

TO:	CHAIR AND MEMBERS STRATEGIC PRIORITIES AND POLICY COMMITTEE NOVEMBER 7, 2016
FROM:	MARTIN HAYWARD, MANAGING DIRECTOR, CORPORATE SERVICES AND CITY TREASURER, CHIEF FINANCIAL OFFICER
SUBJECT:	DEVELOPMENT CHARGES RATE MONITORING – 2016 REVIEW

RECOMMENDATION

That on the recommendation of the Managing Director of Corporate Services and City Treasurer, Chief Financial Officer, that this report BE RECEIVED for information.

PREVIOUS REPORTS PERTINENT TO THIS MATTER
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Strategic Priorities & Policy Committee – June 9, 2016 – Growth Management Implementation Strategy (GMIS): 2017 Annual Review & Update
<http://sire.london.ca/cache/2/tpfq3of5swfd4k55wk4gnc55/2338480926201604163914.PDF>

2014 Development Charges (DC) Background Study
<http://www.london.ca/business/Resources/Development-Financing/Pages/2014-Development-Charges-Study.aspx>

LINKAGE TO THE STRATEGIC PLAN

This report responds to the following objectives of Council's Strategic Plan :

Responsible Growth : Build new transportation, water, wastewater, and storm water infrastructure as London grows.

Proactive financial management : Make sure that financial issues are not created and pushed to the future, creating problems for future generations

Collaborative, engaged leadership : Maximize openness and transparency in Council decision making.

BACKGROUND

Development Charge Reports

- Statutory Report – The ‘DC Annual Report’ provides historical financial information about DC fund revenues and expenditures and is prescribed by the DC legislation as a required, annual report.
- ‘DC rate monitoring’ involves analysis of actual & projected costs and growth assumptions as compared to the estimates used in setting DC rates. DC rate monitoring provides evidence about how suitable the current DC rates are in recovering the actual costs of growth being experienced.

Background

This report addresses DC rate monitoring over the period August 2014 (inception of new DC rate by-law) to September, 2016. It is intended to make high level observations regarding the cost estimates used in setting 2014 DC rates.

Development Charge (DC) Rate setting typically occurs on a maximum five year cycle, as provided for in the DC Act. In the intervening years, monitoring of actual experience in DC costs and revenues against estimates used in DC rate setting is useful primarily to determine whether DC rates are reasonably accurate. As well, periodic observations about the pace of actual growth in relation to the pace of projected growth in the DC study can assist in informing decisions about the rate of spending to provide capacity for future growth.

At the outset, it should be understood that the DC rate study forecasts growth needs (for infrastructure projects) for a full twenty (20) year period. For monitoring purposes, we have three (3) years of actual experience with which to judge the accuracy of these forecasts. The analysis below provides some initial observations from projects that were estimated to be constructed in either 2014, 2015 & 2016. The annual update of this information is important to determine trends over time in how the projections used to set DC rates differ from actual experience.

This review was initiated based on a process depicted in the diagram in Appendix A of this report. The proposed process was vetted with external stakeholders representing the development industry (London Development Institute and London Home Builders) and taxpayers (Urban League).

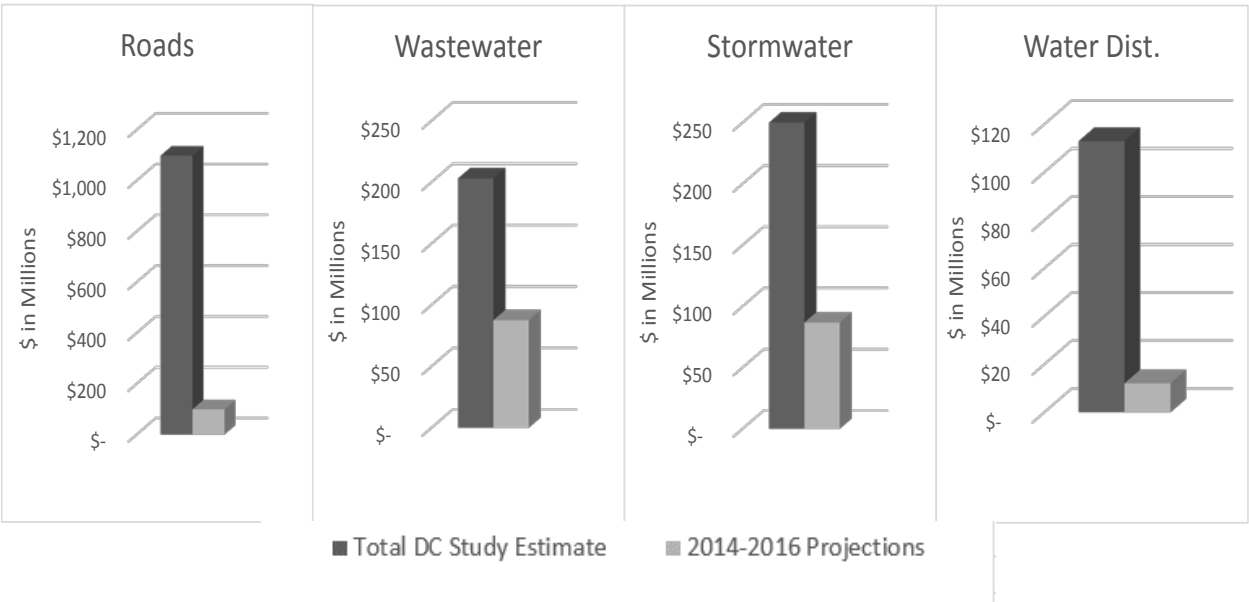
Finally, the report provides a summary of observations and discusses courses of action taken over the year.

ANALYSIS

1. ASPECTS OF DC RATE MONITORING

a. What is the scope of the costs under review through this report?

The 2014 DC study originally projected costs of \$1.9 billion to serve anticipated growth over the next 20 years. We now have approximately three (3) years of experience with the costs used in the 2014 DC study. The graphic below is a representation of the total 2014 DC Study estimates used for setting DC rates vs. the total costs of 2014-2016 projects reviewed in this report, by service component.



b. How can we assess the accuracy of the calculated 2014 DC rates?

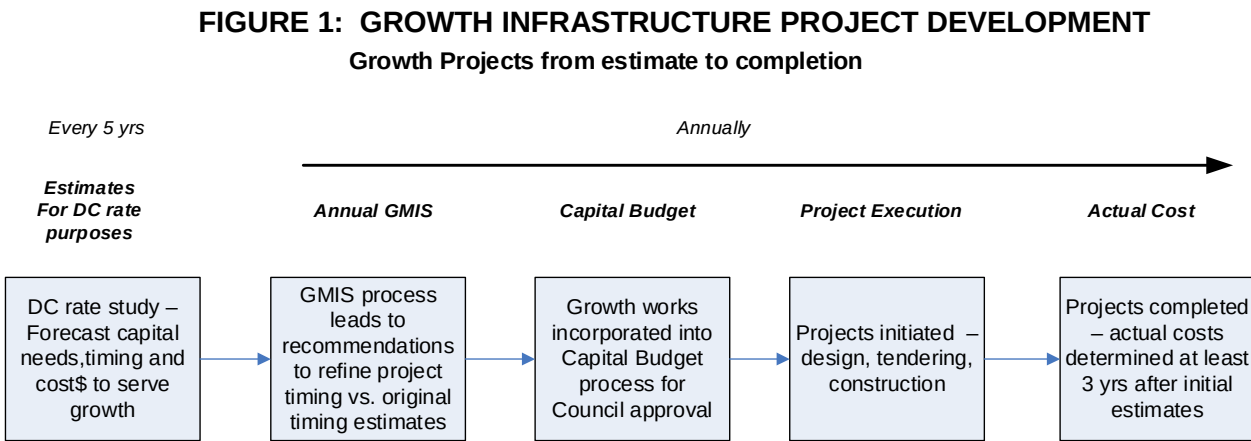
The DC rate study project cost estimates were developed in master plan studies for each respective service area. Project cost estimates are based on a number of informed assumptions about input costs (e.g., pipes, asphalt), physical installation costs, and high-level analysis of project location, design work and restoration costs.

The accuracy of DC rates depends on a number of factors listed below:

- the accuracy of the cost estimates (spanning 20 years) used in the rate calculations,
- the adequacy of contingencies, where specific project costs cannot be developed,
- the actual executed timing of construction of infrastructure works in relation to the anticipated timing in the rate study,
- the rate of building activity and volume of activity in relation to growth forecasts, and
- the density of building activity in relation to targeted densities (ie. is the housing being built meeting the density projections used in the initial growth forecast employed in the DC rate study?) .

The focus of this report is based on accuracy of cost estimation & rate of building activity.

Figure 1 below depicts the general process from growth expenditure forecast to project completion.



DC Rate monitoring on project costs entails forecasting the final project costs to determine whether the initial costs used to establish DC rates are reasonably accurate. It also entails review of closed projects used to calculate DC rates. The results of these reviews on costs are discussed below.

2. GROWTH COSTS - OBSERVATIONS RELATED TO 2014 DC RATE ESTIMATES & FORECASTED FINAL PROJECT COSTS

This section reports observations on estimated project costs used in the 2014 DC rate study compared to actual & anticipated final costs. Observations are based on a review of the projects which were identified in the 2014 Background Study for construction in 2014, 2015 or 2016.

The analysis was undertaken through a review with project managers in Environmental and Engineering Services responsible for managing the design and tender of each DC infrastructure project. They were asked to confirm tender values, engineering fees, and any other projects costs related to the delivery of the completed project (approvals to commence these works have generally previously been received through Civic Works Committee reports). Where a DC funded

annual program budget is in place to support numerous “repetitive” projects in multiple locations across the City, we compiled all commitments and compared against the annual hard service program.

In general, 44% of the projects identified in the Background Study for construction in either 2014, 2015 or 2016 have been tendered and are at a stage where “actual” final project costs can be estimated with reasonable accuracy. The circumstances explaining projects delayed are discussed in greater detail in a later sections of this report. The projects that went un-tendered were generally:

- In earlier stages of pre-design and detailed design, or
- Intentionally deferred due to economic conditions identified through previous Growth Management Implementation Strategy (GMIS) processes.

For untendered projects, there is generally insufficient information to draw accurate observations about how these projects will perform in relation to DC study estimates.

TABLE 1 below provides a summary of the total projected costs compared to costs used to establish DC rates for : Arterial Roads, Wastewater, Stormwater and Water Service Areas (ie. “hard” services). A few statistics on the progress of “hard services” construction are provided below:

- 18% of the total 20 year costs for hard services have been accounted for in this report
- In the first 5 years of the DC Study hard service costs were estimated at \$619M. Approximately \$292M or 47% of the 5 year total was slated for construction in the 2014-2016 time period. The 5 year timeframe is significant due to the mandate in the DC Act stating a DC by-law expires after 5 years and must be revisited through a new DC Study. It is of great importance that the estimates in this time frame are as accurate as possible to keep the integrity of the rate structure for the period.
- Annual programs (a relatively small portion of the overall totals) are experiencing a favourable variance at this point in time of approximately 26% with a small portion of the year 2016 yet to be completed.

**TABLE 1: SUMMARY OF 2014-2016 INFRASTRUCTURE PROJECTS
(DC STUDY COST ESTIMATES VS. PROJECTED FINAL COST)**

Review of Growth Projects (Millions of \$)	Total	% variance	% of Total DC study costs
Total DC projects identified in 2014-2016	64		
Total projects tendered in 2014-2016	28		
Total DC study cost estimates for projects reviewed*	\$277.0		
Total projected final cost - September 2016	\$276.6		
Net variance	\$0.4	0%	
Total DC Study Cost Estimates for Annual Programs*	\$15.4		
Total Projected Annual Program Final Costs	\$10.8		
Net variance Annual Programs	\$4.6	30%	
Total of DC Projects and Annual Programs in DC Study *	\$292.4		18%

Based on the summary, the projected final costs are, in total, very close to those used in the DC rate calculations. Details by Service Area that cumulatively make up the summary above, are discussed in sections i. through v. below.

i. Differences in City Services Reserve Fund (CSRF) funded Arterial Roads

The total 20 year cost estimate of growth related Arterial Roads projects in the 2014 DC rate calculation is approximately \$1.1 Billion.

The following observations were made on the DC projects expected to be constructed through 2014 to 2016 (see Appendix B - Details of 2014-16 Project Costs included in Review):

**TABLE 2: SUMMARY OF 2014-2016 ARTERIAL ROAD PROJECTS
(DC STUDY COST ESTIMATES VS. PROJECTED COST)**

Review of Growth Projects (Millions of \$)	Arterial Roads	% variance	% of Total DC study costs
Total DC Capital Projects identified in 2014-2016	15		
Total projects tendered in 2014-2016	14		
Total DC study cost estimates for projects reviewed*	\$99.2		
Total projected final cost - September 2016	\$94.5		
Net variance	\$4.7	5%	
Total DC Study Cost Estimates for Annual Programs*	\$6.6		
Total Projected Annual Program Final Costs	\$3.7		
Net variance Annual Programs	\$2.9	44%	
Total of DC Projects and Annual Programs in DC Study *	\$105.9		10%

- The data collected shows that projected final costs are currently expected to be slightly below estimates used in the DC rate calculations. This can be attributed in part to coordination of construction of multiple hard services within a single project tender which can reduce the overall cost of design and construction through economies of scale.
- Annual programs comprise more minor construction activities. These include the construction of sidewalks, streetlights, channelizations, etc. and are often constructed as an extension to new site plan or subdivision. These works are contingent on development activity and road capacity conditions at the site of the development and are therefore difficult to predict. Development Finance monitors estimates for these works, both at draft plan and final agreement stage.
- Seven (7) of eight (8) projects planned for construction in the period have been tendered. For the lone un-tendered project (Kilally Rd upgrades), the expected timing for tender is 2017. This project is being coordinated with the Phase 1 Kilally (A30) watermain and is largely dependent on the progression from the Edgevalley/Kilally subdivision application.
- It should be noted that there are several projects with open contracts and contingency amounts which could be returned to the project account resulting in favourable variances being reported at project closeout.

At present, the current DC rate for Arterial Roads is sufficient to support DC funded Transportation projects in the short term. The impact of the escalated cost of BRT over the 2014 DC Study estimates, combined with changes to the DC Act related to calculation of Transit rates is currently under review in preparation for the 2019 DC study.

ii. Differences in CSRF funded Wastewater capital projects

The total 20 year cost estimate of growth related Wastewater projects in the 2014 DC rate calculation is approximately \$203 Million.

The following observations were made on the DC projects slated for 2014, 2015 or 2016 construction (see Appendix B - Details of 2014-16 Project Costs included in Review):

**TABLE 3: SUMMARY OF 2014-2016 WASTEWATER PROJECTS
(DC STUDY COST ESTIMATES VS. PROJECTED COST)**

Review of Growth Projects (Millions of \$)	Wastewater	% variance	% of Total DC study costs
Total DC projects identified in 2014-2016	14		
Total projects tendered in 2014-2016	7		
Total DC study cost estimates for projects reviewed*	\$83.1		
Total projected final cost - September 2016	\$77.9		
Net variance	\$5.2	6%	
Total DC Study Cost Estimates for Annual Programs*	\$4.5		
Total Projected Annual Program Final Costs	\$4.2		
Net variance Annual Programs	\$0.3	7%	
Total of DC Projects and Annual Programs in DC Study *	\$87.6		43%

- As noted in the Arterial Road section, the Wastewater capital growth infrastructure program benefited from coordination of design and tendering across service areas.
- The Greenway Pollution Control Plant Capacity Upgrade project accounts for \$43 Million of the \$77.9 Million total projected cost noted above. There are no expected increases from last year’s final projected cost; construction of this project is on-going.
- Two (2) other projects: Sanitary Trunk Sewer on Exeter Rd/Longwoods Growth Area (SS12B) and Wonderland Growth Area (SS14A) are currently expected to produce favourable variances totalling close to \$3M.
- Future projects not included in the stats above however have less favourable expectations. It is anticipated that the Adelaide PCP Treatment Capacity Upgrade timed for 2025 is expected to increase from \$10.9M to \$20-\$24M. This is expected largely due to the costs experienced for the Greenway PCP Upgrade discussed above. Additionally, the Wonderland Road Pumping Station Upgrade timed for 2024 is expected to double in cost to \$5M. Revised estimates will be included in the 2019 DC study to reflect the updated estimates.
- A trunk sewer has now been identified as needed in the Foxhollow Planning area. This sewer was previously expected to be an oversized sewer, and the adverse impact on the DC funds will be in the order of \$800k .
- The sanitary sewer internal oversizing annual program is expected to have a \$1M positive variance for the period. These works are contingent on development activity and upstream sewer capacity requirements at the site of the development and are therefore difficult to predict.

As part of the ongoing process of planning infrastructure, EES staff attempt to ensure that the most cost efficient servicing solutions are advanced, while at the same time, meeting the desires of development proponents. As a result of this effort, an opportunity may exist to adjust the routing and timing of some of the growth sanitary sewers. This will also provide better DC Sanitary Reserve fund stability in the long term and still accommodate growth in specific areas of the City.

Based on the review outlined above, the current DC rate for Wastewater is sufficient to support the growth program in the short term.

iii. Differences in City Services Reserve Fund (CSRF) funded Stormwater Management (SWM) capital projects

The total 20 year cost estimate of growth related SWM projects in the 2014 DC rate calculation is approximately \$253 Million.

The following observations were made on the DC projects expected to be constructed in either 2014, 2015 or 2016 (see Appendix B - Details of 2014-16 Project Costs included in Review):

TABLE 4: SUMMARY OF 2014-2016 STORMWATER PROJECTS
(DC STUDY COST ESTIMATES VS. PROJECTED COST)

Review of Growth Projects (Millions of \$)	SWM	% variance	% of Total DC study costs
Total DC projects identified in 2014-2016	23		
Total projects tendered in 2014-2016	2		
Total DC study cost estimates for projects reviewed*	\$82.5		
Total projected final cost - September 2016	\$92.0		
Net variance	-\$9.5	-12%	
Total DC Study Cost Estimates for Annual Programs*	\$4.2		
Total Projected Annual Program Final Costs	\$2.6		
Net variance Annual Programs	\$1.6	38.1%	
Total of DC Projects and Annual Programs in DC Study *	\$86.7		34%

- As of October 2015, there has been no construction activity related to the 2014-2016 SWM growth projects, though design work is proceeding in conjunction with the “Just-in-Time” SWM construction process. One exception was Wickerson S-B SWMF, which the tender value came in roughly 50% lower than the total estimated cost in the DC Study. This is encouraging given the anticipated adverse variances discussed below.
- The annual internal storm sewer oversizing program has consumed 38% of its allotted budget from 2014 through 2016 (Year to date). These works are contingent on development activity and upstream storm sewer capacity requirements at the site of the development and are therefore difficult to predict. The specific details of the infrastructure oversizing are developed through the detailed design of the development. The annual program variance, at this point is favourable and relatively minor (\$1.6M) in size.
- The comments below pertain to the project status for various SWM projects, and should be taken into account before drawing any conclusions from Table 4 above. (Project by project details discussed below are contained in Appendix B)
 - o Some of the facilities in the Dingman Creek area (3 projects) are under review as part of the Dingman Area Environmental Assessment (EA). The broader approach to the EA is supported by the Ontario Ministry of the Environment and Climate Change and will look for alternate ways of accommodating surface flows, adjusting the required timing of some facilities, reducing the size of some facilities, opening up land for development, and potentially removing the need for some facilities entirely. The conclusion of this study could drastically change the overall costs of the SWM facilities in the Southwest area.
 - o Two (2) projects in the Hyde Park area are pending the completion of an EA addendum seeking a more cost efficient servicing solution.
 - o Industrial land servicing projects account for two (2) of the untendered projects. These projects are dependent on land acquisition for pond construction. The lands for one of the SWM facilities has now been acquired, and construction is expected to commence in 2017.
 - o As part of the 2017 GMIS the timing of six(6) SWM projects were adjusted for various reasons. SWM project deferrals can be attributed to the following factors:
 - The deferral of projects was in part necessary as a result of growth activity that was lagging behind projections of growth (which in turn drive DC revenues and impact DC reserve fund sustainability). To prudently manage the DC Reserve Fund position, deferral of SWM Facilities (through annual GMIS process) was a necessary consequence of Residential building activity (specifically Low Density Residential activity) falling well below expectations in the first 2 years following the DC study. Though Residential DC revenue production has increased in the past few months, total DC revenue projections remain well below annual expectations forecast in the 2014 DC study;
 - Diminished building activity levels are also cited in the GMIS report as a reason for deferral of projects. Specifically, to avoid premature investment in facilities not immediately needed, SWM facility projects were deferred;

- DC rates would appear to be understated (by approximately 10%) for the SWM DC rate component. Based on experience thus far, higher DC rates could have been justified, which could have produced approximately just less than \$1 million dollars of additional DC revenue (assuming no dampening effect on the market for new construction) in the past two years.
- o Of the remaining projects, at least six(6) are expected to be constructed in 2017 and one(1) other in 2018. These projects are on schedule following the Just in Time delivery of SWM facilities process approved in the 2014 DC policy deliberations

In summary, there is a net unfavourable variance between SWM facility cost estimates used in the 2014 DC rate calculations and costs presently being anticipated. This negative variance has been partially mitigated by favourable variances of projects closed in the past (\$3M favourable variances on closed 2014-2016 SWM projects – see discussion under ‘Growth Capital Project Closeout’ below). The magnitude of the unfavourable variance suggests a review of how costs estimates are arrived at for SWM projects would be in order in the next DC study. EES staff are aware of the apparent bias towards understated DC rates for SWM, and will address in next DC study.

iv. Differences in CSRF funded Water capital projects

The total 20 year cost estimate of growth related Water projects in the 2014 DC rate calculation is approximately \$113 Million.

The following observations were made on the DC projects active through 2014, 2015 & 2016 (see Appendix B - Details of 2014-16 Project Costs included in Review)

**TABLE 5: SUMMARY OF 2014-2016 WATER PROJECTS
(COST ESTIMATES VS. COST ACTUALS)**

Review of Growth Projects (Millions of \$)	Water	% variance	% of Total DC study costs
Total DC projects identified in 2014-2016	12		
Total projects tendered in 2014-2016	5		
Total DC study cost estimates for projects reviewed	\$12		
Total projected final cost - September 2016	\$12		
Net variance	\$0.0	0%	
Total DC Study Cost Estimates for Annual Programs	\$0.18		
Total Projected Annual Program Final Costs	\$0.27		
Net variance Annual Programs	-\$0.09	-48.6%	
Total of DC Projects and Annual Programs in DC Study *	\$12.1		11%

- During 2016, two (2) projects have progressed in terms of tendering, Hyde Park (ADD1) & Uplands Pumping Station. Hyde Park is projected to have a favourable final cost of \$237K as well as Uplands Pump Station - \$60K. These 2 positive variances help to offset the projected adverse variance for the Hyde Park Phase 2 watermain project.
- The Southeast Pressure Zone project was tendered in 2016 but only one bid was submitted and City staff were not satisfied with the price, so the bid was declined. The plan is to re-tender late 2016 early 2017.
- The annual internal water main oversizing program is currently projected to be over the estimated cost by \$90k. These works are contingent on development activity and water capacity requirements at the site of the development and are therefore difficult to predict.

The analysis above suggests that current DC Water rates adequately recover the current estimated costs of growth in the Water Distribution sector.

v. Growth Capital Project Closeout - Favourable Results Observation

Each year, Administration undertakes a process of closing out completed capital projects. These project closeout reports typically contain positive results of projects completed within or below costs estimated in the DC study. When this occurs on DC funded growth projects, funds are returned to DC reserve funds, and DC funded debt authorized for these projects is cancelled. This release of previously committed funding improves DC reserve fund account balances as previously committed funds are no longer required. Table 6 below provides a summary of the projects closed in the years 2014, 2015 & 2016 and the net benefit to the various reserve funds that was recognized upon project closeout. The figures reported generally augment favourable projected variances (Tables 2 & 3 above) / mitigate unfavourable projected variances (Tables 4 & 5 above).

TABLE 6: SUMMARY OF 2014-2016 PROJECT CLOSEOUTS

Completed Capital Projects (in \$000)						
Service Area	# Completed	CSRF Drawdowns not required			DC funded Debt not required	Totals
		2014	2015	2016		
Arterial Roads	13	\$ 1,665	\$ 655	\$ 85	\$ -	\$ 2,405
Wastewater	8	\$ 781	\$ 1,375	\$ 202	\$ 394	\$ 2,752
Stormwater	6	\$ -	\$ 3,069	\$ 21	\$ 1,857	\$ 4,947
Water	4	\$ 994	\$ 200	\$ 174	\$ -	\$ 1,367
Totals	31	\$ 3,440	\$ 5,299	\$ 482	\$ 2,251	\$ 11,471

This completes the review of 2014-2016 growth infrastructure project cost estimates incorporated into DC rates relative to expected final project costs.

3. GROWTH COSTS - OBSERVATIONS RELATED TO URBAN WORKS RESERVE FUND (UWRF) CLAIMS

A key deliverable of the 2014 Development Charge study was to incorporate a phased approach to retirement of the Urban Work Reserve Fund (UWRF) and to move financing of development works in-line with the Growth Management Implementation Strategy (GMIS) and capital budgeting process undertaken by Finance and EES.

In the absence of a “budget based system” that tracked developer led UWRF claims, from initial estimate to project completion (unlike the capital budget system which does so), the analysis related to adequacy of the UWRF estimates is complex and time consuming. At the same time, the significance of these claims, in relation to the overall DC rate is minor (comprising less than 5% of the overall growth infrastructure servicing costs in the 2014 DC study).

In light of:

- The relatively minor nature of the UWRF rate in comparison to CSRF rates for hard services,
- the phasing out of UWRF as a funding vehicle in favour of a “capital budget based system” using Annual Program budgets, and
- a declining pool of remaining UWRF projects,

it is recommended that staff continue to track and process outstanding claims as they are submitted, with a view to providing comprehensive, estimates of remaining claims required to liquidate UWRF obligations under existing development agreements in the next DC study. This is consistent with our approach and recommendation in the 2015 DC Rate Monitoring Report.

4. MATCHING INVESTMENTS WITH THE PACE OF GROWTH

An important relationship exists between the projected amount of residential and non-residential growth and the City’s investments in infrastructure projects. Development Charges rate calculations are based on growth projections that determine servicing needs, which in turn establish DC rates. If actual growth in the form of building construction activity does not consistently meet the growth projections contained in the DC Background Study, then sufficient DC revenue is not being generated to maintain the original schedule of investments in infrastructure. The two key elements – growth activity and investment in infrastructure – should move in tandem.

For the 2017 GMIS Update (tabled June, 2016), staff conducted a growth analysis to compare building construction activity with the DC Background Study growth projections for residential and non-residential development. Excerpts from the 2017 GMIS report tabled in June, 2016 can be found in Appendix C.

The City’s residential and non-residential construction levels have varied substantially in recent years in comparison to the growth projection that was used in the 2014 DC Study. The lower than anticipated growth volumes for several categories of development means that infrastructure investments originally planned to accommodate the higher growth levels cannot be sustained by the current revenue stream. As a result, growth project deferrals were recommended and approved during the 2017 GMIS process and are now reflected in the 2017+ Capital Budgets (to be tabled in the near future).

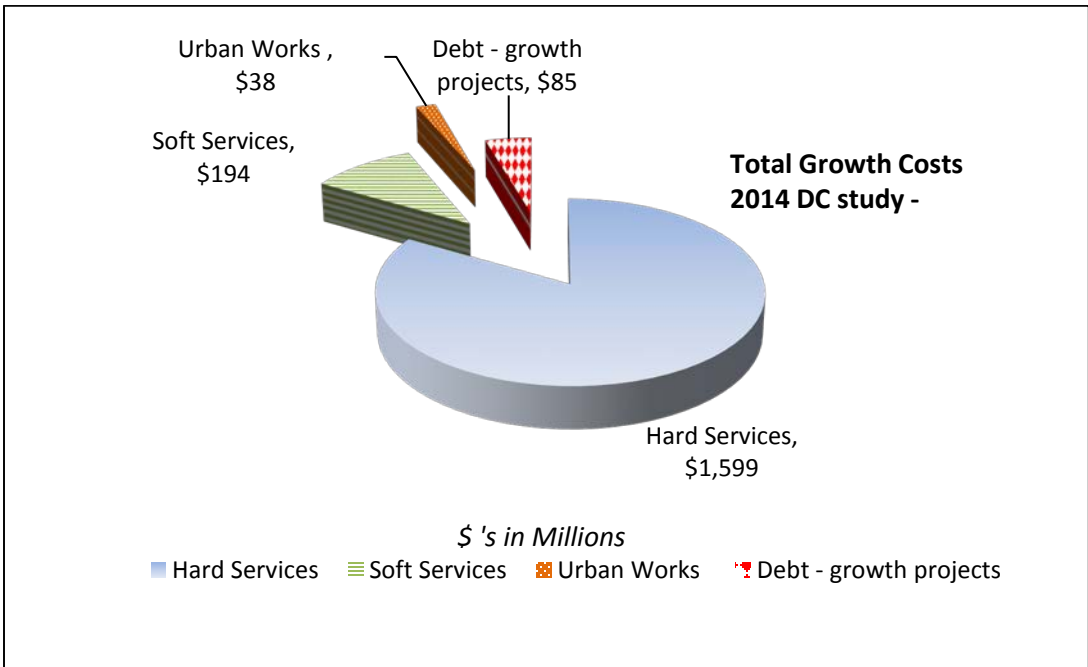
In the past year, the pace of building activity has accelerated leading to a marginally favourable budget variances in certain DC revenue categories. However, overall results remain consistent with observations made earlier this year – DC revenues have thus far been significantly below those contemplated in the DC rate calculations. Therefore, GMIS deferral actions approved in June, 2016 remain warranted at this time.

5. LIMITATIONS IN THIS REPORT

This report has two general limitations that the reader should be aware of:

- 1. First, this report has addressed DC funded “Hard Services” costs in the 2014 DC study. FIGURE 3 below depicts other elements of cost that are incorporated into the DC rate structure, that have not been addressed in this monitoring report. Significant variances in “Soft” Services would also affect DC rates, but not nearly to the same extent as variances in the more costly “hard” services.

FIGURE 3 - DC RATE STRUCTURE BY BROAD CATEGORY



2. Secondly, the scope of this report is limited given the relatively few projects for which tender results are available (28 projects), in relation to the number of projects upon which DC rates were set (for the hard services addressed in this report, in excess of 500 hard service infrastructure projects spanning a 20 year period impact the calculation of the DC rates). Tender results in the future may, or may not reveal currently undiscovered variances that would impact conclusions on the overall “health” of the DC rates.

6. COMMENT ON NATURE OF DC ESTIMATES

It is necessary to use estimates in the DC rate calculation that are based on preliminary, best available information and costing models at the time of the study. These cost estimates are prone to variations as further design, study or market conditions unfold. Therefore, it is important that staff and consultants exercise diligence in developing complete cost estimates and provide for ample contingencies in the DC rate calculations that recognize the vulnerability in the estimates.

CONCLUSION

DC rates were approved in June 2014 using best available information at the time.

The focus of the preceding DC rate monitoring discussion has been to assess the accuracy of DC rates based on three years of experience in a DC study with a 20 year horizon. Based on our observations to this point, it is our opinion that DC rates for CSRF funded infrastructure projects are reasonably accurate with both favourable and unfavourable variances in individual projects being observed.

The observed residential and non-residential building activity, has generally been below what was anticipated when DC rates were calculated. As a result, the 2017 GMIS process was used to cope with this revenue shortfall while striving to also providing adequate opportunity for serviced land. The 2017 GMIS assessment remains valid, though improved activity levels will boost DC reserve funds over what was previously anticipated for 2016 and gives cause for optimism in the 2018 GMIS process.

To sustain infrastructure investments projected in DC rate studies :

- 1) The City must be vigilant to adopt realistic projections of anticipated growth activity, with infrastructure investments to match the anticipated growth;
- 2) Staff must recognize the potential for adverse variations and include allowance for same in estimating project costs in the DC study. The potential for alternative designations of sewers (eg. oversized sanitary sewer redesignated as trunk sewer at substantial increase in funding requirement from DC funds). Unforeseen project needs are still a reality despite master planning of services and such unforeseen needs must also be planned and provided for in DC rates.

Administration looks forward to continue to work with the development industry stakeholders to identify where improved cost and growth estimates can be made in future. Watchfulness in this area will ensure that DC rates remain adequate in funding the growth costs of expansion of infrastructure and to the greatest extent possible, intergenerational equity in DC rates is achieved.

ACKNOWLEDGEMENTS

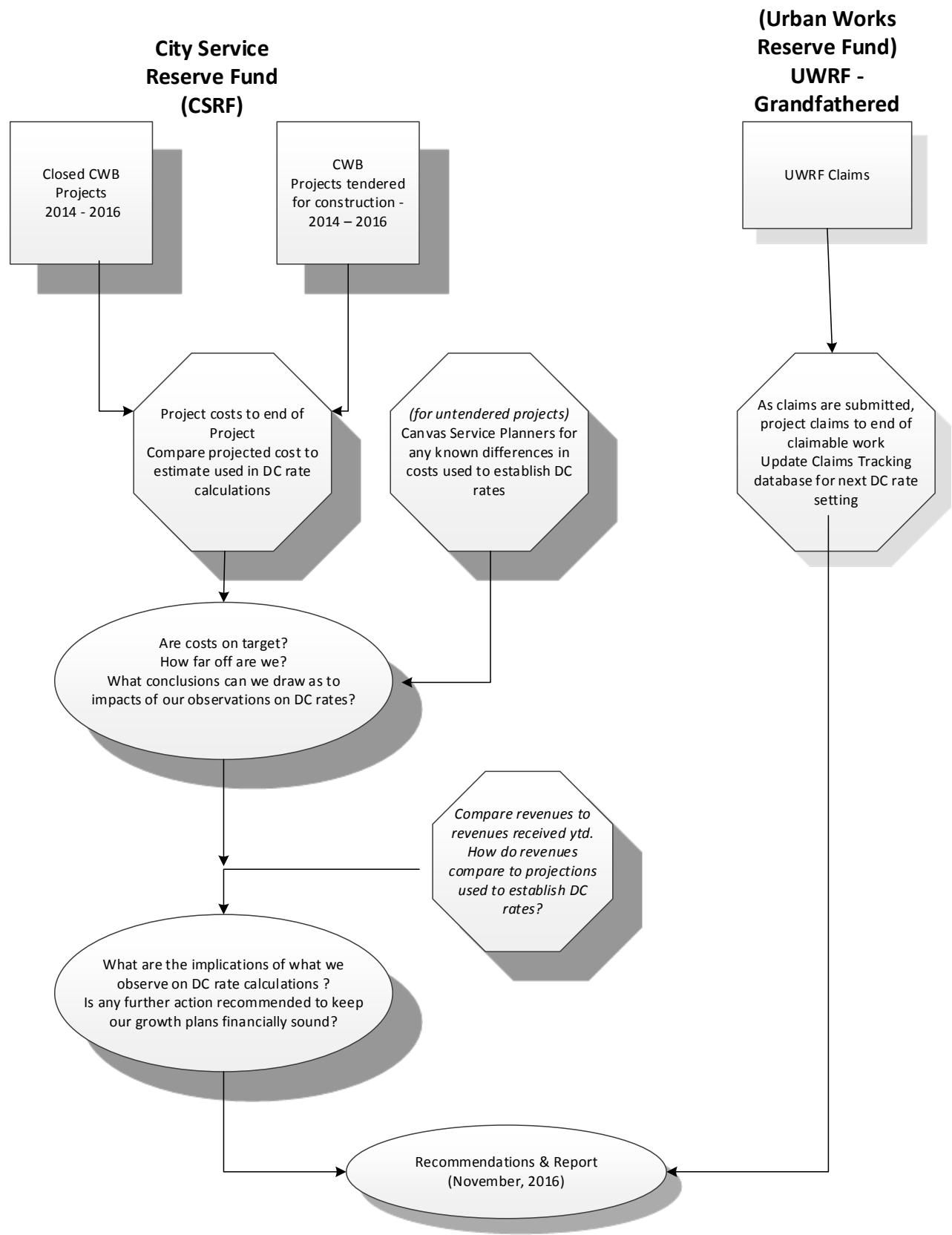
This report was compiled with the assistance of staff in the Development Finance unit, with the assistance of Project Managers of growth projects in Engineering and Environmental Services.

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October 28, 2016
c.c. London Development Institute
 Urban League of London
 London Home Builders' Association

attchmts: Appendix A - Schematic of DC Monitoring Process
 Appendix B –Details of 2014-16 Project Costs included in Review
 Appendix C - Excerpt from 2017 Growth Management Implementation Strategy
(GMIS) – tabled June 9, 2016

DC Monitoring Process 2016



APPENDIX B
2016 DC Rate Monitoring
Details of 2014-2016 Projects Reviewed

City Account Number		Project Description	DC Project ID	Total Estimated Cost (2014-2016)		Expected Year in DC Study	Tender Price	Final Projected Cost	Surplus/Variance	Comments
Roads	TS1496-2	1.2 (1.3) - Sunningdale Road Stage 1 - Phase 1 - Winderland/Sunningdale Intersection (2 to 4 through lanes)	DC14-RS00002	\$	3,300,000	2014	\$ 2,297,390	\$ 3,276,500	\$ 23,700	Project complete - Hold back released
Roads	TS147-1	1.8 Hyde Park Road-Oxford to CTR (2 to 4 through lanes)	DC14-RS00001	\$	2,298,000	2014	\$ 17,814,226	\$ 21,201,415	\$ 1,728,585	Two year construction, nearly complete
Roads	TS147-2	3.1 Hyde Park Road-CTR to Ranshawe Park Road (2 to 4 through lanes)	DC14-RS00005	\$	15,585,500	2015	\$ 12,006,576	\$ 15,000,000	\$ 585,500	2015 construction nearly complete
Roads	TS1470	3.1 Commissioners Road - Winderland Road to Viscount Road (2 to 4 through lanes with centre turn lane)	DC14-RS00004	\$	13,802,000	2015	\$ 11,439,925	\$ 14,314,000	\$ (512,000)	2015 construction change of scope to extended viaduct to buyover for water pipe infrastructure
Roads	TS1308	5. Winderland interchange-Highway 401 (Interchange)	DC14-RS00003	\$	10,450,000	2015	\$ 10,450,000	\$ 10,450,000	\$ -	Project complete, \$10M paid to MTO. Part of 4 interchange projects, actual cost to be rationalized following all 4 constructed. No change in estimate
Roads	TS1409	Killaly Rd upgrades @ Webster Phase 1	DC14-RS00015	\$	2,695,000	2016	\$ -	\$ 2,695,000	\$ -	Expected 2017 construction, pending development application progress
Roads	TS1475-2	Fanshawe Pk Rd E Widening Phase 2	DC14-RS00007	\$	15,460,000	2016	\$ 10,937,968	\$ 13,708,000	\$ 1,752,000	Project on-going, open contract
Roads	TS1484	Sarnia Widening - Winderland to Sleightholme	DC14-RS00008	\$	8,362,000	2016	\$ 8,584,795	\$ 10,200,000	\$ (1,838,000)	Project on-going, open contract, Business Case to change the scope
Roads	TS1264-13	Rural Intersections	DC14-RS00064	\$	300,000	2014-2033	\$ 0	\$ 311,921	\$ (11,921)	Annual program, \$2M total provision
Roads	TS1371	Active Transportation	DC14-RS00063	\$	300,000	2014-2033	\$ 0	\$ 10,283	\$ 289,717	Annual program, \$2M total provision
Roads	TS1739	Urban Intersections	DC14-RS00073	\$	2,259,855	2014-2033	\$ 0	\$ 782,850	\$ 1,477,005	Annual program, \$15.065M total provision
Roads	TS4165	Channelization, Roundabouts & Misc. Works	DC14-RS00067-69	\$	1,212,000	2014-2033	\$ 0	\$ 476,000	\$ 736,000	Annual program, \$8.080M total provision
Roads	TS1651	New Traffic Signals	DC14-RS00071	\$	1,014,113	2014-2033	\$ 0	\$ 240,000	\$ 774,113	Annual program, \$6.76M total provision
Roads	TS4160	Miscellaneous Works - Streetlights	DC14-RS00070	\$	1,160,156	2014-2033	\$ 0	\$ 1,080,000	\$ 80,156	Annual program, \$7.734M total provision
Roads	TS5320			\$	361,992	2014-2033	\$ 0	\$ 795,500	\$ (433,508)	Annual program, \$2.413M total provision
				\$	99,242,616		\$ 73,530,880	\$ 94,541,269	\$ 4,701,347	
Wastewater	ES2685	Greenway PCP Treatment Capacity Upgrades	DC14-WW01001	\$	46,166,750	2014	\$ 38,210,000	\$ 42,775,265	\$ 3,591,485	Project awarded July 28, 2015. Work on going, no change to final projected cost.
Wastewater	ES2493	HP7A - Hyde Park Growth Area Oxford PCP sewer shed	DC14-WW00001	\$	5,625,900	2014	\$ 3,665,636	\$ 5,085,900	\$ 540,000	Of the \$2M estimate, only 650K carried forward to the 2014 Capital Budget as previous allocated funds were sufficient to cover the works, total estimated cost spanning the 2 DC studies was \$5.625M.
Wastewater	ES2533	RB1B - River Bend Growth Area Oxford PCP sewer shed	DC14-WW00002	\$	3,774,900	2014	\$ -	\$ 3,774,900	\$ (251,083)	To be constructed in conjunction with Trib. 'C' project - pending developer timing, but City led design and construction, no change to cost estimate
Wastewater	ES2466	Hyde Park Pumping Station Upgrade	DC14-WW01004	\$	198,500	2014	\$ 343,269	\$ 449,583	\$ (151,083)	Scope change of upgrades needed due to enhanced sewer shed \$343,269 tender for pump & electrical upgrades
Wastewater	ES5016	Wonderland Pumping Station Optimization	DC14-WW01010	\$	500,000	2014	\$ 152,748	\$ 152,748	\$ 347,252	Pump purchase.
Wastewater	ES5260	SS3A - Lambeth Growth Area Greenway PCP sewer shed	DC14-WW00004	\$	7,940,525	2015	\$ 7,853,047	\$ 9,000,000	\$ (1,056,475)	Phase 1 complete, phase 2 on-going, intersection complexities drove cost higher than 2015 estimate
Wastewater	ES5247	SS14A - Winderland Growth Area Greenway PCP sewer shed	DC14-WW00003	\$	4,582,260	2015	\$ 2,837,154	\$ 3,045,506	\$ 1,536,754	Construction on-going, location change to blvd, instead of roadway allowed for cost saving
Wastewater	ES2494	SS15A - North Talbot/Lambeth Growth Area	DC14-WW00005-B	\$	2,765,700	2016	\$ -	\$ 3,100,000	\$ (334,300)	2017 GWIS split project into 2 phases, 2016 & 2018 timing, \$3.1M estimate for both phases
Wastewater	ES2526	SS12B - Exeter Rd/Longwood Growth Area	DC14-WW00005	\$	5,442,400	2016	\$ -	\$ 3,865,000	\$ 1,577,400	2016 GWIS moved project to 2017, estimate revised to \$3.865M.
Wastewater	ES5132	East Park Pumping Station Upgrade	DC14-WW01005	\$	1,653,000	2016	\$ -	\$ 1,653,000	\$ (800,000)	Class EA & Design upgrades, scope not clear construction timing of late 2017 into 2018
Wastewater	..	Medway Sanitary Sewer - Landas & Clarke	DC14-WW00080	\$	-	2017	\$ -	\$ 800,000	\$ (800,000)	Not identified in DC study, Detailed design identified a need, provides regional benefit
Wastewater	ID1057	Industrial Internal Oversizing (250ha)	DC14-WW00081	\$	135,000	2014-2024	\$ -	\$ 135,000	\$ -	Annual program, \$450K total provision, no action to date.
Wastewater	ID1057	Industrial Sanitary Servicing (250ha)	DC14-WW00081	\$	4,050,000	2014-2024	\$ -	\$ 4,050,000	\$ -	Annual program, \$135M total provision, no action to date.
Wastewater	ES5145	Sanitary Sewer Internal Oversizing Subsidy	DC14-WW02001	\$	267,975	2014-2033	\$ 0	\$ 45,697	\$ 222,278	Annual program
				\$	83,102,010		\$ 53,061,854	\$ 77,931,699	\$ 5,170,311	
					Total projects tendered		7	14	Total projects reviewed	
SWM	ES3020-HP6	Hyde Park SWMF 6	DC2009	\$	2,416,700	2013	\$ -	\$ 2,416,700	\$ -	Identified in 2009 DC, construction pending EA addendum
SWM	ES5W-M-SB	Wickerson SB SWMF	DC14-MS00041	\$	3,691,000	2014	\$ 1,700,000	\$ 2,566,000	\$ 1,125,000	Project tendered, construction 2016/2017
SWM	ES5W-M-M4	Murray Marr SWMF 4 - Phase 1	DC14-MS00018	\$	2,100,000	2014	\$ -	\$ 2,100,000	\$ -	On-hold subject to Dingman EA completion, expected construction 2018
SWM	ES5W-M-PDR	Pincombe Drain Remediation	DC14-MS00028	\$	4,200,000	2014	\$ -	\$ 4,300,000	\$ (100,000)	On-hold subject to Dingman EA completion, expected construction 2018
SWM	ID2095-2014	Industrial Facility 1	DC14-MS00053	\$	5,001,914	2014	\$ -	\$ 5,001,914	\$ -	Part of Forest City South Industrial Park servicing. Tender estimate of spring 2017 with construction to follow in the summer of 2017. No change to estimate.
SWM	ES5W-M-OV1	Old Victoria SWMF 5	DC14-MS00026	\$	1,814,938	2015	\$ -	\$ 2,284,000	\$ (449,062)	Detail design in process. Updated cost estimate from approved budget, expected construction 2017
SWM	ES5W-M-HF5	Hyde Park SWMF 5 - Phase 1	DC14-MS00008	\$	5,779,000	2015	\$ -	\$ 5,518,000	\$ 261,000	Project on-hold pending land purchase & EA addendum, expected construction 2017
SWM	ES5W-M-DCB4	Dingman Tributary SWMF B4	DC14-MS00005	\$	3,638,342	2015	\$ -	\$ 3,638,342	\$ -	No change to estimate, estimated construction 2017
					Total projects tendered		7	14	Total projects reviewed	
SWM	ES2681	Mud Creek SWMF 1	DC14-MS00013	\$	9,405,000	2015	\$ -	\$ 10,314,000	\$ (909,000)	In 2016, project to include all Mud Creek funds - \$5.2M added to DC project estimate. Also increased by approximately \$3M to total of \$10.3M. \$1.88M consolidated funding from ES3020-WUDOL & ES2688.
SWM	ID2095-2015	Industrial Facility 2	DC14-MS00054	\$	5,001,914	2015	\$ -	\$ 5,001,914	\$ -	Construction expected 2018
SWM	ES3020-RV87C	Riverbend SWMF Trib. 'C' - A-F G	DC14-MS00032	\$	5,396,000	2016	\$ -	\$ 13,906,700	\$ (8,510,700)	No action to date.
SWM	ES3201	Dingman Online Stormwater	DC14-MS00012	\$	6,390,000	2016	\$ -	\$ 6,500,000	\$ (110,000)	Design complete, 2017 Construction pending acquisition of SWM facility land
SWM	ES5W-M-DCNLP	Dingman Creek - North Lambeth P9 SWMF	DC14-MS00025	\$	3,795,220	2016	\$ -	\$ 5,150,000	\$ (1,354,780)	On-hold Subject to Dingman EA completion, estimated construction in 2018
SWM	ES5W-M-P03	Pincombe Drain SWMF 3	DC14-MS00039	\$	2,448,000	2016	\$ -	\$ 2,567,000	\$ (119,000)	Estimated Construction 2017
SWM	ES5W-M-P08	Parke SWMF Phase 1	DC14-MS00037	\$	4,367,000	2016	\$ -	\$ 4,555,000	\$ (188,000)	2017 GWIS timing set at 2017
SWM	ES5W-M-SC7	Stoney Creek SWMF 2	DC14-MS00035	\$	1,594,200	2016	\$ -	\$ 2,099,000	\$ (504,800)	2017 GWIS moved project to 2023 timing
SWM	ES5W-M-SG6	Sunningdale SWMF 7.1	DC14-MS00037	\$	1,696,400	2016	\$ -	\$ 1,800,000	\$ (103,600)	Project funding committed, expected timing is 2017
SWM	ES5W-M-WO3	White Oaks SWMF No. 3	DC14-MS00039	\$	2,857,000	2016	\$ -	\$ 2,925,000	\$ (68,000)	2017 GWIS moved project to 2023
SWM	ES5W-M-WO4	White Oaks SWMF No. 4 Phase 1	DC14-MS00040	\$	4,698,000	2016	\$ -	\$ 4,900,000	\$ (202,000)	2017 GWIS moved project to 2027
SWM	ID1090	Industrial Storm Trunk Sewers (600ha)	DC14-MS00102	\$	450,000	2014-2033	\$ -	\$ 450,000	\$ -	Annual program, \$3M total provision. No action to date
SWM	ID1090	Industrial Storm Servicing Internal o/s (250ha)	DC14-MS00102	\$	300,000	2014-2033	\$ -	\$ 300,000	\$ -	Annual program, \$1M total provision. No action to date
SWM	ES3429	Storm Sewer Internal Oversizing Subsidy	DC14-MS01001	\$	3,448,230	2014-2033	\$ 0	\$ 1,889,691	\$ 1,548,539	Annual program, \$22.998M total provision.
				\$	82,557,058		\$ 1,700,000	\$ 91,973,261	\$ (9,436,203)	
					Total projects tendered		2	23	Total projects reviewed	
Water	EW3652	River Bend Growth Area - Westde! Bourne (Mid Westde! Bourne to Oxford)	DC14-WD00023	\$	458,156	2014	\$ -	\$ 458,156	\$ -	Watermain moved internal to subdivision, covered in oversizing
Water	EW3652	River Bend Growth Area - Oxford (Westde! Bourne to Kains)	DC14-WD00024	\$	1,109,349	2014	\$ -	\$ 1,109,349	\$ -	Waiting to see what development occurs North of Oxford St. to identify needs, project may be given back.
Water	EW3551	Growth Needs (2028) - Sarnia (West of Deer Ridge to Hyde Park)	DC14-WD00038	\$	879,660	2014	\$ -	\$ 879,660	\$ -	Construction timing for 2017, no change in estimate.
Water	EW3551	Growth Needs (2023) - Hyde Park (Sarnia to South Carriage)	DC14-WD00039	\$	1,130,288	2014	\$ 1,297,091	\$ 1,348,631	\$ (218,343)	Part of Hyde Park Phase 2
Water	EW3595	Growth Needs (AD01) (Upsising) - Hyde Park (Royal York to Sarnia)	DC14-WD00005	\$	2,652,345	2014	\$ 2,155,876	\$ 2,415,200	\$ 237,145	Part of Hyde Park Phase 1
Water	EW3590	Uplands PS	DC14-WD02002	\$	360,000	2015	\$ 187,500	\$ 286,233	\$ 63,767	Early 2017 completion
Water	EW3591	Hyde Park PS	DC14-WD02003	\$	700,000	2015	\$ -	\$ 700,000	\$ -	No action to date
Water	EW3628	Southeast Pressure Zone	DC14-WD02005	\$	2,700,000	2014	\$ -	\$ 2,700,000	\$ -	Tendered 2016, only 1 bidder and but not satisfied with the price so it was declined. Plan to re-tender in the
Water	EW3582	Talbot Growth Area - Tillman Road (Southdale to End)	DC14-WD00031	\$	688,500	2014	\$ 628,817	\$ 774,551	\$ (86,051)	Crestwood developer led construction - \$140K eng, \$628 const. - subject to cost sharing 250mm/600mm
Water	EW3694	Killaly Rd (ASD) Highway to Clarke Phase 1	DC14-WD00012	\$	1,268,900	2016	\$ -	\$ 1,268,900	\$ -	Watermain - actuals could be lower upon clin in submission
Water	ID2195	Industrial Water Servicing Internal o/s	DC14-WD00091	\$	30,000	2014-2023	\$ -	\$ 30,000	\$ -	Construction expected 2017. Transportation led project contingent on subdivision progression
Water	EW3818	Watermain Internal Oversizing Subsidy	DC14-WD01001	\$	150,000	2014-2033	\$ 0	\$ 237,534	\$ (87,534)	Annual program, \$100K total provision. No action to date.
				\$	12,127,198		\$ 4,269,284	\$ 12,218,214	\$ (91,016)	
					Total projects tendered		5	12	Total projects reviewed	
				\$	277,008,883		\$ 132,562,018	\$ 276,664,443	\$ 344,440	
					Total projects tendered		28	64	Total projects reviewed	

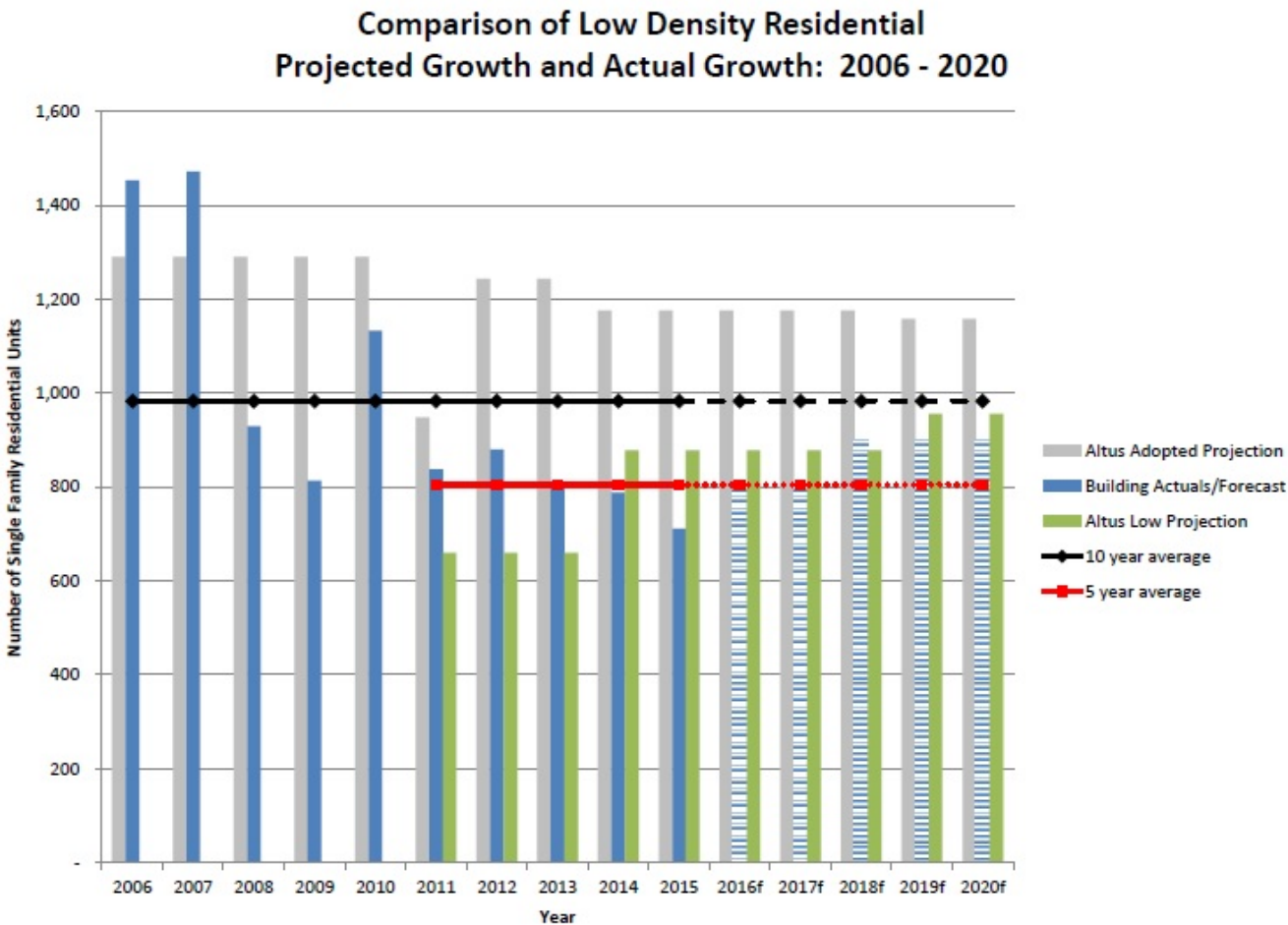
Excerpt from 2017 Growth Management Implementation Strategy (GMIS):DC rate monitoring
(tabled June 9, 2016)

2017 GMIS Context – Growth and Development Observations and Trends

An important relationship exists between the projected amount of residential and non-residential growth and the City’s future investments in infrastructure projects. Development Charges rate calculations are based on growth projections that determine servicing needs, which in turn establish DC rates. If actual growth in the form of development and building construction does not consistently meet the growth projections contained in the DC Background Study, then sufficient revenues are not being generated to maintain the original schedule of investments in infrastructure. The two key elements – growth activity and investment in infrastructure – should move in tandem.

For the 2017 GMIS Update, staff reviewed historic growth levels for all forms of residential and non-residential development. Figure 2 provides a graph of historic and forecasted growth for low density residential development, which is particularly important for DC purposes since single family homes represent almost 50% of calculated DC revenues and are the primary driver for the construction of new infrastructure to support greenfield subdivisions. It should be noted, however, that the growth forecasts for all forms of residential and non-residential development are used for determining future DC revenues and for assessing the health of the DC reserve funds.

FIGURE 2: LOW DENSITY RESIDENTIAL GROWTH: 2006-2020



APPENDIX C

Excerpt from 2017 Growth Management Implementation Strategy (GMIS):DC rate monitoring

(tabled June 9, 2016)

Staff notes the following growth observations and trends that impact DC revenues and the 2017 GMIS recommendations:

- Although the 5 year (2011-2015) average for single family homes city-wide is approximately 880 units per year (well below the 1100+ units per year projected in the 2014 DC study), Staff is anticipating a recovery of the market for this form of housing in the coming years. The City's forecast has been revised to reflect this change, with 800 single family units anticipated for 2016 and 2017 and 900 units for 2018 and beyond. This forecast was discussed with Canada Mortgage and Housing Corporation and is consistent with their near-term forecast for London.
- Medium density residential growth has been below projections for several years. However, it is anticipated that rowhousing construction will be at or slightly above growth projections for the coming years due to increasing demand for this housing form from young adults and retirees. Several GMIS stakeholders have indicated that they are experiencing strong demand for townhouses and believe that the market will sustain higher levels of demand in the future. The City's forecast for townhouses for 2016 and beyond is consistent with the Altus projection and higher than the growth experienced for the 2011-2015 period.
- Apartment construction continues to be strong in London, but has a "peaks and troughs" building cycle. There is strong development interest at present for new apartment buildings due to low vacancy rates; however, construction levels are likely to be at or below the growth projection by the end of the decade.
- Several large commercial developments are anticipated to be built in the coming years at a number of locations city-wide. Additionally, the Altus projection of commercial space has been exceeded for the past five years. These factors have prompted adjustments to the City's forecast of commercial space to assume a higher amount of DC revenues from commercial buildings than originally anticipated.
- A large amount of institutional space was constructed between 2009 and 2011, exceeding the institutional growth projection. Future institutional construction is difficult to predict in light of spending restraints by upper levels of government. As a result, future institutional growth is anticipated to be at, or slightly below, projected levels beyond 2016.
- The industrial sector in the London area has been challenged with the impact of the 2008 recession and the continued restructuring of manufacturing globally. The City is attracting new businesses to London, however, we have been achieving less than half of our projected amount of new industrial floor space for the last three years. Future industrial construction is likely to be challenged by a reduced amount of industrial construction province-wide. Longer-term external forecasts for the industrial sector anticipated continued recovery, which will coincide with the City's development of new industrial lands attractive to larger industrial users. By the end of the decade, London's industrial growth is forecasted to be at the Altus projection.

In recent months, several publications by Statistics Canada, the Conference Board of Canada and the Canada Mortgage and Housing Corporation have indicated that London's economy is recovering. Staff is cautiously optimistic of increased employment opportunities, stronger population growth and corresponding market demand for higher levels of construction of residential units and non-residential floor space. This scenario should improve DC revenues in comparison the performance of the last two years. However, this revenue projection poses some risk in the event that the informed optimistic forecast does not materialize.