

<b>TO:</b>	<b>CHAIR AND MEMBERS CIVIC WORKS COMMITTEE MEETING ON SEPTEMBER 25, 2018</b>
<b>FROM:</b>	<b>KELLY SCHERR MANAGING DIRECTOR, ENVIRONMENTAL AND ENGINEERING SERVICES AND CITY ENGINEER AND ANNA LISA BARBON MANAGING DIRECTOR, CORPORATE SERVICES AND CITY TREASURER, CHIEF FINANCIAL OFFICER</b>
<b>SUBJECT:</b>	<b>POTENTIAL SAVINGS IN CONSULTING COSTS</b>

<b>RECOMMENDATION</b>
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That, on the recommendation of the Managing Director of Environmental and Engineering Services and City Engineer and the Managing Director of Corporate Services and City Treasurer and Chief Financial Officer, that

- a) This report **BE RECEIVED** for information; and;
- b) The opportunity to shift services currently provided by consultants to increased in-house delivery for the corporation be considered as a potential area of more detailed evaluation in the upcoming Service Review (“Deep Dive”) process.

<b>PREVIOUS REPORTS PERTINENT TO THIS MATTER</b>
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Civic Works Committee, December 1, 2015, Item # 2.12, Appointment of Consulting Engineers for the Designs and Construction of Stormwater Management Facilities

Audit Committee, April 29, 2015, Item # 4.4, Report on Internal Audit Results – Engineering and Environmental Services: Roads and Transportation – Capital Budget Development and Project Costing

Audit Committee, April 29, 2015, Item # 4.5, Report on Internal Audit Results – Engineering and Environmental Services: Roads and Transportation – Project Management and Resource Utilization

Civic Works Committee, May 24, 2016, Item # 2.6, Kilally South Stormwater Management Study – Municipal Class Environmental Study Addendum

Strategic Priorities and Policy Committee, August 29, 2016, Item # 2.5, 2019 Development Charge Study In-house Completion of Master Plan Studies

Civic Works Committee, June 7, 2017, Item # 2.19, Staff Resourcing to Meet the Demands of the Clean Water and Wastewater Fund Program

<b>BACKGROUND</b>
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At its meeting on June 2, 2015, Council directed Civic Administration “to review and report back on areas that the City of London could realize consulting cost decreases for

capital projects through the addition of new staff, rather than contracting out those consulting services, so that the City of London would realize net savings.” This report provides a qualitative overview of the types of consulting assignments used in Environmental and Engineering Services (EES).

## DISCUSSION

### Consulting Services Used by EES

The delivery of environmental and engineering services in local government has significantly changed over the last number of years. Anecdotally, most Ontario and Canadian municipalities have moved from a model that saw planning, design and construction of infrastructure occur nearly exclusively in-house to a model that sees substantial work being completed by engineering consultants and contractors.

The reasons for this change are complex and yet almost no independent or academic research exists on the subject. Subjectively, municipalities indicate the change has occurred over several decades and is the result of a variety of factors including: budget cuts and freezes; hiring restrictions; increasing specialization in the engineering profession and its various disciplines; increased project complexity; higher public engagement expectations; technological change; increasing demand and costs of support services and facilities; and, the availability of skilled engineering and technical professionals in the labour market.

The reasons EES uses consultants typically include:

- The project is large. Large projects require a significant dedication of resources. Delivery of these projects in-house would result in the need to either add resources that may not be required once the project is complete or to reassign them from their current work, making it difficult to deliver on other community priorities.
- The project is unique or complex. Complicated or infrequently delivered projects that require the use of specialized resources that are not needed by EES on a regular basis are usually managed via consultant.
- Access to national and international experience. Consultants can sometimes bring direct experience from other jurisdictions, allowing the City to take advantage of new ideas or avoid potential risks.
- Mitigation of design and construction risk is needed. Consulting engineers carry liability insurance for their work, which can mitigate the risk to the City if there are errors or omissions made during design and construction management.
- There is a need to address variable workloads. Municipal infrastructure workloads tend not to be evenly distributed over the course of several years. Changes in legislation, large groups of asset classes needing replacement as an age cohort nears the end of its lifecycle, provincial and federal funding programs, and municipal major project and funding decisions can result in variable demands for engineering and technical services from year-to-year.

### Efforts to Date

The Public Transit Infrastructure Fund (PTIF) and Clean Water and Wastewater Fund (CWWF) programs that started in late 2016 have resulted in both large-scale projects and an expanded infrastructure renewal program for London in the past two years. While both programs are complete in 2020, similar workloads are expected to continue with anticipated Investing in Canada Plan that includes streams for both transit (\$204 million allocated to London to be spent by 2026) and Green Infrastructure (details pending).

Like most EES workplans, these programs are being delivered by a combination of City staff and consultants. The Rapid Transit Implementation Office was created in 2017 and has added both contract and permanent staff to its complement. CWWF has required the hiring of multiple new technical staff, but pending retirements ensure that there will be sufficient work for these teams when workloads return to more typical levels in the future.

### Qualitative Evaluation of Delivery of Engineering Services

Outside of potential cost savings, advantages of delivering more routine projects in-house may include:

- Staff development. Managing design and construction projects can build the competency, confidence and experience of the team. Staff often become better project managers, designers, builders, operators and application reviewers as a result.
- Recruitment and retention. Engineers and other technical professionals may find the opportunity to manage projects, versus contract management, more appealing. This may assist in hiring and retaining technical staff.
- On-going accountability and integration. While EES has successful and long-term business relationships with its many consultants, internal staff undertaking design and construction work may feel an enhanced accountability, especially when it comes to addressing potential concerns from their colleagues who will operate and maintain the asset in the long-term.

Disadvantages of increased delivery of routine projects in-house may include:

- Support staff requirements. Engineering consultants typically bring a full team to City design projects and have the field staff required to see a project through the construction phase should they perform well in prior phases. The City does not currently have the estimators, surveyors, CAD technologists, tender preparation specialists or construction managers that would be required to deliver additional work in-house.
- Access to specialized professional services. Specialized personnel are often difficult to recruit and are typically only needed infrequently, making it impractical to effectively use their skills on a full-time basis. These services can be obtained as individual consultants to the City, but the procurement effort and cost may be more than currently experienced when hiring a consulting office that can access these services within their companies.
- Liability and risk. Consulting engineers carry liability insurance that can protect the City from the costs associated with errors and omissions in the design process. The cost of correcting mistakes or addressing damages to third parties that result from them are the consultant's responsibility via their insurance; should a City designer make similar mistakes, the City would need to pay

corrective costs or third party damages directly. City-led projects do not have the recourse of a consulting engineer's insurance if problems arise.

- **Difficulty in recruitment.** Engineering and technical professional positions can be difficult to recruit, as there is demand for their services across the country. This difficulty is exacerbated if the positions are not permanent. The Canadian labour market for technical staff is expected to see additional challenges as large numbers of current practitioners retire in the near future.
- **Workload flexibility.** When annual programs are smaller, there may be insufficient work to keep technical and support staff busy. Unexpected issues also often arise for City staff over the course of a given year, requiring staff to refocus their efforts to address them. This can make it difficult to continue to manage internally delivered projects on-time and on-budget while staff are responding to emergent issues from Council, the community, other levels of government or unforeseen infrastructure problems.
- **Specialized equipment and technology.** Many consulting engineering commissions allow the City to access not just specialized personnel, but equipment, software and technology that can be expensive to acquire, maintain and train staff to use.
- **Office space needs already significantly exceed supply.** Finding a space for one or two new staff members away from the rest of the team creates challenges with on-boarding, coaching and integration of various elements of engineering design.

Preliminary Quantitative Evaluation of Capital Consulting Costs for the City of London

Using 2017 as an example year, EES spent \$10.7 million in consulting related capital expenditures. Note that 2017 would represent a higher-than-average year with respect to consulting expenditures in EES due to the need to advance design work to meet the requirements of the Federal Clean Water and Wastewater Fund and Public Transit Infrastructure Fund programs.

The expenditures by project type are as follows:

<b>Project Type</b>	<b>2017 Value of EES Capital Consulting Contracts</b>
Growth	\$6.05 million
Lifecycle renewal	\$3.92 million
Service improvements	\$0.71 million

The growth-related expenditures include consultant assignments working on the bus rapid transit project, major roadway expansions and significant upgrades to water, wastewater and stormwater infrastructure. The complex and specialized nature of these projects likely makes them unsuitable for in-house delivery on an ongoing-basis.

Service improvement expenditures on consultants are typically small-dollar value contracts providing short-term services for one-time or emergent issues. There may be some opportunity to group similar service needs in the future and assign them to a new staff member, but the range of contracted services is highly variable and it may not be practical to expect that they can be consolidated.

The \$3.92 million that was spent on consulting services to support more routine investments in infrastructure renewal represents the most feasible opportunity to reduce costs by moving more engineering work in-house. The net savings that might occur

from completing more of the engineering associated with infrastructure renewal in-house would likely be a relatively small part of the total annual expenditure, arising from:

- Any differences in salaries and benefits paid to employees;
- Any differences in overhead costs incurred by consultants versus those incurred by the City of London; and
- Consulting profits.

It is difficult to calculate a figure associated with the above. When fees are not based on a percent of construction costs, consultants typically use hourly rates for staff that include salary, benefits, overhead and profit based on experience categories defined by the Ontario Society of Professional Engineers. It is unlikely consulting companies would provide the detailed break down of these numbers that are required to do a position-to-position comparison with City costs for salary, benefits and overhead. Additionally, City data is not tracked in a way that allows for this comparison to readily occur.

It would also be necessary to quantify any start-up and ongoing costs associated with creating additional in-house capacity, including construction of office space, recruitment of engineering and technical staff, and, acquisition of specialized software, vehicles or equipment and add these costs to more standard corporate overhead associated with space, computer equipment, etc.

Due to other project and program priorities, this undertaking cannot be delivered using current resources in EES or Financial Services and it is recommended that it be referred to the “Deep Dive” process as a potential area for more detailed investigation.

<b>CONCLUSION</b>
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The City needs to balance a variety of factors in deciding which services it delivers using staff and which services it enlists the support of consultants to deliver. The upcoming “Deep Dive” Service Review process may be an appropriate mechanism to prioritize and complete this work.

<b>RECOMMENDED BY:</b>	<b>RECOMMENDED BY:</b>
<b>KELLY SCHERR, P.Eng., MBA, FEC MANAGING DIRECTOR, ENVIRONMENTAL AND ENGINEERING SERVICES &amp; CITY ENGINEER</b>	<b>ANNA LISA BARBON, CPA, CGA MANAGING DIRECTOR, CORPORATE SERVICES AND CITY TREASURER, CHIEF FINANCIAL OFFICER</b>