DOCUMENT 1

BUSINESS CASE: OTTAWA PUBLIC LIBRARY ROSEMOUNT BRANCH

Contract Prime: Boxfish Consultants

Final Report

Date: as at 26 September 2017

CONTENTS

Executive Summary

Background & Purpose

The Ottawa Public Library currently owns and manages 33 facilities across Ottawa. Rosemount Branch is situated at 18 Rosemount Avenue. The current facility is approximately 6,000 square feet and is the oldest library in the City. Over the last three years the OPL management has commissioned several studies on the costs of rehabilitation, expansion, designated substances, and physical constructability issues. In November 2016 the OPL board directed staff to complete a business case on the options available to either rehabilitate, expand, and/or relocate to a new site.

The purpose of this business case is to:

- Identify a list of all potential options for redevelopment.
- Create and apply a set of quantitative and qualitative screens to arrive at a short list of development options.
- Quantitatively assess the shortlisted development options to arrive at a recommended option that meets OPL's development goals and demonstrates positive value for money.

Process & Methods

The business case was initiated in March 2017 with intent to complete by Summer 2017 in preparation for a future meeting of the OPL's board.

- **Data assembly and review**: retrieved and reviewed data from the OPL, City of Ottawa, and third-party sources on capital costs, land values, library usage statistics, etc.

- **Stakeholder consultations**: selected trustees (Chair Tierney and Sweet); councillor Leiper; community group; OPL management; OPL Finance & Business Services; Infrastructure and Economic Development Department; Corporate Real Estate Office.

- **Quantitative Analysis**: Constructed financial model, risk model, demographics forecast model. Iterated on results.

- **Report**: Document incorporated City of Ottawa template requirements. Options analysis, method, results. Delivered for OPL Board review.

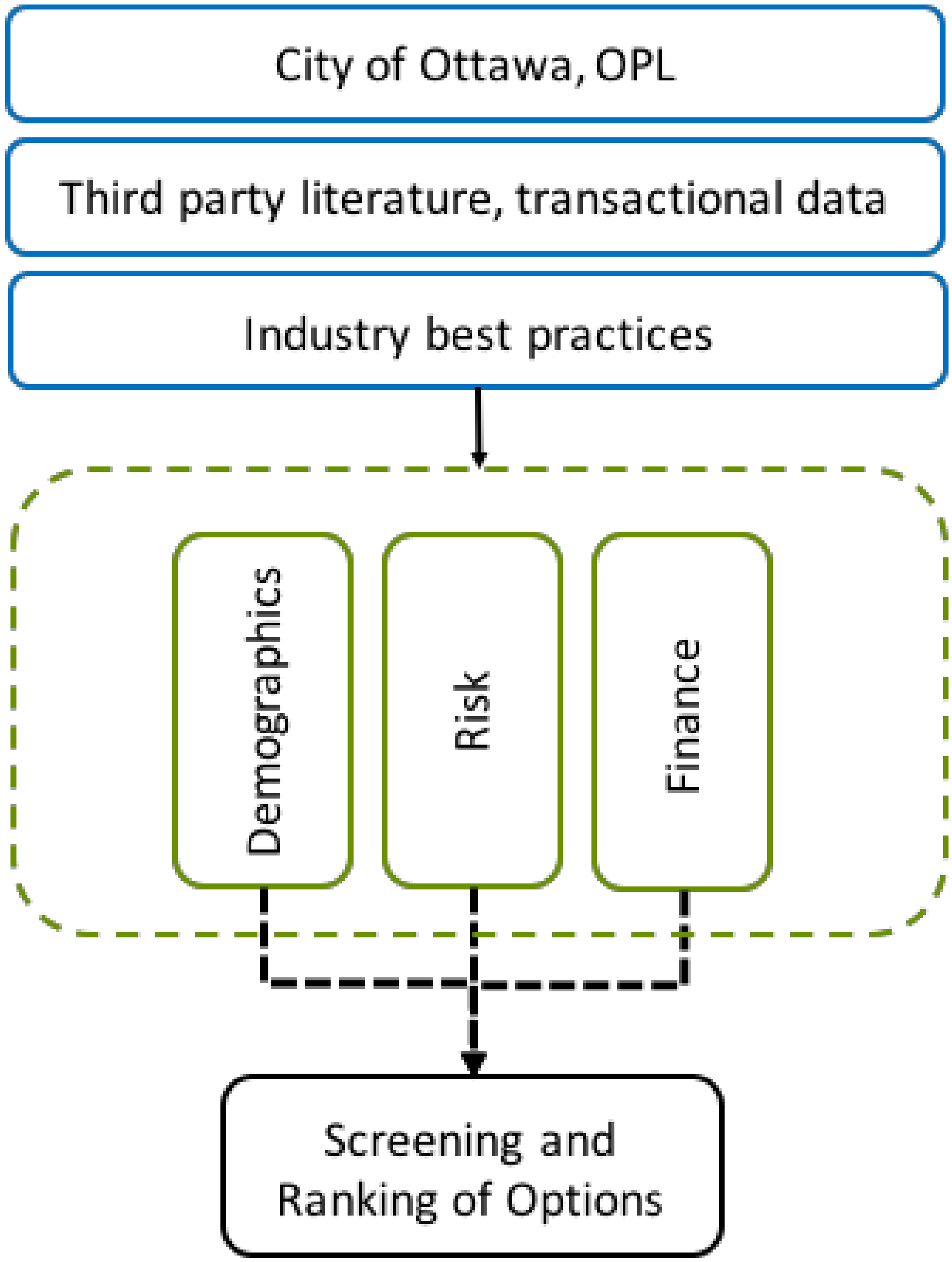
The analytics needed for the business case were partitioned into two threads: first, a long list of development options were agreed to through the initial consultations with the project's stakeholders. These were then reduced to a short-list of feasible options that would be advanced and quantified. In the figure below the OPL's four project priorities are shown. These yielded three screens on affordability, service level and location that were used to arrive at the shortlist of options. The priorities yielded two means to rank development options which are the net present cost of options per unit of space developed and the residual risk to the OPL.

FIGURE 1: OPL PRIORITIES MATRIX

	Priorities	Factor(s)	Impact
1	**Affordability and finance**	Screen (quant): project capital cost Rank (quant): NPV of total cap and op costs per ft^2.	1 option deemed affordable 6 ranked on NPV
2	**Risk and delivery**	Rank (quant): composite score across five risk factors of project delivery	6 ranked on composite risk score
3	**Service level**	Screen (quant): established long term size requirement through demographic forecast	Established size sufficient for 2031 needs. 3 options shortlisted
4	**Location**	Screen (qual): based on location preference, availability of land and cost.	Reduced long list of potential options to plausible sites.

In addition to the screening factors, priorities 1, 2 and 3 each required quantitative analysis to validate the total cost of the options, the residual risk and the estimated long-term demand for library services. These models are shown in in the figure below.

FIGURE 2: QUANTITATIVE ANALYSIS STRUCTURE



THESE BOXES SHOW THE FLOW OF INFORMATION THROUGH THE MODELS CREATED, FROM THE SOURCES AT THE TOP, TO THE MODEL AT THE BOTTOM.

Results

Of the development options considered, the option to rehabilitate the existing facility was deemed the preferred option. This option ranked first in present value of costs and second in total risk to the OPL.

BUSINESS NEED

BACKGROUND

Situated at 18 Rosemount Ave. the Rosemount Branch is one of 33 public facilities the Ottawa Public Library ("OPL") owns and manages on behalf of the City of Ottawa. The facility is an estimated 6,089 ft^2 of useable space, and provides library services and community program space for its customers. Opened in 1918, the facility has undergone an expansion in 1932 and a renovation in 1982, along with some general maintenance and repairs in the intervening years. The OPL manages the Rosemount branch as part of a larger portfolio of assets and is mandated to deliver library services under a fixed budget, to manage risk, and to provide due value for money on public investments.

In 2016 Councillor Jeff Leiper (Note: the 2016 report prepared by READ was funded by the councillor and not by the City of Ottawa or the OPL) in partnership with the Rosemount library Expansion and Development group ("READ"), a community based organization, undertook stakeholder consultations on user preferences for an updated facility both on the current site, and at a new location. The study highlighted specific local user preferences for on-site services, physical architecture, revenue models and locations for a new site.

PURPOSE

The purpose of this business case is to establish a recommended delivery option for the Rosemount Branch of the Ottawa Public Library. The recommendation contemplates the form of procurement and contract, site selection, size of the facility, demand for library services and risk to the OPL.

SELECTION CRITERIA

In developing the business need for the project both the OPL's city-wide mandate to provide library services, and the findings from the local stakeholder study were considered. A rank-ordered priority rubric was used to resolve priorities.

1. Portfolio Affordability: The OPL (through its Board and ultimately City Council) sets total capital and operating budgets for all assets and must deliver services through a fixed envelope. In 2016 the Board received the three-year capital forecast which included a $2M renovation financial plan for the Rosemount Branch, which is considered for the purpose of this business case to be the affordability limit on internal capital funding. As no additional operating budget was approved in 2016, it was assumed that net new pressures would require

board approval and subsequent adjustments to the remaining budget for other assets in the OPL portfolio.

2. Project Affordability (Risk and Delivery): The form of contracting used to procure renovations or new construction will impact the risks and accountabilities both parties take on. For the purpose of this business case it was assumed that the OPL would have access to the City of Ottawa's Infrastructure and Economic Development Department ("IEDD") and Corporate Real Estate Office ("CREO"), who specialize in delivering large commercial/public construction projects for the City, and advising on matters of zoning and land acquisition, respectively. As certain procurement options considered in this report increase the risk and accountability of the OPL and by extension the City, this is an important factor in selecting the preferred option, and in setting the implementation plan.
3. Service Levels: Access to materials loan services, meeting and programming space, internet enabled computers and other services modern libraries are providing will be central to the renewal or relocation of the Rosemount Branch. These requirements manifest as both raw space requirements (e.g., more rooms or more books require more space), and in the cost of fit-up and equipment (e.g., replace desk top computers with touch-screen tablets).
4. Location: A central location is a priority for local users, and for the purposes of this business case the study area boundaries were defined as falling between Island Park Dr. and Fairmont Ave. (east-west), and between the 417 and Wellington West (north-south). The desire to have access to mass transit, that the site be accessible, and that there be facilities for bicycle 'parking' were also factors that were considered.

These four factors are used to summarize the key benefits and costs of each option, and in turn provide a recommended option for development.

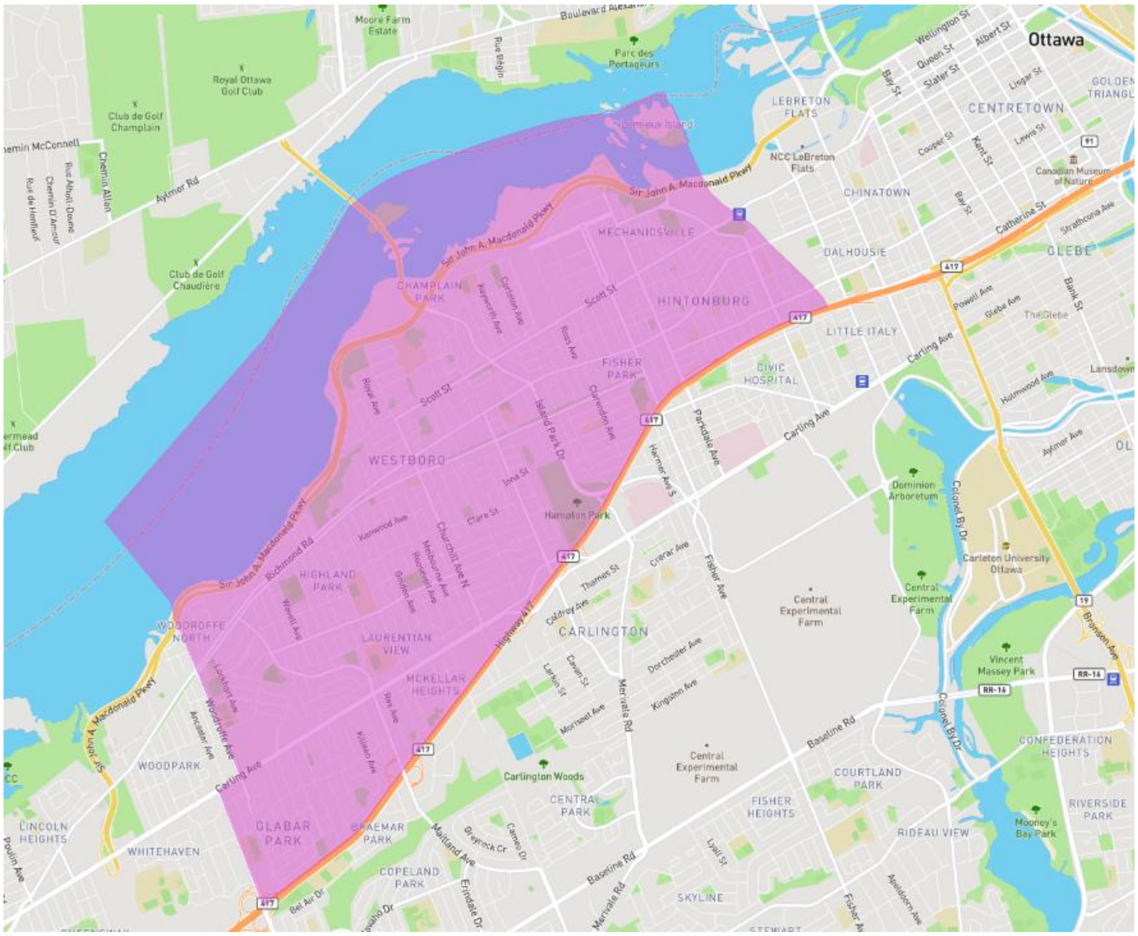
Demand Analysis

Estimating demand for library services in the Central West area is an important input to setting the size of the facility that is renovated or reconstructed. This is best done through a data driven approach whereby the specific catchment area for the library is established, population forecasts for the catchment area are derived (that are internally consistent with the City's City-wide forecasts), and an objective threshold on which to test the sufficiency of size is generated. Each of these components are discussed below, along with the conclusion on demand.

Geographic Area

The Central West area is the Library and Facilities Investment and Growth Planning Area which includes the Rosemount Branch. It is outlined in the diagram below. This area is defined consistently with the geographic boundaries used by the OPL when assessing its city-wide growth pressures for library services. This helps to ensure that no regions of the City are left unfunded in long term growth planning, and that the presence of complimentary assets is accounted for.

FIGURE 3: CENTRAL WEST GEOGRAPHIC AREA

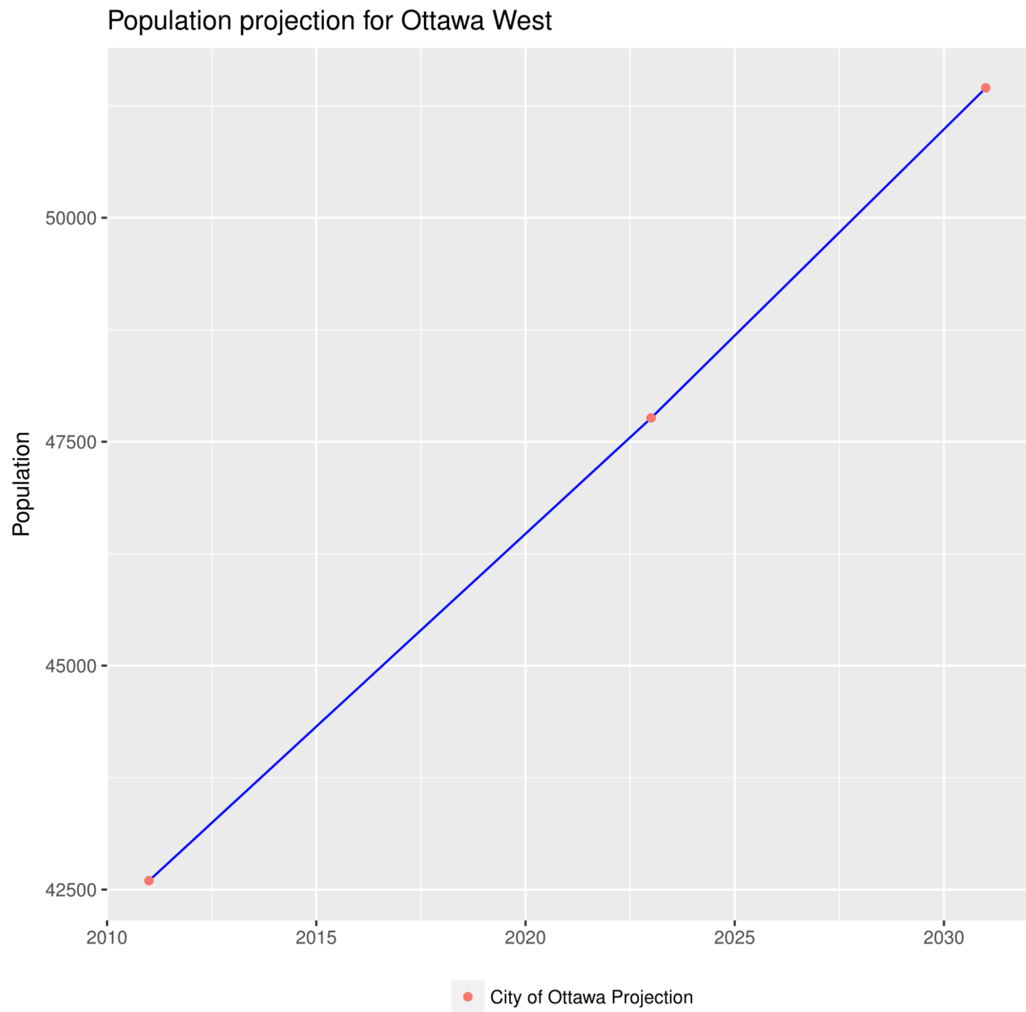


THE FIGURE ABOVE CONTAINS A ROAD MAP OF OTTAWA WITH A SHADED REGION. THE SHADED REGION HAS A NORTH OR UPPER BOUNDARY OF THE OTTAWA RIVER, A LOWER BOUNDARY OF THE 417 HIGHWAY.

POPULATION DATA

Population projections were obtained for years 2011, 2023, and 2031 from the Research & Forecasting division of the Department of Planning, Infrastructure and Economic Development at the City of Ottawa. Population projections for the years in-between the City of Ottawa projections were estimated via linear interpolation (as seen in Figure 4 below).

FIGURE 4: POPULATION FORECAST

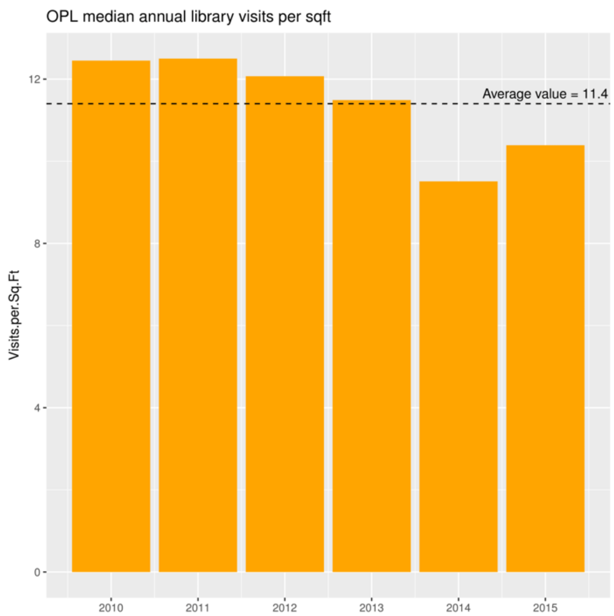


THE FIGURE ABOVE SHOWS A PLOT OF A POPULATION FORECAST FOR OTTAWA-WEST. IT IS APPROXIMATELY STRAIGHT, STARTING AT APPROXIMATELY 42.5 THOUSAND IN 2011, AND ENDING AT APPROXIMATELY 53 THOUSAND IN 2031

NEEDS ANALYSIS

The key metric used to determine whether a scenario provided sufficient space was the number of annual in-person visits per sqft. Between the years 2010 and 2015, the median annual number of visits across OPL branches has ranged from 9.51 visits per sqft to 12.5 visits per sqft. The average over this time period is 11.4 visits per sqft. This five-year average was then set as the target threshold for library visits per sqft for all redevelopment options.

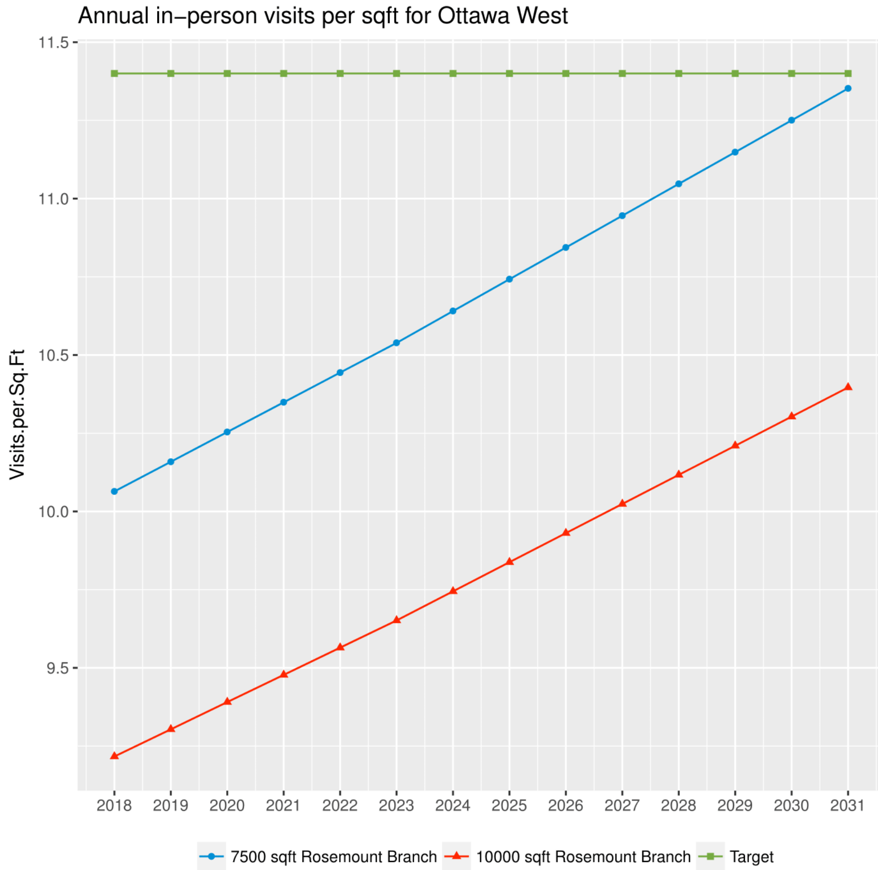
FIGURE 5: OPL MEDIAN ANNUAL LIBRARY VISITS P. SQFT.



ACCESSIBILITY TEXT: THE FIGURE ABOVE SHOWS A BAR CHART GRAPH OF LIBRARY VISISTS PER YEAR PER SQUARE FOOT OF LIBRARY SPACE. THE AVERAGE VALUE IS 11.4 VISITS / SQUARE FOOT OVER THE 2011 TO 2015 TIME PERIOD.

In order to convert the Central West population forecast to annual visits third party research on average library visits was used (Lumos Research Inc., 2011). This report indicates that the national average is approximately 6 visits per capita, thus we tested whether a given scenario would provide sufficient space to keep the Ottawa-West study area at or below 11.4 annual visits per sqft, assuming that residents of Central West visit the library 6 times per year. As illustrated in the figure below, a library of c. 7,500 ft^2 is sufficient to keep the entire catchment area under the target threshold until c. 2031. It is important to note that this calculation includes 50% of the library space at 281 Woodroffe Ave, which is considered part of the Central West service area.

FIGURE 6: IN PERSON VISITS CENTRAL WEST



THE FIGURE ABOVE SHOWS THREE LINES. THE MIDDLE BLUE LINE IS A FORECAST OF LIBRARY VISITS PER SQUARE FOOT AT A 7,500 SQUARE FOOT SITE. IT IS STRAIGHT AND STARTS AT APPROXIMATELY 10 IN 2018 AND ENDS AT APPROXIMATELY 11.5 IN 2031. THE BOTTOM RED LINE IS A FORECAST OF LIBRARY VISITS PER SQUARE FOOT AT A 10,000 SQUARE FOOT SITE. IT IS STRAIGHT AND STARTS AT APPROXIMATELY 9.1 IN 2018 AND ENDS AT APPROXIMATELY 11.3 IN 2031. THE TOP GREEN LINE IS THE UPPER TARGET OF VISITS PER SQUARE FOOT BASED ON THE AVERAGE FOR OTTAWA OF 11.4.

OPTIONS ANALYSIS

The business case considered development options on the way in which construction works would be procured, physical site selection options where new construction is being considered, total size of the renovated space, and other factors such as forms of revenues partnering opportunities.

DEVELOPMENT OPTIONS

The contractual and commercial means by which the OPL procures construction and general development work will impact the mutual risks and accountabilities each of the OPL, and one or more private counterparties take on. The contractual structure will also set the types of financial contribution the OPL makes to the projects (e.g., capital, operating expense, etc.), and the means by which the facility will be maintained over its lifespan.

REHABILITATE EXISTING BUILDING

OPL has previously examined how best to rehabilitate the current location at 18 Rosemount. The OPL commissioned a building code and accessibility review of the Rosemount branch in 2016 followed by a preliminary design report which identified an estimated $2.083M of project expenditures to bring the current building up to code compliance, to upgrade the interiors and to make changes to the exterior entry.

EXPAND THE EXISTING BUILDING AT 18 ROSEMOUNT

The OPL had earlier procured a feasibility study for an on-site expansion to c. 7,500 ft^2. The feasibility study noted that the limited footprint of the building and the site would similarly limit the height up and lateral expansions that could be built, and concluded that over $2.1M would be required to relocate power lines ($1.5M), provide swing space for the library through the renovation ($0.6M), make applications for minor variances ($75k) and for civil service upgrades ($20k). These amounts exclude the actual cost of an expansion on this site. The report goes on to caution that even were these costs deemed reasonable, that there remain serious constructability issues via limited access to the site, and possible upgrades to the building to meet current seismic code requirements.

Whereas community stakeholders noted that an expansion to 7,500 sqft on site may be possible, the feedback did not address the aforementioned constructability issues and as such this option is not carried in the financial analysis.

NEW CONSTRUCTION AT AN ALTERNATIVE SITE

The most common means to contract brownfield renovations or expansions of this size is through design-bid-build, where the OPL would retain a construction manager and the requisite sub-trades. The contract may be structured with an upset price on time and materials, but it is expected that certain elements of the renovation would be excluded from this price protection. For example, variations between as built drawings of the facility and what is uncovered during renovations that drive cost increases would be the responsibility of the OPL.

Whereas the option to renovate on-site is limited to design-bid-build, new build at an alternative site offers more variation in how the OPL could procure these services. Each option represents a distinct contractual structure and each modifies the fundamental risk profile of the project to both the OPL and the developer/constructor.

Design-bid-build

As described above, design-bid-build involves retaining a construction manager to oversee the physical works. They may also sub-contract trades, retain some measure of performance security (e.g., bonding) and offer a limited up-set price on the contract. The contract involves no private financing or deferral of payments, save for the statutory holdback on progress payments. These contracts are often used in construction projects of all sizes and have a standardized set of contract templates from which to use.

While the base contracting is well understood, it is nevertheless critical that the OPL (via the City) have an active role in defining the project and in direct oversight. For example, the relocation option will require that tender-level architectural renderings be produced that meet the form and functional needs of the project, that these be costed to a Class A level, and that the basic design is constructible. Even if the OPL retains a third party architect, this contract will be decoupled from the physical works, and should problems arise in the design, the OPL's prime recourse will be back to the architect, and not the construction manager.

Simplicity in contracting, and the fundamental decoupling of risks and accountabilities are the hallmarks of design-bid-build.

Design-Build-Finance

As the name suggests, Design-Build contracting attempts to re-couple the design and construction elements of the project. The Design-Build contract requests that a single legal entity be responsible for the architectural renderings and the delivery of the facility, generally to a fixed price. Both the procurement of design-build and the resulting contracts require more effort to assemble and deliver. In this case the OPL would be required to generate a functional requirements documents to guide the design-builder's design decisions, and to serve as an objective backstop from which multiple proposals could be evaluated and compared.

In standard design-build contracts payments are made to the contractor on a periodic basis (e.g., monthly) commensurate with their expenditures on labour, materials and overhead. These contracts are sometimes modified to defer payments to the private counterparty, and to release payments only when certainly pre-defined milestones are met (e.g., the delivery of a commissioned facility). This implicitly forces the design-builder to internally finance the cost of the project using its own capital as equity, and likely a senior secured construction loan from an external lender (the balance of the two generally being a product of the credit quality of the design-builder and of the projects itself). The resulting design-build-finance structure has been used in large scale infrastructure projects and is increasingly used on smaller general accommodations projects, however, there is some risk that the Rosemount Branch project may be too small to attract significant interest from design-builders due to the higher up-front investment.

While private capital carries a premium over public capital, the deferral of payments is often attractive for the risk it allocates to the design-builder.

Build & Lease to Own

Build and lease to own is an extension of the design-build-finance option, but rather than making milestone payments to the constructor, the total cost of the project is amortized through a lease of the facility. When used by governments with long-term accommodations needs, generally all or most of the facility will be covered by a single lease, and the term of the lease is set to match the long-term life of the asset (e.g., 30 years). Having a single tenant with no breaks in the lease term allows the developer to achieve competitive pricing on a long-term mortgage, with the net lease payments being theoretically set to yield a threshold return on equity invested over the life of the facility. In this case the lease can be set with end-of-term handback provisions that provide the facility to the OPL at the end of the lease term for continued operations, or to renegotiate the lease for a definite term.

Lease Constructed Space

The target area has limited pre-built space currently for lease, and anticipated construction of new mixed-use residential-retail condominiums in the area suggest that similar vacancies may arise in the medium term. Ground floor space would be required for such an option in order to meet current accessibility requirements, which implies that the Rosemount Branch would be in the market for a retail-grade tenancy. Based on recent vacancies we estimate this cost of triple net rent to be \$30-\$40/ft^2, taking the midpoint of \$35/ft^2 for this option.

Site Selection Options

A long-list of sites were evaluated as candidates for relocation, from which a short list of viable alternatives was derived and used as the basis for financial analysis. The suite of lands is broadly divided into privately held lands, and those lands currently owned by the City of Ottawa.

Privately Held Lands

It is assumed that all privately held lands would have to be procured through an open market transaction at fair market value. Given the narrowly defined geographic window in which the new site could be located, and the recent upward trend in residential and mixed use commercial sales in the area, it is prudent to assume that any open market transaction for lands must be price competitive with recent land sales in the area. Candidate properties were identified in the target area surrounding the current site. Properties surveyed included those identified by local community groups, however these have not been explicitly named in this report as neither the OPL nor the City have formally expressed any interest, nor considered even informal discussions with the owners about a possible sale.

In surveying recent land sales in Ottawa, mixed use lands sell for \$10 to \$40 per buildable square foot on average, with there being a wide range on either end. Thus, land sales in the target area are expected to yield \$1.5M - \$2M per acre for mixed use/commercial zoning. A 7,500 ft^2 facility built on two floors with necessary set-back allowances could be built on approximately one third of an acre (minimum), thus the approximate base cost of land sufficient to meet the needs of the business case is estimated to be greater than \$0.5M-\$0.68M.

In addition, transaction, demolition and remediation costs are expected for private lands, but are excluded here as no investigative work has been completed to date.

Given the base approximate costs of land acquisition, and the noted exclusions, none of the relocation/new build options could be deemed affordable should private lands be required as the budget remaining after land acquisition would be insufficient to complete construction works.

Sites Owned by the City of Ottawa

The City's CREO division identified City owned lands in the target area sufficient to meet the needs of the business case. The City noted that no such lands are currently deemed surplus. The City noted approvals would be required along with public consultations for the use of any City owned lands. It was also noted that the sub-grade soil and geotechnical conditions are unknown, and may increase development costs to meet various environmental and building standards. Nevertheless, two conceptual options were carried in the business case to meet the core requirements set by the OPL.

- Parkland: there are multiple parks that are in excess of one acre in size in the Ottawa-West study area. They are either directly owned by the City, or by the

Province through the school boards. In such cases the subject lands would likely require a rezoning to accommodate a public facility. Title would be transferred from the current owner to the OPL, or a long term land lease would be conferred at a nominal cost. As noted above, it is anticipated that the lands would need to be tested for in-situ contamination and if found, the contaminated materials would need to be removed, cleaned on site, or encapsulated to achieve a record of site condition from Ontario. This conceptual option is referred to as “Parkland Option”.

- Expanding an existing facility: The City of Ottawa owns several public facilities in the area. These include community centres, rinks and social housing complexes. Some candidate facilities have surface grade parking which could be constructed on to complete an extension. A City-owned facility with adjacent space on its site was considered. This development option is considered brownfield (modifying an existing structure). Because this option is an extension to an existing facility, only design-bid-build is considered a plausible form of contracting. This conceptual option is referred to as “Public Facility Option”.

Redevelopment was costed (at an indicative level) for the City-owned properties listed above, and the resulting costs were combined with a total development pro-forma budget through construction, and the anticipated operating impacts in the financial analysis.

Facility Size

Demographic forecast data in the Central West area, library usage statistics and specific card-holder visits at the OPL were used to estimate the demand for library services, and to establish a target threshold for unique visits per square foot of space used. The core conclusion of this analysis is that 7,500 ft^2 is sufficient to provide a level of service (or access to a capital facility) that is on par with that of libraries across Canada. Nevertheless, a second development scenario of 10,000 ft^2 was carried for all options that involved a physical relocation (as this level of expansion is not possible on the current site), as this was at the low end of the range of sizes recommended by the community stakeholders consultation. Details are summarized in Appendix A.

Other Options

Alternative Revenues

In order to close a potential affordability gap in the investment plan two additional forms of revenues were analyzed.

- Development Charges: The City uses Development Charges to fund growth in its real estate and infrastructure assets. Development charge rates are set through a forward-looking report (the “DC Background Study”) on planned investments and anticipated new construction in various asset classes (e.g., residential, commercial, etc.). The most recent study did not provide for a growth component in library services in the Central West region, in part because the internally generated population and demographic forecasts do not show sufficient growth in the area. In order to increase development charges to account for an increased pressure from the Rosemount Branch the City would need to reset the DC Background Study and the associated rates with local developers. Given the most recent DC background study significantly increased development charge rates to fund new transit initiatives, the likelihood of this being further amended upward may be low.

- Local revenues: Residents participating in the councillor’s consultation were almost unanimously opposed to a new local tax levy, thus the funds would need to be raised on a voluntary basis. Local representatives noted that some of the high-net-worth supporters did signal a desire to contribute either cash or lands. No actual local funding has been identified nor confirmed.

  While local revenues are an important feature of other classes of public infrastructure (e.g., upwards of 20% of new hospitals must be funded by local contributions), they present a structuring challenge as the revenues are generally unavailable or even committed when the project is initiated. If the OPL were to initiate a larger project than it could internally afford on the basis that local revenues make up the difference, and if these revenues then do not materialize, the OPL (and by extension the City) would bear the financial risk of completing the project with internal funds (likely appropriated from other projects). Further, the City of Ottawa’s procurement policies for capital assets require that the funds for the project be fully identified and committed prior to releasing tender documents. This structuring challenge limits the use of local funds to equipment and finishings that are not required for final commissioning of the building (e.g., obtaining an occupancy permit). This is in fact how local revenues are used in other contexts, but for the purpose of establishing a business case for expansion, are not included as a core funding source.
- Land sale costs/proceeds: In options that involve a physical relocation of the library to alternate site, no sale proceeds from disposition of 18 Rosemount were credited, nor were the costs of acquiring separate lands included as a cost. The City’s CREO group advised that the City is the registered owner of 18 Rosemount. Any disposal of City owned land requires said land to be circulated internally and declared surplus to City needs before the lands can be made available for sale to the public. Any funds generated by this sale would be directed to the City’s general revenues. Any redirection of funds towards a library project would require Council approval.

Partnering

While the concept of contract-level partnering with a developer is explored above under Needs Analysis, senior stakeholders raised the potential to partner with affordable housing groups to deliver the facility. They note that a secondary function of libraries in some communities is as a meeting place for low-income citizens that are living at or near the poverty line. This demographic also often relies on community housing programs, and to co-locate the two assets would provide a synergy in the delivery of services. However, on further examination, community housing often experiences above average operating, maintenance and lifecycle costs through the way in which users use and maintain the units and common spaces. Given that a combined facility would be built through strata title with a shared use agreement for common elements, the difference in "wear and tear" on the combined asset would be challenging to structure and may result in a net operating pressure to the OPL. Such an innovative partnership model would likely be a positive evolution in the delivery of core public services, but is seen as too complex to properly structure for a project of this size.

Summary

Figure 7 (below) summarizes the 6 development options carried to the financial and risk analysis by site location, contract type, and size of the proposed facility.

FIGURE 7: SUMMARY OF OPTIONS INCLUDED IN FINANCIAL AND RISK ANALYSIS

OPTION	SITE	CONTRACT TYPE	SIZE
1	Rehabilitation 18 Rosemount	Construction Management	6,089
2	Relocation to Parkland Option	Construction Management	7,500
3	Relocation to Parkland Option	Design-Build-Finance	7,500
4	Relocation to Parkland Option	Build-Lease to Own	7,500
5	Relocation and expansion of Public Facility Option	Construction Management	7,500
6	Lease commercial space	Lease	7,500

Financial Analysis

A financial model was prepared for the shortlisted options identified above. The model is a long term (construction + 25 years) cash flow forecast of capital and operating pressures for each option, offset by the revenues in the assumed affordability cap. To the extent that a particular option does not meet the affordability limit, the option is deemed unaffordable until the revenue gap can be closed.

The development options summarized in Figure 8 (below) provide for construction/milestone payments, operations, maintenance and lifecycle, and base rent as follows.

- Construction / Development Payments: are payments made to a contractor or design builder through construction or at commissioning for the asset. In the case of design-bid-build, these payments are made on a periodic basis, whereas in Design Build Finance contracting these are deferred to milestone events. Payments would cover core labour and materials, general requirements, builders profit and financing charges.
- Operations, Maintenance and Lifecycle Payments: are payments made for ongoing operating staff, routine maintenance and upkeep, and major capital reinvestments to maintain the facility in an appropriate condition.
- Base Rent: are annual payments made to an operator on a triple net basis. Operating costs are considered pass through and are reflected separately.

FIGURE 8: SUMMARY OF NET PRESENT VALUE OF PROJECT COSTS BY OPTION

OPTION	SITE	CONTRACT TYPE	SIZE (FT2)	CONSTRUCTION /DEVELOPMENT PAYMENTS ($2017)	BASE RENT ($2017)	O&M + LIFECYCLE ($2017)	TOTAL ($2017)	TOTAL ($2017) / FT^2	RANK
1	Rehabilitation 18 Rosemount	Construction Management	6,089	1,998,141[1]		2,086,618	4,084,759	671	1
2	Relocation to Parkland Option	Construction Management	7,500	2,765,887		2,570,149	5,336,036	711	2
3	Relocation to Parkland Option	Design-Build-Finance	7,500	3,332,395		2,570,149	5,902,543	787	3
4	Relocation to Parkland Option	Build-Lease to Own	7,500		4,281,484	2,698,656	6,980,140	931	5
5	Relocation and expansion of Public Facility Option	Construction Management	7,500	3,536,394		2,929,998	6,466,392	862	4
6	Lease commercial space	Lease	7,500		6,244,612	2,926,875	9,171,487	1,223	6

(1) THE TOTAL PRESENT VALUE COST OF CONSTRUCTION AT 18 ROSEMOUNT IS THE ORIGINAL BUDGET OF $2.086M DISCOUNTED TO 2017 AT THE OLP'S ESTIMATED COST OF CAPITAL.

[1] The total present value cost of construction at 18 Rosemount is the original budget of $2.086M discounted to 2017 at the OLP's estimated cost of capital.

Summary

The summary table above provides the following:

- Affordability: only the rehabilitation on site option can be undertaken with the prescribed affordability limit that the OPL's board has approved.
- NPV Ranking: the discounted costs of long term construction and operating expenses are provided relative to the total size of the facility constructed demonstrate that the rehabilitation option on site (Option 1) is the low cost option.

Risk

Project level risks affect not only core costs to the public-sector authority, but also the degree to which non-financial factors are affected such as public perception, contingent liabilities, and reputation. A granular analysis of the risks that a particular project faces can help to contextualize the core costs each delivery option represents, and also presents an opportunity to created informed mitigation strategies to help ensure a selected option is delivered, on-time and on budget.

Five core risk categories were examined for each for the six delivery options contemplated in this study.

- For each option, the extent to which the OPL would be exposed to the risk, and the way in which a particular form of contracting was considered. Each risk was assigned a score of 1 to 5, with 1 being the lowest residual risk to the OPL, and 5 being high.
- The risks were weighted in impact relative to their approximate contribution to total project costs.

The combined weighted average of each option was the rank ordered to assess the range of possible risk options.

Definitions

Policy, Planning and Procurement: Risks that preconstruction activities are delayed or encounter above average costs due to zoning restrictions, designation of a facility, or delays in the preparation and/or delivery of contract tender documents.

- Rehabilitation on-site carries 'low' risk in this category as the project requires no amendments to zoning, it does not increase the utility of the facility, and the current set-backs are respected.
- The Parkland Option is 'moderate', due to ownership (City or Province) and that it is zoned parkland. The expansion of the Public Facility Option is assigned a 'high' risk in this category due to site setback restrictions, and due to the

complications of completing an addition which would require an approved reduction in surface parking for the balance of the facility.

- The option to lease land is deemed low risk.
- The options for Design-Build-Finance and Build & Lease to Own increase the risk by a half score due to the increased planning and contract documentation required, and to reflect the fact that these forms of contracting are non-standard for the City.

Design: Risk that the design of the facility does not meet the functional requirements set forth by the OPL, that the design will not comply with certain requirements such as accessibility or key uses, or that there are constructability issues with the design prepared.

- Rehabilitation on-site carries ‘low’ design risk as the several preliminary designs and feasibility studies have been completed on core function, code compliance, deferred maintenance, and designated substances.
- The site at the Parkland Option is ‘moderate’ to reflect the design risk of a greenfield construction. The expansion of the Public Facility Option is deemed high, as extending an existing facility introduces constructability risks such as variances between schematics and as-built conditions, and other factors.
- The option to lease land is deemed low risk.
- The procurement options for Design-Build-Finance and Build & Lease to Own reduce this risk by a half category as the constructor will assume much of the design risk.

Construction: Risk that construction costs are above the budgeted allotments due to errors or omissions in initial pricing, contractor performance, or misalignment between prices submitted and the tender design documents.

- Construction risk for the rehabilitation option is deemed ‘moderate-high’ as most pricing will be based on set scope with carve outs for ‘unknown unknowns’.
- Construction risk is moderate for the Parkland Option, and moderate-high for Public Facility Option because this is a substantial addition.
- There is no construction risk for the lease option save for fit-up of the space. As such this is low risk.
- The Design-Build-Finance and Build & Lease to Own options allocate this risk to the builder, and the residual amount that the OPL is exposed to is deemed low.

Operations and Maintenance: Risks that operations and maintenance costs are above the forecasted budget due to operator mismanagement, deferred maintenance backlogs, or other issues.

- Continued operations and maintenance risk for the current site is deemed moderate to reflect the age of the facility; however, with substantial upgrades and given the sound historical performance of the asset, this risk is partially mitigated.
- Operations at new greenfield sites for the Parkland Option is deemed moderate-low as the assets will be built to current code and standards. Risk for operating the renovation at Public Facility option is deemed moderate as operations will include a shared use agreement with the current tenants, and the requirement to reserve against future lifecycle expenditures.
- The Build & Lease to Own model would reduce this risk to the OPL as accountability is with the private operator.

Finance/Economic: Risks that rates of return on private capital (debt and equity) are above those assumed in the base budget. Risks that inflationary pressures on construction, operations and maintenance costs are above those budgeted for.

- The Design Build Finance and Build & Lease to Own options are impacted by this risk (moderate) through the requirement to either raise construction or take our financing to fund the project.
- Leasing constructed space also carries risk as the OPL budgeting process requires that costs be known and budgeted for up-font, whereas most commercials leases have breaks (at, say 5 to 10 year intervals) whereby base costs must be renegotiated.

Scores and Summary

As seen in Figure 9 (below), the six delivery options considered in this report have a weighted average range of risks from a low of 1.4 (lease built space) to a high of 3.6 (Public Facility Option). The low cost option to rehabilitate on-site had a score of 2.3, or low-moderate.

FIGURE 9: SUMMARY OF RISK ANALYSIS

OPTION	SITE	CONTRACT TYPE	POLICY, PLANNING AND PROCUREMENT	DESIGN	CONSTRC.	O&M	FINANCE/ ECONOMIC	SCORE	RANK
		Weight	*0.15*	*0.25*	*0.25*	*0.25*	*0.1*	*1.0*	
1	Rehabilitation 18 Rosemount	Construction Management	2	1	3.5	3	1	2.3	2
2	Relocation to Parkland	Construction Management	5	3	3	3	1	3.1	5
3	Relocation to Parkland	Design-Build-Finance	5	3	1	3	3	2.8	4
4	Relocation to Parkland	Build-Lease to Own	5	3	1	1	3	2.3	3
5	Relocation and expansion of Public Facility	Construction Management	5	4	4	2	3	3.6	6
6	Lease commercial space	Lease	1	2	1	1	4	1.4	1

RECOMMENDATION

Option 1, to rehabilitate the existing site at 18 Rosemount through a design-big-build contract is the recommended option. As seen in the table below, the integrated recommendation accounts for the primary business needs, the financial summaries and the risk impacts of the proposed options. In the combined analysis we have allocated an equal weight to the financial summary and risk analysis, and considered affordability a pass/fail issue to acknowledge that this may be remedied by increasing capital formation envelopes.

FIGURE 10: INTEGRATED RECOMMENDATION OF OPTIONS

OPTION	SITE	CONTRACT TYPE	SIZE	FINANCIAL RANK	RISK RANK	WEIGHTED SCORE	FINAL RANK	AFFORDABLE?
1	Rehabilitation 18 Rosemount	Construction Management	6,089	1	2	1.5	1	Yes
2	Relocation to Parkland	Construction Management	7,500	2	5	3.5	2	No
3	Relocation to Parkland	Design-Build-Finance	7,500	3	4	3.5	2	No
4	Relocation to Parkland	Build-Lease to Own	7,500	5	3	4	5	No
5	Relocation and expansion of Public Facility	Construction Management	7,500	4	6	5	6	No
6	Lease commercial space	Lease	7,500	6	1	3.5	2	No

REFERENCES

#	NAME	DATE	AUTHOR
1	Rosemount Public Library Building Code and Accessibility Review	4.5.2016	Architecture 49
2	Rosemount Public Library Expansion Feasibility Study	6.11.2015	Architecture 49
3	Rosemount Public Library Preliminary Design Study Report	23.9.2016	Architecture 49
4	Ward 15 Buildings	4.5.2017	City of Ottawa, CREO
5	Class D Cost Estimates	15.5.2017	City of Ottawa, IEDD
6	Libraries Facilities Investment and Growth Planning Study	13.6.2016	Danix
7	Business Case OPL Main Library Facility May 2015	1.5.2015	Grant Thorton LLP
8	S3 Infrastructure for Regular and Irregular Time Series	2005	Grothendieck, A. Z. a. G.
9	2015 BE 1487 Library Rosemount Condition Audit	30.4.2017	Halsall
10	An Analysis of Public Library Trends	2011	Lumos Research Inc.
11	Library Facilities Framework and Investment and Growth Planning Study	6.9.2016	OPL Board
12	PC Usage-Cardholder-Programs and Events	4.5.2017	OPL
14	Rosemount Facility Budget 2016	15.6.2017	OPL
15	Rosemount Library Designated Substances Survey	1.2.2010	SLR Consulting Canada
16	Report on Consultation Findings of: Rosemount Library (The Next Chapter)	31.5.2016	Wesley Petit

APPENDIX A: SENSITIVITY ANALYSIS

In addition to the development options presented in the main body of the report, options for an expanded facility to 10,000 ft^2 were prepared, and are summarized in the table below. As seen, none of these are more cost and risk effective than the recommended option. Further, each option is significantly more than the affordability limit.

FIGURE 11: SENSITIVITY ANALYSIS

OPTION	SITE	CONTRACT TYPE	SIZE (FT2)	TOTAL ($2017)	TOTAL ($2017) / FT^2
1	Relocation to Parkland	Construction Management	10,000	7,809,283	781
2	Relocation to Parkland	Design-Build-Finance	10,000	9,225,150	923
3	Relocation to Parkland	Build-Lease to Own	10,000	7,338,931	734
4	Relocation and expansion of Public Facility	Construction Management	10,000	9,602,385	960