
2019-20 Capital Budget

A. The Evolution of Capital Expenditures

The Capital Budget for 2019-20 should be seen in the context of both recent trends in capital spending and the University's proposed Long-Range Space Plan as outlined in Table 14 of the Operating Budget portion of this document. Table 15 sets out expenditures in the Capital Budget since 2015-16 in nine categories.

Category 1 shows all new construction, while categories 2 to 7 show renovations to existing space. Category 1 expenditures are usually funded from general University funds, the major exceptions being projects funded all or in part from external research grants, private funds, government, student contributions, and Housing construction – the latter being funded from the Housing budget. Categories 2 to 5 are funded primarily from general University funds and government, while category 6 is funded from Housing operations, and category 7 is funded by the particular Ancillary Unit undertaking the work. Categories 8 and 9 involve carrying costs and loan repayments, other expenditures such as purchases of land and buildings, and transfers from the capital budget for other purposes. Planned capital expenditures for 2019-20 total \$95.3 million.

Categories 2 to 5 involve **Maintenance, Modernization, and Infrastructure (MMI)** and are eligible to receive funds from the annual MMI transfer from the operating budget to the capital budget, which is budgeted to remain at \$15.5 million in 2019-20 (\$15.5 million in 2018-19). These are expenditures directed at modification of existing space and renewal and expansion of the utilities and infrastructure of the University.

In planning future expenditures on Maintenance, Modernization, and Infrastructure, it is useful to review the value of our current fixed assets on campus. At February 28, 2019, our buildings and infrastructure have a current replacement value (CRV) of approximately \$2,668 million, as follows:

	CRV (\$M)	Square Metres	Major Buildings
Major Non-Residential Buildings	1,874	559,172	72
Utilities and Infrastructure	239		
Subtotal, Eligible for MMI	2,113	559,172	72
Housing	437	257,546	15
Other Ancillary Buildings	118	42,479	8
Total	2,668	859,197	95

At February 28, 2019, the University had 559,000 gross square metres in 72 major non-residential buildings, ranging in size from the Cronyn Observatory (338 square metres) to the Social Science Centre (33,757 square metres). Those buildings, and \$239 million in utilities and infrastructure, are the physical assets generally eligible for MMI expenditures. On that same date, the University had 258,000 square metres of Housing space in eleven major undergraduate residences, four major apartment buildings, and numerous smaller buildings for graduate students in Platt's Lane Estates. Other than Housing, there are many buildings which are operated largely or entirely as ancillaries: Western Student Recreation Centre, Thompson Recreation and Athletic Centre, TD Stadium, Boundary Layer Wind Tunnel, Child Care Centre, the Ivey Spencer Leadership Centre, and facilities at the Research Parks.

With this background in mind, we briefly set out the nine categories of capital expenditures.

- 1. New Construction.** This category includes projects which create new buildings, including housing, additions to existing buildings, and other new facilities such as parking structures or lots, power plants and athletic fields. It does not include projects which improve the space within existing buildings or projects which upgrade other existing facilities.
- 2. Major Building Renovations.** This category involves major maintenance and renovation expenditures on non-residential building projects, with projects generally spanning more than one year. Given that 51% of the 559,000 square metres in major buildings was built before 1980, renovations to major buildings will continue to be a part of our capital planning.
- 3. Utilities and Infrastructure Projects.** This category involves projects with values greater than \$10,000 directed at the upgrading and new installation of utilities and other infrastructure, including boilers, chillers, and electrical, water, and sewer distribution systems. Construction of a new Chiller Plant or major Power Plant expansion would be included in category 1. Given that most of our Utilities and Infrastructure plant and equipment is over thirty years old, these projects will continue to be a critical part of our capital budget. It is noted that proposed projects in this category include many that are devoted to the renewal of portions of our steam, water, and chilled water systems. Major projects in future years will include Central Power Plant upgrades, chiller capacity expansion, continued work on electrical distribution systems, and energy conservation initiatives.
- 4. Modernization of Instructional and Research Facilities.** This category includes the renewal and modernization of classrooms, laboratories, libraries, and other space used for instruction and research, as well as upgrades to information technology. These expenditures are critical to maintaining Western's reputation as a leader in the quality of teaching and research. These projects are sometimes funded by the units themselves with operating or research funds.
- 5. General Maintenance and Modernization Projects.** This category consists of a wide variety of maintenance and modernization projects which are not included in categories 2 to 4. Most of the projects are under \$100,000, involving such work as roof replacement, interior and exterior painting, road, bridge, and sidewalk repair, and general maintenance of structures and systems. A provision for unforeseen projects forms part of the allotment in this category.
- 6. Housing Renovations.** This category includes all maintenance and modernization expenditures on University residences and apartment buildings. Construction of a new residence or apartment

building would be included in category 1. Maintenance and modernization expenditures, projected to be \$13.1 million in 2019-20, are funded from Housing revenues. Housing has always set aside adequate maintenance funds and does not have the significant deferred maintenance on its buildings which may be observed in many other University buildings.

7. **Ancillary Projects.** This category includes capital expenditures on Ancillaries other than Housing, including Hospitality Services, the Book Store, Parking Services, student fee-funded units, self-funded support units, and self-funded research units. These units pay a charge to the University for the space they occupy.
8. **Carrying Costs and Debt Repayments.** This category consists of principal repayments and interest on debt for capital projects.
9. **Other Capital Expenditures.** This category includes asset acquisitions and other miscellaneous expenditures. It has been an established principle in Western's Campus Master Plan that the University pursue, as appropriate, the purchase of lands contiguous to University property as lands become available. Western will continue to seek to protect the Regional Facilities zoning around the main campus and to buy land near our campus when it comes up for sale. The University will also look to acquire strategic physical assets.

The last twelve lines of Table 15 are labeled A to M. Line A shows total sources of funding for the capital budget, including debt; line B, sources of funds less expenditures; line C, the capital reserve at year-end; and line D, capital debt outstanding at year-end. Details on these items are shown in Tables 17 and 19. Annual changes in the capital reserve (line C) are driven by the differences between funding and expenditure (line B). Thus for 2017-18, line B shows a surplus of \$8,549, the difference between funding of \$110,681 and expenditures of \$102,132 (all figures in \$000). The accumulated capital reserve in line C increases by this same amount of \$8,549.

Line E shows the replacement value of non-residential buildings and utilities and infrastructure, the assets eligible for MMI spending, while line F shows the ratio of the annual MMI expenditure to the replacement value. For example, in 2017-18, MMI expenditures were \$36.3 million, while the estimated replacement value of non-residential buildings, utilities, and infrastructure was \$1.99 billion. The ratio of the two is 1.8%, as shown in line F.

Line G of Table 15 shows the annual transfer from the operating budget to the capital budget for Maintenance, Modernization, and Infrastructure (the MMI transfer). As part of the 1995 Strategic Plan, the Board of Governors approved an incremental annual base transfer of \$750,000 from operating to capital in support of maintenance spending for ten years, from 1996-97 to 2005-06. Since there was an existing transfer of \$500,000 in 1995-96, the annual transfer was \$8.0 million in 2005-06. In 2004, Western's Board of Governors approved the recommendation that the base transfer of \$750,000 be continued for another ten years after 2005-06 until 2015-16, when the annual transfer would be \$15.5 million. This commitment established Western as a leader among Canadian universities in maintaining its facilities and dealing with deferred maintenance. For 2009-10 and 2010-11, given the financial constraints faced by the University at that time, the Board approved the annual transfer be held at \$10.25 million. Since that time the base transfer has resumed. In 2019-20, the base transfer will be maintained at the current maximum annual transfer of \$15.5 million (2018-19, \$15.5 million).

Line H of Table 15 shows the ratio of the annual MMI transfer to total MMI expenditures; for example, in 2017-18, the transfer was \$15.5 million and MMI expenditures were \$36.3 million, so the ratio in line H is 42.8%. Other sources of funding for MMI expenditures include the annual capital facilities renewal grant from the Province (projected for 2018-19 and 2019-20 at \$4.6 million and \$4.6 million respectively), special Provincial grants, additional one-time allocations from the University's operating budget, one-time allocations from the Province, fundraising, and borrowing.

Line J contains an estimate of maintenance spending, defined narrowly as spending required to bring aging facilities up to their condition when originally built. In fact, whenever Western undertakes a major maintenance project, there is also modernization of the facility, and whenever we carry out a major modernization project, there is generally some maintenance expenditure; it is thus difficult to separate the two. Line J is calculated on the assumption that 2/3 of the expenditures in categories 2, 3, and 5 involve maintenance (the remaining 1/3 is modernization), while 1/3 of the expenditures in category 4 involve maintenance (the remaining 2/3 is modernization). While the ratio of maintenance to modernization would vary by project and by year, Facilities Management considers them a reasonable average for the four categories over a number of years.

The value of line J in 2017-18 is \$21.7 million, or 1.1% (line K) of the replacement value in that year. A standard target in industry for this ratio is 2.0%; if large buildings last an average of 50 years, then average maintenance spending should be 2.0% of replacement value. When the actual ratio is consistently lower than 2.0%, as has been the case at Western and most Canadian universities over the last three decades, the level of deferred maintenance will grow. As Western continues to renovate aging buildings, there will be years that deferred maintenance will decline.

Table 16 reviews major capital projects – and the projects are assigned to one of the nine categories. For most of the projects, the year and month of the start and end of the project are shown.

The projects listed in Table 16 are the result of an update to the Long-Range Space Plan outlined in Table 14 of the Operating Budget portion of this document. These projects include new construction that will create new student and research spaces, and major building renovations and utilities and infrastructure projects – reflecting the need to maintain and modernize Western's aging physical plant. With new building construction on campus continuing, Western is utilizing scarce developable land in the core campus. The Campus Master Plan, approved in June 2015, highlights the constraints in the amount of buildable land on our campus and the fact that new buildings are being constructed on parking lots – thus increasing the pressure on available parking. We are planning for the construction of parking structures in the periphery of campus – including siting, a funding plan, and the required parking fee rates to finance the structures. University-wide Infrastructure Projects are also included on Table 16. These projects cover upgrades to Western's central power plant, chiller facilities, and major electrical upgrades, and are typically comprised of multiple projects completed over a number of years.

B. Sources of Funding and Capital Expenditures in 2019-20

Table 17 displays sources of funding for budgeted capital expenditures with estimates of comparative data for 2018-19, divided into six major categories: federal, provincial and municipal government grants; funds transferred from Western's operating budget; interest earned; general fundraising; borrowing; and other sources, including internal recoveries. As compared to a decade ago, the University's capital budget is more dependent on transfers from the operating budget and debt.

Table 18 shows expenditures in categories 1 and 2 for 2018-19 (estimates as of January 31, 2019) and 2019-20 (current proposals).

Table 15
CAPITAL BUDGET SUMMARY, 2015-16 TO 2019-20
(\$000)

Category	Purpose	Actual 2015-16	Actual 2016-17	Actual 2017-18	Projected 2018-19	Budget 2019-20
	New Construction					
1	New Construction (Table 18, line 11)	32,343	45,717	51,484	18,805	24,754
	Maintenance, Modernization, and Infrastructure (MMI)					
2	Major Building Renovations (Table 18, line 19)	4,737	15,789	18,924	12,551	20,563
3	Utilities and Infrastructure Projects	8,046	5,719	4,262	14,035	8,024
4	Modernization of Instructional and Research Facilities	6,640	7,816	7,543	6,688	9,308
5	General Maintenance and Modernization Projects	5,923	4,775	5,526	8,765	14,258
	Sub-Total MMI	25,346	34,099	36,255	42,039	52,153
	Other					
6	Housing Renovations	9,124	9,192	9,565	7,890	13,052
7	Ancillary Projects	2,239	1,170	1,776	924	400
8	Carrying Costs and Debt Repayments	4,702	4,453	2,964	2,250	4,500
9	Other Capital Expenditures	3,399	20	88	2,308	488
	Sub-Total Other	19,464	14,835	14,393	13,372	18,440
10	Total Expenditures	77,153	94,651	102,132	74,216	95,347

Line		Actual 2015-16	Actual 2016-17	Actual 2017-18	Projected 2018-19	Budget 2019-20
	Sources of Funding, Reserves, and Debt					
A	Total Sources of Funding, Including Debt (Table 17)	80,836	92,798	110,681	85,582	78,860
B	Sources of Funding less Expenditures	3,683	-1,853	8,549	11,366	-16,487
C	Capital Reserve, Year End (Table 19)	43,604	41,751	50,300	61,666	45,179
D	Capital Debt Outstanding, Year End (Table 19)	291,392	283,725	375,759	362,253	353,903
E	Replacement Value of Non-Residential Buildings, Utilities & Infrastructure, \$M	1,852	1,906	1,985	2,113	2,200
F	MMI Expenditures/Replacement Value	1.4%	1.8%	1.8%	2.0%	2.4%
G	Annual MMI transfer from Operating to Capital Budget	14,000	14,750	15,500	15,500	15,500
H	MMI transfer/MMI Expenditures	55.2%	43.3%	42.8%	36.9%	29.7%
J	Estimate of Maintenance Expenditure	14,684	20,127	21,656	25,797	31,666
K	Maintenance Expenditure/Replacement Value	0.8%	1.1%	1.1%	1.2%	1.4%
L	Number of Major Buildings	92	93	94	95	95
M	Total Gross Square Meters (000's)	836	843	854	859	859

Category 8 does not include carrying costs and loan repayments for Residences and Apartments, Research Park and Richard Ivey School of Business.

Line B is equal to Line A Total Sources of Funding less Total Expenses.

The change in line C from one year to the next is equal to Line B.

Line J consists of 2/3 of Category 2, 3 and 5 and 1/3 of Category 4.

Table 16
MAJOR CAPITAL PROJECTS

		Category	Start	End
1	<i>Projects Underway or Soon-to-Start</i>			
2	Modernization of Thames Hall	2	Jan 17	Jun 21
3	Weldon Library Modernization	2	tbd	tbd
4	Biomedical Research Facility -- Phase 1 of Medical School Project	1	Jan 17	Dec 21
5	Ivey Spencer Leadership Centre Renewal and Expansion	1&2	Nov 18	Dec 20
6	Space/Facilities for Entrepreneurship Initiatives	1	tbd	tbd
7	University-wide Infrastructure Projects (multiple stages)	1,3&5	May 19	tbd
8	Campus Sustainability and Energy Conservation Initiatives (multiple stages)	3&5	Ongoing	
9	<i>Projects in Various Planning Stages</i>			
10	Space Realignment in the Natural Sciences Centre	2	tbd	tbd
11	Indigenous Learning Spaces	2	tbd	tbd
12	Renewal/Replacement/Expansion of Medical School Facilities -- Future Phases	1&2	tbd	tbd
13	Multi-Level Parking Structures	1	tbd	tbd
14	Space for Student Career Services	2	tbd	tbd
15	<i>Projects for Future Consideration -- if Funding Identified</i>			
16	Renewal of Chemistry Facilities, Spencer Engineering Building, Elborn College, Talbot College	2	tbd	tbd
17	Social Sciences Centre Realignment/Expansion	1&2	tbd	tbd
18	Renewal and/or Realignment of Library Facilities	2	tbd	tbd
19	New Research Initiatives/Partnerships at the Research Parks	1	tbd	tbd
20	Athletic Facilities -- Indoor and Outdoor	1	tbd	tbd
21	Residence Projects	6	tbd	tbd
22	Asset Acquisitions	9	tbd	tbd

Table 17
CAPITAL BUDGET: SOURCES OF FUNDING
(\$000)

		Projected 2018-19	Budget 2019-20
1	Government Grants		
2	MTCU Annual Capital Grant (Facilities Renewal Program)	4,644	4,644
3	MTCU Graduate Expansion Capital Grant	3,921	3,893
4	MTCU/MOECG GGRP Innovation Fund	11,610	0
5	Federal Strategic Investment Fund (SIF)	7,454	0
6	Sub-Total	27,629	8,537
7	Operating Budget		
8	Operating Budget MMI Transfer - Base	15,500	15,500
9	Operating Budget MMI Transfer - Base (Ancillaries)	600	600
10	Operating Budget - Engineering Building Facilities Expansion/Renewal	8,694	8,154
11	Operating Budget - FRSF Transfer	3,000	3,000
12	Operating Budget - Medical School Innovation Hub	0	3,000
13	Operating Budget - Classroom Modernization	1,000	1,000
14	Operating Budget - CRC Transfer	910	790
15	Operating Budget - Weldon Library Modernization	15,000	0
16	Operating Budget - Space Realignment in Natural Sciences Centre to Create Student Spaces	10,000	0
17	Operating Budget - Western Wellness Centre (in Thames Hall)	10,000	0
18	Operating Budget - Open Space Strategy and Campus Safety Initiatives	2,000	0
19	Operating Budget - Energy Conservation Initiatives	1,000	0
20	Operating Budget - Improvements to Alumni Hall to Accommodate SRS and Relocate GU Spaces	1,000	0
21	Operating Budget - Planning for Future Projects	250	0
22	Operating Budget - Ivey Spencer Leadership Centre Renewal and Expansion	-500	0
23	Operating Budget - Modernization/Expansion of Talbot College	-719	0
24	Miscellaneous Faculty/Department Budgets	368	1,157
25	Sub-Total	68,103	33,201
26	Interest Earned	615	100

Table 17
CAPITAL BUDGET: SOURCES OF FUNDING
(\$000)

		Projected 2018-19	Budget 2019-20
27	Fundraising		
28	The Claudette MacKay-Lassonde Pavilion (Green Building)	1,990	0
29	Ivey Building	639	0
30	Western Fund	300	0
31	Sub-Total	2,929	0
32	Borrowing		
33	Long-Range Space Plan	-27,500	19,432
34	Sub-Total	-27,500	19,432
35	Other		
36	Student Contribution - Western Student Recreation Centre	1,326	1,365
37	Energy Conservation Incentives (Rebates)	350	500
38	Sports & Recreation Services - Indoor Track Surface Replacement	0	422
39	Sports & Recreation Services - Student Contribution for Artificial Turf Playing Fields	168	172
40	Projects Funded by Housing	7,890	13,052
41	Projects Funded by Units	3,148	1,679
42	Projects Funded by Ancillaries	924	400
43	Sub-Total	13,806	17,590
44	Total Sources of Funding	85,582	78,860

Table 18
CAPITAL EXPENDITURES FOR NEW CONSTRUCTION AND MAJOR BUILDING RENOVATIONS
2018-19 and 2019-20
(\$000)

		Projected 2018-19	Budget 2019-20
1	<i>Category 1: New Construction</i>		
2	Biomedical Research Facility - Phase 1 of Medical School Project	1,010	14,150
3	Ivey Spencer Leadership Centre Renewal and Expansion	228	6,009
4	Medical School Innovation Hub	387	2,612
5	Space/Facilities for Entrepreneurship Initiatives	50	1,700
6	Faculty of Education Courtyard Addition	3,278	145
7	North Chiller Plant	0	88
8	Amit Chakma Engineering Building	6,430	50
9	Ivey Building - Completion of Unfinished Space	7,082	0
10	Western Interdisciplinary Research Building	340	0
11	<i>Total, Category 1</i>	<i>18,805</i>	<i>24,754</i>
12	<i>Category 2: Major Building Renovations</i>		
13	Modernization of Thames Hall	5,326	11,598
14	Weldon Library Modernization	130	5,945
15	Renewal of Spencer Engineering Building	1,752	2,000
16	Space Realignment in Natural Science Centre to Create Student Spaces	0	750
17	Modernization of University College	4,453	270
18	Infectious Disease Pathogenesis and Imaging Facility	890	0
19	<i>Total, Category 2</i>	<i>12,551</i>	<i>20,563</i>

Table 19
CAPITAL RESERVES AND DEBT AT FISCAL YEAR END
(\$000)

		Actual 2015-16	Actual 2016-17	Actual 2017-18	Projected 2018-19	Budget 2019-20
1	A. Capital Reserves					
2	General Capital Fund	16,973	20,291	25,783	29,112	22,710
3	Designated Capital Fund	26,631	21,460	24,517	32,554	22,469
4	Total Capital Reserves	43,604	41,751	50,300	61,666	45,179

		Actual 2015-16	Actual 2016-17	Actual 2017-18	Projected 2018-19	Budget 2019-20
5	B. Capital Debt					
6	New Construction, Major Renovations & Other	96,681	61,970	51,141	2,007	26,164
7	Housing	132,437	120,247	107,003	88,346	73,839
8	Research Park	28,712	27,868	27,015	26,000	25,000
9	Unused and Invested Debenture Proceeds	33,562	73,640	190,600	245,900	228,900
10	Total Capital Debt	291,392	283,725	375,759	362,253	353,903

Line 2 includes the required \$6 million general capital reserve fund.

Line 3 includes fund balances for large capital projects.

Long-Term Financial Trends

The Operating and Capital Budgets set out in Tables 2 and 15 of this document describe proposed spending of some \$888 million for the single year of 2019-20. That spending will take place, however, in a longer term context which must be understood in evaluating the Operating and Capital Budgets. The Administration and Board have identified three elements of that longer term context which should be reviewed in the annual Budget of the University: capital reserves and debt, employee future benefits, and deferred maintenance. These three items are described below.

The long term context for Western changed in May 2007, when the University issued its first debenture for \$190 million. Western issued a further \$100 million debenture in December 2017. As part of this process, the University received a credit rating of AA from Standard & Poor's. This credit rating was reaffirmed in February of 2019. Part of the credit rating evaluation focused on a number of long-term obligations that the University manages on an ongoing basis, including the three which we review below.

A. Capital Reserves and Debt

Table 19 displays Capital Reserves and Debt for fiscal years ending April 30. Capital Reserves are divided into two categories:

- the General Capital Fund, which includes funds not yet designated for specific purposes and funds designated for future projects.
- the Designated Capital Fund, which has been assigned to specific capital projects.

The Designated Capital Fund includes the remaining funds from the sale of the Gibbons property. The University's intention is that when the Gibbons funds are spent, there will be naming opportunities to honor the Gibbons name.

Capital Debt is divided into the following categories:

- **New Construction, Major Renovations, Infrastructure, and Other** – represents debt on projects that are largely new construction, additions to existing buildings, other new facilities, non-residential projects that involve major maintenance, and renovations to existing space. It also includes debt on purchases of property.
- **Housing** – debt required for new construction, maintenance, and modernization projects for University residences and apartment buildings.
- **Research Park** – debt incurred by the Research Park.
- **Unused and Invested Debenture Proceeds** – unused proceeds from Western's debenture issues that have been committed and invested until the specific capital project requires the funding.

Capital Debt is viewed as a resource that can help the University advance its Long-Range Space and Campus Master Plans. As part of the overall management of capitalization, the University has significantly increased its Capital Debt, primarily through debenture issuances of \$190 million and \$100 million in 2007 and 2017, respectively, and by entering into a \$100 million fifteen-year facility in 2013 to finance a 1,000 bed residence and other capital projects. The Board of Governors has approved a Capital Debt Policy which outlines the principles used in guiding the University's overall capitalization and debt management strategy. The University regularly monitors its Capital Debt position and continues to utilize monitoring ratios as part of its management strategy. The table below shows the monitoring ratio of debt per FTE, along with selected revenue metrics, for the years ending April 30.

	FTE Enrolment	Debt (\$M)	Debt per FTE (\$)	Combined Revenue (\$M)*	Revenue per FTE (\$)	Debt / Revenue (%)
2015	31,765	299.0	9,412	1,137.2	35,800	26.3%
2016	31,772	291.4	9,170	1,125.2	35,415	25.9%
2017	32,528	283.7	8,722	1,253.1	38,524	22.6%
2018	33,059	375.8	11,369	1,253.7	37,923	30.0%
2019 p	33,356	362.3	10,858	1,191.8	35,730	30.4%

*2015-2017 information has been updated for comparability purposes to reflect reclassifications in revenues and expenses occurring in 2018

The projected debt is based on Board-approved projects with allowance for other projects which may be presented to the Board during the period under consideration.

B. Employee Future Benefits

Subject to eligibility rules set within various collective agreements, the University provides medical, dental, and life insurance benefits to eligible employees after their employment with Western has ended.

The obligation for these employee future benefits are projected by actuarial valuation every three years. In the years between valuations, an extrapolation of the actuarial valuation is used to determine the projected benefit obligations. At April 30, 2018, the University's accrued benefit liability relating to the employee future benefit plans was \$495 million (2017 - \$474 million).

Cost containment of active and post-retirement benefits have been a focus in previous negotiations. These design changes have included a reduction of the co-insurance, limitation on dependent coverage, and increased service requirements for benefits to vest.

Included in the University's 2018 Audited Combined Statement of Operations is an annual expense in the amount of \$21.8 million (2017 - \$28.9 million) for non-pension employee future benefits.

A recent review of major research universities identified only five institutions with significant post-employment benefit obligations greater than \$200 million, ranging from \$204 million to \$591 million

and an unweighted average of \$365 million. Western ranked second in total liability for employee future benefits. The ratio of obligations to total expenses ranged from 19.7% to 44.1% with an unweighted average of 29.3%.

Employee Future Benefits (EFB)
Obligation and Expense as a % of Total Expenditures: Years ending April 30, 2014 to 2018

	Obligation (\$M)	Expense (\$M)	Total University Expenses (\$M)*	EFB Obligation as % of Total	EFB Expense as % of Total
2014	401.7	23.2	1,054	38.1%	2.2%
2015	482.3	22.5	1,061	45.5%	2.1%
2016	525.7	25.4	1,079	48.7%	2.4%
2017	473.5	28.9	1,113	42.5%	2.6%
2018	495.3	21.8	1,122	44.1%	1.9%

*2014-2017 information has been updated for comparability purposes to reflect reclassifications in revenues and expenses occurring in 2018

C. Deferred Maintenance

Deferred Maintenance is defined as work on the maintenance of physical facilities that has been deferred on a planned or unplanned basis to a future budget cycle or postponed until funds become available. To avoid increasing the size of the deferred maintenance backlog, it is necessary to carry out replacement of facility components on an annual basis.

The estimates of deferred maintenance are different than estimates of debt or employee future benefits in the previous sections. There are actual contracts in place for the first two categories that allow us to make reasonable estimates. For deferred maintenance, that is not the case; therefore, we have to find other ways to quantify this liability. In 2001, a common capital-asset management system was purchased by the Ontario University system to assess, track, and report on the condition of facilities. The system requires that each major component of a building – roof sections, classrooms, heating, ventilation, air-conditioning systems and so on – be inspected, either entirely or on a sample basis. Data on the findings of these inspections are entered into a central database. The system uses industry-standard cost and lifecycle data to forecast the timing and costs of capital renewal projects. The Facilities Management Division estimates that (as of February 28, 2019) deferred maintenance at Western is \$224 million for non-residential buildings and \$35 million for residences. Slightly more than 55% of the deferred maintenance for non-residential buildings relates to mechanical, electrical, and infrastructure requirements. Other major components include maintenance driven by code requirements and maintenance for roofs and windows.

A common measure for determining the overall condition of facilities is the ratio of deferred maintenance over replacement value of the facilities. The calculation for February 28, 2019 is as follows:

	Non-Residential Buildings	Combined Residences
Current Replacement Value (CRV)	\$2,113 million	\$437 million
Deferred Maintenance (DM)	\$224 million	\$35 million
DM/CRV	10.6%	8.0%

The average age of buildings for universities in the Province of Ontario was 54 years as of March 2019. Western's average age is 39 years. Over 51% of our buildings were built before 1980. Western's residences are funded through rents which cover maintenance; the University has never had a problem with deferred maintenance on residences. A ratio of 10.6% (Deferred Maintenance/Current Replacement Value) for non-residential buildings indicates a significant need for maintenance funding.

If the average component of a large building lasts 50 years, then on average, maintenance spending should be 2.0% of replacement value. This level of spending is a standard target in the industry. When the actual ratio is consistently less than 2.0%, as has been the case at most Canadian universities, the volume of deferred maintenance will grow. Failure to adequately address deferred maintenance results in substandard facilities and could result in the failure of critical systems. Based on the current replacement value of our facilities at \$2.0 billion, spending on major maintenance for campus buildings at 2.0% should be in the range of \$40 million annually.

As part of the 1995 Strategic Plan, the Board of Governors approved an incremental annual base transfer of \$750,000 from operating capital in support of maintenance spending for ten years, from 1996-97 to 2005-06. In 2004, Western's Board of Governors approved the recommendation that the base transfer of \$750,000 be continued for another ten years after 2005-06, until 2015-16, when the annual transfer will be \$15.5 million. However, for 2009-10 and 2010-11, the annual transfer was maintained at \$10.25 million. For 2019-20, the base transfer will remain at the current maximum of \$15.5 million (2018-19, \$15.5 million).

As explained at the start of the Capital Budget, the maintenance transfer is used for Maintenance, Modernization, and Infrastructure (MMI). The administration is sometimes asked by faculty and staff if the MMI transfer is too large. As lines G and E in Table 15 show, the ratio of the MMI transfer to the current replacement value (CRV) of our nonresidential buildings, utilities, and infrastructure has been below 1% in recent years.

	Actual 2015-16	Actual 2016-17	Actual 2017-18	Projected 2018-19	Budget 2019-20
MMI (\$M)	14.00	14.75	15.50	15.50	15.50
CRV (\$M)	1,852	1,906	1,985	2,113	2,200
Ratio	0.76%	0.77%	0.78%	0.73%	0.70%

Thus, the MMI transfer from the operating to the capital budget is less than half of the 2.0% required to keep deferred maintenance from growing. Continuation of this MMI transfer is essential to maintaining a safe and reliable campus infrastructure, which supports modern research and teaching, and sustains faculty, staff, and student morale.

Line J of Table 15 presents an estimate of maintenance spending from all sources, with maintenance defined as spending required to bring aging facilities up to their condition when originally built. During the five years, 2006-07 through 2010-11, the ratio was about 2.0%, so that the level of deferred maintenance was stabilized. The University reached the 2.0% ratio with one-time funds from the provincial and federal governments, and by borrowing. The estimated ratios for 2018-19 and 2019-20 will not reach the 2.0% target.

In 2017-18, the Province increased its annual facilities renewal grant to \$60 million (for Ontario's universities and colleges). Western's share of this \$60 million was \$3.5 million in 2017-18. While this increased support is welcome, the most recent assessment within the sector indicates the need for much larger investments (on an entirely different scale) to begin to restore to the condition of University facilities.