
2018-19 Capital Budget

A. The Evolution of Capital Expenditures

The Capital Budget for 2018-19 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 2014-15 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, and other expenditures such as purchases of land and buildings and transfers from the capital budget for other purposes. Planned capital expenditures for 2018-19 total \$104.2 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 2018-19 (\$15.5 M in 2017-18). 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 14, 2018, our buildings and infrastructure have a current replacement value (CRV) of approximately \$2,519 million, as follows:

	CRV \$M	Square Metres	Major Buildings
Major Non-Residential Buildings	1,775	547,482	71
Utilities and Infrastructure	210		
Subtotal, Eligible for MMI	1,985	547,482	71
Housing	427	257,546	15
Other Ancillary Buildings	107	49,300	8
Total	2,519	854,328	94

At February 14, 2018, the University had 547,000 gross square metres in 71 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 \$210 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 – and the projects generally span more than one year. Of the 547,000 square metres in major buildings, 51% was built before 1980, so renovations to major buildings will be a continuing part of University 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 and chillers, as well as 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 \$13.2 million in 2018-19, 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; B, sources of funds less expenditures; C, the capital reserve at year-end (which changes each year by the amount in line B); and 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 2016-17, line B shows a deficit of \$1,853, the difference between funding of \$92,798 (all figures in \$000) and expenditures of \$94,651. The capital reserve in line C decreases by this same amount of \$(1,853), reflecting a decrease in the capital reserve.

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 2016-17, MMI expenditures were \$34.1 million, while the estimated replacement value of non-residential buildings, utilities, and infrastructure was \$1.91 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 will 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 2018-19, the base transfer will be maintained at the current maximum annual transfer of \$15.5 million (2017-18, \$15.5 million).

Line H of Table 15 shows the ratio of the annual MMI transfer to total MMI expenditures; for example, in 2016-17, the transfer was \$14.75 million and MMI expenditures were \$34.1 million, so the ratio in line H is 43.3%. Other sources of funding for MMI expenditures include the annual capital facilities renewal grant from the Province (projected for 2017-18 and 2018-19 at \$3.5 and \$4.6 million respectively), special Provincial grants; additional one-time allocations from the University's operating budget; additional 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 involve modernization), while 1/3 of the expenditures in category 4 is for maintenance (the remaining 2/3 involves modernization). While these ratios 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 2016-17 is \$20.1 million, or (in line K) 1.1% 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 on 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 the additional space necessary to accommodate undergraduate and graduate enrolment expansion and the associated additional faculty and staff, 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 moving forward with the planning for the construction of parking garages in the periphery of campus – including siting, 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 2018-19

Table 17 displays sources of funding for budgeted capital expenditures with estimates of comparative data for 2017-18, divided into six major categories: federal, provincial and municipal government grants; funds transferred from Western's operating budget; interest earned; undistributed investment returns; 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 2017-18 (estimates as of January 31, 2018) and 2018-19 (current proposals).

Table 15
CAPITAL BUDGET SUMMARY, 2014-15 TO 2018-19
(\$000)

Category	Purpose	Actual 2014-15	Actual 2015-16	Actual 2016-17	Projected 2017-18	Budget 2018-19
	New Construction					
1	New Construction (Table 18, line 10)	23,523	32,343	45,717	47,388	31,160
	Maintenance, Modernization, and Infrastructure (MMI)					
2	Major Building Renovations (Table 18, line 18)	4,215	4,737	15,789	21,408	14,915
3	Utilities and Infrastructure Projects	9,790	8,046	5,719	5,308	16,532
4	Modernization of Instructional and Research Facilities	6,480	6,640	7,816	9,062	4,812
5	General Maintenance and Modernization Projects	5,523	5,923	4,775	6,835	15,882
	Sub-Total MMI	26,008	25,346	34,099	42,613	52,141
	Other					
6	Housing Renovations	20,012	9,124	9,192	9,979	13,205
7	Ancillary Projects	1,187	2,239	1,170	1,884	1,075
8	Carrying Costs and Debt Repayments	5,843	4,702	4,453	2,694	5,600
9	Other Capital Expenditures	493	3,399	20	2,325	1,025
	Sub-Total Other	27,535	19,464	14,835	16,882	20,905
10	Total Expenditures	77,066	77,153	94,651	106,883	104,206

Line		Actual 2014-15	Actual 2015-16	Actual 2016-17	Projected 2017-18	Budget 2018-19
	Sources of Funding, Reserves, and Debt					
A	Total Sources of Funding, Including Debt (Table 17)	88,934	80,836	92,798	111,547	96,018
B	Sources of Funding less Expenditures	11,868	3,683	-1,853	4,664	-8,188
C	Capital Reserve, Year End (Table 19)	39,921	43,604	41,751	46,415	38,227
D	Capital Debt Outstanding, Year End (Table 19)	299,065	291,392	283,725	375,869	367,668
E	Replacement Value of Non-Residential Buildings, Utilities & Infrastructure, \$M	1,783	1,852	1,906	1,985	2,052
F	MMI Expenditures/Replacement Value	1.5%	1.4%	1.8%	2.1%	2.5%
G	Annual MMI transfer from Operating to Capital Budget	13,250	14,000	14,750	15,500	15,500
H	MMI transfer/MMI Expenditures	50.9%	55.2%	43.3%	36.4%	29.7%
J	Estimate of Maintenance Expenditure	15,179	14,684	20,127	25,388	33,157
K	Maintenance Expenditure/Replacement Value	0.9%	0.8%	1.1%	1.3%	1.6%
L	Number of Major Buildings	91	92	93	94	95
M	Total Gross Square Meters (000's)	829	836	843	854	864

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 University College	2	Jan 15	Sep 18
3	Western Interdisciplinary Research Building - Phase 1	1	Nov 15	Sep 18
4	ThreeC+ - The New Engineering Building	1	Jan 16	Jul 18
5	Science Space Re-alignment Project (NCB, MC, WSC)	4	Jan 17	May 18
6	Modernization of Thames Hall	2	Jan 17	Apr 21
7	The Biomedical Research Facility -- Phase 1 of Medical School Project	1&2	Jan 17	Jun 21
8	Multi-Level Parking Structures	1	Jun 17	tbd
9	Ivey Building - Completion of Unfinished Space	1	Sep 17	Aug 18
10	Ivey Spencer Leadership Centre -- Renewal/Expansion	1&2	tbd	tbd
11	Residence Projects	6	May 18	Apr 19
12	University-wide Infrastructure Projects (multiple stages)	1,3&5	May 18	tbd
13	Campus Sustainability and Energy Conservation Initiatives (multiple stages)	3&5	Ongoing	
14	<i>Projects Under Consideration</i>			
15	Space realignment in Natural Sciences Centre	2	tbd	tbd
16	Renewal and/or Realignment of Library Facilities	2	tbd	tbd
17	Integrated Learning and Innovation Centre	1	tbd	tbd
18	<i>Projects for Future Consideration</i>			
19	Renewal/Replacement/Expansion of Medical School Facilities - Future Phases	1&2	tbd	tbd
20	Renewal of Chemistry Facilities, Elborn College, Talbot College, Spencer Engineering Building	2	tbd	tbd
21	Western Interdisciplinary Research Building - Phase 2	1	tbd	tbd
22	New Research Initiatives/Partnerships at the Research Parks	1	tbd	tbd
23	Athletic Facilities - Indoor and Outdoor	1	tbd	tbd
24	Asset Acquisitions	9	tbd	tbd

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

		Projected 2017-18	Budget 2018-19
1	Government Grants		
2	MAESD/MOECG GGRP Innovation Fund	0	11,610
3	MAESD Annual Capital Grant (Facilities Renewal Program)	3,477	4,630
4	MAESD Graduate Expansion Capital Grant	3,933	3,921
5	Federal Strategic Investment Fund (SIF)	21,800	3,000
6	Sub-Total	29,210	23,161
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 - Modernization of Weldon Library	0	15,000
11	Operating Budget - Realignment of Natural Sciences Centre to Create Student Spaces	0	10,000
12	Operating Budget - Western Wellness Centre (in Thames Hall)	0	10,000
13	Operating Budget - FRSF Transfer	3,000	3,000
14	Operating Budget - Pedestrian-Friendly and Campus Safety Initiatives	2,000	2,000
15	Operating Budget - Energy Conservation Initiatives	1,500	1,000
16	Operating Budget - Improvements to Alumni Hall to Accommodate SRS and Relocate GU Spaces	0	1,000
17	Operating Budget - CRC Transfer	850	860
18	Operating Budget - Classroom Modernization	500	500
19	Operating Budget - Planning for Future Projects	250	0
20	Operating Budget - ThreeC+ - The New Engineering Building	6,482	6,794
21	Medicine Operating Budget - Level 2/3 Infectious Disease Pathogenesis and Imaging Facility	1,499	807
22	Medicine Operating Budget - Schulich Facilities Expansion and Renewal	5,000	0
23	Education Operating Budget - Faculty of Education Courtyard Addition	4,000	0
24	Science Operating Budget - North Campus Building Second Floor Renovations	2,340	0
25	Ivey Operating Budget - Ivey Building	2,300	0
26	Miscellaneous Faculty/Department Budgets	1,145	282
27	Sub-Total	46,966	67,343
28	Undistributed Investment Returns/Interest Earned	20,060	65

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

		Projected 2017-18	Budget 2018-19
29	Fundraising		
30	The Claudette MacKay-Lassonde Pavilion (Green Building)	0	1,990
31	Ivey Building	1,492	724
32	Western Fund	350	300
33	Sub-Total	1,842	3,014
34	Borrowing		
35	Long-Range Space Plan	-3,829	-15,490
36	Sub-Total	-3,829	-15,490
37	Other		
38	Student Contribution - Western Student Recreation Centre	1,287	1,325
39	Energy Conservation Incentives (Rebates)	103	940
40	Sports & Recreation Services - Student Contribution for Artificial Turf Playing Fields	165	168
41	USC Contribution - Spoke Renovations	1,195	0
42	Projects Funded by Housing	9,979	13,205
43	Projects Funded by Units	3,969	1,212
44	Projects Funded by Ancillaries	600	1,075
45	Sub-Total	17,298	17,925
46	Total Sources of Funding	111,547	96,018

Table 18
CAPITAL EXPENDITURES FOR NEW CONSTRUCTION AND MAJOR BUILDING RENOVATIONS
2017-18 and 2018-19
(\$000)

		Projected 2017-18	Budget 2018-19
1	<i>Category 1: New Construction</i>		
2	ThreeC+ - The New Engineering Building	26,818	11,905
3	Biomedical Research Facility - Phase 1 of Medical School Project	200	5,350
4	Major Infrastructure - North Chiller Plant	0	4,800
5	Multi-Level Parking Structures	100	4,000
6	Faculty of Education Courtyard Addition	150	3,644
7	Western Interdisciplinary Research Building - Phase1	18,410	750
8	Integrated Learning and Innovation Centre	100	711
9	New Academic Building (Housing FIMS and Nursing)	1,610	0
10	<i>Total, Category 1</i>	<i>47,388</i>	<i>31,160</i>
11	<i>Category 2: Major Building Renovations</i>		
12	Modernization of Thames Hall	1,005	6,289
13	Modernization of University College	15,894	3,901
14	Renewal and Realignment of Library Facilities	0	2,000
15	Spencer Engineering Building - Structural Laboratory Upgrade	100	1,900
16	Infectious Disease Pathogenesis and Imaging Facility	2,492	807
17	Translational Cognitive Neuroscience Laboratories	1,917	18
18	<i>Total, Category 2</i>	<i>21,408</i>	<i>14,915</i>

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

		Actual 2014-15	Actual 2015-16	Actual 2016-17	Projected 2017-18	Budget 2018-19
1	A. Capital Reserves					
2	General Capital Fund	13,802	16,973	20,291	23,879	21,388
3	Designated Capital Fund	24,469	24,979	19,807	20,883	15,186
4	Gibbons Property	1,650	1,652	1,653	1,653	1,653
5	Total Capital Reserves	39,921	43,604	41,751	46,415	38,227

		Actual 2014-15	Actual 2015-16	Actual 2016-17	Projected 2017-18	Budget 2018-19
6	B. Capital Debt					
7	New Construction, Major Renovations & Other	100,290	96,681	61,970	41,446	31,049
8	Housing	144,575	132,437	120,247	107,023	93,819
9	Research Park	29,500	28,712	27,868	27,200	26,200
10	Richard Ivey School of Business Foundation	300	0	0	0	0
11	Unused and Invested Debenture Proceeds	24,400	33,562	73,640	200,200	216,600
12	Total Capital Debt	299,065	291,392	283,725	375,869	367,668

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 this document describe, in Tables 2 and 15, proposed spending of some \$912 million for the single year of 2018-19. 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 2018. 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 April 30 fiscal year-ends. Capital Reserves are divided into three categories:

- The General Capital Fund, not yet designated for specific purposes and funds designated for future projects
- Designated Capital Fund, which has been assigned to specific capital projects
- Gibbons Property, the remaining funds from the sale of that 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.
- **Richard Ivey School of Business Foundation** – debt held by Richard Ivey School of Business Foundation.

- **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.

In 2002-03, the Board of Governors approved a Capital Debt Policy, which included a limit of \$7,500 in debt per student full-time equivalent (FTE). In 2005-06, the Board policy was modified to increase the \$7,500 each year by the change in the CPI, beginning in 2002. The table below shows the allowed debt per FTE (shown with indexation beginning in 2003-04) and actual debt per FTE; the figures are for years ending on April 30th. Debt was increased significantly in 2008 due to the issuance of the \$190 million debenture, in 2013 when the University entered into a \$100 million fifteen-year facility to finance the new 1,000 bed residence and other capital projects, and in 2017 with the issuance of a \$100 million debenture.

	Actual		Forecast	
	2016	2017	2018	2019
Total Debt (in millions)	\$291	\$284	\$376	\$368
FTE Enrolment	31,772	32,528	33,051	33,257
Allowable debt per FTE	\$9,772	N/A	N/A	N/A
Actual debt per FTE	\$9,170	\$8,722	\$11,375	\$11,055
Debt room per FTE	\$602	N/A	N/A	N/A

In January 2017, the Board of Governors approved a new Capital Debt Policy that maintains debt per FTE as a monitoring ratio, not a compliance ratio.

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.

	Debt (\$M)	Combined Revenue (\$M)	FTE Enrolment	Revenue per FTE	Debt / Revenue (%)
2014	306.7	1159.3	31,448	36,864	26.5%
2015	299.0	1160.4	31,765	36,530	25.8%
2016	291.4	1152.9	31,772	36,287	25.3%
2017	283.7	1288.8	32,528	39,621	22.0%
2018 p	375.9	1198.2	33,051	36,253	31.3%

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.

These employee future benefits are determined using actuarial valuations 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, 2017, the University's accrued benefit liability relating to the employee future benefit plans was \$474 million (2016 - \$526 million).

Cost containment of active and post-retirement benefits has been a focus in recent negotiations. For staff, Western reduced the age limit for dependent coverage and increased service requirements to qualify for post-retirement benefits to 10 years. For faculty, the threshold for eligibility has been increased from 5 to 10 years for all new employees and cost containment changes were introduced to the plan.

Included in the University's 2017 Audited Combined Statement of Operations is an annual expense in the amount of \$28.9 million (2016 - \$25.4 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 \$223 million to \$594 million and an unweighted average of \$358 million. Western ranked second in total liability for Employee Future Benefits. The ratio of obligations to total revenues ranged from 18.5% to 36.7% with an unweighted average of 24.0%.

Employee Future Benefits (EFB) Obligation and Expense as a % of Total Expenditures: 2013 to 2017

	Obligation (\$M)	Expense (\$M)	Total University Expenses (\$M)	EFB Obligation as % of Total	EFB Expense as % of Total
2013	\$362.6	\$22.6	\$1,009	35.9%	2.2%
2014	\$401.7	\$23.2	\$1,067	37.6%	2.2%
2015	\$482.3	\$22.5	\$1,084	44.5%	2.1%
2016	\$525.7	\$25.4	\$1,107	47.5%	2.3%
2017	\$473.5	\$28.9	\$1,149	41.2%	2.5%

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 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 14, 2018) deferred maintenance at Western is \$210 million for non-residential buildings and \$36 million for residences. Slightly more than 50% 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 14, 2018 is as follows:

	Non-Residential Buildings	Combined Residences
Current Replacement Value (CRV)	\$1,985 million	\$ 427 million
Deferred Maintenance (DM)	\$210 million	\$36 million
DM/CRV	10.6%	8.4%

The average age of buildings for universities in the Province of Ontario was 42.9 years as of June 2016. Western's average age is 37.7 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% 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 2018-19, the base transfer will remain at the current maximum of \$15.5 million (2016-17, \$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 2014-15	Actual 2015-16	Actual 2016-17	Projected 2017-18	Budget 2018-19
MMI (\$M)	\$ 13.25	\$ 14.00	\$ 14.75	\$15.50	\$15.50
CRV (\$M)	\$ 1,783	\$ 1,852	\$ 1,906	\$ 1,985	\$ 2,052
Ratio	0.74%	0.76%	0.77%	0.78%	0.76%

Thus the MMI transfer from the operating to the capital budget is less than half the 2% 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%, so that the level of deferred maintenance was stabilized. The University reached the 2% ratio with one-time funds from the provincial and federal governments, and by borrowing. The estimated ratios for 2017-18 and 2018-19 will not reach the 2% target.

In 2015-16, the Province increased its annual facilities renewal grant to the prior level of \$40 million (for Ontario's universities and colleges). Western's share of this \$40 million is \$2.4 million in 2016-17. The Ontario government has committed to a gradual increase in this total level of funding to \$100 million by 2019-20, and the universities' share is normally about two-thirds of this total. Western's share will reach \$4.6 million in 2018-19. 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.