

## **CITY OF LEBANON IMPACT FEE UPDATE 2018:**

### **School, Recreation, Police and Fire Department Impact Fees**

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Prepared for:

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## Executive Summary

This report provides an updated basis for impact fee calculations for Lebanon school, recreation, police department, and fire department capital facilities. The proportionate basis for each assessment and the related capital costs have been update to reflect available data through the end of calendar year 2017. The revised impact fee schedule is summarized in the chart below. Fees are assessed per square foot of living area for residential uses and per square foot of gross floor area for other uses. Assessment and administration of impact fees is governed by Section 213 of the Lebanon Zoning Ordinance.

### Lebanon Impact Fee Schedule – 2018 \*

Structure Type or Use	Impact Fees Per Square Foot - 2018 Update				
	Schools	Recreation*	Police Dept	Fire Dept	Total
<b>Residential Development</b>					
<i>Per Sq. Ft. Gross Living Area</i>					
Single Family Detached	\$0.95	\$0.63	\$0.23	\$0.21	\$2.02
All Other Housing Units	\$0.87	\$0.89	\$0.32	\$0.40	\$2.48
<b>Non-Residential Development</b>					
<i>Per Sq. Ft. Gross Floor Area</i>					
Retail, Restaurants and Lodging	---	\$0.04	\$0.31	\$0.29	\$0.64
Offices and Commercial Services	---	\$0.07	\$0.15	\$0.19	\$0.41
Industrial, Transp, Whse, Commun.	---	\$0.03	\$0.08	\$0.11	\$0.22
Nursing & Licensed Care Facilities	---	\$0.02	\$0.04	\$0.37	\$0.43
Other Institutional Uses	---	\$0.02	\$0.31	\$0.29	\$0.62

\* Report includes an alternative to eliminate recreation fees for commercial uses and allocate all costs to residential uses. This option would result in a fee of \$0.67 per square foot for single family homes, and \$0.95 per square foot for all other dwelling units.

Based on the 2018 adjustments to the component of each fee calculation:

- School impact fees per square foot have been adjusted with respect to debt service amortization and related credit allowances, and assignment of the capital cost of the Middle School to estimated 2018 construction values. A correction has been made to the factors used in the 2016 update that assigned credit allowances for debt service. A higher credit allowance is assigned in this update, resulting in a lower school fee assessment schedule per square foot.
- Recreation impact fees per square foot would be somewhat lower for residential uses, and much lower for commercial uses. These changes arise from two principal factors: (1) anticipated municipal costs for the Mascoma Greenway are lower due to a grant and a number of private donations toward the project; and (2) several long term planned projects with a low likelihood for implementation have been removed from the cost basis of the fee. A smaller share of the recreation capital expenditures that comprise the fee basis are associated with benefits to commercial sites, which results in a lower allocation of planned facility costs to the non-residential sector.
- Police Department impact fees per square foot would increase by a small amount for commercial uses, but would remain the same for residential uses. In the 2018 update, revised proportionate demand factors suggest a somewhat higher proportionate share of capital costs may be associated with non-residential development than assumed in the 2016 report.

- Fire Department impact fees per square foot for 2018 would be slightly lower than in the 2016 study, reflecting updated estimates of the replacement cost of major trucks and apparatus.

In brief, the capital cost basis for each of the fee categories may be summarized as follows:

- The school impact fee assessment reflects the cost of the most recently constructed school facility in Lebanon (the Middle School for grades 5 through 8) and the proportionate demand on its capacity from an average housing unit.
- The recreation impact fee is based on recovery of a proportionate share of City capital expenditures from the year 2000 forward for selected projects that are part of the 1998 Recreation Master Plan.
- The police department impact fee is based on the recoupment of a proportionate share of the cost to develop the Lebanon police station and its communications system. The size of the facility has remaining capacity to support new development.
- The fire department impact fee represents a proportionate share of the cost to provide the major vehicles and apparatus that are required to serve existing and future development in the City for a horizon year of 2040.

The periodic review and adjustment of the fee schedules is both necessary and desirable to ensure that fees are equitably assessed over time, and that the fees reflect capital facility cost assumptions that are reasonably commensurate with actual City capital investments. The impact fee assessments are structured to allow for future adjustments in the variables of each fee basis. Other impact fee categories may be added in the future for other capital facility categories.

## Introduction

Impact fees are authorized under New Hampshire RSA 674:21, V and enabled within the City of Lebanon by the Lebanon Zoning Ordinance (Section 213). This impact fee analysis provides a basis of assessment for public schools, recreation and public safety impact fees in the City. The report updates and builds on earlier studies of impact fee potential completed by BCM Planning, LLC during the period 2006 to 2016.

In their review of prior work by BCM Planning, the City Council and Planning Board have directed that the City's impact fees should be based on realistic levels of capital investment, supported either by evidence of actual appropriations or past investment levels, expenditures intended to implement an adopted long term plan, or projects that comprise part of the Capital Improvement Program (CIP).

In this context, BCM Planning, LLC has assumed that the most supportable basis for impact fee assessment in Lebanon should reflect: (1) evidence of actual progress in appropriations to fund related capital facilities; (2) existing or planned facility capacity adequate to serve the demands of new development; and/or (3) specific indications from long-term facility plans or the CIP that such investments are forthcoming.

Other categories of impact fee assessment may also be supportable where there is sufficient documentation of available capacity to support new development (either existing or to be created) and where there is a high probability that related capital investments will be completed.

As stated in prior reports by BCM Planning, other forms of investment fees, system development charges, or other capital cost assessments for *public water, sewer or storm water facilities* should be implemented under the authority of utility ordinances, rather than through the impact fee provisions of the zoning ordinance. New Hampshire RSA 149-I provides statutory authority for sewer and storm water system assessments, and RSA 38 authorizes assessments for water utilities. Fees for utility infrastructure are typically charged to users as they connect to a utility system, or when they increase the size of their service connection. In contrast, impact fees assessed under RSA 674:21, V are applied to new development through the land use regulatory process.

## Part A: Public School Impact Fee

In 2009-2010, a public school impact fee was developed based on conditions that included:

- Evidence of ongoing investment in the quality of school facilities that would provide adequate space for the educational program;
- Anticipated improvements that would address existing deficiencies in school facility space per pupil at reasonable spatial standards;
- Indications that adequate capacity would be created to serve the needs of existing enrollment as well as enrollment from new development; and
- Development of a basis of assessment that can be updated periodically and adjusted to reflect proportionate demand on school capacity from average housing units.

### 1. School Facilities

The Lebanon School District completed the construction of a new grade 5-8 middle school (2012) that was designed to accommodate at least 600 students. The new school enabled the District to move grades 5 and 6 from an older facility to the new middle school. That change helped open up more space for grades K-4 and pre-school students in the City's two elementary schools, enhancing capacity and quality within the K-8 system. Table 1 below illustrates current grade configurations, enrollment and estimated capacity as of October 2017.

**Table 1**

Lebanon Public School Facilities - 2018 Impact Fee Update								
School Facilities	Year Built	Grades Served	Site Acreage	Building Area Gross Sq. Ft.	Pupil Capacity **	Square Feet Per Pupil Capacity	October 2017 Enrollment	October 2017 Enrollment as % of Capacity
<b>ELEMENTARY SCHOOLS</b>								
Hanover Street Elementary *	1952	Pre K-4	shared with LHS	54,223	418	130	355	85%
Mt. Lebanon Elementary *	1953	Pre K-4	5.3	32,665	323	101	247	76%
Total Elementary (Pre K-4)		Pre K-4	5.3	86,888	741	117	602	81%
<b>MIDDLE SCHOOL</b>								
Lebanon Middle School (5-8)	2012	5-8	30.0	105,578	600	176	480	80%
Total for Pre K-8 Facilities		Pre-K - 8	35.3	192,466	1,341	144	1,082	81%
<b>HIGH SCHOOL</b>								
Lebanon High School	1958	9-12	35.8	102,382	818	125	578	71%
Total Facilities in Service		K-12	71.1	294,848	2,159	137	1,660	77%
* Students in Pre-K programs included in enrollment totals. Capacity generally computed based on K-4 classrooms								
** Estimates of capacity of existing schools and planned middle school based on interviews with former Superintendent Michael Harris (2006 and March 2010)								

The new middle school and the related changes in grade configuration allowed the oldest schools in the system (Seminary Hill School and the Lebanon Junior High School) and five modular classrooms on those sites to be retired.

The construction of the Lebanon Middle School resulted in an increase facility space available to K-8 students. Prior to construction the K-8 system provided 117 square feet per pupil capacity; after

completion of the construction the average floor area is 144 square feet per pupil capacity. The improvements were of benefit to new development as they enabled expanded facility capacity, and a higher spatial standard per pupil, while improving and modernizing the facilities available to all students.

Lebanon resident pupils comprise about 81% of the total enrollment in local schools. Students from other area towns attend the middle school and high school in Lebanon. (See Table 2.) However, the impact fee for Lebanon must be based solely on resident enrollment and its proportionate demand on school facility space.

**Table 2: Enrollment in Lebanon Public Schools**

<b>Lebanon Schools: Total Public Enrollment October 2017</b>					
<b>School</b>	<b>Grades</b>	<b>Total</b>	<b>Resident</b>	<b>Other</b>	<b>% Resident</b>
Hanover St School	PS to 4	355	355	0	100.0%
Mt. Lebanon Elementary	PS to 4	247	247	0	100.0%
Lebanon Middle School	5 to 8	480	405	75	84.4%
Lebanon High School	9 to 12	578	362	216	62.6%
<b>Total</b>	<b>PS to 12</b>	<b>1,660</b>	<b>1,369</b>	<b>291</b>	<b>82.5%</b>

Since the last update (2015 data; 2016 report date), enrollment at the Middle School increased by 5.5%. Resident enrollment increased by 4.7% and non-resident enrollment by 10.3%. In the elementary grades there was a 1.2% increase in resident pupils. Total high school enrollment declined by 4.3% during the two year period (-1.2%) in resident enrollment and (-9.2%) in non-resident pupils).<sup>1</sup>

## 2. Resident Enrollment Ratios

In the last update to the school impact fee schedule (using 2015 data) BCM Planning, LLC prepared a detailed analysis that matched the number of resident students (by grade level) to the characteristics of the housing they live in based on City property assessment data. That process yielded a detailed cross-tabulation of the number of students by grade level by structure type, age of housing unit, and living area that reflects the local characteristics of the City of Lebanon. After excluding age-restricted housing from the calculations, enrollment ratios were computed by grade level by type of housing structure.

Enrollment ratios were computed per dwelling unit and per 1,000 square feet of living area by structure type. The City’s chosen impact fee assessment method is to compute the fees based on living area. Consequently, enrollment ratios per 1000 square feet of living area, by structural category, are used to define proportionate demand on school space from average housing units in Lebanon.

### *Details on the Derivation of Enrollment Ratios for Lebanon Housing Units:*

The Appendix to Part A of this report (immediately following this section) contains the detailed results of the 2015 tabulations of Lebanon resident enrollment data per dwelling unit, enrollment per 1000 square feet of living area, and associated housing characteristics.

<sup>1</sup> Changes measured by October enrollment counts of resident and non-resident enrollment for 2015 vs. 2017 in City schools.

### 3. School Facility Space Standard

The City's chosen method of impact fee assessment includes only the Middle School (serving grade 5-8 enrollment). The spatial standard used in the update remains the same as that of the 2015 study at 176 square feet of space per pupil capacity. The average consumption of facility space by Lebanon dwelling units (excluding age restricted housing) is then computed by multiplying the estimated number of pupils per 1000 square feet of living area by the school floor area standard per pupil capacity.

### 4. Capital Cost of Facilities

The new (2012) Middle School was entirely new construction representing a total cost of \$23.65 million for a facility with 105,578 square feet of finished space (\$224 per square foot in 2012 not including land acquisition). Adjusting this cost to 2018, using an R. S. Means adjustment factor, yields a value of \$245 per square foot which has been applied in the updated fee calculation for Middle School space.

In the impact fee basis, the net local cost to the Lebanon School District is estimated by deducting from the gross capital cost the proportion of principal costs supported by State Building Aid. The District has indicated that the Middle School project benefited from 44.1% State Building Aid reimbursement of principal costs.

The combination of the above factors (pupils per 1000 square feet of living area x school floor area per pupil capacity x cost per square foot, less State building aid) generates a proportionate net local capital cost per square foot of living area by residential structure type.

### 5. Credit Allowance

New debt service costs were incurred for capacity-related improvements to finance the new middle school for grades 5-8, with an amortization schedule extending from 2012 to 2032. The new school enabled the elimination of five modular classrooms and an increase in the space per pupil capacity available to grade K-8 students, as some of the students were moved from elementary schools into the new middle school.

The additional space and capacity enabled by the construction of the Middle School effectively raised the space standard of the K-8 system from 117 square feet to 144 square feet per pupil capacity, or an upgrade of 27 square feet per pupil overall. The space calculation in Table 3 is used to estimate the proportion of the Middle School development cost attributable to rectifying a pre-existing space deficiency for the 2009 baseline student population.

**Table 3: Estimated Area Required for Upgrade in K-8 Space Per Pupil**

Facility Component	K-8 Facilities Average
Increased K-8 Space (Sq. Ft.) Per Pupil Capacity with new Middle School	27
x Grade K-8 Pupils in 2009 (base year)	1,105
= Sq. Ft. Upgrade of Space Per Pupil in K-8 Facilities	29,835
+ Replace 5 Modular Classrooms @ Approximately 1200 sq. ft. each	6,000
Total Floor Area Upgrade for Pre-Existing K-8 Enrollment	35,835
Area as % of New Middle School floor area (105,578 sq. ft.)	34%

Based on the estimates in Table 3, 34% of the cost of the new middle school may be reasonably attributable to an upgrade in the level of service (space per pupil) provided to K-8 students as the net result of middle school construction. An updated credit calculation for the middle school is shown in Tables 4 and 5.

## Table 4: Debt Service on Middle School and Credited Costs

### Middle School Debt Service

Original Bond Amount : \$ 23,650,600

Interest Rate 3% o 4%

State Building Aid % of Principal 44.10%

Calendar Year	Middle School (New Building, 2012) Debt Service & Building Aid			Less Est. State Building Aid	Net School District Cost
	Principal	Interest	Total		
<b>Past Payments</b>					
2012	\$ -	\$ 550,152	\$ 550,152	\$ -	\$ 550,152
2013	\$ 1,180,600	\$ 925,409	\$ 2,106,009	\$ (520,645)	\$ 1,585,364
2014	\$ 1,185,000	\$ 884,000	\$ 2,069,000	\$ (522,585)	\$ 1,546,415
2015	\$ 1,185,000	\$ 836,600	\$ 2,021,600	\$ (522,585)	\$ 1,499,015
2016	\$ 1,185,000	\$ 789,200	\$ 1,974,200	\$ (522,585)	\$ 1,451,615
2017	\$ 1,185,000	\$ 741,800	\$ 1,926,800	\$ (522,585)	\$ 1,404,215
2018	\$ 1,185,000	\$ 694,400	\$ 1,879,400	\$ (522,585)	\$ 1,356,815
<b>Future Payments</b>					
2019	\$ 1,185,000	\$ 641,075	\$ 1,826,075	\$ (522,585)	\$ 1,303,490
2020	\$ 1,185,000	\$ 581,825	\$ 1,766,825	\$ (522,585)	\$ 1,244,240
2021	\$ 1,185,000	\$ 522,575	\$ 1,707,575	\$ (522,585)	\$ 1,184,990
2022	\$ 1,185,000	\$ 475,175	\$ 1,660,175	\$ (522,585)	\$ 1,137,590
2023	\$ 1,185,000	\$ 439,625	\$ 1,624,625	\$ (522,585)	\$ 1,102,040
2024	\$ 1,180,000	\$ 398,250	\$ 1,578,250	\$ (520,380)	\$ 1,057,870
2025	\$ 1,180,000	\$ 351,050	\$ 1,531,050	\$ (520,380)	\$ 1,010,670
2026	\$ 1,180,000	\$ 303,850	\$ 1,483,850	\$ (520,380)	\$ 963,470
2027	\$ 1,180,000	\$ 256,650	\$ 1,436,650	\$ (520,380)	\$ 916,270
2028	\$ 1,180,000	\$ 209,450	\$ 1,389,450	\$ (520,380)	\$ 869,070
2029	\$ 1,180,000	\$ 162,250	\$ 1,342,250	\$ (520,380)	\$ 821,870
2030	\$ 1,180,000	\$ 116,525	\$ 1,296,525	\$ (520,380)	\$ 776,145
2031	\$ 1,180,000	\$ 70,800	\$ 1,250,800	\$ (520,380)	\$ 730,420
2032	\$ 1,180,000	\$ 23,600	\$ 1,203,600	\$ (520,380)	\$ 683,220
<b>Total</b>	<b>\$ 23,650,600</b>	<b>\$ 9,974,261</b>	<b>\$ 33,624,861</b>	<b>\$ (10,429,915)</b>	<b>\$ 23,194,946</b>

Present Worth Past Payments @ 5%	\$ 10,807,248
Portion of Cost Attributed to Pre Existing Space Deficiencies	34%
Credited Portion of Costs	\$ 3,674,464
City Assessed Valuation 2017	\$ 1,880,549,171
Past Payment Credit Per \$1000 Raw Land Valuation	1.95
Net Present Value Future Payments @ 5%	\$10,122,089
Portion of Cost Attributed to Existing Space Deficiencies	34%
Credited Portion of Costs	\$3,441,510
City Assessed Valuation 2017	\$ 1,880,549,171
Future Payment Credit Per \$1000 Assessed Value of Home	\$1.83

## Table 5: Credit Allowances Applied

IMPACT FEE CREDIT ALLOWANCES PER SQ. FT. OF LIVING AREA FOR INCREASE IN SPACE FOR PRE-EXISTING ENROLLMENT				
Structure Type	Assessed Value Assigned Per Sq. Ft.	Raw Land Value Per Sq. Ft. @ 13% of Total Valuation	Past Pymt Credit	Future Payment Credit
Single Family Det. (SFD)	\$136	\$18	(\$0.04)	(\$0.25)
Units Other Than SFD	\$97	\$13	(\$0.03)	(\$0.18)
Average Housing Unit	\$120	\$16	(\$0.03)	(\$0.22)

## 6. School Impact Fee Assessment Schedule

When it adopted the school impact fee, the Planning Board elected to limit the scope of the school impact fee assessment to the new Middle School facility. Consequently, the impact fee to be assessed reflects only the grade 5-8 portion of total enrollment and related school capital costs. The net effect of updating all the variables in the school impact fee schedule results in a reduced fee schedule:

Structure Type	School Impact Fee Per Square Foot
Single Family Detached	<b>\$0.95</b>
All Other Housing Units	<b>\$0.87</b>



**Table 6**

CITY OF LEBANON SCHOOL IMPACT FEE COMPUTATION PER SQUARE FOOT BY DWELLING UNIT TYPE - 2018													
Type of Structure	Enrollment Per 1000 Sq.Ft. Living Area				School Floor Area Per Pupil Capacity				School Facility Cost/Sq. Ft. (See Text)			Capital Cost Per Sq. Ft. Residential Living Area	
	--									\$245	--		
	Grade K-4 Enrollment	Grade 5-8 Enrollment	Grade 9-12 Enrollment	Total K-12 Enrollment	Grade K-4 Schools	Grade 5-8 Middle	Grade 9-12 High School	Total K-12 Per Pupil	Elementary Grade K-4	Middle Grade 5-8	High Grade 9-12		
Single Family Detached	0.0641	<b>0.0514</b>	0.0581	0.1736	117	<b>176</b>	125	137	--	<b>\$2.22</b>	--	<b>\$2.22</b>	
All Other Housing Units	0.0794	<b>0.0448</b>	0.0305	0.1547	117	<b>176</b>	125	136	--	<b>\$1.93</b>	--	<b>\$1.93</b>	
Type of Structure	State Building Aid (% of Principal) and Net District Cost (See Text)				Credit Allowances for Property Taxes Paid For Pre-Existing Capacity Needs						Impact Fee Per Sq. Ft. (Middle School Only)		
	30%	44%	40%	Net District Cost After State Building Aid	Past Pymts for K-4 Schools	Past Pymts for Middle School	Past Pymts for High School	Future Pymts For K-4 Schools	Future Pymts for Middle School	Future Payments High School			
	Net District Cost K-4 Schools	Net District Cost 5-8 Middle School	Net District Cost High School										
Single Family Detached	--	<b>\$1.24</b>	--	<b>\$1.24</b>	--	<b>(\$0.04)</b>	--	--	<b>(\$0.25)</b>	--	<b>\$0.95</b>		
All Other Housing Units	--	<b>\$1.08</b>	--	<b>\$1.08</b>	--	<b>(\$0.03)</b>	--	--	<b>(\$0.18)</b>	--	<b>\$0.87</b>		

*In the table above, the areas shaded in light gray are not used in the actual school impact fee calculation because the Planning Board’s chosen school impact fee basis is limited to the enrollment ratios, space per pupil capacity, and capital cost of the Middle School (grades 5-8).*

**APPENDIX TO PART A:**

**AVERAGE ENROLLMENT IN LEBANON HOUSING UNITS 2015 (FROM 2015 IMPACT FEE UPDATE)**

**Table A-1**

**AVERAGE ENROLLMENT AND HOUSING CHARACTERISTICS BY STRUCTURE TYPE  
(EXCLUDING AGE RESTRICTED UNITS, NOT ADJUSTED FOR OCCUPANCY) 2015**

Structure Type	Housing Characteristics			Enrollment Ratios			
	Avg Home Size	Avg Valuation Per Unit	Valuation Per Sq. Ft.	K-12 Per Unit	K-12 per 1000 Sq. Ft.	Grade 5-8 Per Unit	Grade 5-8 Per 1000 Sq. Ft.
Single Family Detached	1,751	\$238,804	\$136	0.2971	0.1697	0.0880	0.0503
Townhouse	1,376	\$163,648	\$119	0.2254	0.1639	0.0647	0.0471
Two Family Structure	1,138	\$107,987	\$95	0.2255	0.1981	0.0774	0.0680
Multifamily	865	\$79,514	\$92	0.1031	0.1191	0.0272	0.0314
Mobile Home Incl Parks	826	\$35,966	\$44	0.1979	0.2397	0.0625	0.0757
All Housing Units	1,287	\$152,307	\$118	0.2037	0.1583	0.0597	0.0464
Single Family Detached	1,751	\$238,804	\$136	0.2971	0.1697	0.0880	0.0503
All Other Housing Units	954	\$90,237	\$95	0.1367	0.1433	0.0394	0.0413

**Table A-2**

**AVERAGES FOR SINGLE FAMILY DETACHED HOMES BY YEAR BUILT  
(EXCLUDING AGE RESTRICTED UNITS, NOT ADJUSTED FOR OCCUPANCY) 2015**

SINGLE FAMILY DETACHED HOMES (EXCLUDES AGE-RESTRICTED UNITS AND MULTIPLE HOMES PER PARCEL)							
Year Built	Avg Home Size	Avg Valuation Per Unit	Valuation Per Sq. Ft.	K-12 Per Unit	K-12 per 1000 Sq. Ft.	Grade 5-8 Per Unit	Grade 5-8 Per 1000 Sq. Ft.
Pre 1970	1,560	\$199,678	\$128	0.3074	0.1971	0.0952	0.0611
1970 to 1979	1,908	\$253,865	\$133	0.2363	0.1239	0.0572	0.0300
1980 to 1989	1,927	\$285,151	\$148	0.3208	0.1665	0.1012	0.0525
1990 to 1999	2,116	\$316,977	\$150	0.2864	0.1353	0.1005	0.0475
2000 to 2009	2,190	\$343,583	\$157	0.3204	0.1463	0.0608	0.0277
2010 or Later	2,087	\$302,192	\$145	0.3784	0.1813	0.1351	0.0648
Total Single Family	1,757	\$239,994	\$137	0.2985	0.1699	0.0887	0.0505
1990 or Later	2,146	\$327,213	\$152	0.3094	0.1442	0.0863	0.0402
2000 or Later	2,173	\$336,558	\$155	0.3303	0.1520	0.0734	0.0338
2010 or Later	2,087	\$302,192	\$145	0.3784	0.1813	0.1351	0.0648

*Note: Average values shown in this Appendix may differ from one table to another depending on the filters used to define the sample.*

**Table A-3 – Resident Enrollment by Structure Type 2015 Detail**

Structure Type	Resident Pupils by Grade							Dwelling Units
	Pre-K	Kindergarten	Elementary	Middle	High	Pre-K to12	K to 12	
Single Family Detached	13	51	237	231	261	793	780	2,625
Townhouse	5	8	40	27	19	99	94	417
Two Family Structure	7	7	33	34	25	106	99	439
Multifamily	7	31	120	71	47	276	269	2,610
Mobile Home Incl Parks	2	2	14	12	7	37	38	192
All Housing Units	34	99	444	375	359	1,311	1,280	6,283
Single Family Detached	13	51	237	231	261	793	780	2,625
All Other Housing Units	21	48	207	144	98	518	500	3,658

**Table A-4 – Resident Enrollment and Single Family Homes - Detail by Year Built**

SINGLE FAMILY DETACHED HOMES (EXCLUDES AGE-RESTRICTED UNITS AND MULTIPLE HOMES PER PARCEL)								
Year Built	Pre-K	Kindergarten	Elementary	Middle	High	Pre-K to12	K to 12	Dwelling Units
Pre 1970	8	29	135	136	139	447	439	1,428
1970 to 1979	1	5	27	23	40	96	95	402
1980 to 1989	4	9	30	35	37	115	111	346
1990 to 1999	0	2	14	20	21	57	57	199
2000 to 2009	0	5	21	11	21	58	58	181
2010 or Later	0	1	7	5	1	14	14	37
Total Single Family	13	51	234	230	259	787	774	2,593
1990 or Later	0	8	42	36	43	129	129	417
2000 or Later	0	6	28	16	22	72	72	218
2010 or Later	0	1	7	5	1	14	14	37

**Table A-5 – Estimated Enrollment Ratios for Occupied Housing Units 2015**

**ESTIMATED LEBANON ENROLLMENT RATIOS ADJUSTED TO OCCUPIED HOUSING UNITS - 2015 ESTIMATES**

Structure Type	Lebanon Resident School Enrollment				Housing Units			
	K-4	5-8	9-12	K-12	Dwelling Units	Occupancy Ratio (2010-2014 ACS Sample Data)	Estimated Occupied Units	Average Living Area Sq. Ft.
Single Family Detached	288	231	261	780	2,625	97.8%	2,567	1,751
Townhouse (Attached)	48	27	19	94	417	100.0%	417	1,376
Two Unit Structure	40	34	25	99	439	93.5%	410	1,138
Three or More Unit Structure	151	71	47	269	2,610	91.6%	2,391	865
Manufactured Housing	16	12	7	35	192	77.9%	150	826
<b>Total Units Excluding Age-Restricted</b>	<b>543</b>	<b>375</b>	<b>359</b>	<b>1,277</b>	<b>6,283</b>	<b>94.5%</b>	<b>5,935</b>	<b>1,287</b>
<b>Total Non-Single Family</b>	<b>255</b>	<b>144</b>	<b>98</b>	<b>497</b>	<b>3,658</b>	<b>92.1%</b>	<b>3,368</b>	<b>954</b>

Structure Type	Estimated 2015 Resident Enrollment Per Occupied Unit				Estimated 2015 Resident Enrollment Per 1000 Sq. Ft. of Living Area			
	K-4	5-8	9-12	K-12	K-4	5-8	9-12	K-12
<b>Single Family Detached</b>	<b>0.112</b>	<b>0.090</b>	<b>0.102</b>	<b>0.304</b>	<b>0.0641</b>	<b>0.0514</b>	<b>0.0581</b>	<b>0.1735</b>
Townhouse (Attached)	0.115	0.065	0.046	0.226	0.0837	0.0471	0.0331	0.1639
Two Unit Structure	0.098	0.083	0.061	0.242	0.0856	0.0728	0.0535	0.2119
Three or More Unit Structure	0.063	0.030	0.020	0.113	0.0730	0.0343	0.0227	0.1301
Manufactured Housing	0.107	0.080	0.047	0.234	0.1295	0.0972	0.0567	0.2834
Average All Occupied Units	0.091	0.063	0.060	0.214	0.0711	0.0491	0.0470	0.1672
<b>Average Non-Single Family Units</b>	<b>0.076</b>	<b>0.043</b>	<b>0.029</b>	<b>0.148</b>	<b>0.0794</b>	<b>0.0448</b>	<b>0.0305</b>	<b>0.1547</b>

## Part B: Public Recreation Impact Fee

### 1. Summary

This section updates the City's recreation facility impact fee assessment from the prior calculations adopted in 2016. Beginning in 2013, the City modified its recreation impact fee basis to allow assessments to be made to both residential and non-residential development, and to consolidate residential fee categories into two structural categories. The fee basis was designed to respond to the following guidance expressed by the Planning Director and the Planning Board in 2013:

1. The fee should continue to reflect realistic levels of capital spending by the City on recreation facilities that further the goals of the 1998 Recreation Master Plan and plans for the Mascoma River Greenway. Both the Planning Board and City Council have in the past expressed reservations over any impact fee that is not grounded in either recapture of actual past investments, or based on likely future improvements indicated by the CIP or an adopted plan for facilities.
2. The Greenway has emerged the principal new recreation facility for the City. Non-residential development will benefit from the Greenway and sites that are connected to it. As these facilities are more readily accessible to employees of commercial developments in Lebanon than other sites, a portion of their cost is attributable to non-residential sources of demand.

The principal changes incorporated into this update were:

- Adjustment of all capital costs for past and planned projects to April 2018 dollar values;
- Recognize the value of grants and donations in support of the Mascoma River Greenway to better reflect net municipal costs for the project; and
- Removal of several planned improvements that were part of the original 1998 Recreation Master Plan from the capital cost assignments due to low probability of implementation.

Supportable recreation impact fees based on this update are shown below:

#### **Existing Basis, Updated to 2018**

##### Residential:

	Fee per Sq. Ft. <u>Gross Living Area</u>
Single Family Detached	\$0.63
All Other Residential Units	\$0.89

##### Non-Residential

	Fee per Sq. Ft. <u>Gross Floor Area</u>
Retail, Restaurant, Lodging	\$0.04
Office & Commercial Services	\$0.07
Industrial, Whse, Transportation	\$0.03
Nursing Homes & Licensed Care	\$0.02
Other Institutional Uses	\$0.02

#### **Alternative: 100% Residential Cost Allocation**

Fee per Sq. Ft.  
Gross Living Area

\$0.67

\$0.95

No Fee to Non-Residential

## 2. Recreation Capital Investment 2000-2017

For facilities already constructed, the cost basis reflects data from the City's fixed asset schedule, with the values updated to April 2018 using the Engineering News Record (ENR) construction cost index (CCI). The table also includes the cost of a supportive design study for the Greenway (original cost adjusted using the Consumer Price Index).

The estimated 2018 replacement cost of recreation facilities placed in service since 2000 is estimated at about \$5.43 million. This indicates an average annual investment of about \$319,000 per year (in 2018 dollars) from 2000 to 2017 inclusive of grants and donations for the Mascoma River Greenway. Past capital investments in recreation facilities are shown in Table 7.

**Table 7**

LEBANON CAPITAL EXPENDITURES FOR ACTIVE RECREATION FACILITIES SINCE 2000						
Asset Ref.	Description	Original Expenditure In Year Incurred	Year Completed/ Placed in Service	ENR - Base Year Construction Cost Index	Adjustment Factor to April 2018 *	Estimated 2018 Value of Investment
<b>MASCOMA GREENWAY</b>						
	MASTER PLAN - MASCOMA GREENWAY	\$50,000	2010	n.a.	1.141	\$57,050
2011 REC	MASCOMA RIVER GRNWX BRIDGE '2012'	\$18,578	2012	9412	1.166	\$21,662
2011 REC.2	MASCOMA RIVER GRNWX TRAILS '2014'	\$104,354	2014	9936	1.104	\$115,207
2011 REC.4	MASCOMA RIVER GRNWX TRAILS '2016'	\$78,877	2016	10531	1.042	\$82,189
MRG I89	I-89 RR BRIDGE PEDESTRIAN FENCING	\$39,904	2016	10531	1.042	\$41,580
2011 REC.5	MASCOMA RIVER GRNWX TRAILS '2017'	\$1,024,545	2017	10870	1.009	\$1,033,766
<b>TOTAL</b>		<b>\$1,316,258</b>				<b>\$1,351,454</b>
<b>RIVERSIDE PARK</b>						
116/6.B1	PAVILION	\$10,800	2002	6538	1.678	\$18,122
116/6.I2	SKATE PARK	\$71,346	2002	6538	1.678	\$119,719
116/6.I3	PLAYGROUND	\$20,483	2003	6782	1.618	\$33,141
116/6.I1	RIVERSIDE PARK LANDSCAPING	\$25,037	2004	7308	1.501	\$37,581
REC 2017	SKATE PARK REDEVELOPMENT	\$38,868	2017	10870	1.009	\$39,218
<b>TOTAL</b>		<b>\$166,534</b>				<b>\$247,781</b>
<b>MEMORIAL POOL COMPLEX</b>						
108/23B3	BATHHOUSE	\$390,733	2002	6538	1.678	\$655,650
108/23B4	FILTER BUILDING	\$438,180	2002	6538	1.678	\$735,266
108/23B5	LIFE GUARD HOUSE	\$73,805	2002	6538	1.678	\$123,845
108/23I1	LAP POOL	\$647,036	2002	6538	1.678	\$1,085,726
108/23I2	TRAINING POOL	\$341,116	2002	6538	1.678	\$572,393
<b>TOTAL</b>		<b>\$1,890,870</b>				<b>\$3,172,880</b>
<b>LOWER MEADOWS</b>						
117/15.C1	LOWER MEADOWS FIELDS '2007'	\$35,436	2007	8090	1.356	\$48,052
117/15.C2	LOWER MEADOWS FIELDS '2008'	\$6,891	2008	8550	1.283	\$8,842
117/15.C3	LOWER MEADOWS FIELDS '2009'	\$7,077	2009	8641	1.270	\$8,988
<b>TOTAL</b>		<b>\$49,405</b>				<b>\$65,882</b>
<b>WESTBORO PARK</b>						
REC004C1	WESTBORO PARK '2007'	\$84,383	2007	8090	1.356	\$114,424
REC004C2	WESTBORO PARK '2008'	\$11,193	2008	8550	1.283	\$14,360
REC004C3	WESTBORO PARK '2009'	\$56,256	2009	8641	1.270	\$71,445
<b>TOTAL</b>		<b>\$151,832</b>				<b>\$200,229</b>
<b>ELDRIDGE PARK</b>						
92/30.B1	ELDRIDGE PK R/R & STG FAC	\$120,340	2008	8550	1.283	\$154,396
<b>STORRS HILL</b>						
120/2.I3	STORRS HILL ELECTRICAL UPGRADE	\$201,938	2011	9172	1.196	\$241,518
<b>TOTAL ACTIVE RECREATION FACILITIES</b>		<b>\$3,897,177</b>				<b>\$5,434,140</b>

\*For physical improvements, costs are indexed to 2018 based on the Engineering News Record (ENR) Construction Cost Index (CCI) for February 2018. Expenditure for Mascoma Greenway Master Plan has been indexed to March 2018 (latest available) using the CPI.

A portion of this investment has been supported by grants and private donations for the Greenway project with a total adjusted value (using the CPI) of about \$806,000. Based on the value of these grants and donations, the municipal investment in recreation capital facilities averaged \$272,000 per year. See Table 8 for the estimated value of grants and donations for the Greenway.

**Table 8**

<b>Grants and Donations - Mascoma River Greenway Construction</b>			
Source of Donation or Grant*	Year Received*	Amount*	CPI-Adjusted to March 2018
Dartmouth Hitchcock Medical Center	2013	\$20,000	\$21,425
Hypertherm Philanthropic Endeavors Fndtn	2013	\$33,650	\$36,047
State of NH Bicycle & Pedestrian Grant	2014	\$10,000	\$10,545
Mascoma Savings Bank	2014	\$10,000	\$10,545
Timken Foundation	2014	\$352,912	\$372,145
Upper Valley Board of Realtors	2015	\$2,300	\$2,422
Novo Nordisk, Inc	2015	\$75,000	\$78,987
Byrne Foundation	2015	\$150,000	\$157,975
McLaughlin-Kitchel Family Trust	2015	\$100,000	\$105,316
Rollerblade, Inc	2016	\$10,000	\$10,400
<b>Total</b>		<b>\$763,862</b>	<b>\$805,807</b>
<i>* Source: 2017-2022 Lebanon Capital Improvements Program</i>			

## 2. Total Recreation Facilities Investment (2000 to Completion)

Table 9 shows both the past investments in recreation facilities (2000-2017) as well as anticipated capital costs to fulfill elements of the 1998 Recreation Master Plan. Since 20 years have elapsed since the development of the Recreation Master Plan, it is appropriate to consider whether certain components (and related capital costs) of the original plan remain viable for future implementation.

Significant new investment at Lower Meadows, once thought to be the centerpiece for new athletic fields in Lebanon, is viewed as unlikely to proceed to development due to environmental constraints. For this reason, the last update presumed no additional recreation capital improvements at this location.

In this 2018 update, no capital cost projections are included for Fellows Hill Park, the recreation land adjacent to the Packard Hill Covered Bridge, or for additional recreation improvements at the Westboro Rail Yard. Based on a review with the Recreation Director, it is unlikely these sites will be the location of significant recreation capital improvements.

At the time of this update, the Recreation Department is anticipating a program of accelerated field development that may produce two to three new athletic fields if approved. The site(s) for these improvements have yet to be determined, but their cost can be added to the list of projected capital projects.

While Bagley Park has yet to be improved, it is a possible site for one of the anticipated new sports fields, and a cost assignment has been retained for the site, acquired by the City in the early 1990s. The Recreation Master Plan anticipated improvements to the site including a softball diamond, a small soccer field, horseshoes, a pavilion, parking, lights and walking paths.

The combined 2018 replacement costs of past and anticipated recreation facility investments from 2000 through the completion of the selected portions of Recreation Master Plan (net of grants and donations for the Mascoma Greenway) totals about \$8.0 million in 2018 dollars. The beneficiaries of this total investment include existing development as well as new development that occurs in the future as listed projects (or investments of similar costs are completed. (See Table 9.)

**Table 9**

<b>RECREATION MASTER PLAN COMPONENTS OF IMPACT FEE CAPITAL COST ALLOCATION</b>	Past Investment in Facility	Future Investment 2018 to Completion	Total Rec. Plan Buildout Cost 2018 Dollars	Basis for Cost Estimate
<b>Mascoma Corridor</b>				
* Mascoma River Greenway				
Mascoma Greenway Action Plan	\$ 57,050	\$ -	\$ 57,050	Actual 2010 cost adjusted to March 2018 CPI
Construction Costs	\$ 1,294,404	\$ 1,709,528	\$ 3,003,932	2012 cost estimate of \$2.573 million, indexed to ENR construction cost index (CCI) to April 2018
Less Grants & Donations @ 2018 Value	\$ (805,807)		\$ (805,807)	2017-2022 CIP, values adj. to March 2018 (CPI)
Mascoma Greenway Cost to City	\$ 545,647	\$ 1,709,528	\$ 2,255,175	Estimated net City Expenditure for Greenway
* Westboro Park ( <i>City park portion of 22-ac.site</i> )	\$ 200,229		\$ 200,229	Past investment adjusted to April 2018 (ENR-CCI). No future investment assumed.
<b>Central Lebanon</b>				
* Bagley Park	\$ -	\$ 1,628,964	\$ 1,628,964	Rec Plan cost estimate adjusted to April 2018 (ENR - CCI)
Eldridge Park Improvements (Completed)	\$ 154,396	\$ -	\$ 154,396	Fixed asset value of past investment adjusted to April 2018 (ENR-CCI)
<b>West Lebanon</b>				
* Riverside Park (Incl. Skatepark Redevelopment)	\$ 247,781	\$ 50,000	\$ 297,781	Fixed asset value of past investment adjusted to April 2018 (ENR-CCI). 2017 CIP anticipates another \$50,000 in donations for 2018 and \$50,000 in City funds for 2019.
<b>Intensive/Special Use</b>				
Memorial Pool Area Reconstruction (Completed)	\$ 3,172,880	\$ -	\$ 3,172,880	Fixed asset value of past investment adjusted to April 2018 (ENR-CCI)
* Lower Meadows (past expenditures only)	\$ 65,882	\$ -	\$ 65,882	Fixed asset values of past investment adjusted to 2018 (ENR); future improvements unlikely (excluded)
Storrs Hill Electrical Upgrade (Completed)	\$ 241,518	\$ -	\$ 241,518	Fixed asset value of past investment adjusted to April 2018 (ENR-CCI)
<b>Recreation Facilities Investment 2000 to Completion</b>	\$ 4,628,333	\$ 3,388,492	\$ 8,016,825	<b>Total of past and anticipated City investment</b>
<i>* Recreation facility accessible from Mascoma Greenway, assumed to be of benefit to non-residential development</i>				

If the goal is to complete the selected improvements by 2030, the City would need to invest about \$261,000 per year in recreation facility improvements over the next 13 years. The City's expenditures for recreation facility improvements over the past 17 years averaged about \$320,000 per year (\$272,000 per year net of grants and donations). The capital basis for the fee would therefore be consistent with the City's typical average annual municipal investment in recreation facilities.

### 3. Residential vs. Non-Residential Access to Greenway-related Facilities

In 2013 the City requested that the recreation impact fee incorporate a method to assign a proportionate share of relevant recreation facility costs to non-residential development.

Table 10 provides a basis for estimating relative daytime access of residents and non-resident workers employed in Lebanon to the recreation facilities of the Mascoma River Greenway and the parks that it will connect. The factors in this table have been updated from 2010 Census values to reflect 2016 population and employment estimates.



This allocation is based not on measured usage, but on presumed availability of facilities. For the selected facilities, the availability ratio is estimated at 73% for residents and 27% for non-resident workers employed in the City.

**Table 10**

<b>MATRIX TO ESTIMATE AVERAGE DAILY ACCESS TO RECREATION FACILITIES LINKED BY MASCOMA GREENWAY</b> (City Residents By Age Group, and Non-Resident Workers Employed in Lebanon)											
Population/Employment Component	Pre-School Population (<5)	School Age Population (Age 5-17)	Commuter Flow Data (ACS 2009-2013)			Senior Residents Age 65 or Older			Total Resident Population (Est 2016)	Non-Resident Workers Commuting to City (ACS 2009-2013)	Total Allocation Base (Residents and Non-Resident Workers)
			Residents Working	Work in City (67%)	Commute Out (33%)	Total	In Households	In Group Quarters			
Lebanon Resident Population	830	1,577	7,109	4,755	2,354	2,393	2,269	124	13,599	14,602	28,201
Hours Per Day Per Person Recreation Access Time											
Academic Year (September through May)											
Weekdays	2	2		3	2		8	0		2	
Weekends	8	8		8	8		8	0		0	
Summer Season (June through August)											
Weekdays	2	8		3	2		8	0		2	
Weekends	8	8		8	8		8	0		0	
Annual Person-Hours Facility Access (Millions)	1.12	2.76		7.68	3.19		6.63	0.00	20.25	7.62	27.88
Hours Per Person Per Year	1,354	1,750		1,615	1,354		2,920	0	1,489	522	2,011
Avg Access - Hrs/Person/Day	3.7	4.8		4.4	3.7		8.0	0.0	4.1 per day	2.0 per workday	
									Resident Access	Non-Resident Worker Access	Total
									73%	27%	100%
<b>CALENDAR DAYS BY PERIOD:</b>											
Workdays Sept through May	195										
Weekend Days Sept through May	78										
Workdays June through August	66										
Weekend Days June through August	26										
Total Calendar Days	365										
<b>General Assumptions:</b>											
Workers in City have limited hours of access due to work and commuting hours											
Non-resident workers primary access periods before work, lunch break, after work											
Pre-school population - practical access limited by parental schedule											
School age population - has more access during summer months than academic year											

#### 4. Capital Cost Allocation Between Residential and Commercial Sectors

The total capital investment for each recreation facility is allocated based on the relative availability of the facility to residents compared with non-resident workers.

For the Greenway and the facilities it connects, the cost apportionment is 73% residential and 27% non-residential. For all other facilities, it is assumed to be 100% residential.

When these ratios are applied to the individual facilities in the capital cost basis, the resulting overall cost allocation for all included facilities is 94% to residential demand and 6% to the non-residential sector. In the last update this allocation was 85% and 15% respectively, but that ratio changed principally due to the recognition of income from donations and grants to the Greenway project, and the removal of some capital projects from the fee basis.

Table 11 shows the updated capital cost basis for the recreation impact fee, and the proportionate allocation of costs to the residential vs. non-residential sectors.

**Table 11**

<b>RECREATION MASTER PLAN COMPONENTS OF IMPACT FEE CAPITAL COST ALLOCATION</b>	<b>Total Rec. Plan Buildout Cost 2018 Dollars</b>	<b>Residential %</b>	<b>Non-Residential %</b>	<b>Capital Cost Residential</b>	<b>Capital Cost Non-Residential</b>
<b>Mascoma Corridor</b>					
* Mascoma River Greenway					
Mascoma Greenway Action Plan	\$ 57,050				
Construction Costs	\$3,003,932				
Less Grants & Donations @ 2018 Value	\$ (805,807)				
Mascoma Greenway Cost to City	<b>\$ 2,255,175</b>	73%	27%	\$1,646,278	\$608,897
* Westboro Park <i>(City park portion of 22-ac.site)</i>	<b>\$ 200,229</b>	73%	27%	\$146,167	\$54,062
<b>Central Lebanon</b>					
* Bagley Park	<b>\$ 1,628,964</b>	73%	27%	\$1,189,144	\$439,820
Eldridge Park Improvements (Completed)	<b>\$ 154,396</b>	100%	0%	\$154,396	\$0
<b>West Lebanon</b>					
* Riverside Park (Incl. Skatepark Redevelopment)	<b>\$ 297,781</b>	73%	27%	\$217,380	\$80,401
<b>Intensive/Special Use</b>					
Memorial Pool Area Reconstruction (Completed)	<b>\$ 3,172,880</b>	100%	0%	\$3,172,880	\$0
* Lower Meadows (past expenditures only)	<b>\$ 65,882</b>	73%	27%	\$48,094	\$17,788
Storrs Hill Electrical Upgrade (Completed)	<b>\$ 241,518</b>	100%	0%	\$241,518	\$0
<b>Recreation Facilities Investment 2000 to Completion</b>	<b>\$ 8,016,825</b>	<b>94%</b>	<b>6%</b>	<b>\$ 7,520,950</b>	<b>\$495,875</b>
* Recreation facility accessible from Mascoma Greenway, assumed to be of benefit to non-residential development					

## 5. Service Base Assumptions

Originally the Recreation Master Plan assumed a total population horizon of about 16,500 for facility planning purposes. This number is used to assign a maximum service population associated with the Recreation Master Plan improvements that were made since 2000, and which are anticipated for the Plan's service population.

With this as a target population for the residential service base for the associated Recreation Master Plan improvements, BCM Planning has estimated the associated number of households, housing units, employment, and non-residential building area that would be consistent with that future population. These projections were made based on historical relationships defined by the detailed analysis of population, housing and building floor area that was conducted in 2015.

Based on those relationships a future residential population of 16,500 would be consistent with an inventory of about 15.3 million square feet of gross floor area in non-residential uses, and about 14.5 million square feet in private sector commercial uses.

**Table 12**

<b>HISTORIC CHANGE AND FUTURE GROWTH ASSUMPTIONS FOR FEE ALLOCATION</b>					
Development Sector	1990	2000	2010	2016 Est.	Rec Plan Horizon Population
<b>RESIDENTIAL BASE</b>					
Total Population	12,183	12,568	13,151	13,599	<b>16,500</b>
Persons in Group Quarters	166	290	144	164	199
Persons in Households	12,017	12,278	13,007	13,435	16,301
Total Households	5,173	5,500	6,186	6,398	8,151
Average Household Size	2.32	2.23	2.10	2.10	2.00
Total Housing Units	5,718	5,707	6,649	7,079	9,019
<b>NON-RESIDENTIAL BASE</b>					
Total Covered & Government Jobs in City *	9,703	16,880	18,929	19,243	22,196
Private Sector Jobs in City *	8,547	15,996	18,014	18,434	21,213
Total Jobs Per Capita		1.34	1.44	1.42	1.35
Private Sector Jobs Per Capita		1.27	1.37	1.36	1.29
<b>Gross Floor Area of Non-Residential Uses</b>					
Total Including Government	9,500,000	11,450,000	12,600,000	13,258,427	15,300,408
Private Only	8,960,000	10,814,000	11,949,000	12,627,290	14,523,524
Square Feet Per Employee All Non-Res Devel	979	678	666	689	689
Square Feet Per Employee (Private Only)	1,048	676	663	685	685
				<i>(actual average for from prior</i>	<i>(held constant from prior study</i>
* NH Employment Security data for 1990-2016 (covered employment)					

## 6. Impact Fee Assessment

The total recreation facility investment (past and projected) for the period 2000 through completion of listed projects is estimated at just over \$8 million. This total is apportioned 94% to residential demand and 6% to non-residential uses.

The capital cost allocation for residential demand is then allocated across the total household population for the horizon year and the non-residential investment is allocated across a projected 14.5 million square feet in projected gross floor area.

The resulting capital investment attributable to the horizon year (completion of listed projects) averages \$461 per capita in recreation plan capital improvements. That per capita investment is then assigned by average household size by type of dwelling, and converted to a rate per square foot based on the average living area of dwelling units in Lebanon.

For the non-residential sector, the cost allocation is distributed across a projected 14.5 million square feet of private sector uses, resulting in an average capital cost allocation of \$0.03 per square foot (rounded). Based on an average of 685 square feet per employee, the non-residential impact fee is equivalent to about \$21 per employee.

Because various commercial sectors tend to have different ratios of employees to floor area, the impact fee is adjusted so that those sectors with more employees per square foot pay higher fees than those with fewer employees per square foot.

For example, a retail use would pay about \$0.04 per square foot while an office complex would pay \$0.07 per square foot. Uses that typically have fewer employees for a given amount of floor area (industrial, warehousing for example) would pay a lower rate of about \$0.02 per square foot.

Resulting impact fee assessments per square foot for residential and commercial development are detailed in Table 13.

**Table 13: Recreation Impact Fee Residential and Non-Residential Uses**

IMPACT FEE BASED ON SELECTED RECREATION MASTER PLAN INVESTMENTS 2000 TO COMPLETION SERVING PROJECTED SERVICE BASE WITH TOTAL POPULATION OF 16,500				
<b>RESIDENTIAL COST ALLOCATION</b>		Residential \$ 7,520,950		
Total Population Plan Horizon Year	16,500			
Household Population Plan Horizon Year	16,301			
Recreation Plan Capital Investment Per Capita	\$461			
Residential Structure Type	Est. Average Household Size 2010 *	Avg Fee Per Unit	Avg Sq. Ft. Existing Dwelling Units 2015	Recreation Impact Fee Per Sq. Ft.
Single Family Detached	2.39	\$1,102	1,751	<b>\$0.63</b>
All Other Housing	1.85	\$853	954	<b>\$0.89</b>
<b>NON-RESIDENTIAL COST ALLOCATION</b>				
Recreation Facility Investments - Non-Res Share	\$495,875			
Sq. Ft. Non-Residential Private - Plan Horizon Year	14,523,524 (projected)			
Average Cost Per Sq. Ft.	\$0.03			
Average Square Feet Per Employee	685			
Average Cost Per Employee	\$21			
Non-Residential & Institutional Uses	Average Sq. Ft. Per Employee	Impact Fee Per Square Foot		
Retail, Restaurants and Lodging	500	<b>\$0.04</b>		
Offices and Commercial Services	300	<b>\$0.07</b>		
Industrial, Transportation, Whse, Communic.	700	<b>\$0.03</b>		
Nursing Homes & Licensed Care Facilities	1,000	<b>\$0.02</b>		
Other Institutional Uses	1,000	<b>\$0.02</b>		
<hr/>				
Average Non-Residential (All Other Uses)	685	<b>\$0.03</b>		

If the method of cost allocation to commercial uses is retained, the residential impact fee based on this update would be \$0.63 per square foot for single family homes and \$0.89 for all other dwellings. The average fee per square foot for non-residential uses would be \$0.03 per square foot.

Given the low proportionate allocation of capital costs to the commercial sector for relevant recreation improvements, and the substantial donations received from corporations toward the Greenway, the City may wish to consider reverting to a recreation impact fee that is applicable to residential uses only.

An alternative approach to the model would be to allocate capital costs to residential uses only. Using the 2018 updated costs, this approach would result in a fee of \$0.67 per square foot for single family homes and \$0.95 per square foot for all other dwelling units. Under this alternative, the fee would be assessed only to residential development and no fee would be assessed to commercial uses.

## **Part C: Police Department Impact Fee**

The Lebanon Police Department headquarters located on Poverty Lane is a facility of about 13,800 square feet constructed in 1991. At the time impact fees were first researched by BCM Planning in Lebanon in 2006, an interview with the Chief of Police indicated that the facility was constructed with the intent of supporting staffing of up to 40 sworn personnel. At the time the building was designed, an International Association of Chiefs of Police (IACP) guideline of about 350 square feet per officer was used to size the facility. Reserve capacity at the facility remains available to accommodate additional sworn personnel if required to meet the demands of new development.

The City has significant service demands from non-residential development that influence its staffing needs in comparison with other communities of a similar size, including:

- Location at the confluence of north-south and east-west interstate highways;
- A regional work destination with a high ratio of in-bound commuter traffic;
- A border community to Vermont that is a regional shopping destination with no sales tax;
- A growing retail and commercial development sector and the locus of a unique and large scale medical facility (Dartmouth-Hitchcock and related facilities).

Because of these and other influences, the ratio of officers to resident population in Lebanon is comparatively high. While it is clear that population alone is insufficient to define the personnel needs of any jurisdiction, a relative service standard is required to assign proportionate impacts and related capital costs. As of the 2016 FBI Uniform Crime Report data on personnel for Lebanon, the Police Department had 31 full time uniformed personnel, or 2.3 per 1000 residents. The target personnel ratio established in the original impact fee assessment was only slightly higher at 2.5 officers per 1,000 population. This ratio should in no way be construed as a limitation on the personnel the police department may find necessary to provide adequate services now or in the future.

Based on the target ratio of 2.5 uniformed officers per 1,000 persons, and total floor area within the buildings of the department, the police station facilities are estimated to have the capacity to support a resident population of up to 16,000. The most recent population estimate available for Lebanon at the time this study was prepared was 13,599 persons (2016 estimate).

Because the target service population is higher than the current population, an impact fee may be used to recoup part of the City's past investment in facility capacity through impact fees. Based on the original planning estimates for the facility relative to staffing ratios, the current facility is capable of supporting a larger complement of uniformed personnel sufficient to serve new development.

## 1. Proportionate Demand by Sector

Because police services provide protection and response for all classes of property, proportionate measures are needed to allocate related capital costs between residential and non-residential demand. Measures of the proportionate demand to protect both persons and property include calls for service, number of offenses, assessed valuation of property, square footage of buildings, and the relationship between local employment and the City's resident population.

Table 14 shows the call volume data within the City by sector. Not all calls have a geographic reference, and associations of call volume with residential vs. commercial demand are speculative at best. There are three sectors identified in the original impact fee assessment that are viewed as predominantly commercial areas (Sectors 4, 6 and 7).

**Table 14**

NUMBER OF CALLS BY SECTOR - LEBANON POLICE DEPARTMENT - 1998 TO 2017					Ten Year Total 1998-2007	Ten Year Total 2008-2017	Share of Total Calls	
Reporting Sector	Predominant Land Use	1998	2017	% Change			1998-2007	2008-2017
Sector 1 - N. of Mascoma River	Residential	6,595	8,809	33.6%	81,094	99,007	29.7%	31.9%
Sector 2 - S. of Mascoma River	Mixed - Residential + Downtown S. of Mascoma River	4,908	5,176	5.5%	54,211	51,232	19.9%	16.5%
Sector 3 - (W. Lebanon to E. Wilder)	Rte 10 N - Mostly Residential & Northern Part of West Leb.	4,107	5,649	37.5%	45,464	55,581	16.7%	17.9%
Sector 4 - (Includes Rte 12-A, S. of Route 4; Airport)	Commercial & Airport	4,325	7,328	69.4%	65,702	72,861	24.1%	23.5%
Sector 6 - Rte 120 N of Etna Rd	Commercial	574	1,481	158.0%	9,841	16,436	3.6%	5.3%
Sector 7 - LaHaye/Medical Center Dr	Commercial	294	793	169.7%	5,035	6,411	1.8%	2.1%
Sector 5 (at Police HQ)	Mixed - no geographic reference	1,114	490	-56.0%	11,423	7,260	4.2%	2.3%
All Other		46	126	173.9%	182	1,403	0.1%	0.5%
<b>Total</b>		<b>21,963</b>	<b>29,852</b>	<b>35.9%</b>	<b>272,952</b>	<b>310,191</b>	<b>100.0%</b>	<b>100.0%</b>

The rate of growth in these sectors has been significantly higher in the commercial-oriented sectors than in the more residential sectors. For purposes of estimating proportionate call volume factor, we have used a ratio of 40% residential and 60% non-residential based on call data for the last 10 years (data for years 2008-2017).<sup>2</sup>

Table 15 is a summary of the number of offenses recorded by the Lebanon Police Department by the type of property associated with the offense. The categories have been summarized by BCM Planning to approximate residential vs. non-residential property classes. The data indicate that department activity relating to crimes and arrests is weighted more toward the non-residential sector (about 64%) than from the residential sector (about 36%).

<sup>2</sup> Sector 1, 50% of Sector 2, and Sector 3 assumed to represent predominantly residential demand. All calls in Sectors 4, 6 and 7 and 50% of calls from Sector 2 assumed to be predominantly commercial demand. Calls to the station (Sector 5) and all other calls excluded from estimating the call ratio.

**Table 15**

LEBANON POLICE DEPARTMENT - OFFENSES BY PROPERTY TYPE 2016 AND 2017				
Land Use	2016	2017	2-Year Total	% of 2-Year Total
Residential	703	629	1,332	21.6%
Non-Residential	1,234	1,091	2,325	37.6%
Retail & Lodging	996	879	1,875	30.3%
Office	100	99	199	3.2%
Other Commercial/Parking	112	93	205	3.3%
Industrial/Transp/Storage	22	14	36	0.6%
Private Institutional	4	6	10	0.2%
Public Institutional	364	452	816	13.2%
Other/Unknown	931	775	1,706	27.6%
Highway-Street-Alley	735	614	1,349	21.8%
Open Space - Other	196	161	357	5.8%
Total	3,232	2,947	6,179	100.0%
Offenses Excluding Institutional and "Other/Unknown"				
Residential Locations	703	629	1,332	<b>36.4%</b>
Non-Residential and Public Inst.	1,234	1,091	2,325	<b>63.6%</b>
Total	1,937	1,720	3,657	

Because Police Department services provide not only emergency and crime response, regular patrols serve all types of development with the mission of protecting persons and property. Therefore other factors may also be appropriate to estimate the residential vs. non-residential share of demand on the Lebanon Police Department. These include assessed valuation, employment and population, and building floor area.

When these factors are considered, along with calls for service and offense statistics, the average non-residential share of service demand is estimated at 56% and the residential share at 44%. (Table 16)

**Table 16: Estimated Share of Service Demand – Police Department**

Land Use Sector	Share of Assessed Value 2017 (1)	Estimated Share of Calls 2008-2017	Estimated Share of Offenses 2016-2017	Daytime Pop (Employment - Population 2016)	Share of Floor Area 2015 Study (1)	Average (Rounded)
Non-Residential	63%	40%	64%	59%	53%	<b>56%</b>
Residential	37%	60%	36%	41%	47%	<b>44%</b>

(1) Includes tax exempt and non-taxable property (2017 MS-1 values)  
 Floor area measured by living area for residential, gross area for non-residential (2015)

In the 2015 analysis that was used to develop the 2016 fee update, the proportionate share factors applied in the fee calculation allocated a lower proportion of demand (52%) to the non-residential sector. The 2018 factors shift a somewhat higher share of the capital cost allocation (56%) to commercial uses.

## 2. Allocation of Costs to New Development

As of 2015 the City had about 974 square feet of non-residential gross floor area per resident. For the purpose of the impact fee calculation, it is assumed that the same ratio of non-residential floor area per capita will apply at the time the facility reaches its estimated personnel-based capacity (residential



population of about 16,000). Table 17 summarizes the assumptions of the updated impact fee model and its assignment of police department facility costs to new development.

### 3. Impact Fee Assessment per Square Foot

The Police Department impact fee is based on the recoupment of the City's investment in the department headquarters and related communications equipment and facilities at the site. These costs include the value of land at the site, and the original cost of building construction adjusted to 2018 using R.S. Means time adjustments.

To these values, we have added the adjusted cost of station improvements based on investments in the building and communications equipment using City fixed asset values, adjusted to 2018 using the same cost index.

The average capital cost computed in Table 17 is \$167 per capita for residential uses and \$0.22 per square foot for non-residential uses. The residential fees are computed by multiplying \$167 per capita times average household size, divided by average living area per housing unit, to yield an impact fee per square foot for two structural categories (single family detached homes and all other types of structures).

**Table 17: Impact Fee Basis for Police Department Facilities**

<b>POLICE DEPARTMENT IMPACT FEE - LEBANON, NH</b>		
<b>Demand Base for Services</b>	Total Population	Non-Residential Property GFA
Base Year (2016 NHOEP Estimate)	13,599	13,204,629
Capacity of Police Department Building (Population)	16,000	15,536,000
Supportable New Development	2,401	2,331,371
<b>Number of Sworn Officers in Department</b>		Officers Per 1000 Persons
Full Time Police Officers 2018 *	35	2.6
Number of Sworn Officers Needed @ 2016 Population	34	2.5
Planning Basis for Maximum Building Capacity	40	2.5
Support for New Development (additional officers)	6.0	@ Planning Std
<i>* Current staffing from Chief of Police, April 2018</i>		
<b>Building Floor Area and Replacement Cost</b>	<b>Police Dept</b>	
Floor Area Of Police Headquarters & Storage	14,150	
Planning Std Used - GFA Per Officer	350	
Current Space Demand at Officers/1000 Standard	11,899	
Space Available to Support New Development	2,251	Adjusted 2018 Cost
Station Development Cost in Base Year (1993)	\$1,764,234	\$3,841,747
Evidence Garage (1998)	\$43,328	\$81,461
Total 2018 Equivalent Development Cost		\$3,923,208
Estimated 2018 Cost to Construct Per Sq. Ft.		\$277
Land Value of Site (10 Acres) - 2017 Assessed Val.		\$830,200
Subtotal Land & Buildings Construction		\$4,753,408
Communications and Building/Site Improvements		\$1,324,818
<b>Total Land, Building and Communications</b>		<b>\$6,078,226</b>
<b>Allocation of Facility Cost By Sector</b>		
Non-Residential Share @ Station Planned Capacity	56%	\$3,403,807
Residential Share @ Station Planned Capacity	44%	\$2,674,419
<b>Average Unit Costs for Capital Facilities</b>		
Average Non-Residential Development Per Sq. Ft.		<b>\$0.22</b>
Average Residential Cost Per Capita		<b>\$167</b>
<b>Residential Impact Fee Per Dwelling Unit</b>	Average Household Size Estimated 2010	Impact Fee Per Dwelling Unit
Single Family Detached (SFD)	2.39	<b>\$399</b>
Units Other Than Single Family Detached	1.85	<b>\$309</b>
<b>Non-Residential Fee Per Square Foot</b>	Multiplier	Fee Per Sq. Ft.
Retail, Restaurants, Lodging	1.40	<b>\$0.31</b>
Offices and Commercial Services	0.70	<b>\$0.15</b>
Industrial, Transportation, Whse, Communic.	0.35	<b>\$0.08</b>
Nursing Homes & Licensed Care Facilities	0.20	<b>\$0.04</b>
Other Institutional Uses	1.40	<b>\$0.31</b>
Average Non-Residential	1.00	<b>\$0.22</b>

Table 18 on the next page shows the impact fee schedule per square foot for residential and commercial uses. For residential uses, the fee reflects the average residential cost per capita times the estimated number of persons per household by structure type, divided by the average living area of the residential unit.

The average cost per square foot of non-residential floor area is adjusted from an average for all non-residential uses by multipliers that reflect relative expected demand from various commercial sub-sectors. These multipliers are based on a 2008 study by BCM Planning, LLC for the city of Dover, New Hampshire.

In that study, the rate of police department calls for service per square foot of floor area was compared by sub-category of non-residential development. Retail and institutional uses generate significantly higher call volumes than the average. Office uses were somewhat lower, followed by industrial use and licensed care facilities (nursing homes and assisted living with personal care). At the time of the Lebanon impact fee update, it was not possible to associate Lebanon Police Department calls for service with particular land uses to document local call rates per square foot by category.

Using the multipliers for the non-residential sub-group results in impact fee assessments that vary by use category, with retail uses assessed at \$0.31 per square foot, offices at \$0.15 per square foot, and industrial uses at \$0.08 per square foot.

**Table 18: Police Department Impact Fee Schedule**

<b>Police Department Impact Fee 2018</b>	Estimated Average Household Size Using 2010 Census	Capital Cost Per Dwelling Unit	Average Living Area 2015	<b>Impact Fee Per Square Foot</b>
Single Family Detached	2.39	\$399	1,751	<b>\$0.23</b>
All Other Housing	1.85	\$309	954	<b>\$0.32</b>
<b>Non-Residential &amp; Institutional Uses</b>	Multiplier x Average Non-Residential			<b>Impact Fee Per Square Foot</b>
Retail and Restaurants	1.40			<b>\$0.31</b>
Offices and Commercial Services	0.70			<b>\$0.15</b>
Industrial, Transportation, Whse, Communic.	0.35			<b>\$0.08</b>
Nursing Homes & Licensed Care Facilities	0.20			<b>\$0.04</b>
Other Institutional Uses	1.40			<b>\$0.31</b>
Average Non-Residential (Base)	1.00			\$0.22

The resulting impact fees are assessed per square foot of building area. For the purpose of residential assessment, gross living area is used to compute the fee; for non-residential uses the fee is applied to gross floor area of buildings.

Since there is no remaining debt service on the existing Police Department facility, impact fees may be used to offset other department capital projects that have a tangible relationship to enhancing the department's building capacity, internal systems, or response capability.

## Part D: Fire Department Impact Fee

In 2016 a new impact fee was added for the Fire Department. Most fire department impact fees are based on the total cost of capital facilities including fire station building space and major capital equipment and apparatus. In Lebanon, there are three fire stations that, according to past and recent editions of the Master Plan, have significant needs for renovation and improvement. A long term strategy for defining fire station locations has not yet been developed, and it is possible that fire station space could be consolidated in the future. Major improvements to the Central Fire Station, as recommended in past Capital Improvement Programs, have not been funded. Because of these uncertainties, an impact fee assessment that includes fire station building space may be premature.

Although improvement and expansion plans for fire stations remain unresolved, the City has a major capital investment in the principal vehicles and apparatus of the department, with an estimated current replacement cost of \$6.525 million. In addition to the original investment made to provide the current inventory of equipment, the various pieces of apparatus must be replaced periodically as they approach the end of their useful service life.

The original acquisition of this capital equipment has been entirely borne by existing development. However, this inventory of firefighting, rescue and ambulance equipment (and its periodic replacement) must also provide capacity to respond to demands from new development as well. The basis of assessment described in this section will recoup from new development a proportionate share of the City's capital investment in major fire department vehicles and apparatus.

### 1. Proportionate Demand Measures

The scope of Fire Department services includes fire prevention, safety inspections, emergency preparedness, and responses to fire and rescue incidents throughout the City. These services provide coverage for all classes of property, regardless of the actual frequency of responses to incidents. A number of proportionate measures are used in the fee basis to allocate capital costs to residential and non-residential land uses.

a. Lebanon Fire Department Response Data (NFIRS). The Lebanon Fire Department reports its response data to the National Fire Incident Reporting Service (NFIRS). Each response entry is associated with a property use code and description. Counts of the number of responses by property use code provide a direct proportionate measure of actual runs made by the Fire Department. The response data can then be organized into more general use categories for a proportionate demand analysis.

The NFIRS data provided by the Lebanon Fire Department for this review spans the five calendar years of 2011-2015, comprising 13,322 responses during the period (an average of 2,664 responses per year). About 93% of these responses were associated with some type of developed property, while 7% were recorded as relating to outdoor locations or to an incident on a street or highway that could not be associated with a particular property type. (See data in Table 19.)

The remaining responses that could be associated with a property use class totaled 12,332. Of these, BCM Planning estimates that about 48% are associated with a residential use and the remaining 52% with non-residential uses (including both publicly and privately owned properties).

**Table 19**

<b>LEBANON FIRE DEPARTMENT RESPONSE BREAKDOWN BY PROPERTY USE 2011-2015</b>			
<b>Property Use Categories *</b>	<b>Fire Department Responses Calendar Years 2011 to 2015</b>	<b>% of Responses Within Group</b>	<b>% of All Responses Recorded</b>
<b>RESIDENTIAL</b>	<b>5,923</b>	<b>100.0%</b>	<b>44.5%</b>
One and Two Family	2,573	43.4%	19.3%
Multifamily	3,064	51.7%	23.0%
Residential Street, Driveway, Other Res.	286	4.8%	2.1%
<b>NON-RESIDENTIAL</b>	<b>6,409</b>	<b>100.0%</b>	<b>48.1%</b>
Retail, Restaurant, Lodging, Entertain.	1,787	27.9%	13.4%
Offices Including Financial, Medical	904	14.1%	6.8%
Commercial Other Services	164	2.6%	1.2%
Industrial, Storage, Distribution, Transport	481	7.5%	3.6%
Street or Road in Commercial Area	212	3.3%	1.6%
Hospitals and Mental Health Facilities	859	13.4%	6.4%
Nursing Homes, Boarding and Care	1,377	21.5%	10.3%
Public Uses and Other Institutional	625	9.8%	4.7%
<b>OTHER NOT ASSIGNABLE BY USE</b>	<b>990</b>	<b>100.0%</b>	<b>7.4%</b>
Street or Highway - No Use Assigned	667	67.4%	5.0%
Outdoor Location - No Use Assigned	239	24.1%	1.8%
Other Unknown or No Category Reported	84	8.5%	0.6%
<b>TOTAL</b>	<b>13,322</b>		<b>100.0%</b>
<b>TOTAL FOR CALLS ASSIGNED BY LAND USE</b>	<b>12,332</b>	<b>100.0%</b>	<b>92.6%</b>
Residential	5,923	<b>48.0%</b>	44.5%
Non-Residential	6,409	<b>52.0%</b>	48.1%

*\* Source of call data is Lebanon Fire Department records entered in National Fire Incident Reporting Service file. Use groupings by BCM Planning, LLC based on property use codes and descriptions within the NFIRS data.*

*b. Estimated Response Rates Per Square Foot of Building Area.* Taking this data a step further, BCM Planning, LLC compared the NFIRS response data for general property classes with building floor area for similar use categories using property tax assessment data. Annual response ratios were then estimated per 1,000 square feet of building floor area. This provides an estimate of the relative frequency of Fire Department responses for the land use categories. (See Tables 20-21.)

**Table 20**

<b>FIRE DEPARTMENT RESPONSES PER HOUSING UNIT AND PER 1000 SQ. FT.</b>				
<b>Residential Sector</b>	<b>Housing Units</b>	<b>2011-2015 Fire Dept Responses</b>	<b>Responses Per Unit Per Year</b>	<b>Responses Per Year Per 1000 Sq. Ft. Living Area</b>
One and Two Family	3,256	2,573	0.158	0.098
All Other Housing Units	3,445	3,064	0.178	0.190
Total Identified Residential Units	6,701	5,637	0.168	0.133

*Source: BCM Planning, LLC estimates based on comparison of Fire Department NFIRS response data by housing type to residential tax assessment information.*

For residential uses, the average housing unit generated about 0.168 responses per year per unit, or about 0.133 calls per 1000 square feet of living area. The ratio per unit and per 1000 square feet was higher for multifamily property (at 0.178 per unit, 0.193 per 1000 square feet) than for single family and two family units (0.158 per unit, 0.098 per 1000 square feet). Expected demand based on call data is therefore higher per unit or per square foot for multifamily housing than for single family homes.

For non-residential uses, response rates were estimated based on gross floor area within the land use categories. The average response rate for all non-residential uses was 0.090 calls per 1,000 square feet of gross floor area per year. Higher response rates were indicated for nursing and licensed care facilities, retail and related uses, and institutional uses including government. Response rates for offices and general commercial services were lower than the average for all non-residential uses. The relative response rate for Industrial and storage uses was less than half the average for all non-residential property classes. (See Table 21.)

**Table 21**

<b>FIRE DEPARTMENT RESPONSES PER 1000 SQ. FT. GROSS AREA (NON-RESIDENTIAL)</b>				
Non-Residential Sector Uses	2011-2015 LFD Responses	Avg Responses Per Year	Per Year Per 1,000 SF Gross	Response Frequency Relative to Average
Retail, Restaurant, Lodging	1,787	357	0.110	<b>1.22</b>
Office & Commercial Services	1,068	214	0.070	<b>0.78</b>
Industrial, Whse, Trans, Communic.	481	96	0.040	<b>0.44</b>
Nursing, Hospital & Licensed Care	2,236	447	0.140	<b>1.56</b>
Govt & Other Institutional	625	125	0.110	<b>1.22</b>
Total Identified Non-Residential Uses	6,197	1,239	0.090	<b>1.00 (Avg)</b>

The relative response rates are used later in the basis of assessment as a means to assign impact fees per square foot that vary according to relative response rates.

*c. Other Proportionate Measures and Average of Factors.* As with the Police Department impact fee, appropriate proportionate measures of the demand on related services should include factors other than actual response data, because all properties benefit from public safety coverage even if they do not generate significant call volume. These other indirect measures include total assessed valuation of property, the square footage of buildings, and the relationship between local employment and the City's resident population. (See Table 22.)

**Table 22**

<b>Proportionate Demand Factors for Fire Department</b>					
Development Sector	Share of Assessed Value 2017 (1)	Share of Fire Department Calls From 2011 to 2015	Daytime Pop (Employment - Population 2016)	Share of Building Floor Area 2015 (2)	Average of Factors (Rounded)
Non-Residential Including Government	63%	52%	59%	53%	<b>57%</b>
Residential Uses - All Housing Types	37%	48%	41%	47%	<b>43%</b>
<i>(1) Includes tax exempt and non-taxable property (2017 MS-1 values)</i>					
<i>(2) Floor area measured by living area for residential, gross area for non-residential (2015)</i>					

When these other factors are averaged with the response data, the average proportionate demand ratio for Fire Department services is 57% non-residential and 43% residential. These proportions are used in the impact fee model to allocate Fire Department capital costs between the two major use categories.

## 2. Capital Facility Costs Allocated: Major Capital Equipment

The Lebanon Fire Department has estimated that the total replacement cost of its major fire apparatus and ambulances is about \$6.79 million. (See Table 23.) Between 2016 and 2040, it is likely that all of this equipment will need replacement based on the remaining useful life of the vehicles and apparatus in the Lebanon Fire Department inventory.

**Table 23**

2018 Lebanon Fire Department Major Capital Equipment - Estimated Replacement Cost					
Acquisition Year	Vehicle Description	Age in 2018	Est Service Life	Planned Replacement Year	Estimated Replacement Cost
1991	Ladder 1 - Emergency One Hurricane 110' Aerial Ladder	27	30	2021	\$ 1,500,000
1995	Engine 4 - Smeal Simon/Duplex	23	25	2020	\$ 650,000
2006	Engine 2 - E-One Contendor Pumper	12	20	2026	\$ 750,000
2011	Utility 1 - Ford F-350 Pick-up	7	10	2021	\$ 60,000
2012	Ambulance 1 - Ford F-450	6	8	2020	\$ 265,000
2014	Med 3 - Ford F-550 Ambulance	4	8	2022	\$ 275,000
2014	Truck 2 - E-One Quint	4	25	2039	\$ 900,000
2015	Car 2 - Ford Explorer	3	8	2023	\$ 55,000
2015	Utility 2 - Ford F550 Bucket Truck	3	15	2030	\$ 135,000
2016	Med 2 - Ford E-450 Road Rescue	2	8	2024	\$ 290,000
2016	Car 3 - Ford Explorer	2	8	2024	\$ 55,000
2017	Car 1 - Ford Explorer	1	8	2025	\$ 60,000
2017	Car 4 - Ford F250	1	8	2025	\$ 60,000
2017	Engine 1 - E-One Cyclone	1	25	2042	\$ 620,000
2018	E-One Typhoon Heavy Rescue	0	25	2043	\$ 750,000
0	New Forestry Unit	0		2021	\$ 100,000
<b>Total Estimated Replacement Cost</b>					<b>\$ 6,525,000</b>

*Source: 2018 estimates provided by the Fire Chief*

## 3. Allocation of Costs Per Unit of Development

The existing inventory of equipment (and its periodic replacement to assure functionality) provides the Lebanon Fire Department with capacity that will serve both existing and new development. At some point in the future, if additional equipment is added to the inventory, its replacement cost may be added to the cost basis of the fee.

The total capital investment of \$6.525 million in capital equipment is assigned to a demand base projected to 2040. Proportionate shares of the total investment are allocated to two major development sectors based on existing conditions, defined earlier in this analysis at 57% to non-residential uses and 43% to residential uses.

Non-residential sector costs are then apportioned across the projected 2040 gross floor area of uses in that sector, and residential costs are estimated per capita based on a future service population. The future service population assumes a constant relationship between the City population and the amount of non-residential gross floor area at 974 square feet per capita.

The cost allocation assumptions are summarized by the following steps. (See Table 24):

- Replacement cost of major vehicles and apparatus to be allocated: \$6.525 million
- Projection of service base to 2040 centers on projected non-residential growth, assuming:
  - Non-residential: 104,000 sq. ft. added per year (2005-2015 average) from 2016 base
  - Residential: Population @ current ratio of 974 sq. ft. non-residential area per capita
- Proportionate demand on capital facilities:
  - Non-residential: 57%
  - Residential: 43%
- Average capital cost to service projected 2040 service base:
  - Non-residential: \$ 0.24 per square foot (gross floor area)
  - Residential: \$ 174 per capita (\$365 per dwelling unit @ avg. household size) or \$ 0.28 per square foot (living area) for an average dwelling unit
- Adjust fees per square foot for sub-subcategories:

Apply relative response rates within the non-residential and residential sectors

The average capital cost to serve the projected non-residential service base of 2040 is estimated at \$0.24 per square foot of gross floor area. A relative response multiplier is then applied to the non-residential sub-groups to compute an impact fee based on relative response rates per thousand square feet.

The average cost to serve residential uses is estimated at \$174 per capita, or about \$365 per housing unit based on an estimated average household size (2016) of 2.10 persons. Average housing unit size in Lebanon is estimated at 1,290 square feet (living area) based on BCM Planning, LLC analysis of property assessment data. At the average housing unit size, the capital cost per square foot of living area averages about \$0.28 per square foot for an average dwelling unit in Lebanon.

Based on the 2016 impact fee study, Fire/EMS calls are expected to be lower than the City average for single family detached homes, and higher than the average for other types of structures. The call rates for the two structural categories, when applied to the average cost per square foot for the residential sector, results in a fee of \$0.21 per square foot for single family homes, and \$0.40 per square foot for all other structure types.



**Table 24**

<b>FIRE DEPARTMENT IMPACT FEE - LEBANON, NH (MAJOR CAPITAL EQUIPMENT ONLY)</b>			
<b>Demand Base for Services</b>	Total Population	Non-Residential Property GFA	
Base Year (2016 NHOEP Estimate)	13,599	13,204,629	
Future Service Base (2040 Estimated)	16,120	15,700,629	
<b>Replacement Cost of Major Vehicles and Apparatus</b>		\$6,525,000	
Total Capital Value in Fee Basis		\$6,525,000	
<b>Allocation of Capital Cost by Sector</b>	Buildings	Capital Equipment	Total
Non-Residential @ 57%	Fire Station	\$3,719,250	\$3,719,250
Residential @ 43%	Buildings Not Included in Fee Basis	\$2,805,750	\$2,805,750
Total		\$6,525,000	\$6,525,000
<b>Service Base and Unit Cost</b>	Estimated Existing Service Base	2040 Service Base and Cost Allocation	Average Capital Investment
Non Residential Development Gross Floor Area	13,204,629	15,700,629	
Population (Residential Demand Base)	13,599	16,120	
Non-Residential Capital Cost Per Gross Sq. Ft.		\$0.24	<b>\$0.24</b>
Average Residential Cost Per Capita		\$174	<b>\$174</b>
Persons)			<b>\$365</b>
<b>Residential Cost Per Sq. Ft. Living Area</b>	Average Living Area Per Unit	Average Calls Per 1000 Sq. Ft. Per Year	<b>Impact Fee Per Sq. Ft. Living Area</b>
All Housing Types	1,290	0.133	\$0.28
Single Family Units	1,751	0.098	<b>\$0.21</b>
All Other Housing Units	954	0.190	<b>\$0.40</b>
<b>Non-Residential Impact Fees Per Sq. Ft. Gross Area</b>	Call Rate Multiplier Relative to Avg Non Residential Per 1000 Sq. Ft. Gross Area		<b>Impact Fee Per Sq. Ft. Gross Area</b>
Average Non-Residential	1.00		\$0.24
Retail, Restaurants, Lodging	1.22		<b>\$0.29</b>
Offices and Commercial Services	0.78		<b>\$0.19</b>
Industrial, Transportation, Whse, Communic.	0.44		<b>\$0.11</b>
Nursing Homes & Licensed Care Facilities	1.56		<b>\$0.37</b>
Other Institutional Uses	1.22		<b>\$0.29</b>

**4. Fire Department Impact Fee Schedule**

The Fire Department impact fee is based on the recoupment of a portion of the City’s investment in the major capital equipment necessary to provide adequate coverage throughout the City to existing and anticipated development.

The resulting impact fees are assessed per square foot of building area. (See Table 25.) For the purpose of residential assessment, the fee is applied per square foot of gross living area. For non-residential uses the fee is assessed per square foot using the gross floor area of buildings.

**Table 25**

<b>Residential Cost Per Sq. Ft. Living Area</b>	<b>Average Living Area Per Unit</b>	<b>Average Calls Per 1000 Sq. Ft. Per Year</b>	<b>Impact Fee Per Sq. Ft. Living Area</b>
All Housing Types	1,290	0.133	\$0.28
Single Family Units	1,751	0.098	<b>\$0.21</b>
All Other Housing Units	954	0.190	<b>\$0.40</b>
<b>Non-Residential Impact Fees Per Sq. Ft. Gross Area</b>	<b>Call Rate Multiplier Relative to Avg Non Residential Per 1000 Sq. Ft. Gross Area</b>		<b>Impact Fee Per Sq. Ft. Gross Area</b>
Average Non-Residential	1.00		\$0.24
Retail, Restaurants, Lodging	1.22		<b>\$0.29</b>
Offices and Commercial Services	0.78		<b>\$0.19</b>
Industrial, Transportation, Whse, Communic.	0.44		<b>\$0.11</b>
Nursing Homes & Licensed Care Facilities	1.56		<b>\$0.37</b>
Other Institutional Uses	1.22		<b>\$0.29</b>

The above fee schedule is based solely on the capital cost of major vehicles and apparatus of the Fire Department. In future updates, the estimated replacement cost of the equipment inventory may be adjusted to reflect current costs, or amended to include additions to the inventory. The impact fee model can also be adapted in future updates to include fire station space in the capital cost basis.