

Fire Department Impact Fee

Basis of Assessment - 2016 Update

Town of Nottingham, New Hampshire

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Prepared for:

Town of Nottingham Planning Board

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Fire Department Impact Fee Update

Executive Summary

The original documentation for a fire department impact fee was completed by BCM Planning, LLC on June 30, 2010 and a fee schedule based on that study was adopted by the Nottingham Planning Board on July 13, 2011. This report provides an update of the basis of assessment for the fire department impact fee. It is recommended that the Town maintain the original basis of assessment report as well as any updates of that methodology so that a complete history of the origins and assumptions of the fee calculations can be documented.

The basic components of the impact fee update are: (1) revised estimates of the replacement cost of fire department facilities including major equipment/apparatus; (2) review of the proportionate measures of demand on fire department services and facilities; (3) projections of the future service base of the community; (4) proportionate allocation of capital costs between existing and new development, and between residential and non-residential demand; and (5) revised credit allowances for a portion of debt service on the fire station.

The update of the fee basis, using the same structure as the original 2010 report, supports the following impact fee assessment schedule under 2016 conditions.

2016 Impact Fee Schedule: Fire Department

Residential Uses	Impact Fee Per Unit
Single Family Detached	\$800
Attached and 2 or More Family	\$736
Manufactured Housing	\$812
Non-Residential Uses	Impact Fee Per Square Foot
Average Non-Residential	\$0.35

Should the Planning Board determine that it wishes to assess a fee that is lower than the levels supported in this report, the entire fee table should be discounted by the same percentage to maintain proportionality of the fees by type of development.

A. Fire Station Capital Value

The original development cost of the Fire Station (8,800 square feet) was \$1,090,000 or about \$124 per square foot in 2007. Adjustment of that building cost to 2016 based on R. S. Means time adjustment factors¹ indicates a current replacement cost of \$1,364,000 or \$155 per square foot as of 2016. The 3.14 acre site was purchased by the Town for one dollar, minimizing the cost of land for the facility. Therefore, no land acquisition cost has been incorporated into the capital basis of the fee. The 2007 Fire Station project was designed to accommodate future expansion of the building if needed in the future.

B. Apparatus and Major Capital Equipment

The capital cost of major apparatus and trucks for fire departments often represents an investment that is equal to or greater than the development cost of the buildings that house that equipment and personnel. Based on the original acquisition cost of Fire Department capital equipment, and an average cost escalation factor of 5% per year, the estimated replacement cost of major capital equipment in 2016 is about \$ 1.53 million.

In order to maintain adequate fire-fighting capability, this apparatus must be replaced periodically. This capital equipment provides significant benefit to existing as well as new development. Therefore, it is appropriate that a portion of the capital investment in this capacity be allocated to new development as part of the impact fee.

Table 1: Apparatus and Major Capital Equipment

Principal Vehicles	Model Year	Original Cost	Year Acquired	Estimated Replacement Cost 2016
Truck RAM 2500	2015	\$38,018	2015	\$39,919
Rescue Boat & Trailer	2014	\$20,000	2014	\$22,050
2009 HME Fire Truck 37-E2	2009	\$360,000	2009	\$506,556
Skid Unit	2009	\$13,221	2009	\$18,603
Ford F550 Truck	2005	\$31,000	2005	\$53,021
John Deere Gator HPX (37-G1)	2004	\$8,000	2004	\$14,367
Fire Truck Tanker 37-T1	2003	\$204,901	2003	\$386,371
Fire Truck 37-E3	1995	\$175,000	1995	\$487,543
Subtotal Existing Inventory (Excluding Ambulance)				\$1,528,430

Since ambulance units are acquired and replaced using a special fund derived from self-sustaining fee-based charges, the replacement cost of these vehicles is excluded from the Fire Department impact fee.

¹ Derived from R.S. Means Square Foot Costs 2016

C. Proportionate Demand by Sector

Public safety services center on the mission of protecting persons and property. There are several means of measuring proportionate demand by persons and property on fire department capital facilities which serve both residential and non-residential demand. These include the following:

Calls for Service. In the original fee study, the average residential share of Nottingham Fire and Rescue calls for service was estimated at about 93% residential and 7% non-residential based on the address of the call response. Non-residential sources include commercial uses, manufacturing, public and institutional uses. This proportion has been maintained for the 2016 update.

Assessed Valuation of Developed Property. Using 2016 property assessment data (including values assigned to non-taxable and public property) 94% of the assessed valuation of developed property is residential and 6% is non-residential uses.

Building Floor Area. BCM Planning estimates that the floor area of residential and non-residential floor area that about 95 % of the effective area of all buildings in Nottingham is in residential uses and 5 % is in non-residential development. This ratio excludes the floor area of a large building originally planned by USA Springs that did was not completed or occupied.

Population and Employment. The most recent year for which both a population and local employment (jobs) estimate is available is 2015. Total employment in Nottingham (including government) was 303 according to New Hampshire Employment Security. The estimated population of the Town (NH office of Energy and Planning) was 4,904. The combined total of these figures (5,207) results in a ratio of 94% residential (population) and 6% non-residential (employment in government and private sector uses).

Overall demand on the department and its facilities has been assigned based on the average of these proportionate measures at 94 % residential and 6 % non-residential demand.

Table 2 – Proportionate Demand Measures – Fire Department - 2016

Proportionate Measure	2016 Base Year Estimate	
	Residential	Non-Residential
Department Calls for Service (2009 Study)	93%	7%
Valuation of Developed Property 2016	94%	6%
Building Floor Area 2016	95%	5%
Population/Employment 2015	94%	6%
Average of Factors	94%	6%

D. Future Service Base Assumptions

Year 2040 conditions were projected and assigned as the supportable service based for existing capital facilities of the Fire Department. The year 2040 population assigned in this report is higher than the numbers forecast by the projections issued by the NH Office of Energy and Planning in 2013 and 2016. However, the higher 2040 forecasts result in a more conservative (lower) fee than would be computed assuming the long term NHOEP forecast. A reasonable allocation of capital costs is then made based on projected development which can be computed on a per-unit, per capita, or per square foot basis.

1. Service Base Assumptions

a. Residential Development

The future service population in Nottingham is based on a linear project of total housing units to 2040 based on a long term average annual growth potential of 38 housing units per year. The future proportion of units that are seasonal is assumed to be 10%. (The percentage of Nottingham housing units that are used seasonally has been declining since 1980).

Average household size has been projected through 2040.² The future population projections for 2020 to 2040 are the result of multiplying the projected number of occupied housing units by the projected (declining) household size assigned to the projection years.

Table 3: Residential Demand Base – Nottingham

NOTTINGHAM POPULATION AND HOUSING UNITS: HISTORY AND PROJECTION							
FUTURE CONDITIONS BASED ON PROJECTION OF HOUSING UNITS AND DECLINING HOUSEHOLD SIZE							
Year	Population	Households	Seasonal and Vacant Units	% of Total Units Seasonal or Vacant	Total Housing Units	Persons Per Household	Housing Occupancy Ratio
1980	1,952	644	248	27.8%	892	3.03	72.2%
1990	2,939	1,037	277	21.1%	1,314	2.83	78.9%
2000	3,701	1,331	261	16.4%	1,592	2.78	83.6%
2010	4,785	1,734	252	12.7%	1,986	2.76	87.3%
2015 (est)	4,904	1,884	209	10.0%	2,093	2.60	90.0%
2020 (p)	5,413	2,102	234	10.0%	2,278	2.57	90.0%
2025 (p)	5,599	2,221	247	10.0%	2,468	2.52	90.0%
2030 (p)	5,900	2,392	266	10.0%	2,658	2.47	90.0%
2035 (p)	6,238	2,563	285	10.0%	2,848	2.43	90.0%
2040 (p)	6,565	2,734	304	10.0%	3,038	2.40	90.0%
Buildout Potential Based on 8,400 Units	17,842	7,560	840	10.0%	8,400	2.36	90.0%

Housing growth assumption for years after 2015: total housing stock growth averaging 38 units per year.

² Based on the projected rate of change in average household size within the Rockingham Planning Commission region, applied to Nottingham average household size. Estimates of changes in household size were developed as part of updated household projections prepared for the NH Housing Finance Authority by the NH Center for Public Policy Studies (2014, [Housing Needs in New Hampshire](#)).

b. Non Residential Development

The long term projection of non-residential development has based on a 2040 estimate of 500 jobs and associated floor area for non-residential uses. The 2015 average of 712 square feet of non-residential building floor area per employee (excluding the unoccupied former USA Springs building) has been used to project potential non-residential floor area to 2040 to 358,000 square feet. This is a larger increase in employment than would be predicted by historic linear trends. This means that the non-residential share of capital costs is likely to be allocated to a larger demand base than is likely to develop. This yields a more modest impact fee for commercial uses than one that is based on a much lower non-residential growth assumption.

E. Fire Department Impact Fee Model

Table 4 (next page) summarizes the proportionate demand factors and capital values used to assign fire-rescue capital costs to units of new development. The computation of impact fees in this report based on the assumption that the fire station and the current inventory of apparatus (subject to replacement and improvement) will represent adequate Fire Department capital facilities for development through the year 2040.

a. Facility Standard

The fee basis assumes that the 8,800 square foot fire station will have the capacity to meet the needs of the year 2040 service base projections. This assumption yields a floor area standard of 2.90 square feet of station space per dwelling unit (in 2040). This floor area ratio has been used to estimate the proportionate cost of facilities to be allocated to existing vs. new development.

b. Capital Facility Investment Allocation

The total capital investment in Fire Department buildings and major apparatus is estimated at about **\$2.89** million. Based on the relationship between the existing and projected service base of the Town, about 68% of that capital investment is attributable to 2015 needs, and 32% is the proportion reasonably attributable to new development from 2015 to 2040.

The portion of capital costs attributable to new development is estimated by subtracting the capital value assigned to existing service demand (2015) from the total values assigned to the 2040 horizon year. The capital cost attributable to new development is estimated at \$929,822. Of this total, about \$874,032 is assumed to be related to new residential uses and \$55,790 to new non-residential development.

Table 4: Cost Allocation Basis

FIRE DEPARTMENT IMPACT FEE - NOTTINGHAM NH - 2016 UPDATE			
Service Demand Factor	2015 Needs Estimate	Maximum Service Base Assumed - 2040 Horizon	Change 2015 to 2040
RESIDENTIAL SECTOR			
Population (Residential Demand)			
Total Persons	4,904	6,565	1,661
Households (Occupied Units)	1,884	2,734	850
Average Persons Per Household	2.60	2.40	-0.20
Seasonal & Other Vacant Units	209	304	95
Total Housing Units	2,093	3,038	945
Seasonal/Vacant % of Total Housing	10.0%	10.0%	
NON-RESIDENTIAL SECTOR			
Employment (Total Including Government)	303	500	197
Non-Residential Floor Area (Effective Sq. Ft.) *	215,650	357,884	142,234
Non-Residential Uses: Floor Area Per Employee	712	712	
Floor Area of Facilities	Existing Station	Long Term Fire Station Space Potential	
Floor Area of Fire Station (Built 2007)	8,800	8,800	
Station Space Required Per Dwelling Unit (Implied Standard For Projected Housing Units)	2.90	2.90	
2010 Station Space Needed at Indicated Standard	5,759		
2015 Station Space Needed at Indicated Standard	6,070		
Space Available to Serve New Development	2,730		
Building Area Needs and Cost of Fire Stations	Demand on Capital Facilities		
	Existing Service Base	Total Facility Costs Serving Projection Year	Portion Allocated to New Development
Estimated Development Cost Per Square Foot - 2016		\$155	
Attributed Building Costs - Fire Department	\$892,707	\$1,364,000	\$471,293
Capital Investment Major Apparatus	\$1,069,901	\$1,528,430	\$458,529
Total Capital Facility Investment - Fire Dept.	\$1,962,608	\$2,892,430	\$929,822
Residential Share of Demand	94%	94%	94%
Non-Residential Share of Demand	6%	6%	6%
Capital Cost Attributed to Residential Sector	\$1,844,852	\$2,718,884	\$874,032
Capital Cost Attributed to Non-Residential Sector	\$117,756	\$173,546	\$55,790
Average Cost Per New Residential Unit			\$925
Average Cost Per Square Foot - Non-Residential Development			\$0.39
FIRE DEPARTMENT CAPITAL COST PER UNIT OF NEW DEVELOPMENT			
Residential Capital Cost Per Dwelling Unit		Avg Household Size Est 2015	Capital Cost Impact Per Unit
Single Family Detached (Assume as "average unit")		2.66	\$925
Attached and 2 or More Family		2.32	\$807
Manufactured Housing		2.52	\$876
Avg. Residential Cost Per Square Foot (Based on Single Family Home)			\$0.42
Non-Residential Capital Cost Per Square Foot		All Categories	Capital Cost Per Sq. Ft.
Average Non-Residential			\$0.39
* 2016 figure excludes 175,708 sq. ft. in an incomplete manufacturing building (not supporting employment)			

c. Capital Cost Per Unit of Development

The residential portion of cost attributable to new development is divided by projected growth in residential units to arrive at an average capital investment per unit of new development equal to \$925 per average dwelling unit and \$0.39 per square foot of new non-residential development. Residential capital costs per unit are assigned to various structure types based on their relative household size. These raw capital costs per unit are further adjusted by a credit allowance to arrive at the net impact fee to be assessed.

d. Credit Allowance

Although credit allowances are not required by New Hampshire RSA 674:21, V impact fee assessments often incorporate an adjustment for other payments by new development for the funding of pre-existing deficiencies funded by debt service. The credit allowance is computed based on expressing the dollar amount of the deficiency as a cost per thousand assessed valuation.

The credit allowance for the Fire Station is computed based on 35% of the debt service costs for its development. This is the estimated share of the cost necessary to rectify deficiencies in floor area at the time of the original impact fee calculation (2010) using the service standard of 2.90 square feet of station space per dwelling unit. The derivation of the 35% share is illustrated in Table 5.

Table 5: Base Year Deficiency in Fire Station Space 2010

New Fire Station Size in Sq. Ft. - Built 2007	8,800
Service Standard - Sq. Ft. Per Housing Unit in 2040	2.90
Housing Units in Base Year of Fee 2010	1,986
Size of Facility Needed in 2010	5,759
Actual Size of Old Fire Station - Sq. Ft.	2,700
Expansion Needed for Base Year (2010) Demand	3,059
Percent of Space Constructed to Meet 2010 Needs	35%

In constructing the Fire Station, 2,700 square feet were needed to replace the old fire station (30.7%); another 3,059 square feet were needed to meet the additional space needs required for existing dwelling units as of 2010 (34.8%, rounded to 35% of the 8,800 square foot building).

The amortization schedule for debt service on Fire Station extends to 2027. Past payments on debt service are defined as those made during calendar years 2008 through 2016. Future debt service payments are those to be made from 2017 to 2027.

The credit allowances are computed per thousand dollars of assessed value. For past payments, the credits represent amounts paid by raw land (pre-development). Future payments are those made by completed housing units. A discount rate of 5% per year is assumed for computing present values of past or future payments.

Table 6: Fire Station Debt Service

FIRE STATION FINANCING - 2007 CONSTRUCTION				
Total Development Cost:		\$1,090,000		
Amount Bonded:		\$800,000		
Past Payments				Credited Portion
Year	Principal	Interest	Total	35%
2008	\$20,513	\$32,986	\$53,499	\$18,725
2009	\$41,026	\$34,154	\$75,179	\$26,313
2010	\$41,026	\$33,243	\$74,269	\$25,994
2011	\$41,026	\$32,332	\$73,358	\$25,675
2012	\$41,026	\$31,422	\$72,447	\$25,357
2013	\$41,026	\$30,511	\$71,536	\$25,038
2014	\$41,026	\$29,600	\$70,626	\$24,719
2015	\$41,026	\$28,689	\$69,715	\$24,400
2016	\$41,026	\$27,778	\$68,804	\$24,081
Present Worth of Past Payments @ 5%				\$768,722
Net Local Assessed Valuation 2016:				\$605,934,041
Past Payment Credit Per \$1000 Vacant Land				\$1.27

Future Payments				Portion Credited @
	Principal	Interest	Total	35%
2017	\$41,026	\$26,868	\$67,893	\$23,763
2018	\$41,026	\$25,957	\$66,983	\$23,444
2019	\$41,026	\$25,046	\$66,072	\$23,125
2020	\$41,026	\$24,135	\$65,161	\$22,806
2021	\$41,026	\$23,225	\$64,250	\$22,488
2022	\$41,026	\$22,314	\$63,339	\$22,169
2023	\$41,026	\$21,403	\$62,429	\$21,850
2024	\$41,026	\$20,492	\$61,518	\$21,531
2025	\$41,026	\$19,582	\$60,607	\$21,213
2026	\$41,026	\$18,671	\$59,696	\$20,894
2027	\$41,026	\$17,760	\$58,786	\$20,575
Present Value of Future Payments @ 5%				\$185,430
Net Local Assessed Valuation 2016:				\$605,934,041
Future Payment Credit Per \$1000 Valuation:				\$0.31

For the Nottingham Fire Station, a past payment credit allowance is computed at \$1.27 per thousand valuation of raw land (pre-development). A future payment credit allowance is computed at \$0.31 per thousand valuation, applied to the average assessed value of the completed housing unit. Future payment credits are based on assessed values per dwelling unit for completed units.

Past payments on debt service are computed per dwelling unit by assigning a value for raw land per dwelling unit at 11% of total valuation for completed housing units.³ The credited amounts per dwelling unit are summarized in Table 7.

³ National Association of Homebuilders, May 2016, "Government Regulations and the Cost of a New Home" (Appendix). The assumptions of the analysis estimate the cost of raw land to represent 10.6% of the price of a new home built for sale. This figure is rounded to 11% of total value for credit calculation purposes.

Table 7 – Credit Allowances

Structure Type	Avg Assessed Value Per Unit	Raw Land Value @ 11%	Past Pymt Credit	Future Payment Credit	Total Credit Allowance
Single Family Detached	\$278,000	\$30,580	\$39	\$86	\$125
Attached and 2+ Family	\$157,000	\$17,270	\$22	\$49	\$71
Manufactured Housing	\$143,000	\$15,730	\$20	\$44	\$64
Commercial Per Sq. Ft.	\$100	\$11	\$0.01	\$0.03	\$0.04

Average taxable values per housing unit and per square foot have been assigned to the various use categories. The credit allowance is then deducted from the assigned capital cost per unit. Cost and credits for non-residential (commercial) development are computed per square foot. The result is the net impact fee to be assessed (see Table 8).

e. Impact Fee Assessment

The impact fee assessment for Fire Department facilities is summarized in Table 10 below. Using the assumptions outlined above, the net impact fee on residential development would be \$800 per single family housing unit, \$736 for an attached, duplex or multifamily unit, and \$812 per manufactured housing unit.⁴ The impact fee for commercial uses would be \$0.35 per square foot.

Table 8: Net Impact Fee Assessment

Cost Per Unit, Credit Allowance and Impact Fee	Capital Cost Per Dwelling Unit	Credit Allowance Per Unit (See Credit Tables)	Impact Fee Schedule
Residential Uses			Impact Fee Per Unit
Single Family Detached	\$925	(\$125)	\$800
Attached and 2 or More Family	\$807	(\$71)	\$736
Manufactured Housing	\$876	(\$64)	\$812
Non-Residential Uses	Capital Cost Per Square Foot	Credit Per Sq. Foot	Impact Fee Per Square Foot
Average Non-Residential	\$0.39	(\$0.04)	\$0.35

⁴ Manufactured housing refers to homes defined by NH RSA 674:31.

F. Updating and Adjusting the Model and Fee Schedule

The Fire Department impact fee model can be updated and adjusted to reflect alternative growth assumptions or to update values assigned for capital costs, assessed valuation, debt service payments and other variables.

In future years, as the impact fee is updated, more of the debt on the fire station will be amortized, the assessed valuation of the Town will increase, and the credit allowances will decline. The capital value of Fire Department facilities, adjusted to reflect replacement costs, is likely to increase. Overall, these trends should allow the Fire Department impact fee to rise over time, and for more of the Town's capital investment to be recovered in the impact fee assessment.

The model should be updated or adjusted periodically so that it reasonably represents the estimated replacement cost of the capital facilities included in the fee basis. This helps maintain parity in assessments made at different times so that the fees are commensurate with capital costs at the time of the assessment.