

TOWN OF HINESBURG

**FIRE PROTECTION
IMPACT FEE ANALYSIS**

Prepared By

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I. INTRODUCTION:

The Town of Hinesburg, Vermont, has recently updated its Town Plan and its Capital Budget and Program. Through that process, the Town determined that it needed to make some significant investments in its Public Safety infrastructure (facilities and equipment) in order to be able to provide adequate service to anticipated future development. In particular, the Town identified the need for a new Fire Station (to be part of a new public safety building shared with the Police Department and Rescue Service), and for a new aerial fire truck. These are costly investments that would not be necessary in the absence of the anticipated future development. The Town feels that it is appropriate for the new development to finance a proportionate share of the costs of these investments. To this end, the Town has requested an analysis leading to the establishment of Fire Protection Impact fees. The purpose of the impact fee program is to allocate the appropriate share of the costs of planned fire protection facilities and equipment needed to accommodate the anticipated needs of the growing community, to the anticipated new development.

The Selectboard has chosen to include in its Capital Budget and Program funding for an aerial ladder truck to provide service to the type of development envisioned in the Town Plan (higher densities and taller structures) while also reducing the reliance on mutual aid in the event of a fire at one of the existing large structures in the Town. This will be a net addition to the Department's fleet of trucks, and will require additional space at the fire station. The planned public safety building will be constructed on the site of the existing fire station, and will also provide space for the Police Department. In total, the planned building will contain 13,000 square feet of space, 8,000 of which will be devoted to the Fire Department.

Fire protection is intended to reduce the risk of property loss and human loss (i.e. injury and loss of life). Human loss, however, is extremely rare, and most fire protection activity is aimed at reducing property loss. As such, the capital needs for fire protection are based, to a large extent, on the type and size of structures in the community, and the total value of property at risk. The capital projects described above are necessary to provide adequate service in the short term future, but are expected (with routine replacement) to be able to accommodate anticipated growth over the coming twenty years.

With this in mind, this impact fee analysis will be based on estimating the cost to the Town of providing the capital facilities and equipment needed to provide fire protection services to existing and anticipated development through the year 2029. To measure this, an estimate will be developed of the total value at risk at that time. The value at risk will be measured in units of \$1,000. The impact fees will be based on a ratio that measures the cost to the Town for fire protection facilities and equipment per \$1,000 unit of value at risk. This ratio, when applied to the estimated value at risk (measured in \$1,000 units) of new development, will yield the base

impact fee for fire protection.

This base impact fee will be reduced by any credits needed to offset possible double payments that might be made by the new development.

The process for developing the formula for calculating fire protection impact fees includes the following steps:

- 1) The estimation of the total cost to the Town (in current, 2009, dollars) of the fire protection facilities and equipment needed through the year 2029 (exclusive of routine replacement).
- 2) The estimation of the total number of units of value at risk by the year 2029.
- 3) The calculation of the cost to the Town per unit of value at risk of all fire protection facilities and equipment.
- 4) Estimation of any credits that are needed to offset any double payments for fire protection facilities or equipment.

II. Estimating the Town’s Cost for Fire Protection Facilities and Equipment:

The Hinesburg Volunteer Fire Department operates out of a main station located on Route 116 in the center of the Village. An older station, is located nearby, but is used only for storage by several Town departments. The fire station houses numerous pieces of fire fighting equipment, including two pumpers, one tanker, one heavy rescue vehicle, one first response vehicle, and a quick attack pumper¹, plus a variety of miscellaneous equipment. Some of the vehicles and equipment were purchased (all or part) by voluntary donations collected by the Fire fighters’ Association. The cost to the Town of creating this set of fire protection facilities and equipment is assumed to be the depreciated value of what the Town paid for each item, expressed in current (year 2009) dollars. For buildings, a life span of 30 years is assumed, with a residual value of 20 percent of initial cost. For most vehicles, a life span of 20 years is assumed, with a residual value of 10 percent of initial cost. For the first response vehicle, a ten year life span is assumed, with a residual value of 5 percent of the initial cost. The other pieces of equipment have varied life spans. TABLE FP-1, below, shows the current depreciated value of the Town’s cost of all fire protection structures, vehicles, and equipment.

Fire Station: The Fire Station was originally constructed in 1972 and was extensively renovated and expanded in 2000. The total construction cost in 2000 was \$76,000. In current (2009) dollars, this would equal \$95,076. Since the building is 9 years old, its **current depreciated value of the Town’s cost is estimated at \$66,553.**

1. The first response vehicle (Med-100) is currently stored off-site.

Vehicles: The Department currently maintains two engine/pumper trucks, one tanker truck, one heavy rescue truck, one first response vehicle, and one quick attack pumper². These vehicles, along with the initial cost and the amount covered by donations or grants, are shown in TABLE FP-1, which also shows the current value of the Town's initial cost and the current depreciated value of the Town's cost for each item. **The current depreciated value of the Town's investment in heavy vehicles is \$249,616.**

TABLE FP-1

Estimated Current Depreciated Value of Town's Investment in Fire Protection						
	Year	Original Cost	Donations	Original Cost to Town	Town Cost in 2009 \$	Current depreciated. value of Town Cost
Station	2000	\$76,000	\$0	\$76,000	\$95,076	\$66,553
Vehicles						
Engine 1	1996	\$120,000	\$0	\$120,000	\$164,160	\$57,456
Engine 2	2003	\$175,000	\$20,000	\$155,000	\$180,110	\$126,077
Tanker 1	2006	\$148,000	\$75,000	\$73,000	\$77,745	\$66,083
Heavy Rescue 1	1998	\$110,000	\$110,000	\$0	\$0	\$0
First Response	2001	\$31,000	\$31,000	\$0	\$0	\$0
Quick Attack Pumper	2001	\$87,000	\$87,000	\$0	\$0	\$0
Vehicle Totals		\$671,000	\$323,000	\$348,000	\$422,015	\$249,616
Equipment						
Turn out suits	2003	\$30,500	Grants \$0	\$30,500	\$35,441	\$14,176
Turn out suits	2009	\$30,500	\$0	\$30,500	\$30,500	\$30,500
Breathing Apparatus	2009	\$101,000	\$68,000	\$33,000	\$33,000	\$33,000
Compressor	2004	\$22,000	\$19,000	\$3,000	\$3,420	\$2,565
Hose, Water transfer	2003	\$18,000	\$0	\$18,000	\$20,916	\$14,641
Communications	2003	\$10,000	\$10,000	\$0	\$0	\$0
Communications	2005	\$10,000	\$10,000	\$0	\$0	\$0
Communications	2007	\$15,000	\$10,000	\$5,000	\$5,215	\$4,172
Thermal Imagers	2005	\$22,000	\$15,800	\$6,200	\$6,863	\$5,033
Multi Gas Meters	2005	\$3,200	\$3,200	\$0	\$0	\$0
Siren	2008	\$15,000	\$14,900	\$100	\$100	\$97
Equipment Totals		\$277,200	\$150,900	\$126,300	\$135,455	\$104,184
GRAND TOTALS		\$1,024,200	\$473,900	\$550,300	\$652,546	\$420,354
PLANNED INVESTMENTS						
						\$1,979,042
						\$902,000
TOTAL INCLUDING PLANNED INVESTMENTS						\$3,301,396

Equipment: The department owns a wide range of equipment, including turn-out suits, breathing apparatus and compressor, hose and water transfer devices, communications devices, thermal imaging cameras, multi-gas meters, and an alert siren. These were purchased at different times since 2003, and have varied life spans. Some were partially funded by grants. Using the procedure described for vehicles, the total **current depreciated value of the Town's investment**

² The quick attack pumper is currently stored off site.

for this equipment was estimated to be \$104,184.

The Total current depreciated value of the Town's Investment in the existing station, vehicles, and equipment is \$420,354.

Planned Capital Investments: The Department plans two major capital investments over the coming years: Construction of a new, enlarged, fire station as a part of a planned Public Safety Building, and purchase of a new aerial ladder truck.

The new addition to the station will contain 5,000 square feet of space allocated to the Fire Department, and that portion of the building is expected to cost a total of \$1,082,215. Some of the new space will allow on-site storage of the vehicle currently stored off-site. The remainder will be additional space to provide service to future development. It is estimated that 90% of the total project will provide new capacity and be eligible for funding from impact fee revenues. The Town plans to fund this project with a thirty year bond. The total cost, including interest, will be \$1,975,042. The value of the station addition must be added to the total current depreciated value of the existing fire protection infrastructure. In addition, part of the financial analysis supporting the fire station project is an expenditure of \$4,000 for the development of impact fee formulae. **Altogether, the net change to the current depreciated value of the Town's investment in fire protection infrastructure will be an additional \$1,979,042.**

The need for the aerial truck is driven in part to effectively protect the existing large structures in the town, and in part by the need to be able to protect the anticipated future construction of residential or mixed use buildings of three or more stories. An additional benefit of the aerial truck is that it could likely reduce the ISO insurance rating and subsequently lower insurance rates in the Town. The cost of this vehicle, including interest, is estimated to be \$902,000. Since the truck will meet some current needs, only 75 percent will be eligible for impact fee funding. Since the aerial truck will not be replacing any existing vehicles, the entire cost should be added to the current depreciated value of the Town's Fire Protection infrastructure. **The net change to the current depreciated value of the Town's investment in fire protection infrastructure will be an addition \$902,000.**

All together, these planned capital investments will create a net addition of \$2,881,042, bringing the anticipated **total current depreciated value of the Town's investment in existing and planned fire protection infrastructure to \$3,301,396, as shown in Table FP-1.**

III. Estimating the Value of Property At Risk in the Town:

The value of property at risk to fire is the total value of structures and contents. Since the Town has recently reassessed its property tax base at virtually 100 percent of fair market value, it was

reasonable to base this analysis on the most recent tax data. Examination of the Town’s tax data revealed that the assessed value of all structures (excluding school and municipal structures) was \$316,281,500. The assessed value of all residential structures was \$184,197,514, and the assessed value of all non-residential structures was \$132,083,986 (excluding schools and municipal structures). To round out this analysis, school and municipal officials were contacted and asked to provide the insured value of their respective structures and their contents.

Estimation of the value of contents required a different approach. Consultation with insurance professionals indicated that insurance underwriters assume that the value of contents for residential properties is either 75 or 80 percent of the value of the structure. The latter value is assumed for this analysis. The same professionals indicated that there is no rule of thumb for non-residential properties, that it was established on a case by case basis. For this analysis, it was assumed that the value of contents in non-residential properties would be equal to 150 percent of the value of the structure. TABLE FP-2 presents the estimated value of property currently (2009) at risk in the Town of Hinesburg.

**TABLE FP-2
ESTIMATED VALUE AT RISK (2009)**

Category	Structure	Contents	Total
Residential	\$184,197,514	\$147,358,011	\$331,555,525
Municipal	\$ 2,859,359	\$ 887,528	\$ 3,746,887
Schools	\$ 37,000,000	\$ 5,550,000	\$ 42,550,000
Non-Residential	\$132,083,986	\$198,125,984	\$330,209,970
Totals	\$356,140,859	\$351,921,523	\$708,062,382

The next step is to project this forward to the year 2029, assuming that the planned infrastructure will be adequate to meet demands for a twenty year period. This was done by determining an annual rate of growth in the Town's Grand List. Examination of the Town’s grand list over the past five years revealed that it had been growing at an annual rate of 1.9 percent. It was assumed that this growth rate would continue over the coming twenty years, and this rate of growth was also assumed to apply to the value of property at risk in the Town. When compounded over the twenty year period, the resulting growth factor is 1.457. Applying this to the estimated total value at risk in 2009 results in an estimate of total value at risk in the year 2029 of **\$1,031,646,891**.

Expressing this in terms of units of \$1,000, results in the total of **1,031,647 units**.

IV. Estimating the Cost of Fire Protection Per Unit of Value at Risk:

With the total cost to the Town of creating the 2029 Fire Protection infrastructure estimated at \$3,301,396, and the total value at risk in 2029 estimated as 1,031,647 units of \$1,000, the estimation of the cost per unit of value is straight forward. The cost is divided by the value at risk:

$$\$3,301,396 / 1,031,647 = \$3.2001 \text{ per unit of } \$1,000 \text{ of value.}$$

This can be rounded downward to \$3.20 per unit of \$1,000 of value.

This figure becomes the basis for calculating the Fire Protection Impact Fee.

V. Computation of Base Fire Protection Impact Fee:

The base Fire Protection Impact Fee for a proposed structure is calculated by multiplying the above ratio by the value at risk for that structure. Estimation of the value at risk is slightly different for residential and non-residential structures, so the process must be described separately for the two categories.

A. Base Impact Fee For Residential Properties:

The first step in determining the base fire protection impact fee for residential development is to develop an estimate of the value of the proposed structure. If the application of a zoning permit contains a reliable estimate, that can be used. If not, the following procedure should be followed. The total floor area of the proposed dwelling should be divided into the amount of finished interior floor area and the amount of garage floor area. The structure value can be estimated as \$120 per square foot of finished interior floor area plus \$80 per square foot of garage space.

Consider the following examples:

1. A modest single family dwelling on a two acre lot, to be built in 2010, that contains 2,000 square feet of interior floor space plus 576 square feet of garage (a two car garage). The estimated structure value would be $2,000 \times \$120 + 576 \times \$80 = \$286,800$.
2. A small condominium (one of eight to be built on a four acre parcel in 2012) that contains 1,500 square feet of interior floor area plus 264 square feet of garage. In this case, the estimated structure value would be $1,500 \times \$120 + 264 \times \$80 = \$201,120$.
3. A one bedroom flat (900 square feet) with no garage (one of sixteen to be built on a four acre parcel in 2014) would have an estimated structure value of $900 \times \$120 = \$108,000$.
4. A luxury single family home of 3,500, to be built on a five acre parcel in 2015 square feet of interior space plus a three car garage of 24 x 36 would have an estimated structure value of $3,500 \times \$120 + 864 \times \$80 = \$489,120$.

Once the structure value is estimated, the value of the contents can be estimated at 80% of the

structure value, and the value at risk becomes 1.8 times the estimated structure value. The base fee is determined by converting the estimated value at risk into units of \$1,000, and multiplying the number of units by the base fee of \$3.20 per \$1,000 of value at risk. For the four examples above, this is shown in TABLE FP-3

TABLE FP-3
Base Impact Fees For Example Residential Developments

<u>Example number</u>	<u>Structure value</u>	<u>x 1.8/\$1,000 = units of value at risk</u>	<u>x \$3.20 = base fee</u>
1. Modest SFDU	\$286,800	x 1.8/\$1,000 = 516.24 units	x \$3.20 = \$1,642.37
2. Condominium	\$201,120	x 1.8/\$1,000 = 362.016 units	x \$3.20 = \$ 1,158.45
3. Flat	\$108,000	x 1.8/\$1,000 = 194.4 units	x \$3.20 = \$ 622.08
4. Luxury SFDU	\$489,120	x 1.8/\$1,000 = 880.416 units	x \$3.20 = \$2,817.33

B. Base Impact Fees for Non-Residential Properties:

For non-residential properties, the procedure for computing the base Fire Protection Impact Fees is similar except that the structure value per square foot varies by the type of structure and the use. Each proposed development must be estimated individually, yet it is not practicable to undertake a complete assessment of each property as it will be developed according to plans. A simplified estimation process is needed to facilitate administration of the impact fees.

The process presented below is based on the property assessment manual published by Marshall and Swift which is widely used by Vermont municipal assessors and listers. This manual provides unit value estimates (dollars per square foot) for different uses (i.e., commercial, office, manufacturing, etc.), different types of construction and different qualities of construction. In addition, adjustment factors are provided for local variations such as extreme climate (increased heating system value) or unusual local construction costs. The assessment manual also provides unit costs for site improvements such as general landscaping and parking.

This process begins by estimating the post-construction value of the structure (V_s), as described below. Next, the value of the structure will be used to estimate the value of the contents (V_c) as described above. Finally, the total value at risk (V_t) is estimated as the sum of the value of the structure (V_s) and the value of the contents (V_c). Since the value of the contents is estimated as 1.5 times the value of the structure, the total value at risk (V_t) becomes 2.5 times the value of the structure (V_s).

Drawing on the Marshall & Swift manual, TABLE FP-4, on page 9, was prepared which provides typical unit value estimates (dollars per square foot of structure) for a list of common uses, for a number of different structure types. Since the intent is to generate typical or average value estimates, construction quality was always assumed to be "average", and the associated

values from Marshall And Swift were used.

TABLE FP-4 includes unit assessed value figures (dollars per square foot) for the following uses: Industrial/manufacturing; Engineering and Research; Office (general office activities); Medical Office; General Retail; Automotive Service Facilities; Group Care Facilities; and Motels. It is felt that most applicable non-residential developments will fall into one of these general categories. Four structure types are included in the table: Steel skeleton or reinforced concrete skeleton structures; Masonry or concrete bearing wall structures; Wood frame structures; and Steel (prefabricated) structures. Again, it is felt that most projects will fall into one of these structure categories.

Use of TABLE FP-4 to estimate the value of the structure (V_s) involves selecting the column indicating the proposed use of the structure and following that column to where it intersects with the row representing the proposed structure type. The value at the intersection represents the assessed value of the structure per square foot of building space constructed. For instance, a 20,000 square foot masonry bearing wall structure used for a medical office will have a unit assessed value of \$117.00 per square foot, and a total assessed structure value of 20,000 s.f. x \$117.0/s.f. = \$2,340,000.

It is then necessary to convert this estimate of the value of the structure to an estimate of the value of the structure and its contents. Since it was previously determined that the value of the contents of non-residential properties would equal 1.5 times the value of the structure, the estimated value of the structure plus contents will be 2.5 times the value of the structure as estimated using TABLE FP-4. Using the example started above, the estimated value of the 20,000 square foot medical office building will be 2.5 x \$2,340,000 = \$5,850,000. Measured in units of \$1,000 of value, the value of this building and contents would be 5,850 units.

Thus, the base Fire Protection Impact Fee would be computed at \$3.20 per unit of \$1,000 of value at risk, or:

$$\text{Base Fee} = \$3.20/\text{unit} \times 5,850 \text{ units} = \$18,720.00$$

**TABLE FP-4
ESTIMATED STRUCTURE VALUES PER SQUARE FOOT OF FLOOR SPACE**

TYPE AND QUALITY OF CONSTRUCTION	TYPE OF USE							
	INDUSTRIAL/ MANUFAC- TURING	ENGINEERING AND RESEARCH	OFFICE (GENERAL)	MEDICAL OFFICE	GENERAL RETAIL	AUTO SERVICE FACILITY	ELDERLY CARE FACILITIES	MOTELS
FIREPROOFED STEEL SKELETON OR REINFORCED CONCRETE STRUCTURE	\$67.00	\$90.00	\$128.00	\$138.00	\$86.00	NA	\$105.00	NA
MASONRY OR CONCRETE BEARING WALL STRUCTURE	\$49.00	\$70.00	\$99.00	\$117.00	\$72.00	\$54.00	\$86.00	\$75.00
WOOD FRAME STRUCTURE	\$46.00	\$66.00	\$96.00	\$114.00	\$70.00	\$51.00	\$83.00	\$73.00
PRE-FAB STEEL STRUCTURE	\$45.00	\$65.00	\$90.00	\$107.00	\$68.00	\$40.00	\$80.00	\$73.00

VI. Computing credits to offset possible double payments:

The Town of Hinesburg will be making annual payments for the specified fire protection facilities and equipment for just over 30 years (to include the entire bond repayment period). Some of these payments will be offset by impact fee revenues, but the remainder will be covered by general tax revenues generated from the Town's tax base, including the land on which new development is now taking place and the new development after it is completed. If the new development is assessed impact fees, it should have no further obligation to pay for the planned fire station or truck. It is, however, not possible to separate taxes paid by development that has paid impact fees from the rest of the general tax revenues. Thus, it is necessary to compute a credit to offset such double payments. The credits against the impact fee should equal the present discounted value of the stream of past and future tax payments from the development that would be used for expenditures on fire protection facilities and equipment.

To do this, it is first necessary to tally the annual payments made on the specified fire protection projects, net of anticipated impact fee revenues. This is shown in TABLE FP-5, on the following page. The credits will be based on the stream of tax payments needed to cover these annual expenditures over the coming years. In TABLE FP-5 it is assumed that fire protection impact fees will cover 90 percent of the cost of the station and 75 percent of the cost of the aerial truck.

The stream of tax payments is broken into two parts. The first includes tax payments made before the development comes onto the grand list (i.e., the tax payments on the land), which will be referred to as past tax payments. The second part includes tax payments after the development comes onto the grand list (i.e., the tax payments on land and new structure), which will be called future tax payments.

The next step in the analysis is to estimate credits for past and future tax payments based on units of \$1,000 of assessed value of raw land and of assessed value of the completed structure and land. This begins with the tabulations of the Town's annual expenditures for the specified fire protection facilities and equipment projects, net of any estimated offsetting impact fee revenues, as shown in TABLE FP-5. The analysis then involves estimating the tax rate necessary to cover these annual payments. This is done by dividing the annual payment by the estimated grand list for each year (the future grand list values are based on the current grand list (4,950,396) along with an assumed annual growth rate of 1.9%) and applying that tax rate to a unit value of \$1,000.

**TABLE FP-5
ANNUAL FIRE PROTECTION EXPENDITURES**

Impact fee station share 90%

Impact fee truck share 75%

Year	Station Expenditures	Percent from Impact Fees	Aerial Truck Expenditures	Percent from Impact Fees	Total Expenditures	Expenditures from Impact Fees	Expenditures from taxes
2009	\$0	90%	\$0	75%	\$0	\$0	\$0
2010	\$0	90%	\$0	75%	\$0	\$0	\$0
2011	\$54,111	90%	\$0	75%	\$54,111	\$48,700	\$5,411
2012	\$90,185	90%	\$3,400	75%	\$93,585	\$83,717	\$9,869
2013	\$88,381	90%	\$102,000	75%	\$190,381	\$156,043	\$34,338
2014	\$86,577	90%	\$98,600	75%	\$185,177	\$151,869	\$33,308
2015	\$84,774	90%	\$95,200	75%	\$179,974	\$147,697	\$32,277
2016	\$82,970	90%	\$91,800	75%	\$174,770	\$143,523	\$31,247
2017	\$81,166	90%	\$88,400	75%	\$169,566	\$139,349	\$30,217
2018	\$79,362	90%	\$85,000	75%	\$164,362	\$135,176	\$29,186
2019	\$77,559	90%	\$81,600	75%	\$159,159	\$131,003	\$28,156
2020	\$75,755	90%	\$78,200	75%	\$153,955	\$126,830	\$27,126
2021	\$73,951	90%	\$74,800	75%	\$148,751	\$122,656	\$26,095
2022	\$72,148	90%	\$71,400	75%	\$143,548	\$118,483	\$25,065
2023	\$70,344	90%	\$0	75%	\$70,344	\$63,310	\$7,034
2024	\$68,540	90%	\$0	75%	\$68,540	\$61,686	\$6,854
2025	\$66,737	90%	\$0	75%	\$66,737	\$60,063	\$6,674
2026	\$64,933	90%	\$0	75%	\$64,933	\$58,440	\$6,493
2027	\$63,129	90%	\$0	75%	\$63,129	\$56,816	\$6,313
2028	\$61,326	90%	\$0	75%	\$61,326	\$55,193	\$6,133
2029	\$59,522	90%	\$0	75%	\$59,522	\$53,570	\$5,952
2030	\$57,718	90%	\$0	75%	\$57,718	\$51,946	\$5,772
2031	\$55,914	90%	\$0	75%	\$55,914	\$50,323	\$5,591
2032	\$54,111	90%	\$0	75%	\$54,111	\$48,700	\$5,411
2033	\$52,307	90%	\$0	75%	\$52,307	\$47,076	\$5,231
2034	\$50,503	90%	\$0	75%	\$50,503	\$45,453	\$5,050
2035	\$48,700	90%	\$0	75%	\$48,700	\$43,830	\$4,870
2036	\$46,896	90%	\$0	75%	\$46,896	\$42,206	\$4,690
2037	\$45,092	90%	\$0	75%	\$45,092	\$40,583	\$4,509
2038	\$43,289	90%	\$0	75%	\$43,289	\$38,960	\$4,329
2039	\$41,485	90%	\$0	75%	\$41,485	\$37,337	\$4,149
2040	\$39,681	90%	\$0	75%	\$39,681	\$35,713	\$3,968
2041	\$37,878	90%	\$0	75%	\$37,878	\$34,090	\$3,788

This will yield a tax payment each year on a unit of \$1,000 needed to cover that year's annual expenditure. The credit for past tax payments will be the present value of the stream of tax payment from the beginning of the analysis period up to the year in which the development is constructed. The credit for future tax payments will be the present value of the stream of tax payments from the time the development is constructed until the end of the bond terms. This analysis is shown in TABLE FP-6. Note that while TABLE FP-6 goes only to 2020, the analysis

actually extended to the end of the bond period. The shorter period is shown in TABLE FP-6 because it is assumed that the impact fees will be updated before the end of that period.

TABLE FP-6
IMPACT FEE CREDIT FOR PAST TAX PAYMENTS

ASSUME 2006 MUNICIPAL GRAND LIST EQUALS \$4,950,396
Grand List has grown at 1.9 % and will continue to grow at 1.90%

Unit of land value \$1,000

Unit of total value \$1,000

DWELLING YEAR	ANNUAL EXPENSE	TAX RATE NEEDED	TAX ON \$1,000	CREDITS FOR	CREDITS FOR
				PAST TAXES ON \$1,000 OF LAND	FUTURE TAXES ON \$1,000 OF TOTAL VALUE
2009	\$0	\$0.000	\$0.00	\$0.00	\$0.41
2010	\$0	\$0.000	\$0.00	\$0.00	\$0.43
2011	\$5,411	\$0.001	\$0.01	\$0.00	\$0.45
2012	\$9,869	\$0.002	\$0.02	\$0.00	\$0.46
2013	\$34,338	\$0.006	\$0.06	\$0.02	\$0.46
2014	\$33,308	\$0.006	\$0.06	\$0.09	\$0.42
2015	\$32,277	\$0.006	\$0.06	\$0.16	\$0.38
2016	\$31,247	\$0.006	\$0.06	\$0.23	\$0.34
2017	\$30,217	\$0.005	\$0.05	\$0.30	\$0.31
2018	\$29,186	\$0.005	\$0.05	\$0.37	\$0.27
2019	\$28,156	\$0.005	\$0.05	\$0.44	\$0.23
2020	\$27,126	\$0.004	\$0.04	\$0.51	\$0.20

The figures in the two right hand columns of TABLE FP-6 show the values used to compute credits for both residential and non-residential development. The relevant figures are selected from the row representing the year in which the new dwelling comes onto the grand list.

A. Credits for Residential Development:

In order to use TABLE FP-6 to calculate credits for past tax payments it is necessary to have an estimate of the value of the raw land used for the proposed dwelling. A review of current tax assessments of undeveloped parcels in excess of 25 acres revealed that raw land was, on average, assessed at a value of \$1,200 per acre. For single family detached dwellings, the size of the lot, in acres, can be multiplied by \$1,200 to get the estimated value of raw land for the dwelling. For attached dwellings (condominiums and flats) the size of the total parcel (in acres) can be divided by the number of units permitted on the parcel to get the average amount of raw land (in acres) per unit.

This, in turn, can be multiplied by \$1,200 to get the estimated raw land value for each dwelling. The estimated value of the raw land can then be expressed in terms of units of \$1,000.

Using TABLE FP-6 to calculate the credit for future tax payments requires an estimate of the total assessed value of the dwelling after it is constructed. This includes both the structure value

(estimated on the basis of floor area as described earlier) plus a value for the developed lot. It is assumed that the value of the developed lot will equal 20 % of the structure. For example, a dwelling with an estimated structure value of \$240,000 would have a developed land value of \$60,000 and a total assessed value of \$300,000. This would be expressed in terms of units of \$1,000.

TABLE FP-7 shows the values computed for the four example dwellings, using the assumptions described above. These values provide everything needed to compute the base impact fee and the credits using TABLE FP-6.

**TABLE FP-7
ESTIMATED VALUES FOR EXAMPLE DWELLINGS**

Project Description	2,000 sf single family home, two car garage (24' x 24'), two acre lot, built in 2010	1,500 sf condominium, one car garage (264 sf), one of eight on 4 acres in 2012	900 sf flat, no garage, one of sixteen on a 4 acre lot in 2014	3,500 luxury home with three car garage (864 2f) on 5 acre lot in 2015
Structure value \$120/finished sf plus \$80/sf garage	2,000 x \$120 + 576 x \$80 = \$286,800	1,500 x \$120 + 264 x \$80 = \$201,120	900 x \$120 = \$108,000	3,500 x \$120 + 864 x \$80 = \$489,120
Value at risk 1.8 x structure value	1.8 x \$286,800 = \$516,240.0	1.8 x \$201,120 = \$362,016.0	1.8 x \$108,000 = \$194,400.0	1.8 x \$489,120 = \$880,416.0
Raw land value at \$1,200/acre	2 x \$1,200 = \$2,400	1/2 x \$1,200 = \$600	1/4 x \$1,200 = 400	5 x \$1,200 = \$6,000
Developed lot value 20% or structure	.20 x \$286,800 = \$57,360	.20 x \$201,120 = \$40,224	.20 x \$108,000 = \$21,600	.20 x \$489,120 = \$97,284
Total assessed value, Structure plus lot	\$286,800 + \$57,360 = \$334,160	\$201,120 + \$40,224 = 241,344	\$108,000 + \$21,600 = 129,600	\$489,120 + \$97,284 = 586,944

The actual impact fee will be the base fee computed as the value of the structure plus contents divided by \$1,000, multiplied by \$3.20.

The credit for past tax payments will be the value of raw land divided by \$1,000 multiplied by the appropriate value from the next to right hand column of TABLE FP-6.

The credit for future tax payments will be the total assessed value divided by \$1,000 multiplied by the appropriate value from the right hand column of TABLE FP-6.

These calculations are shown in TABLE FP-8.

TABLE FP-8
IMPACT FEE CALCULATIONS FOR EXAMPLE DWELLINGS

Project Description	2,000 sf single family home two car garage (24' x 24') two acre lot, built in 2010	1,500 sf condominium, one car garage (264 sf), one of eight on 4 acres in 2012	900 sf flat, no garage, one of sixteen on a 4 acre lot in 2014	3,500 luxury home with three car garage (864 2f) on 5 acre lot in 2015
Base Impact Fee value at risk/\$1,000 x \$2.20	$\$516,240/\$1,000 \times \$3.20 = \$1,651.97$	$\$362,016/\$1,000 \times \$3.20 = \$1,158.45$	$\$194,400/\$1,000 \times \$3.20 = \622.08	$\$880,416/\$1,000 \times \$3.20 = \$2,817.33$
Credit for past tax payments	$\$2,400/\$1,000 \times \$0 = \0.00	$\$600/\$1,000 \times \$0.0 = \0.00	$\$400/\$1,000 \times \$0.09 = \0.04	$\$6,000/\$1,000 \times \$0.16 = \0.96
Credit for future tax payments	$\$334,160/\$1,000 \times \$0.43 = \143.69	$\$241,344/\$1,000 \times \$0.46 = \110.02	$\$129,600/\$1,000 \times \$0.42 = \54.43	$\$586,944/\$1,000 \times \$0.38 = \223.04
Net impact fee	\$1,508.28	\$1,048.43	\$567.65	\$2,593.33

The remaining issue regarding residential development is how to treat additions to existing structures where no new dwellings are being created. Such additions clearly generate an increase in the value at risk to loss from fire, and should be subject to the impact fees.

The base impact fee can be computed by first assuming that the estimated construction cost from the Zoning/Building Permit application represents the value of the structure. This can be increased by 80 percent to estimate the value of the structure and content. This is expressed in units of \$1,000 of value. Multiplying this by the base impact fee per \$1,000 of increase in value at risk will produce the base impact fee. For example, a residential addition with an estimated construction cost of \$25,000 would be assessed an impact fee based on $1.8 \times \$25,000 = \$45,000$ (45 units) of value at risk. Multiplying this by the impact fee rate of \$3.20 per \$1,000 of value would yield a base impact fee of $\$3.20 \times 45 = \144.00 .

Credits are slightly different for additions since there is no raw land being assessed tax payments in past years (the land is already being used for development and receiving benefits from fire protection). Thus, there should be no credits for past taxes. The addition, however, will be making future payments, some of which may be used for expenditures for fire protection equipment and facilities. A credit for future tax payments is justified. This can be computed by assuming that the construction cost is the value added to the grand list and using the appropriate value in the right hand column of TABLE FP-6. If the addition enters the Grand list in 2012, TABLE FP-6 indicates that there should be a credit of \$0.46 per unit of \$1,000 of value at risk. The credit would be $\$0.46 \times 25 = \11.50 .

Thus, the net impact fee for the example addition (with construction cost of \$25,000) will be

\$144,000 - \$11.50 = **\$132.50.**

The impact fees calculated above represent the maximum that can be assessed. The Town may decide to reduce them if the reductions retain the equity factors built into the calculations.

B. Credits for Non-Residential Development:

As described above, the fire protection impact fee for non-residential development is computed using estimated total value at risk for the new development (expressed in units of \$1,000) and the base impact fee rate of \$3.20 per unit. Calculating the credits will use the values from TABLE FP-6, but the process for estimating the values of raw land and total assessed value of the new development are slightly different.

The approach to estimating total post development value is similar to that described for estimating structure value, except that the unit values include the cost of site development. These ratios are shown in TABLE FP-9 on the following page, and reflect total post development value exclusive of the value of the raw land, and the value of contents.

TABLE FP-9 is used to estimate the assessed value of the structure and site improvements per square feet of building area, based on the use and type of construction³. The example started on page 8 considers a 20,000 square foot medical office building of masonry bearing wall construction with a structure value of \$2,340,000 and a total value at risk of \$5,850,000. TABLE FP-9 indicates that the value of structure plus site improvements will be \$120.00 per square foot, for a total of \$2,400,000, or 2,400 units of \$1,000.

The value of the raw land prior to development can be based on assessed land value from tax data for the parcel prior to development, if available, or can be estimated as ten percent of the estimated value of the structure plus site improvements. In this example, the assessed land value is not known, so the latter approach is used. The land value becomes ten percent of \$2,400,000, or \$240,000 (240 units of \$1,000). The estimated value of the structure plus site improvements, plus land becomes \$2,400,000 + \$240,000 = \$2,640,000. The estimated values of raw land and total completed development, expressed in units of \$1,000 of value, will be used for estimating credits.

³ Table FP-6 is similar to Table FP-4 except that the values have been increased to reflect the value of site improvements.

**TABLE FP-9
ESTIMATED POST DEVELOPMENT VALUES PER SQUARE FOOT OF FLOOR SPACE**

TYPE AND QUALITY OF CONSTRUCTION	TYPE OF USE							
	INDUSTRIAL/ MANUFAC- TURING	ENGINEERING AND RESEARCH	OFFICE (GENERAL)	MEDICAL OFFICE	GENERAL RETAIL	AUTO SERVICE FACILITY	ELDERLY CARE FACILITIES	MOTELS
FIREPROOFED STEEL SKELETON OR REINFORCED CONCRETE STRUCTURE	\$70.00	\$94.00	\$131.00	\$142.00	\$89.00	NA	\$109.00	NA
MASONRY OR CONCRETE BEARING WALL STRUCTURE	\$52.00	\$73.00	\$102.00	\$120.00	\$76.00	\$57.00	\$89.00	\$79.00
WOOD FRAME STRUCTURE	\$49.00	\$69.00	\$99.00	\$117.00	\$73.00	\$54.00	\$86.00	\$77.00
PRE-FAB STEEL STRUCTURE	\$48.00	\$68.00	\$94.00	\$111.00	\$71.00	\$44.00	\$83.00	\$77.00

The basic impact fee as estimated on page 8, was computed to be $5,850 \times \$3.20 = \mathbf{\$18,720.00}$. From this amount must be deducted credits for past and future tax payments.

TABLE FP-6, presents estimated credits for past tax payments per \$1,000 of raw land value, for the various years that new development might be completed. Continuing with the example, and assuming that the development comes on line in 2013, the 2013 row of TABLE FP-6 is used. The next to right hand column indicates a credit for past tax payments of \$0.02 per \$1,000 of raw land. Since the value of raw land has been estimated at \$240,000 (240 units), the credit for past tax payments would be $240 \times \$0.02 = \mathbf{\$4.80}$.

The right hand column of TABLE FP-6 shows the credits for future tax payments per \$1,000 of total assessed value for the development. For this purpose, it is necessary to use the estimated value of the structure, site improvements, and raw land, (estimated above to be \$2,640,000). For the example, the 2013 row of TABLE FP-6 indicates a credit of \$0.46 per \$1,000 of assessed value. Thus, the credit for future tax payments would be $2,640 \times \$0.46 = \mathbf{\$1,214.40}$.

Thus, the net fire protection impact fee would be the base impact fee less the two credits, or
 $\$18,720.00 - \$4.80 - \$1,214.40 = \$17,500.80$

In the case of non-residential additions or redevelopments, the process of calculating the fees is similar to that described for residential additions. The value of structure is estimated on the basis of Table FP-3, and adjusted to include the value of contents using the adjustment factor of 2.5. This figure represents the new value at risk from the expansion, and should be expressed in units of \$1,000.

Consider, for example, a 10,000 square foot addition to a steel skeleton structure of an engineering and research facility, to come onto the grand list in 2013. TABLE FP-3 indicates a unit value for structure of \$90.00 per square foot. The value of structure and site improvements is $10,000 \times \$90.00 = \$900,000$. The adjusted value of structure plus contents would be $\$900,000 \times 2.5 = \$2,250,000$, or 2,250 units of \$1,000.

For this addition project, the base impact fee would be $2,250 \times \$3.20 = \$7,200.00$.

From this would be deducted a credit for future tax payments. No credit for past tax payments is appropriate since the previous development benefited from any taxes paid for fire protection facilities. In computing the credit for future tax payments it will be assumed that the land value is unchanged and only the increase in structure value and site improvements need be considered. This is estimated on the basis of TABLE FP-9 which shows a unit value of \$94.00 per square foot for this type of structure and use. The estimated value of the structure and site improvements is $10,000 \text{ sf} \times \$94.00/\text{sf} = \$940,000$, or 940 units of \$1,000.

The 2013 row of TABLE FP-6 indicates that the credit for future tax payments will be \$0.44 per unit of \$1,000 of total assessed value of the structure plus site improvements. Thus the credits would be $940 \times \$0.46 = \432.40 .

Combining these steps, the net impact fee levied for this sample non-residential expansion would be

$$\mathbf{\$7,200.00 - \$432.40 = \$6,767.60}$$

Again, these computations represent the maximum impact fees that are justified. The Town may decide to reduce them as long as the reductions retain the equity factors built into the calculations.

VII. Special Credits:

A. Credits For Purchase or Cash contribution towards purchase of identified Fire Protection Facilities or Equipment: If a development subject to these impact fees agrees to purchase or make a cash contribution towards the purchase of any fire protection facilities or equipment that meet the Town's specifications and are specifically included in these fire protection impact fee calculations, the development should be granted a credit against the original fire protection impact fees. The credit should be in the amount equal to the amount of the purchase or cash contribution, but may not exceed the amount of the original fire protection impact fee. For residential developments, the credit shall be distributed equally across all new dwelling units in the development. The credit shall be deducted from the fire protection impact fee assessed against the dwelling unit at the time that the Zoning Permit for construction of that unit is obtained. For non-residential developments, the credit shall be deducted from the total original fee assessed against the development. If the fee is to be paid in several payments, the credit shall be pro-rated against each payment in accordance with that payment's share of the total original fee.

B. Credit for Installation of effective Sprinkler systems: The casualty insurance industry has recognized that the risk of fire loss is substantially reduced in buildings fitted with effective sprinkler systems. It is reasonable to expect that the provision of sprinkler systems would effectively reduce the value at risk as perceived by the local fire department. In order to encourage the installation of sprinkler systems in non-residential buildings, the following credit against the Fire Protection Impact Fee is authorized.

For any newly constructed non-residential building that includes an effective sprinkler system, a credit equal to ten percent⁴ of the base impact fee, calculated as described above, may be awarded. To qualify for this credit the developer must show a letter of intent from an insurance

⁴ The ten percent ratio is based on the determination of the Vermont League of Cities and towns that it could grant a credit of ten percent of premiums to buildings fitted with effective sprinkler systems.

company to issue coverage for the building with a credit for sprinklers, or must demonstrate that the sprinkler system has been designed to meet the guidelines of the Insurance Rating Organization (ISO) with no more than 25 deficiency points.

VIII Exemptions or Waivers:

Vermont's Impact Fee Enabling Ordinance, 24 V.S.A., Section 5205, authorizes municipalities to exempt certain types of development from all or part of impact fees, provided that the development achieves policies or objectives clearly stated in the municipal plan. Thus, the Town's Impact Fee Ordinance may authorize the Selectboard to exempt certain developments from all or part of any duly adopted impact fees. Such developments might include such things as affordable housing, or construction of or additions to municipal facilities where the need for such project has been identified in the current Municipal Plan.