CITY OF BLACK DIAMOND

April 17, 2012 Workstudy Agenda

25510 Lawson St., Black Diamond, Washington

Workstudies are meetings for Council to review upcoming and pertinent business of the City. Public testimony is only accepted at the discretion of the Council.

4:00 P.M. – CALL TO ORDER, ROLL CALL

1.) Fire Impact Fees – Mr. Williamson and Mr. Young

2.) Adjournment

Review Draft

IMPACT FEES

FOR

FIRE PROTECTION FACILITIES

IN

CITY OF BLACK DIAMOND, WASHINGTON

Henderson
Young &
Company

January 13, 2011

1. INTRODUCTION

The purpose of this study is to establish the rates for impact fees for fire protection facilities in the City of Black Diamond, Washington. The City of Black Diamond, located southeast of Seattle, was established in the late 1880's and incorporated in 1959. The city's current population is approximately 4,200. Development proposed in the Villages MPD and the Lawson Hils MPD will increase the population to nearly 20,000. The growth from the MPDs, and any other new development, will impact the City's fire protection service. This study identifies the rates for impact fees that will pay for the capital cost of fire protection facilities needed to serve new development.

This study of impact fees for fire protection facilities for the City of Black Diamond presents the methodology, summarizes the data, and explains the calculation of the fees. The methodology is designed to comply with the requirements of Washington law. This introduction describes the basis for fire protection impact fees, including:

- Definition and Rationale of Impact Fees
- Statutory Basis For Impact Fees
- Responsibility for Public Facilities
- Need for Additional Fire Protection Facilities
- Determining the Benefit of Fire Protection Facilities to Development
- Methodology and Relationship to Capital Facilities Plan
- Data Sources and Calculation

Definition and Rationale of Impact Fees

Impact fees are charges paid by new development to reimburse local governments for the capital cost of public facilities that are needed to serve new development and the people who occupy the new development. New development is synonymous with "growth."

Local governments charge impact fees on either of two bases.

- First, as a matter of policy and legislative discretion, they may want new development to pay the full cost of its share of new public facilities because that portion of the facilities would not be needed except to serve the new development. In this case, the new development is required to pay for virtually all the cost of its share of new public facilities[1].

- Second, local governments may use other sources of revenue to pay for the new public facilities that are required to serve new development. If, however, such revenues are not sufficient to cover the entire costs of new facilities necessitated by new development, the new development may be required to pay an impact fee in an amount equal to the difference between the total cost and the other sources of revenue.

There are many kinds of "public facilities" that are needed by new development, including fire protection facilities, parks, schools, roads, water and sewer plants, libraries, and other government facilities. This study covers fire protection facilities for the City of Black Diamond, Washington. Impact fees for fire protection facilities can be charged to all residential and non-residential development within the City of Black Diamond.

Statutory Basis For Impact Fees

RCW 82.02.050 - 82.02.090 authorizes local governments in Washington to charge impact fees. The impact fees that are described in this study are not mitigation payments authorized by the State Environmental Policy Act (SEPA). There are several important differences between impact fees and SEPA mitigations. Two aspects of impact fees that are particularly noteworthy are: 1) the ability to charge for the cost of public facilities that are "system improvements" (i.e., that provide service to the community at large) as opposed to "project improvements" (which are "on-site" and provide service for a particular development), and 2) the ability to charge small-scale development their proportionate share, whereas SEPA exempts small developments.

The following synopsis of the most significant requirements of the law includes citations to the Revised Code of Washington as an aid to readers who wish to review the exact language of the statutes.

[1] RCW 82.02.050 (2) prohibits impact fees that charge 100% of the cost, but does not specify how much less than 100%, leaving that determination to local governments.

Types of Public Facilities

Four types of public facilities can be the subject of impact fees: 1) public streets and roads; 2) publicly owned parks, open space and recreation facilities; 3) school facilities; and 4) fire protection facilities. *RCW 82.02.050(2) and (4), and RCW 82.02.090(7)*

Types of Improvements

Impact fees can be spent on "system improvements" (which are typically outside the development), as opposed to "project improvements" (which are typically provided by the developer on-site within the development). *RCW 82.02.050(3)(a) and RCW 82.02.090(6) and (9)*

Benefit to Development

Impact fees must be limited to system improvements that are reasonably related to, and which will benefit new development. *RCW 82.02.050(3)(a) and (c).* Local governments must establish reasonable service areas (one area, or more than one, as determined to be reasonable by the local government), and local governments must develop impact fee rate categories for various land uses. *RCW 82.02.060(6)*

Proportionate Share

Impact fees cannot exceed the development's proportionate share of system improvements that are reasonably related to the new development. The impact fee amount shall be based on a formula (or other method of calculating the fee) that determines the proportionate share. *RCW 82.02.050(3)(b) and RCW 82.02.060(1)*

Reductions of Impact Fee Amounts

Impact fees rates must be adjusted to account for other revenues that the development pays (if such payments are earmarked for or proratable to particular system improvements). *RCW 82.02.050(1)(c) and (2) and RCW 82.02.060(1)(b)* Impact fees may be credited for the value of dedicated land, improvements or construction provided by the developer (if such facilities are in the adopted CFP and are required as a condition of development approval). *RCW 82.02.060(3)*

Exemptions from Impact Fees

Local governments have the discretion to provide exemptions from impact fees for low-income housing and other "broad public purpose" development, but all such exemptions must be paid from public funds (other than impact fee accounts). *RCW 82.02.060(2)*

Developer Options

Developers who are liable for impact fees can submit data and or/analysis to demonstrate that the impacts of the proposed development are less than the impacts calculated in this rate study. *RCW 82.02.060(5).* Developers can pay impact fees under protest and appeal impact fee calculations. *RCW 82.02.060(4) and RCW 82.02.070(4) and (5).* The developer can obtain a refund of the impact fees if the local government fails to expend the impact fee payments within 6 years, or terminates the impact fee requirement, or the developer does not proceed with the development (and creates no impacts). *RCW 82.02.080*

Capital Facilities Plans

Impact fees must be expended on public facilities in a capital facilities plan (CFP) element (or used to reimburse the government for the unused capacity of existing facilities). The CFP must conform with the Growth Management Act of 1990, and must identify existing deficiencies in facility capacity for current development, capacity of existing facilities available for new development, and additional facility capacity needed for new development. *RCW 82.02.050(4), RCW 82.02.060(7), and RCW 82.02.070(2)*

New versus Existing Facilities

Impact fees can be charged for new public facilities *(RCW 82.02.060(1)(a))* and for the unused capacity of existing public facilities *(RCW 82.02.060(7))* subject to the proportionate share limitation described above.

Accounting Requirements

The local government must separate the impact fees from other monies, expend the money on CFP projects within 6 years, and prepare annual reports of collections and expenditures. *RCW 82.02.070(1)-(3)*

Responsibility for Public Facilities

In general, local governments that are authorized to charge impact fees are responsible for specific public facilities for which they may charge such fees. The City of Black Diamond is legally and financially responsible for the fire protection facilities (stations and apparatus) it owns. The City currently contracts with King County Fire District 44 for the operation of the stations and apparatus. The City has retained ownership of the stations and apparatus, and will own future stations and apparatus that will serve new development, therefore Black Diamond can charge impact fees for fire protection.

The primary fire protection inventory for the City of Black Diamond Fire Department includes Station 98 that is staffed part-time, 1 engine, 1 aid car, 1 staff vehicle and 1 brush truck.

In addition to the primary response assets, the City of Black Diamond has Station 99 that is not staffed, and 4 reserve apparatus (2 engines, 1 aid car, and 1 staff vehicle) that are dispatched as needed within the City of Black Diamond when a primary apparatus is out of service for repairs or maintenance. The reserve station and apparatus are excluded from the impact fee analysis because they are not used frequently enough to have a material effect on the cost of providing fire protection facilities.

Need for Additional Fire Protection Facilities

The need for fire protection facilities is influenced by a variety of factors, such as response time, call loads, population, non-residential structures, geographical area, topographic and manmade barriers, and standards of the National Fire Protection Association (NFPA).

Black Diamond will become a city of approximately 20,000, so a survey was conducted of Washington cities with populations between 15,000 and 25,000. Eleven cities responded[2] and they average 2.3 fire stations and 7.4 on-duty firefighters.

Emergency calls per dwelling and per square foot of non-residential space can be used to forecast future call loads. The average emergency calls per year in two comparable fire protection providers[3] is 0.116 calls per dwelling unit and 0.1489

[2] Aberdeen, Anacortes, Arlington, Bainbridge Island, Camas, Mercer Island, Moses Lake, Mukilteo, Port Angeles

[3] North Whatcom Fire & Rescue, Eastside Fire & Rescue

calls per 1,000 square feet of non-residential space. Applying these call rates to the 6,050 new dwellings and 1,165,000 square feet of non-residential space in the proposed MPDs would predict 875 emergency calls per year. Adding these calls to the current 170 calls per year produces a total of 1,045 calls per year. If future fire stations handle double the current call load of Station 98, Black Diamond would need a total of 3.1 stations when the MPDs are built out.

The standards of the NFPA indicate the number of firefighters to respond to a structure fire. Specific response standards vary according to the type of emergency, the type of fire protection agency, and the density of development. For this study, it is assumed that approximately 12 firefighters are needed to respond to a fire emergency in Black Diamond. Typical fire station staffing in communities like Blakc Diamond is 4 crew members per station. The NFPA standards indicate a need for 3 fire stations for Black Diamond when fully developed.

As noted above, Black Diamond is expected to grow from its current population of 4,200 to approximately 19,200. The growth of 15,000 people is 3.58 times the current population. If the City's current half-time staffed station is considered the equivalent of 0.5 stations, then 3.58 times 0.5 indicates that the future need for population (excluding commercial development) is at least 1.8 stations.

The preceding analysis of the need for fire stations (with apparatus) in Black Diamond can be summarized as follows.

Basis of Need	Stations Needed
Comparable cities	2.3
Emergency call load	3.1
NFPA response standards	3.0
Population growth	1.8
Average	2.5

As noted above, Black Diamond currently has the equivalent of 0.5 staffed fire stations, therefore new development in Black Diamond creates the need for an additional fire stations (with apparatus)[4].

[4] 2.5 total – 0.5 current = 2.0 additional

Determining the Benefit of Fire Protection Facilities to Development

The law imposes three tests of the benefit provided to development by impact fees: 1) proportionate share, 2) reasonably related to need, and 3) reasonably related to expenditure *(RCW 80.20.050(3))*.

1. Proportionate Share

First, the "proportionate share" requirement means that impact fees can be charged only for the portion of the cost of public facilities that is "reasonably related" to new development. In other words impact fees cannot be charged to pay for the cost of reducing or eliminating deficiencies in existing facilities.

Second, there are several important implications of the proportionate share requirement that are not specifically addressed in the law, but which follow directly from the law:

- Costs of facilities that will be used by new development and existing users must be apportioned between the two groups in determining the amount of the fee. This can be accomplished in either of two ways: (1) by allocating the total cost between new and existing users, or (2) calculating the cost per unit (i.e., per call for service) and applying the cost only to new development when calculating impact fees.

- Impact fees that recover the costs of existing unused capacity can be based on the government's actual cost or the replacement cost of the facility in order to account for carrying costs of the government's actual or imputed interest expense.

The third aspect of the proportionate share requirement is its relationship to the requirement to provide adjustments and credits to impact fees, where appropriate. These requirements ensure that the amount of the impact fee does not exceed the proportionate share.

- The "adjustments" requirement reduces the impact fee to account for past and future payments of other revenues (if such payments are earmarked for or proratable to the system improvements that are needed to serve new growth).

- The "credit" requirement reduces impact fees by the value of dedicated land, improvements or construction provided by the

developer (if such facilities are in the adopted CFP and are required as a condition of development approval). The law does not prohibit a local government from establishing reasonable constraints on determining credits. For example, the location of dedicated land and the quality and design of a donated public facility can be required to conform to adopted local standards for such facilities.

Without such adjustments and credits, the fee-paying development might pay more than its proportionate share.

2. Reasonably Related to Need

There are many ways to fulfill the requirement that impact fees be "reasonably related" to the development's need for public facilities, including personal use and use by others in the family or business enterprise (direct benefit), use by persons or organizations who provide goods or services to the fee-paying property (indirect benefit), and geographical proximity (presumed benefit). These measures of relationship are implemented by the following techniques:

- Fire protection is provided by the City of Black Diamond to all properties regardless of the type of use of the property, therefore, the fire protection impact fees are charged to all residential and non-residential development of the City of Black Diamond because all types of property benefit from fire stations and apparatus.

- The relative needs of different types of growth are considered in establishing fee amounts. Fire protection impact fee rates are calculated separately for residential and non-residential land uses.

- Fee-payers can pay a smaller fee if they can demonstrate that their development will have less impact than is presumed in the calculation of the impact fee schedule for their classification of property. Such reduced needs must be permanent and enforceable (i.e., through land use restrictions).

- Washington law requires one or more service areas as a way of connecting a unit of development and a fire protection facility. All impact fees paid by new development in the service area would be required to be spent on new fire protection facilities in the same service area. The benefits provided by individual fire protection apparatus are not limited to geographic areas surrounding each station within the City of Black Diamond because the apparatus

are frequently called upon to assist with an incident in a different area of the service area when the seriousness of the call suggests a need for additional units or when backup is requested. These response policies make fire protection facilities function as a single system, and all properties benefit from improvements to any part of the system, therefore the fire protection impact fee for each land use category is calculated, collected, and expended in a single service area covering all of the City of Black Diamond.

3. Reasonably Related to Expenditures

Two provisions of the law tend to reinforce the requirement that expenditures be "reasonably related" to the development that paid the impact fee. First, the requirement that fee revenue must be earmarked for specific uses related to public facilities ensures that expenditures are on identifiable projects, the benefit of which can be demonstrated. Second, impact fee revenue must be expended within 6 years, thus requiring a timeliness to the benefit to the fee-payer.

Methodology and Relationship to Capital Facilities Plan

Impact fees for fire protection facilities will be expended on the list of projects in the city's Capital Facilities Plans. The projects in the CFP include the stations and apparatus needed for new development, as quantified above (see "Need for Additional Fire Protection Facilities"). The costs from the CFP are calculated in this study to identify costs per unit of capacity of fire protection facility. The costs per unit of capacity are applied to the incident rate of fire and medical calls per dwelling unit and per non-residential square foot. The amount of the fee is determined by charging each fee-paying development for the number of units of demand that it generates. This methodology fulfills the statutory requirements that impact fees be based on the CFP, and also be based on a formula or other methodology.

Data Sources and Calculation

Data Sources

The data in this study of impact fees for fire protection facilities in the City of Black Diamond, Washington was provided by the City of Black Diamond and King County Fire District 44 unless a different source is specifically cited.

Data Rounding

The data in this study was prepared using computer spreadsheet software. In some tables in this study, there will be very small variations from the results that would be obtained using a calculator to compute the same data. The reason for these insignificant differences is that the spreadsheet software was allowed to calculate results to more places after the decimal than is reported in the tables of these reports. The calculation to extra places after the decimal increases the accuracy of the end results, but causes occasional differences due to rounding of data that appears in this study.

2. FIRE PROTECTION IMPACT FEE PER UNIT OF DEVELOPMENT

This chapter presents the methodology, summarizes the data and explains the calculation of the impact fees. The data is presented in four tables.

1. Fire Station Capital Cost per New Unit of Development

Table 1 identifies the fire station capital cost per new dwelling unit and per non-residential square foot. There are several steps involved in the calculations shown in Table 1.

Annual Station Cost

The first step in calculating the station cost per new unit of development is to determine the annual station cost per square foot. This cost is determined by dividing the station capital cost per square foot by its useful life.

Rows A through C of Table 1 calculate the average annualized fire station cost per square foot. The cost per square foot is based on a survey of comparable fire stations in King County. The costs include land, building, "soft costs" of design, permitting and construction management, and furnishings and equipment.

The useful life represents the length of time the station will last before requiring significant capital cost for repair or renovation. The annualized cost is calculated by dividing the $405.00 cost per square foot (Row A) by the 50 year useful life (Row B), resulting in an annualized station cost of $ 8.10 per square foot, as shown in Row C of Table 1.

Station Square Feet Per Fire and Medical Incident

The next step in calculating the station cost per new unit of development is to determine the amount of station square feet per fire and medical incident. This amount is determined by dividing the fire station inventory by the annual incidents.

This calculation is shown in Rows D through F of Table 1: the Station 98 inventory of 4,915 square feet (from Row D) is divided by the 170 annual incidents (from Row E). The result, shown in Row F, is 28.91 station square feet of fire station space per fire and medical incident.

Station Cost Per Fire and Medical Incident

Next, the station cost per fire and medical incident is calculated by multiplying the annual station cost per square foot by the station square feet per fire and medical incident.

The result of this calculation is shown in Row G of Table 1: the station cost per square (from Row C) is multiplied times the station square feet per incident (from Row F). The result is the station cost of $234.19 per fire and medical incident. In other words, each fire and medical incident "uses up" $234.19 worth of fire station.

Station Capital Cost for Residential Development (per dwelling unit)

The capital station cost of fire and medical incidents per dwelling unit is determined by multiplying the annual fire and medical incidents per dwelling unit times the annual station capital cost per fire and medical incident, then multiplying that result times the useful life of the fire station.

In Rows H through K of Table 1 the fire and medical incident rate of 0.116 emergency calls per year per dwelling unit[5] is multiplied by the annual capital cost of $234.19 per fire incident (from Row G), resulting in a dwelling unit cost of $27.1655 per year (Row I). Since a fire station lasts 50 years the residential dwelling unit needs to pay 50 times the annual rate, therefore the annual cost of $27.1655 is then multiplied times the 50-year useful life of the station (shown in Row J) to calculate the station capital cost of $1,358.27 per dwelling unit (in Row K).

Station Capital Cost for Non-Residential Development (per square foot)

The capital station cost of fire and medical incidents per non-residential square foot is determined the same way as for residential development, but using the incidents per non-residential square foot.

In Rows L through O of Table 1 the fire and medical incident rate of 0.0001489 emergency calls per year per non-residential square foot is multiplied by the annual capital cost of $234.19 per fire incident (from Row G), resulting in a non-residential square foot cost of $0.0349 per year. The annual cost of $0.0349 is then

[5] The incident rate in Rows H and L represents the average incident rate of two Washington fire service providers with characteristics relevant to Black Diamond: North Whatcom Fire & Rescue, and Eastside Fire and Rescue.

multiplied times the 50-year useful life of the station (shown in Row N) to calculate the station capital cost of $1.74 per non-residential square foot (see Row O).

Table 1: Fire Station Cost per New Dwelling Unit and Non-Residential Square Foot

Component	Data	Units
A. Cost	405.00	$ per square foot
B. Useful Life	50	years
C. Annual Cost	8.10	$ (A ÷ B)
D. Station Square Feet	4,915	square feet
E. Annual Incidents	170	emergency calls
F. Square Feet per Incident	28.91	square feet (D ÷ E)
G. Cost Per Incident	234.19	$ (C x F)
Residential Development (per dwelling		
H. Annual Incidents	0.116	emergency calls per year per dwelling
I. Cost per Year	27.1655	$ (G x H)
J. # Years (Useful Life)	50	years (same as B)
K. Cost for Useful Life	1,358.27	$ (I x J)
Non-Residential Development (per square foot)		
L. Annual Incidents	0.0001489	emergency calls per year per sq ft of non-residential
M. Cost per Year	0.0349	S (G x L)
N. # Years (Useful Life)	50	years (same as B)
O. Cost for Useful Life	1.74	S (M x N)

2. Fire Apparatus Capital Cost Per New Unit of Development

Table 2 identifies the fire apparatus capital cost per new dwelling unit and per non-residential square foot. There are several steps involved in the calculations shown in Table 2. The methodology is similar to fire station costs (Table 1), but applied to several types of fire apparatus (engines, aid cars, staff vehicles, and brush trucks).

Annual Apparatus Cost

The first step in calculating the apparatus cost per new unit of development is to identify and annualize the cost of each type of apparatus. The capital cost per

apparatus is based on the cost of primary response apparatus and major support equipment. The annualized capital cost per apparatus is determined by dividing the capital cost of each type of apparatus by its useful life:

Rows A through C of Table 2 calculates the average annualized apparatus cost for each of the primary response apparatus: engine, aid car, staff vehicle and brush truck. The cost per apparatus includes the vehicle, fire and medical equipment, and communications equipment.

The useful life of each apparatus is shown in Row B of Table 2 and represents the length of time the apparatus will last before requiring replacement. The annualized cost is calculated by dividing the cost per apparatus (Row A) by the useful life (Row B), resulting in an annualized apparatus cost for each apparatus type, as shown in Row C of Table 1. For example, the cost of an engine is $726,856 and it's expected useful life is 15 years. Annualizing the cost based on a 15 year life results in a cost of $48,457.07 per year.

Apparatus Cost Per Fire and Medical Response

The next step in calculating the apparatus cost per new unit of development is to determine the apparatus cost per fire and medical response. The capital cost per fire and medical response is calculated for each apparatus by dividing the annualized cost of the apparatus by the total annual incidents responded to by each type of apparatus. Each type of apparatus is analyzed separately because the number and type of apparatus responding to an incident varies depending on the type and severity of the incident.

This calculation is shown in Rows D and E of Table 2: the annualized cost of one of each type of apparatus (from Row C) is divided by the number of emergency responses for each type of apparatus (Row D) resulting, in Row E in the cost per response for each apparatus type. For example, an engine responded to 77 fire and medical emergency incidents in a year. Dividing the annualized cost of an engine of $48,457.07 (Row C) by the 77 annual responses results in an engine cost of $629.31.

Apparatus Cost Per Fire and Medical Incident

The apparatus cost per fire and medical incident is calculated by multiplying the apparatus cost per response by the percent of fire and medical incidents each type of apparatus responds to. This calculation accounts for the fact that different types of fire and medical emergencies need different types or combinations of apparatus. In many cases, more than one apparatus is dispatched to an emergency incident. The number and type of apparatus dispatched to each incident varies depending on the type and severity of the incident. As a result, the usage of apparatus varies among the types of apparatus. The result of this calculation

accounts for the effect of usage on the cost of apparatus per fire and medical incident.

The percent of fire responses by each type of apparatus is shown in Row F of Table 2. The cost per emergency incident in Row G is calculated by multiplying the cost per response (from Row E) by the percentage in Row F. For example, engines respond to 45% of all emergency fire and medical incidents, therefore the engine cost per incident is based on the engine response cost of $629.31 (from Row E) times 45% (see Row F) which results in $283.19 per incident. Another way to understand this data is that one fire or medical incident involves 0.45 engines, therefore the cost of responding to a fire or medical incident includes 45% of the cost of an engine, and therefore an average incident "uses up" $283.19 of fire engine.

Apparatus Capital Cost for Residential Development (per dwelling unit)

The apparatus cost of fire and medical incidents per dwelling unit is determined by multiplying the annual fire and medical incidents per dwelling unit times the annual apparatus cost per fire and medical incident, then multiplying that result times the useful life of the apparatus. This calculation is done separately for each apparatus type.

In Rows H through K of Table 2 the fire and medical incident rate of 0.116 emergency calls per year per dwelling unit[6] is multiplied by the annual capital cost per apparatus per fire and medical incident (from Row G). Since an apparatus lasts for a certain number of years the residential dwelling unit needs to pay for the apparatus over the apparatus useful life. For example an engine has a useful life of 15 years (see Row J), therefore, the annual engine cost per incident of $32.8501 (from Row I) is multiplied times the engine useful life of 15 years to calculate the engine capital cost of $492.75 per dwelling unit (in Row K). This calculation is repeated for each of the apparatus types.

Apparatus Capital Cost for Non-Residential Development (per square foot)

The apparatus cost of fire and medical incidents per non-residential square foot is is determined the same way as for residential development, but using the incidents per non-residential square foot.

In Rows L through O of Table 2 the fire and medical incident rate of 0.0001489 emergency calls per year per non-residential square foot is multiplied by the annual apparatus cost per fire and medical incident for each apparatus (from

[6] Incident rates for residential and non-residential properties are the same as in Table 1, above.

Row G). Since an apparatus lasts for a certain number of years the non-residential development needs to pay for the apparatus over its useful life. For example an engine has a useful life of 15 years (see Row J), therefore, the annual engine cost per year of $0.0422 per square foot (from Row M) is multiplied times the engine useful life of 15 years to calculate the engine capital cost of $0.63 per non-residential square foot (in Row O). This calculation is repeated for each of the apparatus types.

Table 2: Fire Apparatus Cost per New Dwelling Unit and Non-Residential Square Foot

Component	Units	Engine	Aid Car	Staff Vehicle	Brush Truck
A. Cost	$	726,856	251,420	55,000	90,000
B. Useful Life	years	15	15	10	20
C. Annual Cost	$ (A ÷ B)	48,457.07	16,761.33	5,500.00	4,500.00
D. Responses per Year	emergency calls	77	114	68	3
E. Cost per Response	$ (C ÷ D)	629.31	147.03	80.88	1,500.00
F. Usage at Incidents		45%	67%	40%	2%
G. Cost Per Incident	$ (E x F)	283.19	98.51	32.35	30.00
Residential Development (per dwelling unit)					
H. Annual Incidents	emergency calls per	0.116	0.116	0.116	0.116
I. Cost per Year	$ (G x H)	32.8501	11.4271	3.7529	3.4800
J. # Years (Useful	years (same as B)	15	15	10	20
K. Cost for Useful Life	$ (I x J)	492.75	171.41	37.53	69.60
Non-residential Development (per square foot)					
L. Annual Incidents	emergency calls per year/sq ft	0.0001489	0.0001489	0.0001489	0.0001489
M. Cost per Year	$ (G x L)	0.0422	0.0147	0.0048	0.0045
N. # Years (Useful	years (same as B)	15	15	10	20
O. Cost for Useful Life	$ (M x N)	0.63	0.22	0.05	0.09

3. Total Cost of Response to Fire and Medical Emergencies for Each Land Use Category

The station and apparatus cost per unit of development (from Tables 1 and 2) are combined to determine the total fire and medical cost per dwelling unit or non-residential square foot.

In Table 3 the station and apparatus cost per unit of development (from Tables 1 and 2) are added together to determine the fire and medical cost per dwelling unit or non-residential square foot

Table 3: Total Cost of Responses to Fire Emergencies By Land Use Category

Cost Component	Residential Cost	Non-Residential Cost
Station	$ 1,358.2747	$ 1.7435
Engine	492.7517	0.6325
Aid Car	171.4067	0.2200
Staff Vehicle	37.5294	0.0482
Brush Truck	69.6000	0.0893
Total	2,129.5625	2.7336

4. Fire Impact Fee Per Unit of Development

Adjustments and Impact Fees

The final step in determining the fire protection facilities impact fee is to "adjust" (i.e., reduce) the cost per dwelling unit or non-residential square foot Adjustments reflect (1) any credits for other revenue from existing and new development that the City of Black Diamond will use to pay for part of the cost of the same fire services facilities that are the basis of the impact fee (a "revenue credit"), and (2) the portion of costs of new facilities that benefit existing development.

Black Diamond does not have any sources of revenue to pay new development's share of the cost of new fire stations and apparatus, therefore no adjustment is made for "revenue credits". New development will be given an adjustment for future payments of other revenues that are used to pay for the same new fire services facilities that are required to serve the new development.

Existing development in Black Diamond will benefit from new fire stations and apparatus, therefore an adjustment is made to account for that benefit. The amount of the adjustment corresponds to the portion of current calls (170) as a percent of total future calls (1,045). Thus the adjustment is 170 ÷ 1,045 = 16.27%.

Table 4 shows the total cost per dwelling unit or non-residential square foot from Table 3, the 16.27% adjustment, and the impact fee after the adjustment is subtracted from the full cost.

Table 4: Impact Fees By Land Use

Land Use	Total Fire & Medical Cost Per Unit Of Development	Adjustment For Benefit to Current City Development @ 16.27%	Fire Protection Impact Fee Per Unit of Development	
Residential	$ 2,129.56	$ 346.44	$ 1,783.13	per dwelling unit
Non-Residential	2.73	0.44	2.29	per square foot

- Class size for grade 5 should not exceed 26 students.
- Class size for grades 6-8 should not exceed 28 students.
- Class size for grades 9-12 should not exceed 28 students.

The district anticipates using the following student generation rates for single and multiple family dwelling units cited in their 2008-2013 Capital Facilities Plan.

Table 8-10. Student Generation Rates

Students per unit	Single Family	Multifamily
Elementary	.401	.137
Middle School	.135	.045
High School	.166	.056
Total	.702	.238

Source: Enumclaw School District (5/08)

To accommodate the current student population and future needs, it is anticipated that the district will need four new elementary schools, two middle schools, and one high school in the City over the long term. The existing Black Diamond Elementary School is slated for reconstruction to add capacity, and is scheduled to open in 2011.

The school attendance area for the elementary and secondary schools would likely extend beyond the City limits to serve students within the district. It should be noted that these projections include the areas surrounding Lake Sawyer currently served by the Tahoma and Kent School Districts. Depending on variable growth between individual portions of the planning area, the Enumclaw School District will only be required to absorb a portion of the growth occurring within the City.

8.7. Fire and Emergency Medical Services

8.7.1. Fire and Emergency Medical Service Concept, Objective, and Policies

Fire and Emergency Medical Services Concept

As the City grows over the next 20 years, additional fire stations, equipment and personnel will be required to maintain adequate fire and emergency medical services. Additional water system improvements will also be needed to maintain adequate fire flow (i.e., water for fire protection).

~~The Capital Facilities Element requires adequate fire flow through the water system and adopted standards for fire flow. The water systems within new development should be served off a looped line, if required to achieve fire flow. These new systems should also be designed and constructed to meet fire flow standards.~~

Fire and Emergency Medical Services Objectives and Policies

Policy CF-17: The City's level of service for determining the need for fire and emergency medical capital facilities and equipment will consider relevant factors such as response time, call loads, growth of population and non-residential structures, geographical area, topographic and manmade barriers, and standards of the National Fire Protection Association.

~~The City shall contract with the district to maintain a ratio of 1.4 on-duty career firefighters per 1,000 population to protect the suburban and urban areas of the City until such time as the City reaches a population of 10,000. Thereafter, the ratio of on-duty career firefighters per thousand residents will decrease incrementally to no less than 0.89 on-duty firefighter per 1,000 population. The district will continue to foster and support the volunteer system utilizing volunteers to augment the LOS provided by the career staff.~~

~~The staffing level of 1.4 on-duty career firefighters per 1,000 population is consistent with national averages, but is greater than the 2007 staffing level of 0.5 on-duty firefighters per 1,000 population inside the City.~~

Policy CF-18: The City will ~~shall~~ take reasonable action to ensure ~~development~~ that there is a fire station within 1.5 miles radius or 6 minutes travel time on paved roads from developed properties in the City. ~~distance of a fire station upon built roads.~~ The City's current station 99 will not be considered when determining compliance with this Policy.

~~Policy CF-19: It is determined that 8,000 square feet is an adequate size for satellite fire stations.~~

Policy CF-1920: The City will implement ~~Implement~~ impact fees for fire and emergency medical ~~Fire and Emergency Medical~~ capital facilities and equipment. ~~Impact fees will be waived for sprinklered buildings less than 32 feet in finished height and properly sprinklered residences.~~

~~Policy CF-21: Replace Station 99 and Engine 99.~~

Policy CF-202: The City will ~~shall negotiate with King County Fire Protection District 44 to~~ develop a staffing and equipment plan that provides ~~providing the best possible~~ fire, rescue, and emergency medical services for ~~citizens as~~ the City as it grows.

~~Policy CF-23: The City shall pursue a Concurrency Management Plan for fire and BLS services.~~

8.7.2. Inventory

The City owns two fire stations, three fire engines, one brush truck, one aid car, and two staff vehicles. Station 98 is located on SE 296th Street, near Lake Sawyer. It is staffed half-time. Station 99 is located in the City Center, and it is not staffed. Several of the fire apparatus are older models that do not meet current standards.

The City contracts with Mountain View Fire and Rescue, King County Fire Protection District 44, to provide ~~provides~~ fire protection, fire prevention, rescue, emergency medical services, and other services that protect life or property. ~~via a~~ The current contract between ~~with~~ the City and the District ~~pursuant to a~~ is the 2006 inter-local agreement (ILA).

Mountain View Fire and Rescue is a combination department, consisting of both career and volunteer personnel, and has ~~26~~ 28 career staff ~~firefighters~~ and approximately 100 volunteers, 23 ~~32~~ of which are assigned to the City. ~~It~~ The District services a combined area of approximately 70 square miles encompassing an estimated population of 27,000. ~~Of the total population served,~~ Approximately 4,200 of those people live in the City.

The district operates out of eight stations, including the two ~~of which are~~ located in the City~~: Station 98 located on SE 296th Street, near Lake Sawyer, and Station 99 located in the City Center. The ILA requires that Station 98 have one career lieutenant and one career firefighter/emergency medical technician (EMT) on duty during the day. Staffing at night is provided by two volunteer firefighter/EMTs. Station 99 is staffed solely by volunteers.~~

District equipment includes 12 structure fire apparatus, including three water tenders (2,000 gallons each), three brush trucks, one medium rescue vehicle, one light rescue vehicle, five aid vehicles, a special operations support vehicle, a 14-person transport van, ~~a five-ton flatbed truck,~~ various four-wheel drive command vehicles, and a training/safety officer vehicle. ~~Of this equipment, the City owns three of the fire engines, one brush truck, one aid car, and two staff vehicles counted.~~

Pursuant to the April 2006 ILA between the City and District 44, one career lieutenant and one career firefighter/EMT are on duty at the Lake Sawyer station between 0600 hours and 1800 hours each day. Staffing at night is provided by two volunteer firefighters/EMTs. Station 99 is staffed only by volunteers responding from home. The staff assigned in the City is supported by a cadre of volunteers and career staff assigned throughout the District. Nighttime coverage, between 1800 hours and 0600 hours, is augmented by volunteer staff at Station 92, Station 93 on SE Covington Sawyer Road, Station 97 on Green Valley Road, and Station 94 near Krain Corner. Additionally, Station 92 has a staff of two career firefighters on duty 24 hours each day.

Advanced Life Support (ALS) services are provided by King County Medic One. ALS services are funded separately through a countywide property tax assessment of $0.30 per $1,000 valuation.

8.7.3. Level of Service

As described in Policy CF-17, the City's level of service for determining the need for fire and emergency medical capital facilities and equipment is based on a variety of relevant factors such as response time, call loads, growth of population and non-residential structures, geographical area, topographic and manmade barriers, and standards of the National Fire Protection Association. This approach to level of service uses analyses of all these variables rather than a single formula to determine the number and location of fire stations and apparatus.

~~The City has an LOS standard of 1.4 on-duty career firefighters per 1,000 population. Pursuant to the April 2006 ILA between the City and District 44, one career lieutenant and one career firefighter/EMT are on duty at the Lake Sawyer station between 0600 hours and 1800 hours each day. Staffing at night is provided by two volunteer firefighters/EMTs. Station 99 is staffed only by volunteers responding from home. The staff the City is supported by a cadre of volunteers assigned to Station 98 and Station 99, as well as career staff assigned to nearby stations. Nighttime coverage, between 1800 hours and 0600 hours, is augmented by volunteer staff at Station 92, Station 93 on SE Covington Sawyer Road, Station 97 on Green Valley Road, and Station 94 near Krain Corner.~~

~~The National Fire Protection Association (NFPA) establishes six trained firefighters arriving to a scene within 14 minutes of an alarm 80% of the time for volunteer fire departments in rural areas (defined as areas with a population density less than 500 people per square mile; District 44 has roughly 350 people per square mile) as a sufficient number of members to operate safely and effectively.~~

~~2007 response data indicates Station 98 had a response time of 6.98 minutes or less 80% of the time, and Station 99 has a response time of 8.28 minutes or less 80% of the time. Both stations' response times are well below the NFPA's standard. Note, both fire and EMS responses were considered together because of the limited database.~~

8.7.4. Future Needs

Black Diamond is expected to grow from its current population of 4,200 to approximately 19,200, so a survey was conducted of Washington cities with

populations between 15,000 and 25,000. Eleven cities responded[1] and they average 2.3 fire stations and 7.4 on-duty firefighters.

Emergency calls per dwelling and per square foot of non-residential space can be used to forecast future call loads. The average emergency calls per year in two comparable fire protection providers[2] is 0.116 calls per dwelling unit and 0.1489 calls per 1,000 square feet of non-residential space. Applying these call rates to the 6,050 new dwellings and 1,165,000 square feet of non-residential space in the proposed MPDs would predict 875 emergency calls per year. Adding these calls to the current 170 calls per year produces a total of 1,045 calls per year. If future fire stations handle double the current call load of Station 98, Black Diamond would need a total of 3.1 stations when the MPDs are built out.

The standards of the NFPA indicate the number of firefighters to respond to a structure fire. Specific response standards vary according to the type of emergency, the type of fire protection agency, and the density of development. It is assumed that approximately 12 firefighters are needed to respond to a fire emergency in Black Diamond. Typical fire station staffing in communities like Black Diamond is 4 crew members per station. This NFPA standard indicates a need for 3 fire stations for Black Diamond when fully developed.

As noted above, Black Diamond is expected to grow from its current population of 4,200 to approximately 19,200. The growth of 15,000 people is 3.58 times the current population. If the City's current half-time staffed station is considered the equivalent of 0.5 stations, then 3.58 times 0.5 indicates that the future need for population (excluding commercial development) is at least 1.8 stations.

The preceding analysis of the need for fire stations (with apparatus) in Black Diamond can be summarized as follows.

Basis of Need	Stations Needed
Comparable cities	2.3
Emergency call load	3.1
NFPA response standards	3.0
Population growth	1.8
Average	2.5

[1] Aberdeen, Anacortes, Arlington, Bainbridge Island, Camas, Mercer Island, Moses Lake, Mukilteo, Port Angeles

[2] North Whatcom Fire & Rescue, Eastside Fire & Rescue

As noted above, Black Diamond currently has the equivalent of 0.5 staffed fire stations, therefore new development in Black Diamond creates the need for two additional fire stations (with apparatus)[3].

Specific capital improvement projects for fire stations and apparatus are listed in the tables at the end of this Capital Facilities Element.

~~As the City and district increase in population, the district may need to increase the number of volunteer and career firefighters available per shift.~~

~~The City should create a work plan to address its long-term fire and emergency services needs as a result of anticipated development and growth.~~

8.8. Utilities

This Utilities Element has been developed in accordance with Section 36.70A.070 of the GMA. It describes how the existing and planned utility capacity will be financed, and supports the City's Land Use Element.

Suggested items to be included in the Utilities Element and recommendation for preparing the element are delineated in WAC 365-195-320. These are as follows:

- Integration of the general location and capacity of existing and proposed utility lines with the Land Use Element of the City of Black Diamond Comprehensive Plan. For the purposes of this step, proposed utilities are understood to be those awaiting approval when the comprehensive plan is adopted.
- An analysis of the capacity needs for various utilities over the planning period to serve the growth anticipated at the location and densities proposed within the jurisdiction's planning area.
- A schematic identification of the general location of utility lines and facilities required to furnish anticipated capacity needs for the planning period within the jurisdiction's planning area. This should be a part of the process of identifying lands useful for public purposes to be carried out by planning jurisdictions.
- Evaluation of whether any utilities should be identified and classified as essential public facilities, subject to the separate siting process established under the comprehensive plan for such facilities, and if so, provision for applying that process as appropriate.
- Creation of local criteria for siting utilities over the planning period, involving:
    a. Consideration of whether any siting proposal is consistent with the locations and densities for growth contemplated in the Land Use Element.

[3] 2.5 total – 0.5 current = 2.0 additional