2016 – 2035

Capital Improvement Plan

King County Fire District 28

Capital Facilities & Equipment Plan

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King County Fire District 28 Capital Facilities & Equipment Plan

Prepared For:

King County Fire District 28 Board of Commissioners

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King County Fire District 28

August 2015

This plan as prepared is reflective of the economic downturn which occurred in 2008/2009 following the national real estate bubble created between 2002 and 2007. The resulting devaluation of local real estate has left public sector agencies such as King County Fire District 28 (KCFD28) who are dependent upon ad valorem taxes struggling to make ends meet. In an effort to recover from the economic downturn KCFD28 attempted to run a levy rate increase to $1.50 per assessed thousand. This ballot measure failed and resulted in staffing reductions and major cuts to the operating budget while service demand continued to increase. The following pages of this plan reflect a strategic, responsible, and cost conscious compromise reflective of the current economy.

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1. Capital Facilities & Equipment Plan

1.1. Introduction & Purpose:

The purpose of this document is to identify the capital resources necessary for King County Fire Protection District #28 who does business as King County Fire District 28 (KCFD28), to transition from a rural, to urban and suburban service delivery model. KCFD28's intent is to sustain adequate levels of service consistent with their adopted service standards and the Land Use elements of the City of Enumclaw and King County Comprehensive Plans. The goal of this plan is to forecast the next twenty years of capital facilities needs and establish an achievable six year funding plan that incrementally provides the resources necessary to maintain adequate service delivery prior to or concurrently with the impacts of development.

As the Capital Facilities Plan for King County Fire District 28, this plan contains all elements required by Washington Law to comply with the Washington State Growth Management Act (GMA) as set forth in RCW 36.70A.070(3):

> *"(3) A capital facilities plan element consisting of: (a) An inventory of existing capital facilities owned by public entities, showing the locations and capacities of the capital facilities; (b) a forecast of the future needs for such capital facilities; (c) the proposed locations and capacities of expanded or new capital facilities; (d) at least a six-year plan that will finance such capital facilities within projected funding capacities and clearly identifies sources of public money for such purposes; and (e) a requirement to reassess the land use element if probable funding falls short of meeting existing needs and to ensure that the land use element, capital facilities plan element, and financing plan within the capital facilities plan element are coordinated and consistent."*

The underlying premise of this document is that as the community continues to grow, additional resources will be required to adequately meet the growing demand for services. It is assumed that a direct relationship exists between population and demand for services which directly links to a need for resources. This plan focuses on achieving the adopted levels of service for King County Fire District 28's 20 year planning documents by utilizing a "concurrency" philosophy to service delivery; meaning fire and emergency service capacity must grow concurrently with development. To determine future resource needs, this document utilizes the 20 year growth predictions found in the City of Enumclaw and King County Comprehensive Plans. For purposes of this plan, capital improvements are defined as real estate, structures or collective equipment purchases anticipated to have a cost over $10,000 and an expected useful life of at least 3 years.

1.2. Background & Organizational Overview:

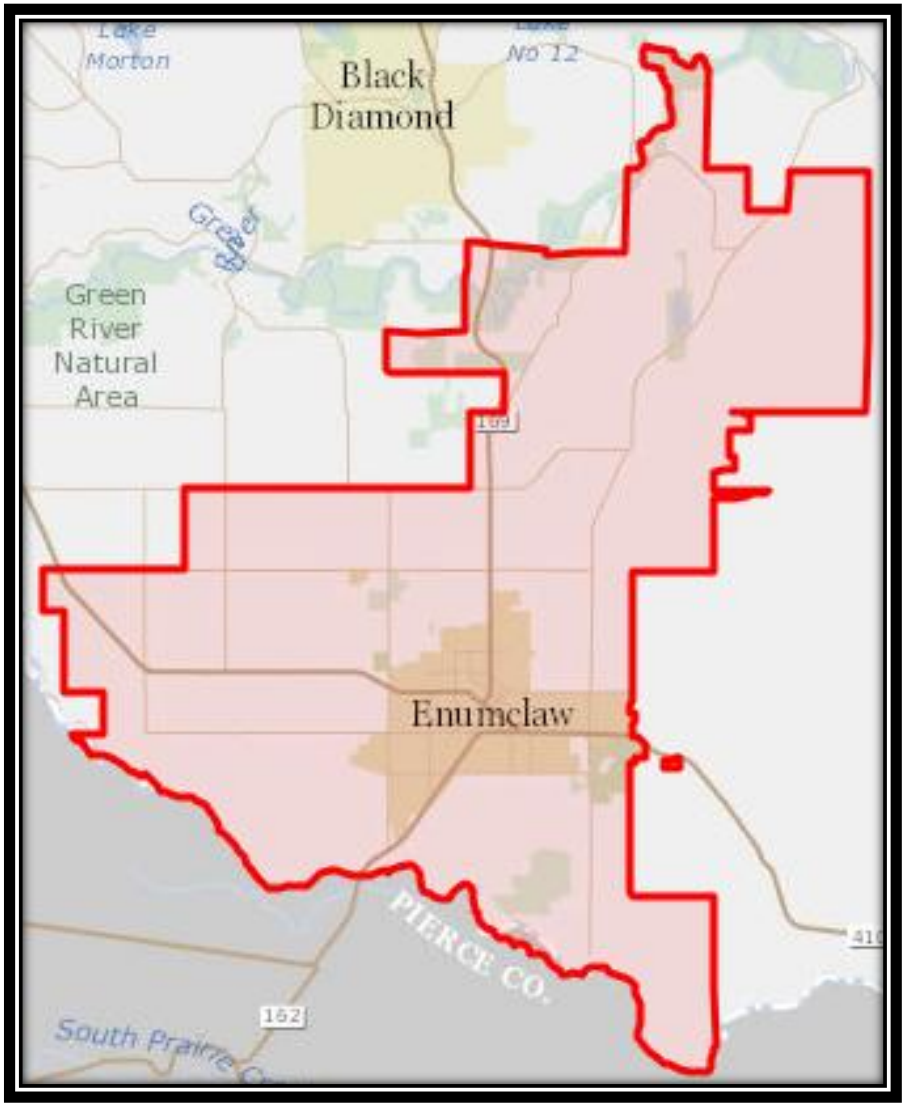
1.2.1. Yesterday

King County Fire District 28 is a suburban/rural fire protection district, established under Title 52 of the Revised Code of Washington. The District was created in 1946. The City of Enumclaw was annexed in to Fire District 28 in 2011 through voter referendum. The Fire District serves a population of approximately 19,000 in 56 square miles of King County, Washington. The service area includes the City of Enumclaw, and a large portion of rural south east King County. The Enumclaw Fire Department serves multiple state highways, a power generation dam, regional power lines and substations as well as high-pressure regional pipelines carrying natural gas.

1.2.2. Today

The Fire District operations include fire response, emergency medical services including BLS (basic life support) transport, hazardous materials response at the operations level, limited technical rescue, and fire prevention and public education activities. The Fire District is classified as a “combination” district incorporating both career (paid) personnel, resident personnel and on-call (volunteer) personal. During 2015 the district consisted of 13 full-paid firefighters, 30 volunteer firefighters and 1 office staff. The district operates out of 3 fire stations.

Exhibit 1 Service Area Map of King County Fire District 28[1]



[1] Map provided by King County Assessor's Office

1.2.3. Tomorrow's Growth

The City of Enumclaw is expected to grow and redevelop with higher and better uses for existing property. Higher density commercial development will include larger and taller structures that integrate mixed uses requiring additional resources and specialized equipment for the delivery of adequate fire and rescue services. The King County defined urban, and rural areas of today will likely remain much the same in the future with growth occurring mainly within the City limits of Enumclaw and the Urban Growth area (UGA) as described below.

1.2.3.1. City of Enumclaw

A population projection of between 14,000 and 16,000 by 2035 is made for the city. The 14,000 figure is based on the Puget Sound Regional Council data, and the 16,000 figure is based on the City of Enumclaw's projections. For this document, the city population growth is projected on a straight line relationship from the 2010 Census data to the projection of just under 16,000 by 2035.

1.2.3.2. Unincorporated Areas

King County projects a low rate of growth for the Enumclaw Plateau (outside of the City of Enumclaw). The annual growth rate of .6% found in the 2008 Master Plan may be high, considering the actual rate of the past 5 years. For this document, the unincorporated areas (outside the UGA) of the Fire District were projected at a linear rate of .5%; with the 2010 Census population of 6,918 as the base point. City growth projections were obtained from City of Enumclaw Planning Department.

Table 1 Future population of KCFD28

Portion of KCFD28 Service Area	Population 2015	Population 2025	Population 2035
Unincorporated King County	7,467	7,849	8,241
City of Enumclaw	11,312	13,868	15,996
King County Fire District 28 Total	18,779	21,717	24,237

2. Inventory of Current Capital Assets

Capital resources for KCFD28 consist of fire stations, fire apparatus (vehicles used for fire and rescue work), staff vehicles and the related equipment, tools and associated personal protection equipment needed to safely and legally provide fire and rescue services. Current inventories of these resources are listed below.

2.1. Fire Stations

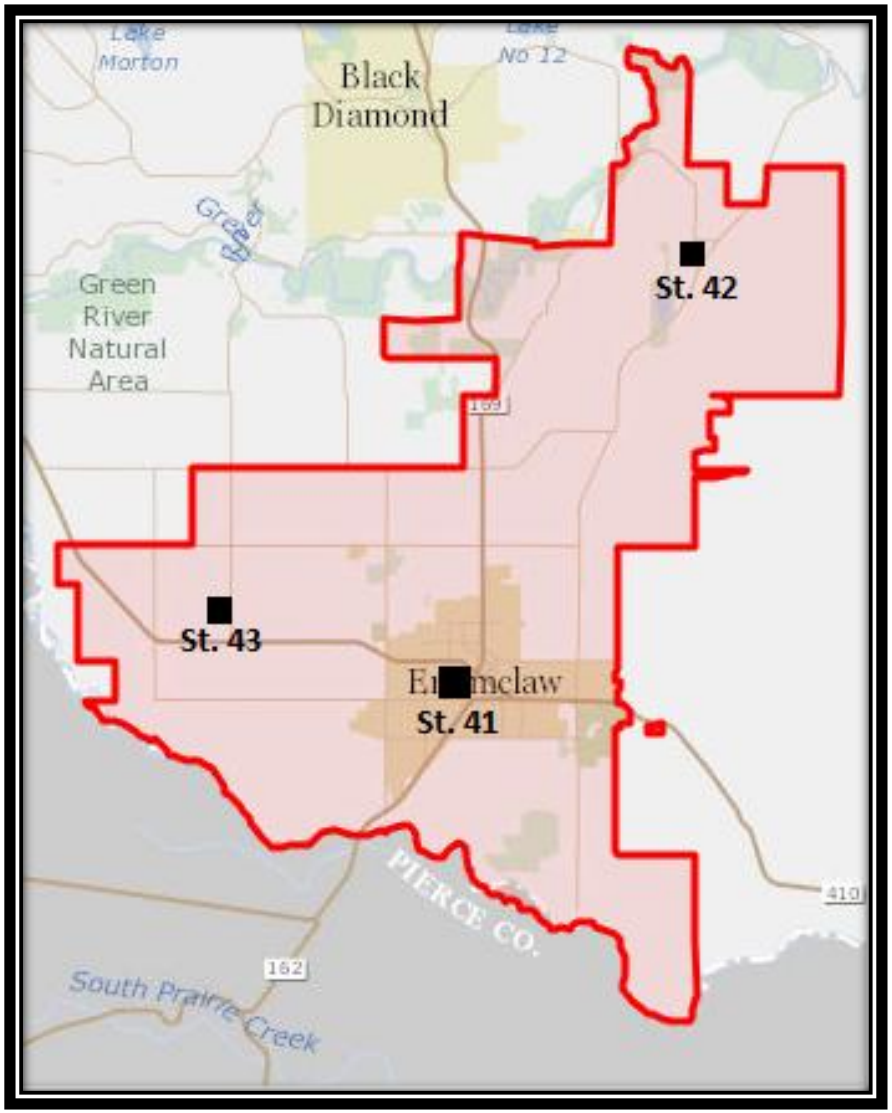
Emergency services are provided from three fire stations located throughout the service area as identified in Table 2 and shown on the map in Exhibit 2. On average the existing three fire stations in operation are 30 years old with an average square footage of 5,076.

Table 2 Existing Fire Station Descriptions

Fire Station	Location	Size	Purchased/ Built	Capacity	Condition	Acres
Station 41[2]	1330 Wells Street	7,883	1968	6 bays	Fair	0.52
Station 42	35420 Veazie Cumberland Road	4,388	1928	4 bays	Poor	1.98
	Resident Quarters	1,568	2006	-	Good	-
	Auxillary Building	1,152	1993	2 bays	Fair	-
Station 43	43407 212th Ave. SE	1,677	1969	1 bay	Fair	0.99
Sub-Total		16,668		11		3.49
Vacant Land	Parcel 2320069162		2011			5.85
Total		**16,668**		**11**		**19.90**

[2] Building actually owned by the City of Enumclaw and leased by KCFD28

Exhibit 2: Map of KCFD28 service area and station locations



2.2. Apparatus and Equipment

KCFD28's current fleet of emergency response vehicles is well maintained but fire engines, tenders and the aerial have an average age of 13.17 years, even with two new 2015 model year apparatus. Three aid units are maintained and have an average age of 10 years. Table 3 provides a detailed listing of existing apparatus and equipment.

Table 3 Apparatus Inventory

Location	Engine	Aid Car	Tender	Aerial	Brush	Command	Utility Vehicles	Light Trailer	Rescue/ Quads
Station 41	1	2	1	1	1	1	2	1	
Station 42	1	1	1						
Station 43	1								
City Building									1
Total	**3**	**3**	**2**	**1**	**1**	**1**	**2**	**1**	**1**

2.3. Special Equipment

A full complement of special equipment is necessary for the delivery of fire and rescue services. Special equipment includes all of the equipment within fire stations or carried on fire engines and other apparatus that allow firefighters to safely and effectively deliver emergency services. Table 4 provides a listing of the equipment maintained by KCFD28.

Table 4 Existing Special Equipment Inventory

Existing Special Equipment Inventory	
Fire Equipment	**Quantity**
Rescue Tools	5
Self-Contained Breathing Apparatus (SCBA)	31
IT & Office Equipment	variable
Mobile Radios 800MHz/VHF	28
Portable Radios 800MHz/VHF	60
Personal Protective Gear	65
Pt Care Reporting Tablets	5
Defibrillators	5
Breathing Air Compressor	1
Thermal Imaging Cameras	4
Misc Tools & Equipment	variable

3. Needed Resources

3.1. Impacts of the Growth Management Act

The Washington State Growth Management Act (GMA) was enacted to provide local oversight of community growth with the intent for local agencies such as counties, cities and towns, to monitor and mitigate the impacts of growth. Concurrency for transportation infrastructure is mandated by the Act and local agencies were given the authority to establish concurrency guidelines for other public needs such as water, sewer and fire services.

Fire districts such as KCFD28 were originally created to provide rural fire protection. At the time the GMA was enacted in King County, more than 30 independent rural fire districts existed; all were independent municipal corporations without reporting requirements to the King County planners who were charged with developing Comprehensive Plans and implementing codes to comply with the GMA. As a result, fire officials for the most part were unaware of the looming impacts that the GMA (and its mandate to establish urban growth boundaries) would have on their ability to deliver services into the future.

The 1990s brought an almost 54 percent population increase in the City of Enumclaw prior to the development moratoria enacted in 1998. As a result of development moratoria in place beginning in 1998 and lifted in 2008, followed by the subsequent “great recession”, the City had little new development between 2000 and 2010 and experienced negative population growth. With the lifting of the moratoria and national economic recovery, the City is beginning to experience moderate growth which is expected to continue. Despite the negative population growth and stagnant development in this time frame the demand for service has increased significantly from 1653 calls for service in 2000 to 2326 calls for service in 2014.

Community growth generates the need for additional capital facilities to support the demand for service. While population has been in a negative growth for nearly twenty years the demand for services has increased significantly with only two investments made in capital facilities within the KCFD28 service area. One investment being a remodel in 1999 to Station 41, which is not actually owned by KCFD28 but rather leased from the City Of Enumclaw. The other investment was the addition of a modular home to the Station 42 property to house resident firefighters. The 2008 KCFD28 Master Plan stated that the current facilities were sufficient for providing the adopted level of service however the calls for service in 2008 were 1848 with career staffing 12 hours per day and (6) FTEs, representing a 25% difference in call volume and 24/7 career staffing with (13) FTEs compared to 2014.

3.2. Indicators of Future Capital Facility Needs

3.2.1. Level of Service Measures

3.2.1.1. Response Effectiveness

Response time is a critical component of any fire service system and is measured against two major benchmarks; time to brain death in a non-breathing patient and time to the occurrence of flashover[3] in a structure fire.

Response effectiveness is defined as the ability for a fire department to assemble enough equipment and personnel to prevent brain death, and control fire prior to flashover. Brain death begins to occur at 4 to 6[4] minutes in a non-breathing patient and flashover can occur anywhere from 3 to 20 minutes depending on availability of oxygen and fuel in a fire. Most fire engineers and the National Fire Protection Association (NFPA) estimate flashover to occur most commonly between seven (7) to twelve (12) minutes.[5]

3.2.1.2. Level of Service Components and Measures

Washington State Law in Chapter 52.33 RCW requires substantially career fire departments to adopt level of service standards and report performance of those standards annually. Time to the onset of brain death in a non-breathing patient and time to flashover in a structure fire are the two elements required to be considered by the State when setting performance standards. The statute further recognizes the National Fire Protection Association (NFPA), the International Fire Chief's Association (IFCA) and International City/County Management Association (ICMA) for their work on establishing performance measures for fire and rescue services.

Chapter 52.33 RCW requires reporting of "fractile" performance at the 90th percentile. In simple terms, this would be the response performance of the 90th emergency response out of 100 if the response data of these incidents were stacked in order

[3] Flashover refers to the point in a structure fire when everything in a room has heated to a point that causes everything within the room to instantaneously burst into flames. Survival is no longer possible in a room that has flashed-over. Flashover is a significant killer of firefighters even with all of their protective gear.

[4] The American Heart Association states; Brain death and permanent death start to occur in just four to six minutes after someone experiences cardiac arrest. Cardiac arrest is reversible in most victims if it's treated within a few minutes with an electric shock to the heart to restore a normal heartbeat. This process is called defibrillation. A victim's chances of survival are reduced by 7 to 10 percent with every minute that passes without CPR and defibrillation.

[5] Source: Time Verses Products of Combustion, NFPA handbook, 19th Edition

of response time from fastest to slowest. Response time performance of the 90th incident in the stack would be the agency's performance at the 90th fractile. To measure emergency response performance and identify system deficiencies, KCFD28 has adopted response time standards based upon the concepts described in this section and performance is evaluated against the following four performance factors.

3.2.1.3. Turnout Time:

Turnout time refers to the elapsed time from when firefighters have received notification of an emergency until they are able to cease their current task, walk to the apparatus bay, don personal protective equipment, board their response vehicle, securely seatbelt themselves into the vehicle and begin driving away from their assigned fire station toward the dispatched emergency.

3.2.1.4. First Unit Travel Time:

First unit travel time refers to the drive time required for the first emergency response unit to travel from a fire station to the address of the emergency it was dispatched to. The fire industry often refers to first unit travel time as "Distribution Time" which references the best practice of distributing fire stations and adequate resources across a fire departments service area so that all areas of the jurisdiction can be reached within the adopted time standard for the first unit to arrive on location of an emergency event. This time measure is sometimes referred to as the speed of attack or response.

3.2.1.5. Resource Reliability:

Reliability refers to the probability that the required amount of resources will be available when a fire or other emergency call is received. If all response resources are available at their assigned station every time an emergency call is received, they would have a reliability of 100%. If a fire station's emergency response unit is assigned to an emergency response when a second request for emergency response is received in that fire station's service area, a substitute response unit from a fire station farther away will need to respond causing longer response times than if the original unit were able to respond. These simultaneous emergency calls are tracked to measure the effectiveness or reliability of fire station resources; as the number of emergencies in a given fire station's service area increases, the probability of that station's emergency response unit(s) being available decreases. A decrease in unit availability or "Reliability" leads to increased response times, therefore it is imperative that response units remain available or reliable at least as often as they are expected to perform their defined level of service. To achieve 90% performance, response units must be available to respond 90% of the time.

3.2.1.6. Levels of Service by Community Type:

For discussion purposes, the areas within the boundaries of King County Fire District No. 28 can be broken down into three (3) distinctive classifications:

- The urban areas within the City of Enumclaw
- The suburban areas surrounding the City of Enumclaw
- The rural areas in the remainder of the Fire District's Service Area

There are many ways that public agencies measure the level of service they provide. In many communities it is appropriate to consider variations in service levels based on population densities. This is because rural areas often present lower risks than urban area based on land use and structure types. In addition, rural area dwellers often have a different expectation of service delivery based on geographical distance from service centers and the availability of lower revenue-producing assessed values found in rural areas.

The Centers for Public Safety Excellence (CPSE) have specifically defined the various population density ranges for determination of appropriate response performance objectives. These standards are as follows:

Urban Service Area:
A geographically defined land area having a population density greater than 2,000 or more people per square mile.

Suburban Service Area:
A geographically defined land area having a population density of 1,000 to 2,000 people per square mile.

Rural Service Area:
A geographically defined land area defined as having a population density of less than 1,000 per square mile.

3.3. King County Fire District 28 Levels of Service

The CPSE classifications are not used by Fire District No. 28 for establishing Level of Service (LOS) standards and the King County Comprehensive Plan identifies “rural lands” as “all lands which are not within and urban growth area and are not designated as natural resource, lands having long-term commercial significance for production of agricultural products, timber, or the extraction of minerals.” For LOS purposes therefore, the areas are classified as either Urban or Rural.

An analysis of population densities in King County Fire District No. 28 reveals that the areas in and surrounding Enumclaw’s city limits should be classified as “urban” while the remainder of the District’s lands should be classified as “rural” as represented in Exhibit 3 . The Board of Fire Commissioners has previously adopted the following response time standards;

Urban levels of service:
Shall be a response time of 9 minutes 90% of the time when the responsible Department has a staffed station.

Rural level of service:
Shall be a response time of 12 minutes 80% of the time when the responsible Department has a staffed station and 14 minutes 80% of the time when the fire station is not staffed

3.4. Current Response Time Performance

KCFD28's current response times, shown in Table 4, are within the current established standards as adopted in 2008. It is important to note the current standards were adopted at a time when Station 41 was not staffed 24 x 7. When the response standards were adopted, volunteers would need to respond from home prior to apparatus responding on calls during times when the station was unstaffed. Under that model, it was unrealistic for the board of commissioners to believe that a lower response standard could have been met.

While our currently adopted response times are being met, a more appropriate representation of our ability to respond to emergencies is our Unit Reliability represented in Table 5. While it may appear that A41 is the only unit in the red response condition, with KCFD28's current staffing model, we typically only have one unit staffed between the hours of 0600-2100. Keeping that in mind if Station 41 is at minimum staffing and A41 is out of service on a response, it is safe to assume that all of the other units are unavailable for immediate response as well, as represented in the total unit availability in Table 5.

Table 5: 2014 Response Time Performance

Response Time Performance for 2014*				
Description	**Average**	**90th Percentile**	**80th Percentile**	**70th Percentile**
City Of Enumclaw(Urban)	7:29	8:59	7:24	6:34
District(Rural)	10:55	15:23	13:43	12:42
Out of District	15:41	25:58	24:51	19:32
***Calculations made based on a 3 month average**				

Table 6 Current Unit Reliablity2014[9]

Time committed to responses by unit 2014				
Unit	**Out of Service Time Per Year**	**Percentage of Time Unavailable**	**Unit Reliability**	**Response Condition**
A41	63430	12.07%	87.93%	Red
A411	8674	1.65%	98.35%	Green
E41	8340	1.59%	98.41%	Green
A42	3128	0.60%	99.40%	Green
T41	813	0.15%	99.85%	Green
E43	791	0.15%	99.85%	Green
U41	460	0.09%	99.91%	Green
U411	460	0.09%	99.91%	Green
C41	355	0.07%	99.93%	Green
B41	223	0.04%	99.96%	Green
T42	179	0.03%	99.97%	Green
R41	171	0.03%	99.97%	Green
E42	82	0.02%	99.98%	Green
Total Unit Out of Service Time	**87106**	**16.57%**	**83.43%**	**Red**

[9] Performance is displayed in a stop-light approach, red equals failure to the standard , yellow is above failure but within 5 percent of the standard and green signifies that the performance expectation is being met

3.4.1. Conclusion of Need for Capital Resources

KCFD28 uses multiple indicators in determining the need for additional resources that will achieve and maintain their level of service standards. KCFD28 commissioned Emergency Services Consulting Inc (ESCI) to provide a Master Plan in 2008, the study evaluated deployment of resources and various indicators of need to arrive at recommendations for future deployment. The 2008 Fire Master Plan and this Capital Facilities Plan have evaluated multiple variables of both KCFD28's service delivery model and their service area demographics to develop a rationale for the need of future resources. The variables considered regarding the KCFD28 service area include:

- The nature of fire and life safety risks
- Types of incidents occurring (fire, rescue, emergency medical services, etc.)
- The magnitude of incident types and their need for resources
- Types and sizes of properties and their specific risks (existing and future)
- The ability of existing resources to match demand of incident types and property risks
- Historic and predicted population and geographic growth
    - Urban growth
    - Suburban growth
    - Rural growth
- Historic and predicted land development
- Emergency call growth (historic and predicted)
- Travel times from fire stations to emergency scenes (historic and predicted)
- Availability of fire resources to demand for service (work load related, capacity of fire resources is limited)
- Responding unit types (career or volunteer staffing)
- Transportation networks (existing and future), and their influence on emergency response
- Geographic Information System (GIS) modeling of fire station coverage areas (provides for best placement of resources)
- Historic and predicted response times (current and future deployment)

Additionally, KCFD28 strives to provide our community with an adequate Protection Class based on the Washington State Surveys and Ratings Bureau(WSRB). By providing a lower protection class based upon the WSRB KCFD28 can provide our taxpayers with a significant cost savings in their insurance premiums. To determine a community's Protection Class the WSRB objectively evaluate the four major areas listed below:

Fire Department:

WSRB reviews such items as engine companies, ladder companies, distribution of fire stations and fire companies, automatic aid received, response to alarms, equipment carried on apparatus, apparatus maintenance, pumping capacity, reserve apparatus, department personnel and training.

Water Supply:

Water supplies used are reviewed to determine their adequacy for fire suppression purposes. Major tasks include calculating required fire flows (GPM) for buildings and conducting flow tests to measure water pressures (PSI) and volume (GPM). They also consider hydrant size, type, and installation, as well as the inspection frequency and condition of fire hydrants.

Emergency Communications Systems:

Our communities 911 system is evaluated including facilities, handling and dispatching fire alarms, dispatch personnel and training.

Fire Safety Control:

Fire prevention activities such as fire code enforcement, public education and building code enforcement are reviewed.

Currently two of the four evaluated areas, Water supply and Emergency Communications are out of KCFD28's control. However, the other two areas, Fire Department and Fire Safety Control, have significant impact on the projected Capital needs of KCFD28 in the future.

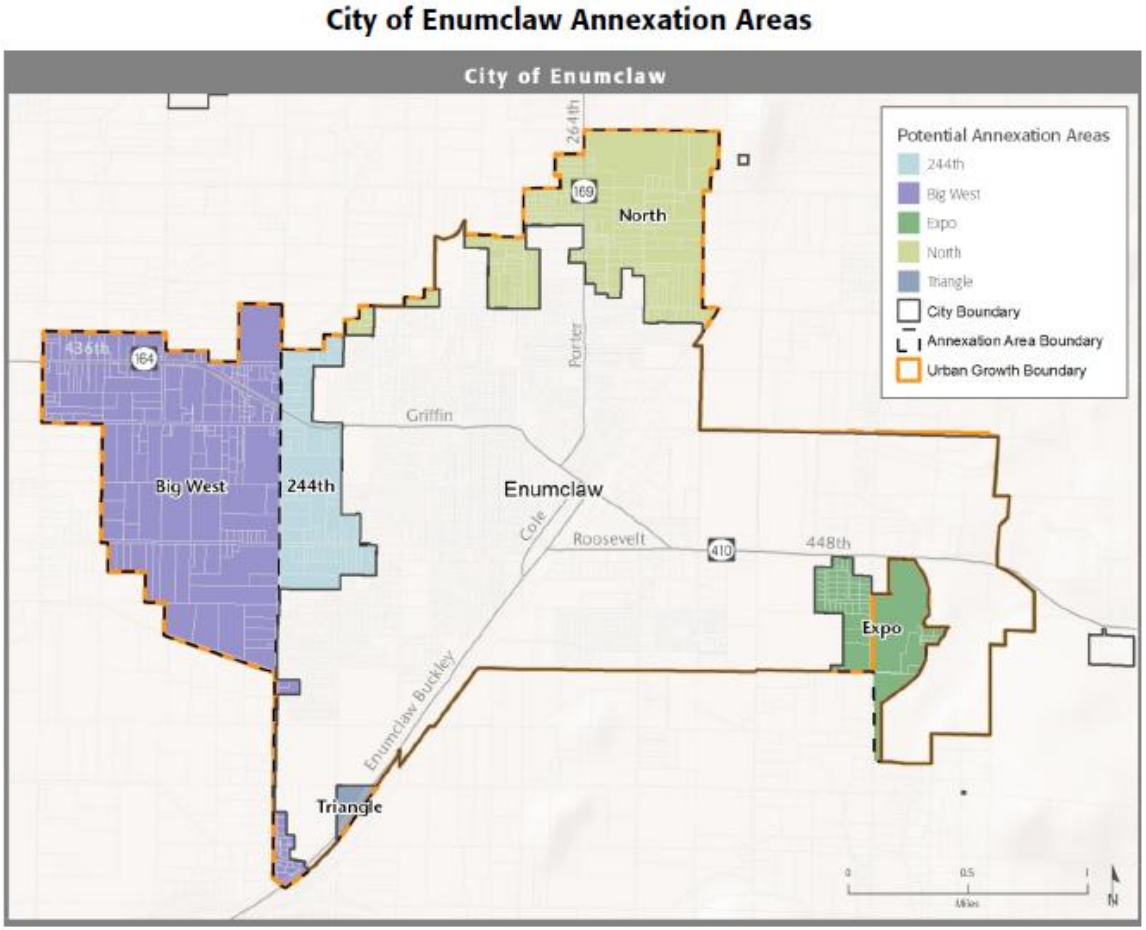
3.5. Capital Projects and Purchases

According to the 2008 Fire Master Plan produced by ESCI the current fire station locations provided adequate coverage to KCFD28 based upon the adopted levels of service and call volume of that time. However, over the past seven years there has been a nearly 25% in call volume and the City of Enumclaw comprehensive plan calls for significant annexation of the Urban Growth Area(UGA). These issue of annexation significantly affects KCFD28's ability to deliver its adopted levels of service and is discussed below.

According to a Fiscal Impacts of Annexation Study authored by Berk & Associates (2009) any annexation that includes the "Big West" annexation area, as seen in Exhibit 3, may have implications for the City of Enumclaw's patterns of commerce. As the only annexation area with significant potential to support a new commercial center it is imperative that KCFD28 be proactive in addressing the projected future needs of this annexation.

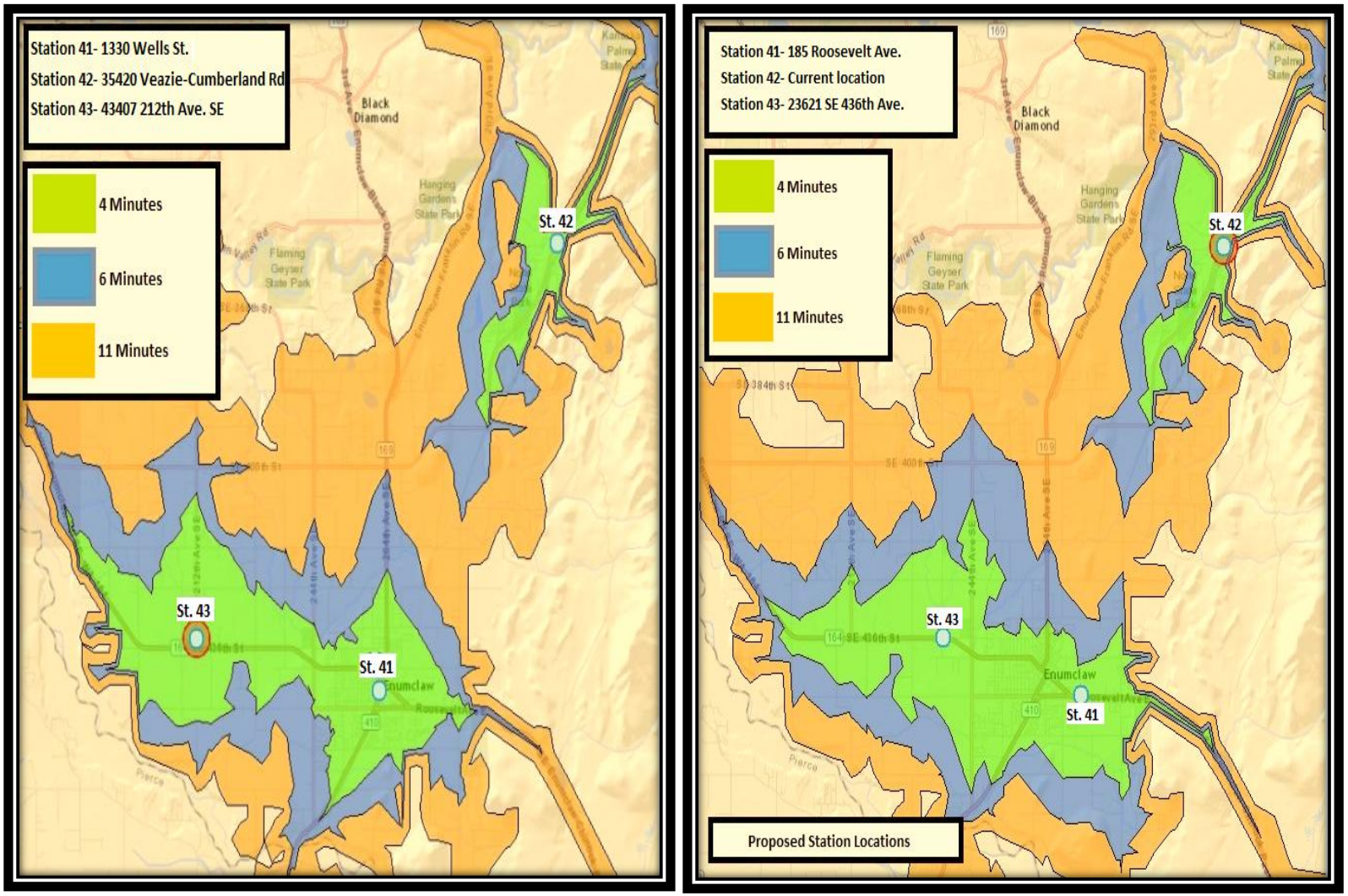
In order to provide for the needs of the "Big West" annexation KCFD28 needs to consider the current layout of it three fire stations and their ability to cover a commercial center within the established response standards. As shown in Exhibit 4 you can see that a relocated Station 43 would provide better coverage to the "Big West" annexation area in conjunction with a relocated Station 41 providing better coverage to any growth to the eastern half of the district.

Exhibit 3: City of Enumclaw Annexation Map



Source: Berk & Associates, 2008

Exhibit 4: Map of Existing and Proposed Fire Stations with Travel Time Coverage Comparison



3.5.1. Cost of New Fire Stations

The following costs are based on the General Services Administration's estimates for size requirements of fire stations capable of meeting the National Fire Protections Associations standards for safe and effective fire stations. Cost of construction is based upon recent construction costs of fire station construction experienced by the Kent and Graham Fire Departments.

3.5.2. Proposed Station 41

Station 41 shown in Exhibit 4 is proposed to be relocated near the area of 185 Roosevelt Avenue East, a location that can provide service to the areas currently served by existing Stations 41 and better coverage to the eastern borders of the fire district. This new station in conjunction with a proposed relocation of Station 43 near 23621 SE 436th Avenue SE will provide better concentration of resources and quicker response times to existing and future development. Proposed Station 41 will serve as a 20,000 sq. ft. Headquarters, providing office and other space for all administrative and training functions, training grounds, emergency response apparatus and living quarters for on duty personnel. The estimated costs of the proposed Station 41 are shown in Exhibit 5.

Exhibit 5: Estimated Cost of Proposed Station 41

Land and Construction Costs	
Land (3 acres x 43,560 per acre = 130,680)	$653,400
New Construction @ $310 sq. ft.	$6,200,000
Site Development @ $12 sq. ft.	$1,568,160
Subtotal Land and Construction Costs	***$8,421,560***
Project Soft Costs	
Furnishing and Equipment @ 7%	$589,512
Washington Sales Tax @ 9.5%	$808,474
Architect and Engineering Fees @ 10%	$842,160
Project Management @ 8%	$673,728
Permits/Fees/Inspections @ 3%	$252,648
Printing/Reimbursables @1%	$84,216
Contingency funds @ 12%	$1,010,592
Subtotal Soft Costs	***$4,261,330***
Total Station 41 Project Costs (2015 Dollars)	**$12,682,890**
Cost with 3% inflator per year	
2020	**$14,702,522**
2025	**$17,044,743**
2030	**$19,759,529**
2035	**$22,906,710**

3.5.3. Proposed Station 43

Station 43 shown in Exhibit 4 is proposed to be relocated near the area of 23621 SE 436th Avenue SE, a location that can better provide service to some of the areas currently served by existing Stations 41 and better coverage to the "Big West" annexation area. This new station in conjunction with a proposed relocation of Station 43 near will provide better concentration of resources and quicker response times to existing and future development. If it is determined that the relocation of the current Station 41 is not feasible the proposed Station 43 will still have significant impact upon service delivery. KCFD28's ability to provide service to newly developed areas to the West of the City Of Enumclaw is greatly enhanced without significant coverage overlap with the current Station 41. Proposed Station 43 will serve as an 8,000 sq. ft. satellite station providing office space and living quarters for on duty personnel and (2) emergency response apparatus.

Exhibit 6: Estimated Cost of Proposed Station 43

Land and Construction Costs	
Land (1 acre x 43,560 per acre)	$217,800
New Construction @ $310 sq. ft.	$2,480,000
Site Development @ $12 sq. ft.	$522,720
Subtotal Land and Construction Costs	***$3,220,520***
Project Soft Costs	
Furnishing and Equipment @ 7%	$225,436
Washington Sales Tax @ 9.5%	$305,949
Architect and Engineering Fees @ 10%	$322,052
Project Management @ 8%	$257,642
Permits/Fees/Inspections @ 3%	$96,616
Printing/Reimbursables @1%	$32,205
Contingency funds @ 12%	$386,462
Subtotal Soft Costs	***$1,626,362***
Total Station 43 Project Costs (2015 Dollars)	**$4,846,882**
Cost with 3% inflator per year	
2020	**$5,618,865**
2025	**$6,539,237**
2030	**$7,551,248**
2035	**$8,754,008**

3.5.4. Cost of Special Equipment Required, 2016-2035

Identifies total revenue needed between 2016 and 2035 to fund KCFD28's equipment purchase and replacement plan.

Table 7: Special Equipment costs 2016-2035

Special Equipment Cost in 2015 Dollars				
Description	**Replacement Quantity**	**Cost**	**Cycles in 20 Year Plan**	**Subtotal**
Rescue Tools	3	$34,441	2	$206,646
SCBA	31	$6,500	1	$201,500
IT & Office Equipment	1	$10,000	20	$200,000
Mobile Radios 800MHz/VHF*	28	$2,100	2	$117,600
Portable Radios 800MHz/VHF*	60	$1,750	2	$210,000
Bunker Gear	65	$2,100	2	$273,000
Defibrillators	6	$4,656	2	$55,872
Breathing Air Compressors	1	$70,232	1	$70,232
Thermal Imaging Cameras	4	$20,303	2	$162,424
Pt Care Reporting Tablets	4	$7,070	3	$84,840
Emergency Operations Center	1	$20,000	1	$20,000
Station 41 Generator	1	$50,000	1	$50,000
Station 42 Generator	1	$20,000	1	$20,000
Misc. Tools & Equipment**	1	$25,000	20	$500,000
TOTAL (in 2015 Dollars)				$2,172,114
*Puget Sound Emergency Radio Network implementation will affect future radio expenses **Includes hoses, nozzles, hand tools, saws, fans, etc				

3.5.5. Apparatus Replacement

Identifies the life cycle of apparatus and the total revenue needed between 2016 and 2035 to fund KCFD28's apparatus purchase and replacement plan.

Table 8: Apparatus Replacement Summary

Apparatus Replacement Schedule with 3% Annual Inflation						
Year	**Fire Engine**	**Aid Car**	**Command or Utility**	**Tender**	**Brush/Rescue Other**	**Projected Cost for Year**
2016						$0
2017						$0
2018						$0
2019						$0
2020						$0
2021	1	1				$821,137
2022						$0
2023						$0
2024						$0
2025						$0
2026						$0
2027		1		1		$1,262,792
2028				1		$1,005,064
2029						$0
2030						$0
2031	1	1	1		1	$1,515,628
2032						$0
2033						$0
2034					1	$261,272
2035					1	$32,707
2036					1	$40,435
					Total 20 year apparatus costs	**$4,939,036**

4. 20 Year Capital Cost Summary

The cost of resources itemized in Table 9, are based upon an interim plan to achieve and maintain fire service concurrency over the next 20 years. Capital needs include the construction of two new fire stations and all of the apparatus (fire engines, ladders etc), and equipment required to deliver fire and life safety services.

Timing of fire station and other capital expenditures is consistent with the capital projects detailed in section 3.5, found on pages 18 through 26 of this document. Fire station construction costs are shown in a single budget year but in reality will be spread out over four years for each proposed station project. Generally the four year plan follows a first year of design and engineering, a second year of design approval and includes expenses for permitting and site infrastructure improvements. The third year expenses represent hard construction costs, and the fourth year ends with the completion of construction, acceptance by KCFD28 from the contractor and installation of final furnishings and firefighting equipment.

Phasing of construction and corresponding expenditures is equal to 30 percent of the projects estimated costs in the first two years. Third year expenses are estimated at 60% of the overall project cost and 10 percent is budgeted in the fourth and final year of the construction process.

Table 9: 20 Year Cost of Capital Resource Needed to Preserve LOS, 2016 – 2035

20 Year Capital Needs																						
Costs in thousands based with 3% Annual Inflation																						
Expense Type	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**	**2034**	**2035**	**2036**	**Total**
Station Construction	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$18,083	$7,118	$0	$0	$0	$0	$0	$0	$0	$0	**$25,201**
Apparatus	$0	$0	$0	$0	$0	$821	$0	$0	$0	$0	$0	$1,263	$1,005	$0	$0	$1,516	$0	$0	$261	$33	$40	**$4,939**
Equipment	$124	$119	$62	$51	$52	$294	$257	$188	$238	$60	$62	$64	$169	$68	$70	$118	$345	$262	$260	$81	$84	**$3,030**
Total	**$124**	**$119**	**$62**	**$51**	**$52**	**$1,115**	**$257**	**$188**	**$238**	**$60**	**$62**	**$19,410**	**$8,292**	**$68**	**$70**	**$1,633**	**$345**	**$262**	**$521**	**$114**	**$124**	**$33,170**

5. Capital Resource Costs, 2016 – 2021

Table 10: Six (6) Year Capital Needs

Six (6) Year Capital Needs							
All Costs in thousands based on 3% inflation							
Year	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**6 Year Total**
Station Construction	$0	$0	$0	$0	$0	$0	$0
Apparatus	$0	$0	$0	$0	$0	$821	$821
Equipment	$124	$119	$62	$51	$52	$294	$702
Asset Preservation	$0	$0	$0	$0	$0	$0	$0
Total in Thousands	**$124**	**$119**	**$62**	**$51**	**$52**	**$1,115**	**$1,523**

6. Financing Plan

Full funding of this capital plan depends on KCFD28 annual levy being increased to $1.50 per assessed $1,000, impact fees and additional capital bond measures. Through annual tax levies and bonds, the tax payers of KCFD28 will fund 59 percent of the 20 year capital needs with impact fees estimated to provide 41 percent of the funding required. Impact and level of service fees to be assessed on new development have been estimated to produce $2,383 per residential dwelling unit and $.35 per square foot of commercial space making up $10.2 million of the $33.1 million required to fund the plan.

6.1. Financial Feasibility of Capital Facilities Plan

The revenue resources identified in Table 7, "20 Year Cost/Funding Sources for Capital Needs" indicate that it is financially feasible to maintain KCFD28's current response capabilities while keeping pace with the future growth of the district. The financial feasibility is dependent upon several items to include the following.

- A voter approved increase and maintenance of the levy rate to $1.50 per assessed $1,000.
- A voter approved capital bond for the building of proposed stations.
- Implementation of impact fees on new development.

Within the financial plan, impact fees account for approximately $10.2 million in the 20 year funding plan.

6.2. Methodology for Impact Fee Calculation

KCFD28 has $33.1 million in capital needs in the next 20 years. An evaluation was done by staff which indicates that 75 percent of our workload occurs within the city limits of Enumclaw; the other 25 percent occurs within the unincorporated areas of KCFD28. Based upon this, the complete amount of capital costs cannot be assessed to the residents and businesses of the City of Enumclaw. In addition, KCFD28 cannot assess the entirety of the City of Enumclaw's 75 percent ($24,877,500) of capital needs to new growth. Over the next 20 years the population of the City of Enumclaw is projected to increase 41 percent. If zoning remains consistent with the existing use the life expectancy of our capital equipment is expected to be compressed by 41% due to the additional workload. The current residents and businesses of the City of Enumclaw will be expected to bear 59 percent($23 Million) of the future capital costs over the next 20 years. New residents and new commercial occupancies will bear the remaining 41 percent($10.2 Million)) based upon the expected growth and resulting compression of capital equipment. The mathematical formula shown in Table 11 will be used to calculate the impact fees for future residential and commercial occupancies within the City of Enumclaw.

Table 11 Impact Fee Formula

Impact Fee Formula For City of Enumclaw (COE)		
Projected Capital Cost		$33,170,000
Workload in COE	x	75%
Projected Capital Cost COE		$24,877,500
Projected Growth in COE	x	41%
Projected Capital Cost due to Growth in COE		$10,199,775
50% Split Between Commercial and Residential	x	50%
Projected Capital Cost for Residential/Commercial		**$5,099,887.50**
Commercial Impact Fee Formula for City of Enumclaw(COE)		
Projected Capital Cost For Commercial		$5,099,887.50
Feet² of Vacant and Redevelopable Land Zoned Commercial in COE*	÷	14,679,720
Impact Fee Per Foot² of Commercial Land		**$0.35**
Residential Impact Fee Formula for City of Enumclaw(COE)		
Projected Capital Cost For Residential		$5,099,887.50
Number of Projected Dwelling Units*	÷	2,140
Impact Fee Per Dwelling Unit		**$2,383.13**
*According to 2015 City of Enumclaw Comprehensive Plan		

6.3. GMA Policy

Washington's Growth Management Act in RCW 36.70A.070 (3) (e) contains a requirement to reassess the land use element of applicable Comprehensive Plans if probable funding falls short of meeting existing needs. This requirement applies to either City of Enumclaw or King County, not directly to KCFD28. Both the City of Enumclaw and King County have responsibility for Comprehensive Land Use Plans that apply to areas within KCFD28's response area. KCFD28's policy is to annually assess probable funding for consistency with this Plan. When funding is likely to fall short, KCFD28 may make adjustments to; levels of service performance standards, timelines for implementation of the Plan, sources of revenue, or a combination of the previous to achieve a balance between available revenue,

needed capital facilities and adequate levels of service. In addition, KCFD28 will provide annual updates to the City of Enumclaw and King County that address KCFD28's ability to fund this plan. This policy constitutes KCFD28's response to RCW 36.70A.070 (3) (e).

Appendix-A

Exhibit 7: Appendix-A Vehicle Replacement Costs

Existing Apparatus and Equipment Inventory and Valuation Summary with 3% Annual Inflation									
Year	**Assignment**	**Make**	**QTY**	**Vehicle Type**	**Replacement Cost In Replacement Year**	**Equipment Cost In Replacement Year**	**Replacement Year**	**Replacement Cycle (Years)**	**Total**
1991	Engine 43	Seagrave	1	Type I Engine	$480,000.00	$100,778.01	2021	30	$580,778.01
2001	Aid 411	Braun	1	Aid Unit	$200,000.00	$40,358.97	2021	20	$240,358.97
1997	Tender 42	H&W	1	Tender	$855,456.53	$120,334.22	2027	30	$975,790.75
2006	Aid 42	Braun	1	Aid Unit	$238,810.46	$48,190.72	2027	21	$287,001.18
1998	Tender 41	Seagrave	1	Tender	$881,120.23	$123,944.25	2028	30	$1,005,064.47
2001	Engine 42	H&W	1	Type I Engine	$645,079.86	$135,437.22	2031	30	$780,517.08
2001	Brush 41	H&W	1	Type VI Engine	$288,847.16	$44,931.78	2031	30	$333,778.94
2010	Aid 41	Braun	1	Aid Unit	$268,783.27	$54,239.08	2031	21	$323,022.35
2001	Utility 41	Ford F-350	1	Utility Truck	$60,176.49	$18,133.18	2031	30	$78,309.67
2004	Rescue 41	Ford F-550	1	Rescue	$191,132.16	$70,140.24	2034	30	$261,272.40
2005	Tower 41	Allmand	1	Light Tower	$32,706.87	$0.00	2035	30	$32,706.87
2006	Quad 41 & 411	Polaris	2	ATV	$18,357.39	$1,860.29	2036	30	$40,435.36
								Cost to Replace Apparatus and Equipment 2016-2035	$4,939,036.05
Existing Apparatus and Equipment Inventory and Valuation Summary with 3% Annual Inflation									
2007	Utility 411	Ford F-350	1	Utility Truck	$71,853.88	$21,651.97	2037	30	$93,505.85
2008	Pt Trailer	All Terrain Res-Q	1	ATV Trailer	$17,000.47	$0.00	2038	30	$17,000.47
2010	Chief 41	Ford F-150	1	Command	$78,516.67	$23,659.69	2040	30	$102,176.36
2015	Ladder 41	Rosenbauer	1	Quint	$1,820,446.85	$204,860.95	2045	30	$2,025,307.81
2015	Engine 41	Rosenbauer	1	Type I Engine	$975,741.16	$204,860.95	2045	30	$1,180,602.12
								Cost to Replace Remaining Apparatus and Equipment	**$3,418,592.61**