PUGET SOUND REGIONAL FIRE AUTHORITY

Mitigation and Level of Service Policy

for Fire Service Concurrency

Updated September 7, 2022

This plan has been implemented through the following Resolution and the Board Members identified below:

PUGET SOUND REGIONAL FIRE AUTHORITY
INTERNATIONALLY ACCREDITED FIRE AGENCY
Matt Morris Fire Chief

Professionally and compassionately helping people

RESOLUTION NO. 187
ADOPTING THE 2023 PUGET SOUND REGIONAL FIRE AUTHORITY MITIGATION & LEVEL OF SERVICE POLICY

Background:

1. Puget Sound Regional Fire Authority "Puget Sound Fire" has determined, consistent with the State Growth Management Act, that uncoordinated and unplanned growth poses a threat to the health, safety, and high quality of life enjoyed by residents of Puget Sound Fire; and

2. Puget Sound Fire is committed to ensuring that Puget Sound Fire facilities and equipment necessary to support development and growth within Puget Sound Fire are adequate to serve development at the time development occurs without decreasing current service levels; and

3. Puget Sound Fire is committed to a "concurrency" philosophy to service delivery; meaning Fire and emergency service capacity must grow concurrently with development; and

4. Puget Sound Fire has adopted level of service policies and response standards; and

5. Puget Sound Fire cannot meet the current level of service standard in Puget Sound Fire; and

6. New development is eliminating the capacity of Puget Sound Fire's response resources even further; and

7. Placement of additional Fire stations and/or additional staffed units is the most effective way to reduce response times and achieve concurrency; and

8. Puget Sound Fire cannot fund the needed facilities and equipment and also provide for the costs of the operation and maintenance of Puget Sound Fire; and

9. Puget Sound Fire has determined that it is not in the public interest of the residents and property owners of Puget Sound Fire that developments be permitted to occur unless adequate fire and life safety facilities, equipment, and personnel are provided; and

10. Puget Sound Fire is opposed to additional residential, commercial, or industrial development within Puget Sound Fire boundaries until Puget Sound Fire can satisfy the need for equipment, station facilities, and personnel to support the required level of service; and

11. Puget Sound Fire is not opposed to development and desires to work with developers to assure fire and life safety facilities, equipment, and personnel remain concurrent with development; and

12. Puget Sound Fire desires to provide developers with methods and options to satisfy the environmental impacts of proposed developments on public safety.

13. Puget Sound Fire initially adopted its Mitigation & Level of Service Contribution Policy to address the above concerns in 2014.

NOW, THEREFORE BE IT RESOLVED by the Governance Board of Puget Sound Regional Fire Authority as follows:

1. The above recitals are found to be true and correct.

2. The updated 2023 Mitigation & Level of Service Contribution Policy, which is attached hereto, is adopted as a policy of Puget Sound Fire and replaces the previous 2022 version.

3. The 2023 Mitigation & Level of Service Contribution Policy shall serve as a State Environmental Policy Act "SEPA" policy and as a Growth Management Act 'GMA Policy.

4. Staff and administration shall use the Mitigation & Level of Service Policy for guidance in resolving SEPA and land use/GMA impacts to fire and life safety. However, should staff reviewing a project determine that there are specific attributes of a project that make this policy inadequate or unworkable, staff is also authorized to require additional studies and/or environmental review and to offer additional options to developers that may fall outside the scope of this policy.

ADOPTED by the Puget Sound Regional Fire Authority Governing Board, at an open public meeting of such Board on the 7th day of September 2022, the following Board Members being present and voting:

GOVERNING BOARD

Allen Barrie (Sep 13, 2022 16:23 PDT)
Board Chair Barrie

Les Thomas (Sep 8, 2022 18:44 PDT)
Board Vice Chair Thomas

Margaret Harto (Sep 10, 2022 13:04 PDT)
Board Member Harto

Bill Boyce (Sep 13, 2022 12:56 CDT)
Board Member Boyce

James A. Scott (Sep 12, 2022 15:25 PDT)
Board Member Scott

Toni Troutner (Sep 8, 2022 15:37 PDT)
Board Member Troutner

ATTEST
Board Secretary Steward

Puget Sound Regional Fire Authority Governance Board Members				
City of Covington (Advisory Member)	**City of Kent**	**City of Seatac (Advisory Member)**	**KCFD#37**	**KCFD#43 (Advisory Member)**
	Les Thomas (Vice-Chair)		Allan Barrie (Chairperson)	
Sean Smith	Bill Boyce	Jake Simpson	Margaret Harto	Camille Walls
	Toni Troutner		Jim Scott	

This policy has been designed with two distinct purposes in mind, first to inform the lay reader regarding issues critical to maintaining fire service concurrency and second, to provide guidance to Puget Sound Regional Fire Authority's staff in implementing mitigations necessary for maintaining fire service concurrency within the Puget Sound Regional Fire Authority service area. The basis for impact and level of service contribution fees is derived from the revenues needed to maintain fire service concurrency and are identified in Puget Sound Regional Fire Authority's 2014–2033 Master Capital Facilities and Equipment Plan.

NEW DEVELOPMENT IN COVINGTON, SEATAC, AND KENT

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Acronyms

ALS:	Advanced Life Support
BLS:	Basic Life Support
C&E:	Capital and Equipment
CFAI:	Commission on Fire Accreditation International
CPSE:	Center for Public Safety Excellence
EMS:	Emergency Medical Services
ERF:	Effective Response Force
GPM:	Gallons Per Minute (relates to fire flow)
IAFC:	International Association of Fire Chiefs
ICMA:	International City/County Management Association
ISO:	Insurance Services Office
PSF:	Puget Sound Fire Authority
LOS:	Level of Service
MERF:	Minimum Effective Response Force
NFPA:	National Fire Protection Association
PSAP:	Public Safety Answering Point
RCW:	Revised Code of Washington
SEPA:	State Environmental Protection Act
SOC:	Standard of Cover

1. Definitions

1.1. **Accreditation:** Refers to the process of obtaining certification of competency and credibility under the guidelines established by the Center for Public Safety Excellence (CPSE).

1.2. **Accredited Agency:** Refers to a fire agency that has undergone an independent, peer review and been recommended for Accredited Agency Status by a team of assessors certified by the Center for Public Safety Excellence. Then, because of that review, their case is presented to CPSE's Accreditation Commission, and if found credible by a vote of the Commission, are awarded Accredited Agency status.

1.3. **Adopted:** Refers to the formal action taken by a governing body to accept and put into effect an idea, method, or course of action.

1.4. **Alarm:** A signal or message from a person or system indicating the existence of an emergency or other situation requiring an action by an emergency response agency.

1.5. **Alarm Processing Time:** See Section 6.2.

1.6. **Authority Having Jurisdiction:** Refers to the municipal entity having jurisdiction for the enforcement of land-use and related building codes.

1.7. **Apparatus:** Refers to various specialized vehicles such as fire engines, fire trucks, ambulances, etc. that firefighters utilize during emergency responses.

1.8. **Call Stacking/Cascading Failure:** Refers to the occurrence of simultaneous emergency calls. Call stacking occurs when more than one request for emergency assistance occurs within the same fire station service area. When this occurs, the primary response unit cannot answer the second emergency and a second fire unit from the same station must respond or, a fire unit from a fire station farther away responds. See 1.27 – Reliability

1.9. Chief: Refers to the Fire Chief of Puget Sound Regional Fire Authority.

1.10. Concentration: Refers to the deployment or spacing of multiple fire and rescue resources from within a fire service jurisdiction so that the proper number of resources needed for an effective response force for all types of emergency incidents can arrive at the scene of an emergency within the defined level of service time.

1.11. **Concurrency:** Concurrency refers to the twelfth goal of the Washington State Growth Management Act[1] which requires public facilities and services necessary for public safety to be adequate to serve new development without decreasing current service levels below locally established minimum standards. WAC 365-196-210(7) "Concurrency" means that adequate public facilities are available when the impacts of development occur, or within a specified time thereafter.

1.12. **Deployment:** The strategic assignment and placement of fire agency resources such as fire and EMS companies, fire stations and specific staffing levels for those companies to mitigate community emergency events.

1.13. **Dispatch Time:** See Section 6.2

1.14. **Distribution:** The deployment or "distribution" of fire stations and resources across a fire service jurisdiction so that the adopted first-in drive time standard for fire and rescue resources can be achieved.

1.15. **Drive Time:** The elapsed time needed for an emergency vehicle to travel to a dispatched address. Drive time begins when the wheels of a fire apparatus begin to roll in response to a dispatch and ends when the apparatus is parked at the scene of the dispatched address.

1.16. **Effective Response Force:** Refers to the number of resources and personnel needed to effectively provide fire or emergency medical services capable of mitigating the known risk(s) in the community. The number of resources making up an effective response force varies by type of emergency and level of risk.

1.17. **Fire Flow:** The quantity of water available for fire protection purposes more than that required for other purposes.

1.18. **Fire Impact Fee:** A fee authorized under Chapter 82.02 RCW that is assessed on new development to pay a proportionate share of the costs associated with maintaining fire service concurrency. Fire Impact fees must be adopted and authorized by the local land use authority.

1.19. **Fire Level of Service Fee:** A fee that is used to mitigate the direct impacts new development has upon fire services inside of a jurisdiction that has not adopted fire

[1] Found in RCW 36.70A.020 and defined in WAC 365-196-210(7)

impact fees. Fire level of service fees are consistent with the Growth Management Act and applied through the SEPA process or in cooperation with the authority having permitting jurisdiction under RCW 54.18.110 and 82.02.020.

1.20. **Fire Service Concurrency:** See 1.9 – Concurrency.

1.21. **First Due:** See First-in (1.24)

1.22. **First Due Area:** The response area of a jurisdiction that has been assigned to a specific fire station and its emergency response units, generally because of its ability to arrive at the scene of an emergency first compared to other areas of the jurisdiction.

1.23. **First-in:** Refers to the first fire and rescue apparatus to arrive at the scene of an emergency. Distribution performance is a measure of first-in drive time.

1.24. **Fractal Performance:** Refers to the percentile of time a specified performance expectation is achieved. If an emergency response drive time of 5 minutes is the standard, and it is achieved on 82 of 100 responses, the fractal or percentile performance would be 82%.

1.25. **First Full Alarm:** Refers to the number of fire resources and personnel assigned to a specific alarm type that can assemble an effective response force to mitigate the alarm.

1.26. **Impact:** Refers to the drain on the capacity of emergency response resources and their ability to maintain levels of service standards.

1.27. **Level of Service:** Level of service (LOS) refers to PSF's adopted response time and performance expectations. Level of service expectations are established in PSF's Standards of Cover document.

1.28. **NFPA Standards:** Codes, standards, recommended practices, and guides developed by the National Fire Protection Association through a consensus development process of the American National Standards Institute for fire protection agencies.

1.29. **Reliability:** A measure of resource capacity. A reliable resource is available to answer emergency calls as least as often as the service expectation placed upon that resource.

1.30. **Resource Exhaustion:** Resource exhaustion occurs when the demand for service placed upon a fire service resource is so great, that its fractal reliability begins to fall below the adopted level of service for that resource resulting in the need for resources from fire stations farther away to respond in place of the resource experiencing exhaustion. Resource exhaustion results in longer response times unless additional resources are added to the fire station serving that area to create more capacity.

1.31. **Response**: Response refers to the movement of firefighters and fully equipped fire apparatus to the scene of an emergency request for fire or emergency medical services. The request for response is generally issued through Valley Communications Center, the 9-1-1 answering point for PSF.

1.32. **Response District:** Refers to the defined geographic area, generally a quarter mile square, used to determine the closest response resources to be assigned to an emergency within that response district.

1.33. **Risk:** Refers to the exposure or probability of injury or loss.

1.33.1. **Low Risk:** A risk category where a low level and consequence of injury or loss is probable to occur.

1.33.2. **Moderate Risk:** A risk category where a moderate level and consequence of injury or loss is probable to occur.

1.33.3. **High Risk:** A risk category where a high level and consequence of injury or loss is probable

1.34. **Standard(s) of Cover:** Refers to the in-depth process developed by the Center for Public Safety Excellence for the strategic planning of fire resource deployment capable of meeting community risks. Standard of Cover is the "Standard" to which the fire department will deliver service based upon community descriptions and the risks within those community types. See Section 7.2.

1.35. **Total Response Time**: The time interval from the receipt of a 911 call at a public safety answering point to when response unit(s) arrive at the scene of an emergency. Total response time is made up of three components, alarm processing time plus turnout time plus drive time.

1.36. **Turnout Time:** See Section 6.2

2. Policy Statement

2.1. It is the policy of Puget Sound Regional Fire Authority (PSF) to participate in the orderly growth of the community and to maintain concurrency[2] of fire and life safety services as the community grows. Concurrency describes the goal of service capacity of PSF growing with or staying concurrent with the impacts of development occurring within the service area. PSF recognizes that regional economic vitality depends upon orderly growth and supports community growth through development and is not opposed to new development.

2.2. However, new development and the population increase that comes with new development has a direct impact on the ability of PSF to maintain adopted levels of service and adequate public safety concurrently with development. Consequently, *PSF opposes the negative impacts development imposes upon fire service capacity and level of service performance* and directs the Fire Chief to utilize the mitigation strategies found within this document to mitigate all negative impacts of development that threaten concurrency by reducing service capacity below the benchmark level of service standards adopted herein.

2.2.1. Levels of service standards and service capacity are adopted and defined in PSF's Standard of Cover document.

2.3. The Fire Chief or their designee, shall cause the evaluation of each development proposed to occur within the service area. The Chief's evaluation shall identify any adverse impacts that may affect PSF's ability to maintain adopted benchmark levels of service and the mitigation strategies necessary to maintain concurrency with development. It is the intent of PSF to recognize when adequate service capacity exists and to only impose mitigations that are rational and relational to the impacts of new development upon service capacity.

[2] See Section 1, Concurrency defined

3. Purpose Statement

3.1. The purpose of this policy is to establish guidelines for the implementation of monetary and non-monetary mitigations appropriate to maintaining fire service concurrency within PSF's emergency response area. It is the intent to utilize the guidelines herein to mitigate the direct impacts of new development upon PSF's ability to deliver fire and life safety services in accordance with its adopted level of service standards. Further, this policy as prepared shall constitute Growth Management, Impact Fee, SEPA, land subdivision, and building permit policy as adopted by the Governance Board of Puget Sound Regional Fire Authority.

4. Consistency with other Plans and Policies

4.1. To ensure that Puget Sound Regional Fire Authority (PSF) will be able to meet the increasing demand for fire protection services resulting from future development and population growth, this policy utilizes the findings and conclusions of a number of plans and policies including but not limited to; Covington, Kent, King County, Maple Valley and SeaTac Comprehensive Plans and, PSF's; Capital Facilities Plan, Station Location Analysis, Standard of Cover and annual reports required by Chapter 52.33 RCW.

5. Primary Responsibility of Puget Sound Fire

5.1. The primary responsibility of PSF is the delivery of emergency fire and rescue services. The delivery of these services ideally originates from fire stations located throughout the service area. To provide effective emergency service, firefighters must respond in a minimum amount of time after the incident has been reported and with sufficient resources to initiate meaningful fire, rescue, or emergency medical services.

6. The Importance of Time and Fire Service Performance Measures

6.1 Time and Emergencies

6.1.1 Time and Fire Loss

Time is the critical issue when an emergency is reported. Fire can expand at a rate many times its volume per minute and as a result, quick response is critical for the rescue of occupants and the application of extinguishing agents to minimize loss prior to flashover. The time segment between fire ignition and the start of fire suppression activities has a direct relationship to fire loss.

6.1.2 Time and Patient Survival

The delivery of emergency medical services is also time critical. Survival rates for some types of medical emergencies are dependent upon rapid intervention by trained emergency medical personnel. In most cases, the sooner trained fire or emergency medical rescue personnel arrive, the greater the chance for survival and conservation of property. The importance of time and the critical factors affected by time are discussed in section 6.3.

6.2 Measured Components of Emergency Response

6.2.1. **Alarm processing time**: Amount of time that it takes to receive and process an emergency call. This includes (1) receiving the call, (2) determining what the emergency is, (3) verifying where the emergency is located, (4) determining what resources and fire department units are required to handle the call, and (5) notifying the fire department units that are to respond.

6.2.2. **Turnout time**: The time from when fire department units are first notified of an emergency to the beginning point of response time. This includes discontinuing and securing the activity firefighters were involved in at time of dispatch, traveling by foot to their apparatus, donning appropriate personal protective equipment and taking a seat-belted position on the apparatus to respond.

6.2.3. **Response/Drive time**: The time that begins when the wheels of a response apparatus/vehicle begin to roll in route to an emergency incident and ends when wheels of the response vehicle stop rolling upon arrival at the address of the emergency scene.

6.2.4. **Access time**: Amount of time required for the crew to move from where the apparatus stops at the address of an emergency incident, to where the actual

emergency exists. This can include moving to the interior or upper stories of a large building and dealing with any barriers such as locked gates, stairways, elevators, doors, or other restrictions that may slow access to the area of the emergency.

6.2.5. **Setup time**

6.2.5.1. Setup time Fire: The amount of time required for fire department units to set up, connect hose lines, position ladders, and prepare to extinguish the fire. Setup time includes disembarking the fire apparatus, pulling, and placing hose lines, charging hose lines, donning self-contained breathing apparatus, making access or entry into the building, and applying water. The opportunity for saving time during setup is minimal, even for trained personnel.

6.2.5.2. Setup time EMS: Setup time also includes the time required for firefighters to deploy lifesaving equipment such as defibrillators, oxygen masks, and/or other rescue tools.

6.3 Flashover

6.3.1. **The term flashover**: Refers to the most dangerous time in fire growth. As a fire grows within a room, its radiant heat is absorbed by the contents of the room heating the combustible gases and objects to their ignition point until finally the entire room bursts into flame, spreading outside of the room involved.

Figure 1: Flashover

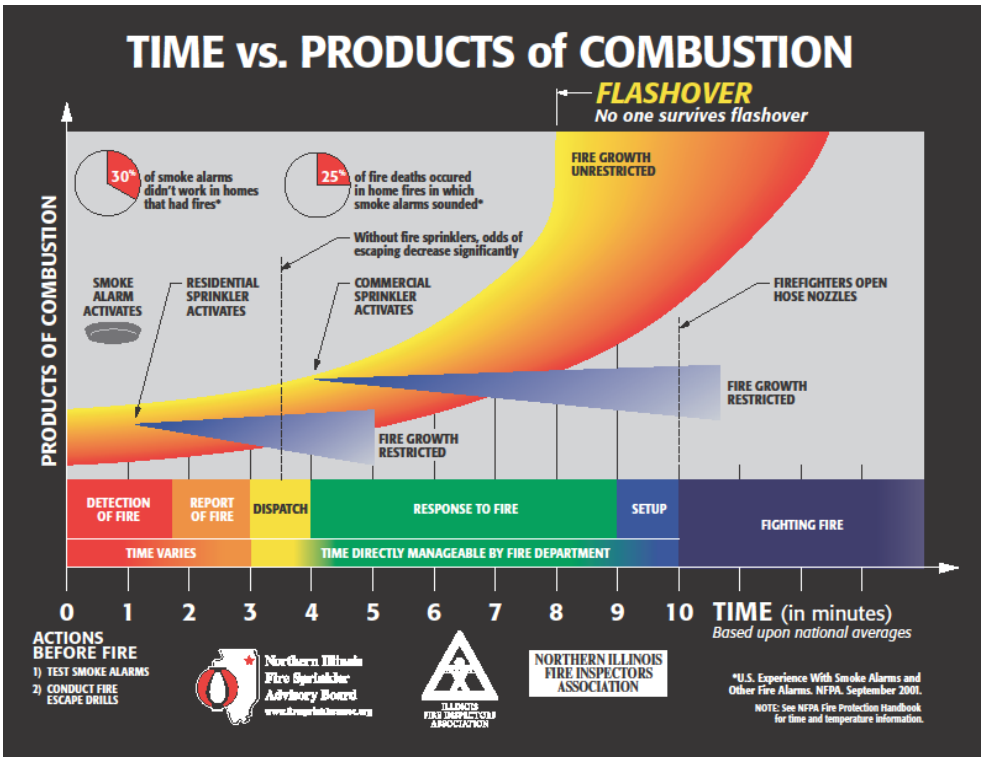
6.3.2. **Measuring the time to flashover**: A function of time and temperature. Fire growth occurs exponentially; that is, fire doubles in size every minute of free burn that is allowed.

6.3.3. **Factors that determine when flashover may occur:** These include the type of fuel, the arrangement of the fuels in the room, room size, and so on. Because these factors vary, the exact time to flashover cannot be predicted, making quick response and rapid-fire attack the best way to control fire, protect life and reduce fire loss.

6.3.4. **Flashover's modern living influence:** Over the past 50 years, fire engineers agree that the replacement of wood and other natural products with plastics and synthetic materials for interior furnishings has resulted in increased fuel loads, higher fire temperatures and decreasing time to flashover, making quick response more important than ever. Flashover can typically occur from less than four 4 to beyond 10 minutes after free burning starts depending upon the air or oxygen supply available to the fire.

6.3.5. **Flashover and fire spread can be mitigated**. Figure 2 shows the progression of fire and how some timeframes can be managed by the fire department, and some cannot. The elapsed time from fire ignition to fire reporting varies but can be indirectly managed using remotely monitored fire alarm and suppression systems to help mitigate the growth of fire. These systems can automatically report the presence of a fire to a public safety answering point (PSAP) or 9-1-1 center. In a perfect world, all structures would be equipped with a monitored fire alarm and automatic fire sprinkler system to help reduce dispatch time and speed the arrival of fire department resources allowing firefighters to arrive at the scene when fires are smaller and more controllable.

Figure 2: Time vs. Products of Combustion



This diagram illustrates fire growth over time and the sequence of events that may occur from ignition to suppression. Depending on the size of room, contents of the room and available oxygen, flashover can occur in less than 2 or more than 10 minutes. Flashover occurs most frequently between 4 and 10 minutes.

6.3.6. **Significance of automatic fire sprinklers**: As the above exhibit illustrates, properly maintained and functioning fire sprinkler systems in both residential, and commercial occupancies will activate to help control a fire long before the arrival of firefighting resources. Automatic fire sprinklers can control fire and buy firefighters significant time toward saving lives and minimizing loss from fire. In PSF's case, there are often too few resources available to supply a full first alarm and the effective response force resources required for a structure fire. As a result, it is typical for structure fire responses to be supplemented with mutual aid companies from other jurisdictions or volunteer resources that take much longer to arrive, limiting PSF's overall ability to control larger fires.

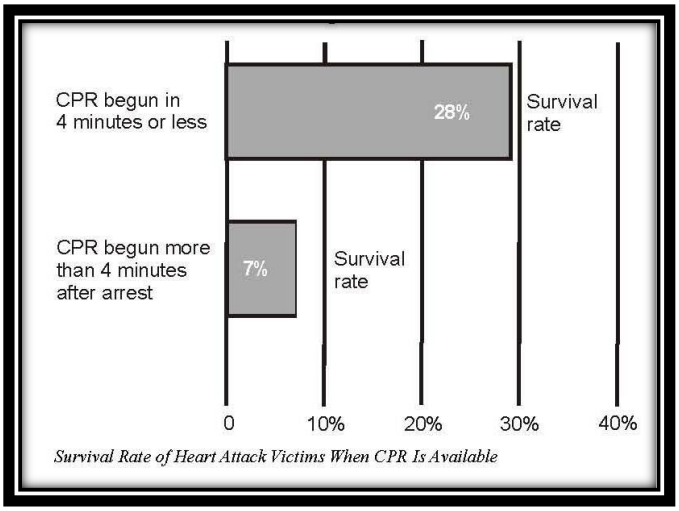
6.3.7. **Flashover is deadly**: Once flashover occurs, it is no longer possible for survival in the room of flashover. Not even firefighters in complete protective gear can survive the intense heat of flashover. A post-flashover fire burns hotter and moves faster, making search and rescue more difficult and riskier in the remainder of the structure. Once flashover occurs more firefighters are needed to deal with the much larger and growing fire problem.

6.3.8. **Firefighting resources should arrive prior to flashover**: Because of the dramatic change in fire conditions post flashover (see Figure 1) all fire based performance standards attempt to place fire resources on scene of a fire prior to flashover.

6.4 Brain Death in a Non-Breathing Patient

6.4.1. **Timely treatment and a non-breathing patient is critical for survival:** The delivery of emergency medical services (EMS) by first responders is also time critical for many types of injuries and events. If a person has a heart attack and cardiopulmonary resuscitation (CPR) is started within four minutes, that person's chances of leaving the hospital alive are almost four times greater than if they did not receive CPR until after four minutes. Exhibit 3 shows the survival rate for heart attack victims when CPR is available.

Figure 3: Cardiac Survival Rate[3]

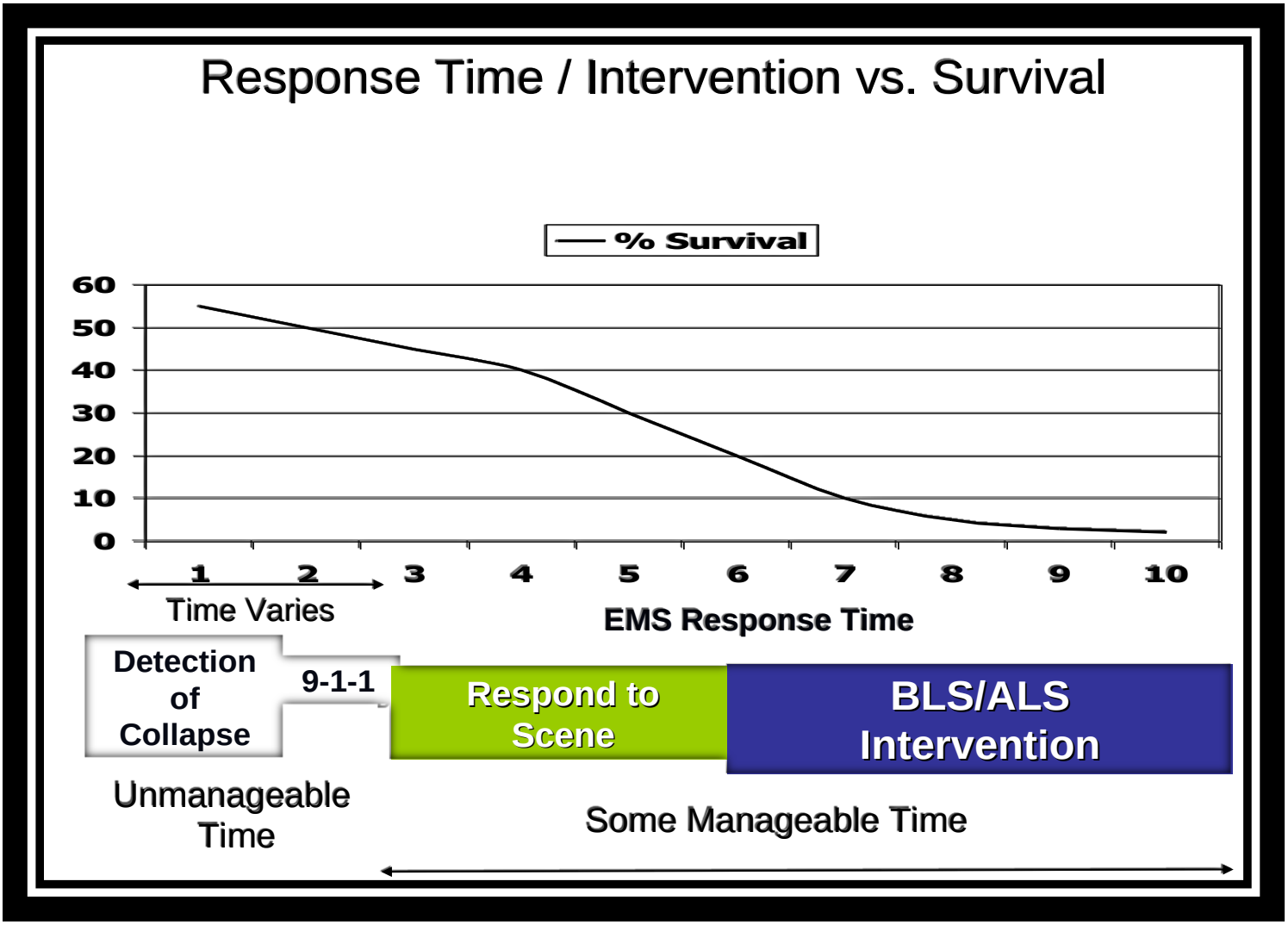


6.4.2. **Automatic defibrillation increases survival further**: Chances of survival are increased with the intervention of a cardiac defibrillator. All PSF units carry defibrillators. Exhibit 4 shows the survival rate of a heart attack victim with CPR and defibrillation.

6.4.3. **Puget Sound Fire's "Deadline:"** Between 2000 and 2014, no patient has survived cardiac arrest where the total response time to arrival has exceeded 7 minutes and 34 seconds.

[3] Source: National Fire Protection Association Handbook Volume 19

Figure 4: Cardiac Survival with CPR and Defibrillation[4]



[4] Data Source: King County Emergency Medical Services

7. Recognized Standards for Fire Service Response Performance:

7.1 National Fire Protection Association (NFPA) Standard 1710

7.1.1 **NFPA 1710**: establishes Standards for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Career Fire Departments and contains the following time objectives to be performed 90% of the time:

7.1.1.1 Dispatch time: "All communications facilities, equipment, staffing, and operating procedures shall comply with NFPA 1221." NFPA 1221 sets the performance standard for alarm processing to dispatch time at 1-minute (60 seconds) 90 percent of the time.

7.1.1.2 Turnout time:

Fire based response:	1 minute 20 seconds (80 seconds)
Medical based response:	1 minute 00 seconds (60 seconds)

7.1.1.3. Fire response/drive time: Four minutes (240 seconds) or less for the arrival of the first arriving engine company at a fire suppression incident and/or eight minutes (480 seconds) or less for the deployment of a full first alarm assignment at a fire suppression incident.

7.1.1.4. Basic life support (BLS) response/drive time: Four minutes (240 seconds) or less for the arrival of a unit with first responder or higher-medical certification capability at an emergency medical incident.

7.1.1.5. Advanced life support (ALS) response/drive time: Eight minutes (480 seconds) or less for the arrival of an advanced life support unit at an emergency medical incident, where the service is provided by the fire department.

7.1.1.6. Total response time: Adding the three separate time segments together, the NFPA expects the following temporal benchmarks to be performed at least 9 out of every 10 times from receipt of a 9-1-1 call to the arrival of fire and EMS resources.

Figure 5: NFPA's Total Response Time Standards (minutes & seconds)

Fire call
- First-in: = (Dispatch =1:00 + Turnout = 1:20 + Drive = 4:00) = 6:20
- Full alarm: (Dispatch = 1:00 + Turnout = 1:20 + Drive = 8:00) = 10:20

EMS – Basic & Advanced Life Support Services
- First-in:= (Dispatch =1:00 + Turnout = 1:00 + Drive = 4:00) = 6:00
- Full Alarm: = (Dispatch =1:00 + Turnout = 1:00 + Drive = 8:00) = 10:00

7.2 Center for Public Safety Excellence (CPSE) Standard of Cover

7.2.1. **The Center of Public Safety Excellence** is a consortium of the International Association of Fire Chiefs (IAFC), International Association of Fire Fighters (IAFF) the International City/County Management Association (ICMA), the International Code Council (ICC), the Insurance Services Office (ISO) the National Fire Protection Association (NFPA) and the U.S. Fire Administration (USFA). Together this group maintains the Commission on Fire Accreditation International (CFAI) and the criteria for fire departments to achieve Accredited Agency Status. Critical to achieving Accredited Agency Status is an assessment of the fire department's ability to effectively deliver service. To make this assessment, the CFAI has established a methodology for; determining the fire and non-fire risks of a community, assessing the fire department's capability compared to that risk, measuring fire department resource capacity and guidelines for performance standards to assess overall performance of a fire department. The CFAI publishes this methodology in its Standards of Cover manual.

7.2.2 **The term standard of cover**: Refers to the "standard(s)" to which a fire department runs daily operations in order to "cover" the service area of the fire department. The CFAI process for establishing a Standard of Cover has nine parts that are described below with relevant information to PSF:

7.2.2.1. Existing deployment assessment: Identifies current inventory of fire stations, apparatus, and staffing. PSF's stations apparatus and staffing are found in PSF's Capital Improvement and Equipment Plan.

7.2.2.2. Review of community expectations: Ultimately, level of service is driven by the community. PSF's standards have been adopted herein and by the Cities of Kent and Covington in their Comprehensive Plans, both have undergone a public review and hearing process. Additionally, Fire District 43 and SeaTac have adopted minimum standards in their contracts for response services with PSF.

7.2.2.3. Community risk assessment: The CPSE requires adoption of benchmark response times for each component (alarm processing, turnout, drive) of response as well as separate benchmarks for both urban and rural deployment. Additionally, benchmarks must be established by type of incident, and category (low, moderate, and high) of risk associated the event. PSF has conducted this risk assessment across the 109 square miles of urban and rural areas in its 2019 Standard of Cover document.

7.2.2.3.1. Critical task analysis and staffing comparison: The CFAI requires staffing standards that can respond and providing adequate personnel to address the risks identified in the community risk assessment.

7.2.2.3.2 PSF's current staffing and resources alone, are incapable of providing adequate staffing necessary to mitigate the potential response needs of high-risk occupancies.

7.2.2.4. Distribution of Resources: Fire stations should be distributed so that resources deployed from them can provide coverage to the response area within the level of service (LOS) standard established for first-in fire and rescue units. PSF's Standard of Cover has revealed service areas where current fire station deployment cannot meet adopted service levels.

7.2.2.6. Concentration of Resources: Fire resources should be concentrated near high demand areas and in large enough numbers of equipment and personnel to provide an effective response force with the full first alarm assignment. Because of a lack of resources, PSF often relies on resources from neighboring fire departments to assemble an effective response force.

7.2.2.7. Capacity Analysis/Reliability**:** To achieve adopted performance standards, resources must be available or "reliable" at least as often as their adopted performance expectation. Historic reliability below the adopted performance standard places the service area in "Resource Exhaustion" and creates call stacking and simultaneous calls within a specific service area.

PSF is currently experiencing resource exhaustion SYSTEM WIDE daily where reliability is below 90% during the hours of 1000 to 2100.

7.2.2.8. Historical response effectiveness studies: The percentage of compliance the existing response system delivers based on current LOS.

7.2.2.9. Overall Evaluation and Plan: Identifies performance issues, and strategies toward sustaining service levels and achieving benchmark performance.

7.2.3. **Prevention and mitigation**: CPSE recognizes the cost of providing fire services needs to be balanced to individual communities and therefore they emphasize the need for mitigation. Fire prevention, risk reduction, education, and code enforcement along with mitigation policies are encouraged. Prevention and mitigation efforts directly impact the level of safety

for responding firefighters and the public. Using analysis of risk and looking at what strategic mitigations can be implemented may not only prevent the incident from occurring but may also minimize the severity when and if the incident occurs.

7.2.4. **CPSE Standard**: CPSE requires both temporal and staffing capability standards to assure timely arrival with adequate capability to address existing risk. Following is an example of the CPSE standard requirement:

> *"For 90 percent of all moderate and high-risk structure fires the departments total benchmark response time, from the receipt of the 911 call in the secondary public safety answering point (PSAP) to the arrival of the first-due unit, staffed with at least two firefighters arriving on an aid car or three firefighters arriving on an engine or ladder truck shall be: 7 minutes 40 seconds in urban areas and 9 minutes 35 seconds in rural areas. The first-due unit for all risk levels shall be capable of: providing incident size up, initiating command, and requesting additional resources. If arriving on a fire engine, the first-due unit shall be capable of providing 500 gallons of water and 1,500 gallons per minute (gpm) pumping capacity; establishing and advancing an attack hose-line flowing a minimum of 150 gpm; or rescuing at-risk victims. These operations are done in accordance with the Department's standard operating procedures while providing for the safety of responders and the public.* (PSF is not currently capable of achieving this standard.)

8. State and Local Standards

8.1 Washington State Law

8.1.1. Chapter 52.33 RCW requires fire departments with paid staff to establish Level of Service (LOS) policies and performance objectives based on the arrival of first responders with defibrillation equipment prior to brain death and the arrival of adequate fire suppression resources prior to flashover. This law recognizes the NFPA's Standard 1710 and the Commission on Fire Accreditation International's (CFAI) Standard of Cover as bases for this statute and requires a 90% performance expectation of the established LOS.

8.2. King County Standards

8.2.1. The King County Comprehensive Plan and Countywide Planning Policies are based on the concept of concurrency and require that adequate facilities and services be available or be made available to serve development as it occurs. The County Comprehensive Plan recognizes the validity of using a response time analysis in determining appropriate service levels and recognizes the central role of fire protection districts and regional fire authorities in providing those services. However, King County has not adopted any fire service response standards.

8.3. City of Covington and Kent Response Standards

8.3.1. The Covington and Kent Comprehensive Plans have adopted the fire service response standards of the Puget Sound Regional Fire Authority.

8.4. Fire District 43 (Maple Valley Fire & Life Safety) City of SeaTac

8.4.1. Fire District 43 and the City of SeaTac have established their own standards through a contract for services with PSF. District 43 and SeaTac response time standards exceed those adopted by PSF in its Standard of Cover.

8.5. PSF's Standard of Cover

8.5.1. PSF maintains a "Standard of Cover" document as part of their accreditation process through the Center for Public Safety. The Standard of Cover is the "Standard" or Level of Service (LOS) to which the fire department will deliver services to the community. Performance below benchmark standards can contribute to unnecessary property and life loss. The continuum of time of fire service performance to adopted level of service standard

includes three main components measured at the 90th percentile (9 out of 10 times) of performance:

8.5.1.1. Dispatch time**:** The time interval from when a 9-1-1 call is answered, and appropriate resources dispatched through alerts to firefighters.

8.5.1.2. Turnout time: The time interval that begins when audible or visual notification is received by firefighters from the 9-1-1 center and ends when firefighters have donned appropriate protective equipment and safely seat-belted themselves in their response vehicle ready to drive.

8.5.1.3. Travel time: The time interval that begins when a response unit begins to move in route to the emergency incident location and ends when the unit arrives at the addressed location or, at the entryway to the addressed complex.

8.5.1.3.1. First unit arrival objectives: 90% performance expectation.

Figure 6: PSFA First Unit Arrival Service Standard

- **Urban Service Area:**
  - Low Risk
    - **Fire**
      Dispatch (1:10) + Turnout (1:55) + Drive Time (5:35) = 8:40
    - **EMS**
      Dispatch (1:30) + Turnout (1:45) + Drive Time (10:15) = 13:30
  - Moderate Risk
    - **Fire**
      Dispatch (1:10) + Turnout (1:55) + Drive Time (4:35) = 7:40
    - **EMS**
      Dispatch (1:10) + Turnout (1:45) + Drive Time (4:35) = 7:30
  - High Risk
    - **Fire**
      Dispatch (1:10) + Turnout (1:55) + Drive Time (4:35) = 7:40
    - **EMS**
      Dispatch (1:10) + Turnout (1:45) + Drive Time (4:35) = 7:30

- **Rural Service Area:**
  - Low Risk
    - **Fire**
      Dispatch (1:10) + Turnout (1:55) + Drive Time (7:35) = 10:00
    - **EMS**
      Dispatch (1:30) + Turnout (1:45) + Drive Time (13:15) = 16:30
  - Moderate and High Risk
    - **Fire**
      Dispatch (1:10) + Turnout (1:55) + Drive Time (6:30) = 9:35
    - **EMS**
      Dispatch (1:10) + Turnout (1:45) + Drive Time (6:30) = 9:25

8.5.1.3.3. Full first alarm arrival objectives: 90% performance

Figure 7: PSFA Full First Alarm Response Force Standard

- **Urban Service Area:**
  - Low Risk
    - **Fire**
      Dispatch (1:10) + Turnout (1:55) + Drive Time (7:55) = 10:00
    - **EMS**
      Dispatch (1:30) + Turnout (1:45) + Drive Time (8:35) = 11:50
  - Moderate Risk
    - **Fire**
      Dispatch (1:10) + Turnout (1:55) + Drive Time (12:55) = 16:00
    - **EMS**
      Dispatch (1:10) + Turnout (1:45) + Drive Time (6:20) = 9:15
  - High Risk
    - **Fire**
      Dispatch (1:10) + Turnout (1:55) + Drive Time (17:35) = 20:40
    - **EMS**
      Dispatch (1:10) + Turnout (1:45) + Drive Time (6:20) = 9:15

- **Rural Service Area:**
  - Low Risk
    - **Fire**
      Dispatch (1:10) + Turnout (1:55) + Drive Time (9:55) = 12:00
    - **EMS**
      Dispatch (1:30) + Turnout (1:45) + Drive Time (13:05) = 16:20
  - Moderate/High Risk
    - **Fire –** Hydrant Supply
      Dispatch (1:10) + Turnout (1:55) + Drive Time (14:55) = 18:00
    - **Fire –** Tender Supply
      Dispatch (1:10) + Turnout (1:55) + Drive Time (15:55) = 19:00
    - **EMS**
      Dispatch (1:10) + Turnout (1:45) + Drive Time (8:20) = 11:15

8.5.2 Reliability is a measure of resource capacity. For a resource to be reliable, it must be available to answer emergency calls as least as often as the service expectation placed upon that resource. For instance, if a fire resource is expected to deliver service at the adopted standard 90% of the time, then that resource should be available to respond to an emergency incident from its assigned fire station at least 90% of the time. Reliability levels below the adopted performance expectation indicate resource exhaustion.

Figure 9: PSF Reliability Objectives

Performance Type	Urban	Rural
Minimum Peak Hour Unit Reliability	90%	90%

9. Local Restriction on Level of Service

9.1. PSF Standards Assessment: PSF has assessed its ability to deliver service in compliance with established national standards finding that current deployment will not allow the department to meet recognized standards. As a result of the level of service analysis, PSF has completed a fire station deployment study with a focus on determining the optimum station location and resource deployment necessary to achieve effective response times. This study has considered the National Fire Protection Association's Standard 1710, the Center for Public Safety Excellence's (CPSE) Standard of Coverage recommendations and Chapter 52.33 RCW in establishing standards for emergency response. Resources required to close the gap between current performance and adopted benchmark levels of service are identified in the 2014-2033 Master Capital Facility and Equipment Plan and its subsequent annual 6-year updates.

9.2. Because of resource limitations and budget restrictions, PSF has adopted level of service standards that exceed the benchmark standards established by NFPA 1710, the CPSE and the guidelines of Chapter 52.33 by as much as 6 minutes.

10. Need for Mitigation of Development Impacts

10.1 Substandard performance: PSF's current fire system performance falls short of national standards. Any additional impacts posed by new development will further erode PSF's ability to deliver service at adopted standards.

10.1.1. Auto Aid: PSF must rely on resources from neighboring fire departments to assemble an effective response force.

10.1.2. Resource exhaustion: PSF is currently experiencing resource exhaustion at Stations 45 and 73 where reliability is below 90% during peak demand hours.

10.1.3. Service Standards: PSF has had to adopt level of service standards that exceed benchmark standards established by NFPA 1710, and the guidelines of Chapter 52.33 by as much as 6 minutes.

10.2. Revenue restrictions: Washington's limit on annual tax collections (101% of the previous year) has eroded PSF's ability to keep up with growth and inflation. An annual levy rate which began at $1.00 per thousand dollars of assessed value will quickly be devalued. This declining levy rate and, greater than one percent inflation has compounded recovery from the lingering effects of the great recession and the current impacts of the COVID pandemic. This has resulted in reductions in purchasing power, delays in hiring, and delays in equipment replacements within PSF. Since 2011 funding of capital replacement programs was reduced in favor of meeting increasing operating expense due to new community growth and inflation. This has led to underfunding the 2014 to 2033 capital plan timeline for additional resources. In August of 2019 voters approved PSF's request to restore its tax levy to $1.00 per thousand of assessed value beginning in the 2020 tax year. Restoration of the levy should assist in better funding the capital needs of PSF.

10.3. Conclusion: Unless new development can mitigate their impacts on the fire service system in accordance with this policy, PSF must oppose all development occurring within PSF service area.

11. Determining Development Impacts

11.1. Concepts of Fire Service Capacity and Cascading Failure:

11.1.1 The deployment of fire and life safety resources such as fire engines and emergency medical vehicles is geographically based through planned selection of fire station locations. Fire station locations must be carefully chosen to allow the resource(s) deployed from these locations to reach all portions of the assigned service area within a time frame capable of providing successful outcomes for critically injured or non-breathing patients and, to prevent flashover and minimize life and property loss during a structure fire.

11.1.2. This type of geographic deployment depends on the availability of the resources assigned to that fire station location. System failure begins to occur when the demand for these resources is increased to a point where simultaneous requests for a resource begins to commonly occur because of exceeding the capacity of that resource. When service demand exceeds a fire station's capacity, a resource from a fire station further away must respond in its place. The result of this situation is often referred to as cascading failure. The failure of one resource to be available to answer emergency calls cascades to the next closest fire station resource, leaving two service areas unprotected when the covering resource vacates its assigned area to make up for lack of capacity of the failing resource area. This effect continues to cascade out with a ripple effect to yet other fire stations and jurisdictions.

11.1.3. Cascading failure causes longer drive times to reach emergency scenes and as a result, it is less likely that those resources can positively affect the negative outcomes of flashover and brain death.

11.1.4. The solution to cascading failure is the addition of service capacity to the area experiencing substandard reliability. The deployment of additional fire resources results in considerable expense to a community; therefore, a delicate balance must be maintained to use but not exceed the service capacity of resources.

11.1.5. The Center for Public Safety Excellence refers to a fire resource's capacity in their Standards of Cover guidelines, in terms of level of "reliability" of a fire resource. If a resource is available at least as often as the expected performance expectation, it is considered reliable.

11.1.6. PSF's ability to meet its response time standards is directly affected by resource reliability.

Figure 10: Reliability Chart

2021 Station Reliability															
	SeaTac			Kent						Covington		Maple Valley			System Wide
Hour	Sta. 45	Sta. 46	Sta. 47	Sta. 73	Sta. 71	Sta. 76	Sta. 72	Sta. 74	Sta. 77	Sta. 75	Sta. 78	Sta. 80	Sta. 81	Sta. 83	Avg.
Incident Count	2611	1663	1673	2651	6649	1717	1962	5399	2114	1817	1218	1051	1249	1140	
00:00	89.02%	92.74%	92.93%	89.76%	91.01%	93.44%	91.44%	89.40%	91.04%	94.14%	96.59%	95.96%	95.01%	96.21%	92.76%
01:00	88.47%	92.01%	95.72%	89.43%	92.62%	94.46%	92.11%	88.70%	92.62%	93.56%	96.93%	96.90%	93.81%	96.34%	93.12%
02:00	90.17%	93.27%	96.07%	89.22%	92.33%	93.96%	93.22%	91.41%	92.20%	94.29%	96.87%	97.40%	95.73%	96.89%	93.79%
03:00	92.32%	94.22%	95.18%	91.42%	93.78%	94.85%	96.22%	91.63%	93.85%	95.51%	98.47%	98.27%	95.95%	98.05%	94.98%
04:00	92.91%	94.52%	96.07%	91.17%	92.45%	94.41%	95.06%	91.82%	93.87%	97.15%	98.13%	99.00%	96.59%	96.99%	95.01%
05:00	91.42%	94.21%	95.28%	89.49%	92.21%	94.72%	94.05%	91.72%	91.64%	96.23%	97.40%	96.96%	95.07%	96.83%	94.09%
06:00	91.74%	93.06%	95.80%	88.21%	92.70%	92.84%	93.06%	90.90%	91.73%	94.92%	96.63%	96.95%	94.59%	95.19%	93.45%
07:00	92.79%	93.92%	94.69%	89.75%	92.13%	92.42%	91.62%	89.34%	89.45%	91.96%	94.19%	95.89%	91.99%	94.18%	92.45%
08:00	91.98%	92.88%	93.71%	85.75%	90.25%	91.14%	90.69%	89.54%	89.74%	92.03%	94.60%	94.52%	92.48%	94.78%	91.72%
09:00	91.85%	94.61%	91.08%	87.47%	90.11%	92.60%	90.02%	87.49%	89.61%	90.14%	90.78%	92.77%	93.16%	92.51%	91.01%
10:00	86.93%	93.90%	87.32%	86.90%	88.77%	91.62%	88.77%	85.96%	89.07%	88.43%	90.88%	93.15%	92.96%	91.84%	89.75%
11:00	86.02%	93.27%	90.14%	85.52%	87.36%	89.58%	87.84%	84.24%	86.50%	89.70%	90.95%	91.57%	92.85%	92.13%	89.12%
12:00	88.03%	93.06%	90.48%	87.17%	87.99%	90.57%	89.79%	86.47%	86.52%	88.83%	91.14%	93.60%	94.34%	93.85%	90.13%
13:00	84.79%	92.12%	89.78%	85.26%	88.56%	91.14%	89.28%	83.84%	88.27%	88.04%	92.51%	92.68%	94.56%	92.95%	89.56%
14:00	84.79%	92.12%	89.78%	85.26%	88.56%	91.14%	89.28%	83.84%	88.27%	88.04%	92.51%	92.68%	94.56%	92.95%	89.56%
15:00	86.98%	93.18%	90.18%	84.79%	87.44%	90.69%	86.43%	84.43%	87.81%	86.48%	89.12%	90.57%	94.70%	90.69%	88.82%
16:00	85.21%	91.58%	90.03%	82.53%	87.52%	89.55%	89.25%	84.41%	87.13%	88.19%	92.52%	90.93%	94.00%	92.20%	88.93%
17:00	84.38%	92.18%	90.78%	85.22%	87.21%	91.70%	87.71%	82.64%	86.93%	87.11%	92.78%	92.00%	90.88%	92.83%	88.88%
18:00	86.73%	91.34%	90.30%	84.06%	88.28%	90.92%	88.97%	83.45%	85.19%	85.91%	93.10%	91.88%	89.01%	92.25%	88.67%
19:00	86.18%	90.82%	91.08%	84.49%	88.60%	90.77%	88.15%	83.76%	85.06%	87.58%	91.85%	92.49%	88.98%	92.47%	88.73%
20:00	85.56%	89.87%	91.32%	83.33%	87.48%	91.32%	89.67%	82.51%	86.75%	89.20%	94.07%	92.84%	89.34%	94.83%	89.15%
21:00	88.22%	90.29%	91.01%	82.71%	88.06%	91.40%	89.82%	83.76%	87.61%	89.71%	93.07%	93.90%	88.71%	93.92%	89.44%
22:00	87.28%	91.38%	91.88%	86.37%	88.46%	93.76%	91.25%	88.17%	89.98%	92.22%	95.65%	95.74%	92.68%	95.46%	91.45%
23:00	90.64%	93.77%	93.64%	91.68%	93.05%	93.93%	93.17%	92.18%	95.14%	94.47%	97.49%	97.19%	93.38%	96.76%	94.04%
Daily Avg.	88.52%	92.68%	92.26%	86.96%	89.87%	92.20%	90.70%	87.15%	89.42%	90.99%	94.09%	94.41%	93.14%	94.30%	91.19%

11.2 Components of Response:

11.2.1. PSF tracks two primary performance measures. These measure the time required for the system to provide resources against the Level of Service goals established by PSF.

11.2.1.1. First is the arrival time of the initial arriving "first-in" or distribution resource.

11.2.1.2. Second is the arrival of the full first alarm assignment which provides the resources needed to effectively mitigate the emergency incident. This is referred to as the "Effective Response Force" (ERF) or concentration resources. An initial arriving resource can begin to render aid or perform other necessary tasks as a component of the ERF but cannot resolve the incident alone. The ERF for life threatening medical calls requires two or more resources. The ERF for a structure fire requires five or more resources. The additional resources of the ERF must respond from greater distances than the first-in resource therefore the first-in and ERF have separate performance expectations.

11.3 Effect of Development on Fire System Performance:

11.3.1. New development uses service capacity eroding the reliability and the temporal performance of fire service resources.

11.4. Mitigation Actions Required:

11.4.1. PSF's limited funding and resources has caused the need to adopt standards that establish levels of service below nationally recognized benchmark standards. As a result, all new development has a direct impact on PSF's service capacity.

11.5. Mitigation Options: Residential, Commercial and Regional Commercial

11.5.1. PSF staff may utilize the options listed below and/or any state or locally adopted building code set, and any NFPA or other recognized standard to mitigate the impacts of new development upon the ability of PSF to deliver adopted levels of service.

11.5.2. Acceptable mitigations shall appropriately address risk of the residential, commercial, or regional commercial development and may include, but not be limited to one or more of the following options to achieve concurrency:

11.5.2.1. Installation of automatic fire sprinkler systems to provide onsite fire control until PSF response units can arrive on scene. All automatic fire sprinkler systems shall comply with NFPA 13.

11.5.2.1.1. Exception: *Partial flow through or multi-purpose or, water mist fire protection systems may be allowed in one and two-family structures upon approval of the Fire Marshal representing the authority having jurisdiction.*

11.5.2.2. Installation of monitored alarm and alerting systems to provide early alerting to PSF.

11.5.2.3. Installation of fire walls or other building separations to reduce fire flow and/or firefighting resource requirements.

11.5.2.4. Use of alternate construction materials or design to reduce chance of fire spread between structures and aid in rescue operations.

11.5.2.5. Installation of systems or features that assist evacuation and sheltering in place.

11.5.2.5.1. Design and installation of areas of refuge in multi-story stairwells.

11.5.2.5.2. Installation of a central fire department lobby control with intercom systems in taller high-risk (multi-family housing) buildings to assist evacuation and sheltering in place.

11.5.2.6. Addition of access enhancements such as secondary access points, fire lanes, ambulance parking spaces etc.

11.5.2.7. Installation of incident reduction features such as grab bars in senior and disabled housing units.

11.5.2.8. Installation of monitored medical alarms.

11.5.2.9. Installation of alarm monitored defibrillators in public areas of multi-family housing, places of assembly, and public buildings.

11.5.2.10. Impact Fees.

11.5.3. Selected mitigation measures should be relational to the risk imposed by the development and its use. Time is the critical issue in the delivery of emergency fire and medical services. Mitigation measures should be appropriate and adequate to achieve a level of public safety that would be equivalent to PSF's achievement of response time standards within a reasonable, six-year period.

12. Developer Agreements

12.1. Developer agreements may be required for all developments occurring within PSF service area when impact or level of service fees alone, do not adequately mitigate the risk of the new development or ensure concurrency. When determined by the Chief or his designee, PSF and the development applicant shall enter into a mitigation agreement that clearly identifies all mitigation necessary to maintain fire service concurrency.

12.2. Basis for Calculating Impact and Level of Service Fees (Appendix A):

12.2.1. Boundaries: As a point of reference, PSF boundaries and resources deployed within those boundaries shall be used to determine the service capacity according to PSF's adopted response time standards. This policy shall be applied to all or administratively defined areas within the boundaries of PSF.

12.2.2. Property Categories: Properties are grouped by three basic categories, residential, commercial, and regional commercial.

12.2.2.1. Residential properties shall include both single family and multifamily units.

12.2.2.2. Commercial property shall be those property uses that would otherwise be classified as industrial, business, retail sales and services, wholesale sales, storage, assisted care facilities, churches and medical facilities.

12.2.2.3. A "regional commercial" designation may be applied to commercial properties when by design, location, and business plan is intended to serve a regional largely non-resident population. Regional commercial designations are likely to occur near regional transportation, shopping and entertainment centers, places of assembly, and will produce fire service impacts that are much higher than like properties in other areas serving resident populations.

12.2.3. **Capital Improvements:** PSF's Capital Facilities and Equipment Plan identifies the resources and revenue needed to provide adequate service and maintain public health and safety over a 20-year planning cycle. Each year an updated Six Year Capital Improvement Plan shall be adopted to provide current levels of service and provide the basis for updating construction and equipment costs and impact and level of service fees.

12.2.4**. Fire Department Service Demand:** Past demand for fire department services to property categories identified above, shall be used to predict future service level demand to those proposed property types. The percentage of service use by new development and its impact on PSF Service Levels shall be used to determine appropriate and relational contributions for each property type (see Appendix A, Res/Com Split). Needed expenditures for capital improvements identified in PSF's

Capital Facilities and Equipment Plan will be the basis for determining the construction and equipment costs (C&E) which are used in calculating impact fees and level of service contributions.

12.2.5. **Usage Factor:** The specific use of fire services by land use category. Use factors are based on actual incident rates. (See appendix A)

12.2.6**. ERF (Effective Response Force) Factor:** The minimum amount of staffing and equipment that must reach a specific emergency location within the maximum adopted level of service time capable of fire suppression, EMS and/or another incident mitigation.

12.2.7. **New Development Share:** That portion of C&E to be paid for by new development. New Development share is used to assure that new development pays only for improvements related to growth and maintenance of fire service concurrency.

12.2.8. **Projected Development:** The 20-year growth projections found in PSF's Capital Facilities and Equipment Plan will be the basis for PSF calculations of future dwelling units and future square-footage of commercially developed properties.

13. Mitigation Methodology and Fee Application

13.1. New Development Assessment: PSF shall pursue all appropriate mitigations necessary to maintain public safety and fire service concurrency through the provisions provided by the Growth Management Act (GMA), State Environmental Protection Act (SEPA), Washington State subdivision codes, and the adopted land use regulations in the authority having jurisdiction.

13.1.1**. Impact Fees & Mitigations**

13.1.1.1. In the PSF response area, where fire service impact fees have been adopted by the Authority Having Jurisdiction, will be assessed based on established fees found in Appendix A. Total fees will be calculated based on worksheets found in Appendix B or C.

13.1.1.2. PSF staff will determine appropriate non-fee mitigations that may be necessary in addition to impact fees to provide for adequate built-in protection or mitigations necessary for fire service concurrency to the proposed development.

13.1.1.3. PSF staff shall consider developer submitted alternate mitigations and fee amounts presented in a study that provides acceptable alternatives to the mitigations found in this policy.

13.1.2. **Level of Service Fees & Mitigations**

13.1.2.1. In areas where fire service impact fees have not been adopted in support of PSF by the authority having jurisdiction to permit building and land uses, each new development when proposed, and upon notice of application, shall have their direct impacts assessed and their appropriate mitigation options determined by PSF staff.

13.1.2.2. Appropriate Level of Service Contribution fees will be calculated and determined by applying the formula found in Appendix A.

13.1.3. Impact and Level of Service Fee Reduction:

13.1.3.1. Where automatic fire sprinklers are *voluntarily* installed in single family residential occupancies in compliance with RCW 82.02.100 a reduced fee equal to 70% of the impact or level of service fee shall serve to mitigate the costs of needed EMS and rescue resources.

13.1.4. Determination of fee – Adjustments – Exception – Appeals

13.1.4.1. The developer may be entitled to a credit for the value of any dedication of land for, improvements to, or new construction of any system improvement provided by the developer to fire protection facilities identified in the PSF Capital Plan.

13.1.4.2. The standard impact or level of service fee may be adjusted in one of the following circumstances:

13.1.4.2.1 The developer demonstrates that the impact fee was improperly calculated; or,

13.1.4.2.2. Where unusual circumstances are identified by the land use authority having jurisdiction, the developer or PSF staff, the fee may be adjusted in specific cases to ensure that impact fees are imposed fairly. Adjustments will be determined jointly by the director for the land use authority having jurisdiction and PSF's designee.

13.1.4.3. In cases where a developer requests an independent fee calculation, adjustment exception or a credit pursuant to RCW 82.02.060(6), PSF's designee will consult with the director for the land use authority having jurisdiction prior to making the final fee determination.

13.1.4.4. A developer may provide studies and data to demonstrate that any factor used by PSF may not be appropriately applied to the development proposal.

13.1.4.5. Any appeal about fee amounts shall follow the process for the appeal of the development application in the authority having jurisdiction for land use approval.

13.1.4.6. Impact fees may be paid under protest to obtain a building permit or a manufactured home permit.

13.1.5. Fee Collection Policy

13.1.5.1. Payment of impact fees shall comply with the guidelines of chapter 82.02 RCW, applicable implementing city/county codes, and will be collected by the jurisdiction having authority at time of permitting, or as defined by a required development agreement. Impact or level of service fees shall be based on the most recently adopted formula and fees. Any fees paid later than required shall be subject to interest at a rate of one (1) percent per month.

13.1.5.2. All impact fees collected by the authority having jurisdiction shall be held in separate account, transferred to PSF with interest, where they shall be held in a reserve account used to fund PSF's Capital Improvement Plan. If impact fees are not utilized within ten years of receipt, a refund will be issued to the developer with interest.

13.1.5.3. All level of service fees collected, shall be held by PSF in a reserve account used to fund PSF's Capital Improvement Plan. If a level of service fees is not utilized within five years of receipt, a refund will be issued to the developer with interest.

13.1.6. Multi-Family common space credit

13.1.6.1. Each MF dwelling unit shall be credited 50 square feet toward common spaces (not including commercial spaces) in other parts of residential portions of the structure. Total common spaces within the residential portion of the structure exceeding the sum of 50 square feet times the number of total dwelling units shall be assessed the per square foot fee identified in Appendix A for Commercial/Industrial properties for each square foot of common space exceeding the credited amount.

13.1.6.2. Common space credits per dwelling unit shall not apply to mixed use developments where separate commercial and parking spaces are not part of the common living areas of the multi-family space.

13.1.7. Fee Exempt Properties

13.1.7.1. Shelters or dwelling units for temporary placement, which provide housing to persons on a temporary basis not exceeding two weeks.

13.1.7.2. Rebuilding or remodeling of a legally established structure destroyed or damaged by fire, flood, explosion, act of nature or other accident or catastrophe; provided, that a building permit for the rebuilding or remodeling is issued within one year after such damage or destruction occurs. The exemption shall not apply to any additional structure or expansion of the original square footage that is proposed to be built on the same tax parcel on which the structure that was damaged or destroyed is being rebuilt or remodeled.

13.1.7.3. Projects in which existing dwelling units are converted into condominium ownership and where no new dwelling units are created.

13.1.7.4. Any development activity that is exempt from the payment of an impact fee pursuant to RCW 82.02.100(1), as amended.

13.1.7.5. Any development activity for which fire impacts have been mitigated pursuant to a voluntary agreement entered into with PSF to pay fees, dedicate land or construct or improve fire facilities; provided, that the agreement predates the effective date of impact fee imposition.

13.1.7.6. Any development of 200 square feet or less that does not use or store hazardous materials that would create a life safety risk.

13.1.7.7. Alterations of an existing nonresidential structure that does not expand the useable space and that does not involve a change in use.

13.1.7.8. Demolition of or moving an existing structure within PSF from one site to another.

13.1.7.9. Miscellaneous improvements that do not create additional demands and need for fire protection facilities, including, but not limited to, fences, walls, swimming pools, and signs.

13.1.7.10. Alteration or expansion of or remodeling of an existing dwelling or structure where the use is not changed.

13.1.7.11. Construction of an accessory dwelling unit on a parcel with an existing single-family dwelling unit; provided however, that this shall only exempt the construction from two-thirds of the normal residential impact fee that would otherwise apply.

13.1.7.12. Pursuant to RCW 82.02.100(2), where automatic fire sprinklers are voluntarily installed in single family residential occupancies, a reduced fee equal to 70% of the impact or level of service fee shall serve to mitigate the costs of needed EMS and rescue resources.

13.1.7.13. Existing structures retained and incorporated into a new subdivision of land.

13.1.8. Agreements

13.1.8.1. All mitigation agreements between PSF and developers shall be recorded as a lien against the property of the proposed development. Upon receipt of payment, PSF will promptly notify the appropriate authority having jurisdiction and remove any encumbrances recorded against the appropriate property.

14. PSF Funding Share

14.1. PSF Funding Participation: There is currently an identified need for additional fire facilities and equipment in PSF related to growth that occurred prior to this policy. Total funding of PSF's Capital Facilities and Equipment Plan is split between PSF and new development. New development through impact fees or level of service fees shall only be required to fund that share related to new growth. PSF will share in the expense of needed resources as outlined below:

14.1.1. PSF will be directly responsible for the percentage of construction and equipment costs beyond the growth share determined for new development.

14.1.2. PSF will contribute shortages because of loss of, or default on collections of impact and level of service fees.

14.1.3. Estimated revenues are never fully realized from development and PSF will need to supplement shortages.

14.1.4. PSF will contribute the actual construction and equipment costs exceeding original estimates.

14.1.5. Payment of unanticipated costs associated with implementing PSF Capital Improvement Plan.

14.1.6. Advancing funds for capital expenses before total collection of impact fee or level of service contributions.

14.1.7. Management of this policy, and the Capital Improvement Plan.

15. Adequate Provisions for Public Safety, Limitations, Intent of Concurrency

15.1. The safety and welfare of current and future residents of PSF is of paramount concern. It is recognized that this policy may have limitations and may not provide definitive guidance for effective mitigation of direct development impacts on PSF's service capacity in all cases.

15.2. It is not the intent of this policy to limit PSF's staff in making decisions outside of this policy where those decisions and mitigation options serve the intent of maintaining concurrency with development and protecting PSF's service capacity, making rational and relational mitigation requests appropriate to the level of risk, and protecting the safety of the public and firefighters in a fair and consistent manner.

16. Policy Review and Adjustment

16.1. This policy will be reviewed and amended annually. This review will include updates to reflect current level of service capacity. Amendments will be made consistent with the annual revision of the six (6) year Capital Improvement Plan and shall be approved through a resolution of PSF's Governance Board.

Appendix A

Impact Fee Formula Calculation								
Land Use Type	**System wide C&E**	**Residential/ Commercial Split**	**Usage Factor**	**ERF Factor**	**New Dev Share**	**Projected New Units 2014 - 2035**	**Impact Fee**	
Residential								
Single-Family	$108,673,000	58%	62%	1.08	80%	14,200 Units	$2,377.75	Per Unit
Multi-Family			38%	1.4			$1,889.13	
Commercial								
Commercial/Industrial	$108,673,000	42%	33%	2	85%	12,312,100 SF	$2.08	Per SqFt
Hospital/Medical Clinic/ Civic/School/Church			26%	2	95%		$1.83	
Senior Living/Assisted Care			21%	3	95%		$2.22	
Service - Hotel/Restaurant/Etc.			20%	2	95%		$1.41	

LOS Formula Definitions

- **Land Use Type:** Defines the land use types and structures that are assessed impact fees.

- **System wide C&E:** The construction and equipment costs for the 20-year time span of the Puget Sound RFA's Master Capital Facilities and Equipment Plan. This cost is updated based on a combination of updated 6-year capital need changes and consumer price index (CPI) increases.

- **Res/Com Split:** Percentage of annual emergency responses by property type; Residential = 58%, Commercial = 42%.

- **Usage Factor:** The portion of Res/Com Split that emergency response resources are used by a specific property type.

- **ERF Factor:** The ERF or effective response force factor represents the size of the first alarm emergency response in numbers of firefighters and equipment that is needed to effectively handle the risk posed by that property type.

- **New Dev Share:** Represents the portion of C&E costs assigned to new development. The remaining portion is to be paid for by the RFA through annual tax collections.

- **Projected New Units:** Defines the number of new units projected to be constructed within Puget Sound Regional Fire Authority service area between 2014 and 2035

Impact Fee Amount: Represents the maximum fee to be paid by new development for each specific property type. This fee amount may be reduced by 30% for single-family homes only if an automatic sprinkler system is installed voluntarily.

PUGET SOUND REGIONAL FIRE AUTHORITY
INTERNATIONALLY ACCREDITED FIRE AGENCY

Project Permit # _____

Appendix B

Puget Sound Regional Fire Authority
Impact Fee Calculation for New Residential Development

Date of Analysis: _____
Project Address: _____

Project City: _____
Land Parcel # _____

Impact Fee category (check one) and rate:

Single-Family	_____	Impact fee rate:	$2,377.75/ Unit
Multi-Family	_____	Impact fee rate:	$1,889.13/ Unit

Optional Fee Credit for Single-Family *Only*:

Sprinklers installed voluntarily in SFR(circle one): YES: 30% NO: 0%

Total Fee Calculation:

Impact Fee Rate	= _____
Residential units in development	**x** _____
Total impact fee amount	$ _____

New Residential Impact Fee to be assessed:

Total impact fee amount $ _____ **–** optional fee credit for SFR _____% = $_____

Project Permit # _____

Use for Multi-Family Only

Multi-Family Common Space Calculation:

Total Common Space in development _____SF **–**

Residential units in development _____ units **x** 50 SF

Common Space area to be assessed

= _____SF

Commercial/Industrial Impact fee rate:

x $2.08 /SF

Common Space Impact Fee amount

$ _____

Total New Multi-Family Impact Fee to be assessed:

New Residential IF amount $ _____ **+** Common Space IF amount

$ _____ = $_____

PUGET SOUND REGIONAL FIRE AUTHORITY
INTERNATIONALLY ACCREDITED FIRE AGENCY

Project Permit # _____

Appendix C

Puget Sound Regional Fire Authority
Impact Fee Calculation for New Commercial Development

Date of Analysis: _____
Project Address: _____

Project City: _____
Land Parcel # _____

Impact fee category (check one) and rate:

Commercial/Industrial	_____	Impact fee rate:	$2.08 / SF
Hospital/Medical/Civic/ School/Church	_____	Impact fee rate:	$1.83 / SF
Senior Living/Assisted Care	_____	Impact fee rate:	$2.22 / SF
Service–Hotel/Restaurant/Etc.	_____	Impact fee rate:	$1.41 / SF

Total fee calculation:

Impact fee rate	= _____
Square footage of development	x _____

Impact Fee to be assessed:

Total impact fee amount = $_____