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I. Statement of Intent

The City of Portland Water Bureau (PWB), USDA Forest Service (Forest Service), and Oregon Department of Forestry (ODF) agree that a vigorous fire protection and suppression program for the Bull Run Watershed Management Unit (BRWMU) is required in order to ensure protection of water quality and ecosystem values (Figure 1. – General vicinity map of Bull Run Watershed Management Unit). Fire suppression resources provided by the Mt. Hood National Forest and the North Cascade District are subject to federal and state funding levels. The parties agree that the Forest Service will retain primary responsibility for a comprehensive fire protection program in the Management Unit. It is further agreed that the Forest Service will prepare and periodically update a Fire Protection plan for the Management Unit in consultation with the PWB and ODF that includes specific provisions for fire prevention, detection and suppression that are relevant to the Management Unit. Once prepared, the Fire Protection Plan will be reviewed on a yearly basis and provisions made for any changes in conditions, resource values, or funding. In addition, because of the high potential adverse effects to the City’s water supply in the event of a large stand replacement fire in the watershed, the City of Portland may choose to augment fire prevention and fire preparedness where agreed to and in concert with the Forest Service and ODF.


The FM Plan is intended to be a dynamic document which captures revisions and updates on an as-needed basis.
II. Description of the Bull Run Watershed Management Unit

A. Management Objectives & Constraints

Public Law 95-200 designates the principle management objectives within the Bull Run Watershed Management Unit as the continued production of “pure, clear, raw, potable water” for the City of Portland and its wholesale customers. The Oregon Resource Conservation Act of 1996 (Act) amended PL 95-200 to prohibit timber harvest, including salvage logging, in the Bull Run water supply drainage and some of the lands that drain directly into the lower Bull Run River. Exceptions in the Act include cutting of trees for the protection, enhancement, or maintenance of water quality and quantity, the construction, expansion, protection or maintenance of municipal water supply facilities; or for the construction, expansion, protection or maintenance of energy transmission. The Little Sandy Protection Act of 2001 expanded the boundary of the Management Unit to include nearly all federal land in the Little Sandy hydrographic drainage and extended the timber harvest restrictions to the entire Management Unit. The Portland City Council approved adoption of a new City Code chapter in February, 2010 that applies the same
tree-cutting restrictions that apply to federal lands in the Management Unit to City-owned lands in and adjacent to the Bull Run.

In 1994, the Northwest Forest Plan (NWFP) amended the Mt. Hood Land and Resource Management Plan within the range of the northern spotted owl. The Northwest Forest Plan adds new resource management goals and objectives and several major land allocations, each with its own set of standards and guidelines. These land allocations overlay the 1991 Mt. Hood Forest Plan land allocations. The standards and guidelines of the NWFP supersede other direction except treaties, laws, and regulations unless that direction is more restrictive or provides greater benefits to late-successional forest related species (USDA Forest Service, 1997).

B. Unique Resources at Risk

A number of unique values are within the BRWMU. In addition to the municipal water supply and infrastructure, other resources include: historic buildings, ESA-listed fish species in the lower Bull Run River, pure strain of coastal cutthroat trout in Bull Run Lake, and late successional reserves for old growth dependent species (The PWB will provide a table of Values at Risk for the 2015 update).

C. Fire History & Occurrence

The fire history of the Bull Run was evaluated by researchers from the University of Washington in the mid 1990s (Krusemark, Agee and Berry, 1996). The authors used the natural fire rotation (NFR) technique to quantitatively characterize the fire regime. NFR is defined as the number of years in which the equivalent acreage of a geographic area of interest (e.g., a watershed or a fire protection unit) burned. The NFR is computed as follows:

\[
NFR = \frac{[\text{Time Period}]}{[\text{Proportion of Area Burned}]} 
\]

The average NFR for the Bull Run from 1493 to 1993 is 347 years, but the record is heavily influenced by a few large events (Krusemark, Agee and Berry, 1996). The literal interpretation of a 347 year NFR is that every 347 years an area equal in size to the watershed (68,000 acres) is burned. Areas above 3300 feet elevation generally burned more frequently than areas below 3300 feet. This elevation represents the general break between the western hemlock (Tsuga heterophylla) and silver fir (Abies amabilis) plant zones. The overall NFR below 3300 feet (1493 – 1993) is 369 years. The overall NFR above 3300 feet (1493 – 1993) is 293 years (Krusemark et al, 1996). Although NFR is a useful measurement to characterize and compare the fire frequency regime of the BRWMU, it does not characterize the frequency of stand-replacing fires that have burned areas less than the full acreage of the Bull Run watershed that would likely significantly impact water quality.
D. Fire Seasonality

Krusemark et al. (1996) assessed the fire seasonality of the Bull Run watershed by examining 20th century weather records, number of fires, and cause. Weather data took into account probability of lightning ignitions based on long term and short term drought, thunderstorm activity and east winds. Based on these data, a 4-month fire season (July through October) appears to occur in the Bull Run watershed.

Large fires during the 20th century occurred in the late summer and were the result of escaped slash burns. It should be noted that the Forest Service no longer conducts slash burns in the Bull Run watershed or adjacent to the BRWMU. However, forestry practices on private industrial forestland outside of the BRWMU may continue to use slash burning. Analysis and prioritization of fuel reduction projects may lead to future burning activity on Federal land outside of the BRWMU. If so, these fuel reduction activities on federal land will be conducted in a manner that does not compromise the integrity of the fire protection program for the Bull Run that is established in this plan.

Table 1. Number of fires by Size Class\(^1\) and Cause – 1994 through 2013 represent the number of fires occurring in the BRWMU from 1995 through 2011 and the cause of each fire. Limited public access has minimized the number of fires. Rapid detection and timely response have minimized fire size.

Fires by Size Class and Cause 1994-2013

<table>
<thead>
<tr>
<th>Size Class</th>
<th>Lighting</th>
<th>Campfire</th>
<th>Debris Burning</th>
<th>Arson</th>
<th>Misc</th>
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<td>1</td>
<td>2</td>
<td>1</td>
<td>12</td>
</tr>
</tbody>
</table>

\(^1\) Size Class definitions: Class A = 0 - .24 acres; Class B = .25 – 9.9 acres; Class C = 10 – 99 acres; Class D = 100 – 299 acres; Class E = 300 – 999 acres; Class F = 1000 – 4999 acres; Class G = 5000+
Table 2. Number of fires by Size Class and Cause – 1980 through 1993 represent the number of fires occurring in the BRWMU from 1980 through 1994 and the cause of each fire. Forest Service slash burning activity was the cause of the largest fire during this ten year period. The primary difference between the 2 timeframes is Forest Service slash burning activity. When comparing the two tables 77% of the fires have been Class A fires and 22% Class B fires.

Fires by Size Class and Cause 1980-1993

<table>
<thead>
<tr>
<th>Size Class</th>
<th>Lightning</th>
<th>Equipment</th>
<th>Smoking</th>
<th>Campfire</th>
<th>Debris Burning</th>
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Total 6 1 2 3 1 2 15

E. Fire Regime

Across the Pacific Northwest, the frequency, intensity, and extent of fires differ considerably. These differences are broadly categorized into either “high, moderate, or low” severity as described by the frequency, intensity, and environmental gradients of temperature and moisture.

Fire severity of the Bull Run watershed is generally categorized as high, with most large fires occurring in summer to fall. Fires that appear to have entered the watershed from its edge significantly influence the historic record. Because the Bull Run receives much more precipitation than watersheds directly north or south, its high-severity fire regime contrasts with the moderate-severity fire regime observed in these adjacent areas. The NFR outside of the Bull Run is estimated between 250-300 years (Krusemark et al. 1996).

The “high” severity fire regimes are characterized by: infrequent severe crown or surface fires that cause high tree mortality; or stand replacement fires that typically result in total stand mortality and moderate to high loss of the duff-litter layer. Unlike “moderate” fire severity regimes, the landscape following “high” severity fire regimes are usually dominated by a lack of residual (remnant survivor) trees. Stand structure is void of an overstory and this results in an even-aged stand. These fires are generally associated with: drought years, east wind weather events which lower humidity, and an ignition source such as lightning. Fires are often of short duration, but of high intensity and severity (Krusemark, et al. 1996).
III. Pre-suppression

A. Industrial Fire Precaution Level & Fire Prevention

The Industrial Fire Precaution Level (IFPL) system was developed by federal, state and industry representatives. The system outlines industrial activities that are permitted as the atmosphere warms and the environment dries (see Appendix I for definition of levels and activities). Historically, the Mt. Hood NF and ODF have relied on separate fire-weather stations to issue determinations of IFPLs for lands within their jurisdiction in the BRWMU. A number of times throughout past fire seasons, this has resulted in one IFPL identified for ODF protected lands and another IFPL identified for Forest Service protected lands. These dual IFPL’s caused confusion for Water Bureau maintenance crews and Water Bureau contractors working in the Bull Run, since ODF-protected land (i.e., City-owned land) is intermingled with Forest Service protected land in the area between the main gate and Bull Run Dam No. 1. Contractors and Water Bureau employees often were not clear on which protection agency to contact, what approval procedures to use, and what agency form to use. A single IFPL for the Bull Run would simplify administration and reduce confusion among agency personnel and their contractors. Appendix I contains the Mt Hood National Forest Industrial Fire Precautions Inspections Guide and is provided as a guideline, although each waiver request will be individually analyzed and reviewed.

Beginning 2006, ODF and Forest Service representatives agreed to apply a single IFPL designation determined by the Forest Service for the entire Bull Run Watershed Management Unit and City-owned land on the western boundary of the Management Unit. This has simplified administration of the IFPL system for contractors and Water Bureau maintenance crews working in the Bull Run. The area designated by a single IFPL will have the same boundaries as the Regulated Use area (see Figure 2). Regulated Use places limitations of prohibitions on smoking, open fires, and motorized vehicles. Regulated Use closures should not be confused with IFPL operations. ODF and the FS will issue written Regulated Use closures. There is no waiver process for these closures.

Details of the IFPL waiver application and approval process administered by the Forest Service and can be found in Appendix I, Mt. Hood National Forest Industrial Fire Precautions Inspections Guide Revision 5, June 2002 under Waivers and Substitute Measures. The ODF waiver process can also be found in Appendix I.
Forest Service IFPL data has been generated from the Log Creek Remote Automated Weather Station (RAWS).

B. Fire Danger Rating System

ODF and the Forest Service use a Fire Danger Rating for all regulated areas. The adjectives of low, moderate, high and extreme describe the fire danger for use in public information releases and fire prevention signing (National Wildfire Coordinating Group, 2002). The Fire Danger Rating system should not be confused with the Industrial Fire Precaution Level. IFPL’s relate to industrial operations on ODF or Forest Service jurisdiction lands, whereas the Fire Danger Rating system is used to determine the appropriate staffing levels on any given day by the two agencies.

Staffing levels refer to daily staffing of initial attack resources. As fire danger levels change, the amount and type of resources may change. Dispatch levels refer to which resources should respond to a reported fire and are linked to staffing levels.
C. Fire Prevention Cooperatives

ODF and the Forest Service belong to two Cooperative Fire Prevention Groups. They are the Mid-Columbia Fire Prevention Cooperative that serves areas to the north and east of the Forest and the Mt. Hood Fire Prevention Cooperative, which serves areas west of the Forest. Both of these groups are active in serving the communities by providing fire prevention information and education. This is accomplished by participating in community events such as county fairs, parades and school events such as team teaching.

D. Community Wildfire Protection Plans

The Healthy Forests Restoration Act (HFRA) of 2003 provides incentives for communities to engage in comprehensive forest planning and project prioritization. Communities must first prepare a Community Wildfire Fire Protection Plan (CWPP) in order for fuel reduction projects to be given a high priority for federal funding related to the Act. HFRA allows the Forest Service and the Bureau of Land Management to give consideration to the priorities of local communities as they develop and implement forest management and hazardous fuel reduction projects through CWPP’s. The Forest Service maintains a Geographic Information System (GIS) layer of Wildland Urban Interface (WUI) areas as defined by the HFRA. These GIS layers need to be updated as new boundaries are identified through completion of community fire plans.

ODF and the Forest Service worked with Clackamas County to develop a CWPP, which was completed in 2005. The plan was updated in 2012 and includes refinement of the WUI mapping and additional emphasis on a localized approach to wildfire planning. In the 2012 plan, CWPP’s were developed for each individual fire agency in order to more directly address wildfire issues specific to individual communities.

The two agencies also assisted Hood River County in completing a CWPP for their jurisdiction in 2007. A large part of this involvement was helping to map WUI areas, develop a risk assessment and determine hazard reduction needs. This will be an ongoing effort that will need to be updated at least yearly.

ODF and the Forest Service also worked with Multnomah County to develop a CWPP in 2011. The plan aims to promote a more fire resilient community through accomplishing several objectives, including: (1) assessing wildfire risk, (2) developing hazardous fuels reduction and biomass utilization projects, (3) enhancing emergency response operations, (4) involving the community in wildfire prevention, and (5) reducing structural ignitability through regulatory alignment.

E. Fire Detection

Hickman Butte lookout is located in the southeast portion of the Bull Run drainage and is seasonally staffed with a contract fire lookout. This lookout is generally staffed seven days a week from approximately late-June until mid-October, depending upon the fire weather conditions. The contract fire lookout requires knowledge in map interpretation,
The use of a multi-channel radios, and procedures for recording and reporting fire weather observations. When needed, the Hickman Butte lookout can be used as radio relays for users that may be in radio dead zone areas.

Prevention patrols are provided by ODF and Mt. Hood westside Fire Management. When patrolling within the Bull Run Management Unit, patrols may make contact with cooperators and contractors during their normal route of patrol. During periods of lightning activity or high to extreme fire danger, the Forest will utilize additional ground patrols as needed. Dry conditions coupled with forecasts predicting dry weather will generate a “severity request.” Severity requests are supplemental sources of fire protection funds that may add additional resources.

When the need arises, ODF or the Forest Service will initiate aerial detection flights, especially if the Forest experiences any significant lightning activity during fire season. Mt. Hood Dispatch will coordinate fixed wing or helicopter detection flights with the Gifford Pinchot National Forest, ODF or the Columbia River Gorge National Scenic Area. These missions are strictly for the detection of wildfires. Use of aerial detection flights may also be considered during periods of high or extreme fire danger and/or during periods of anticipated abnormally high human-caused fire occurrences associated with heavy-use holidays or weekends. Aerial detection flights will also be considered if a threat from sleeper fires exists. Most early season thunderstorms are wet and fire starts may not be noticed until later in the season when fuels are much dryer.

ODF and the Forest Service rely on automated lightning detection data to map the location of cloud-to-ground lightning strikes. ODF provides the City with access to their lightning detection data. ODF, City, Forest employees, cooperators, and contractors in the BRWMU (and private landowners and recreationists outside the BRWMU) supplement these conventional fire detection and reporting methods. All fires that are discovered in or near the Bull Run Watershed Management Unit are to be reported directly to the Columbia Cascade Communication Center (CCCC) located in Vancouver. If fires are reported to the ODF Molalla Unit office or the Zigzag Ranger District office, the information is to be relayed as soon as possible to CCCC and respectively, fires reported to CCCC should be reported to ODF. This communication effort provides for effective and efficient use of all available fire suppression resources. Information on the description of the fire location and when possible, the legal description (Township/Range/Section/1/4 Section), will be requested when the fire is reported. When possible, reporters of fires may be asked to guide ground resources to the fire location.

**F. Cooperation/Coordination**

Several structured mechanisms are used to periodically exchange *preseason* information about fire management issues and resources for the Bull Run. First, a preseason meeting is held annually between ODF, Forest Service, and the City. Second, information about the Bull Run fire management program is discussed at the semi-annual meetings related to the Memorandum of Understanding between the City of Portland Bureau of Water Works and USDA Forest Service, Mt. Hood National Forest. Third, ODF and the Forest
Service meet annually to discuss the number and type of wildland suppression resources which respond to fires in the BRMU. This is called the Block Card coordination meeting. Structural fire suppression is the responsibility of the Sandy Fire District.

**G. Training & Emergency Equipment Rental Agreements**

ODF and the FS obtain guidance and direction of training standards from the National Wildfire Coordinating Group. The FS obtains additional requirements from Forest Service Handbooks (FSH 5109.17). A combination of the two agency standards outlined below, define the use of those not employed by ODF or the FS when suppressing a fire.

“It is agency policy that only qualified personnel will be assigned duties in wildland fire suppression or prescribed fire. All employees assigned dedicated fire program management responsibilities at the local, geographic area, or national level shall meet established interagency and agency competencies (knowledge, skills and abilities) and associated qualifications. The National Wildfire Coordinating Group (NWCG), *Wildland and Prescribed Fire Qualifications Systems Guide* PMS 310-1 is the policy” (National Interagency Fire Center, 2006).

Non-agency firefighters will be certified by state or local fire departments, or private training providers with approved Memorandum of Understanding (MOU) through their local Geographic Area Wildfire Coordination Group. Agencies will not assist in the administration, or sponsor the Work Capacity Test (WCT), as the certifying agency (National Interagency Fire Center, 2012).

The Oregon Department of Forestry will occasionally use AD, Administrative Determined, hired employees in fire support and fire suppression activities. In addition to all other OR-OSHA rules AD employees must specifically meet the minimum training and Personal Protection Equipment (PPE) standards required by OR-OSHA Subdivision N rules (Appendix D).

Notification, communication, and assistance for non-agency suppression resources will take place through the use of federal Emergency Equipment Rental Agreements (EERA) or on ODF jurisdiction, the ODF Rental Agreement. The FS will also coordinate with PWB for use of dozers and tenders.

PWB will set up annual Hazmat awareness training of Hazmat substances that may be involved in a wildland/urban fire incident.
IV. Suppression

A. Fire Suppression Resources & Block Card

ODF and the Forest Service respond to fires based upon the closest forces concept. A block card identifies designated area and fire suppression resources that would respond to a fire start according to the dispatch level – Level I, Level II, and Level III. The dispatch levels are based upon the National Fire Danger Rating System, weather narrative and actual and predicted indices (Ignition Component, Spread Component, Energy Release Component, and Burning Index). Dispatch Level I would send minimal resources while Dispatch Level III would send all resources listed on the block card. No matter what the Dispatch Level, the Incident Commander has the ability to order more resources than are displayed on the block card. The current Block Card developed for the Bull Run Watershed Management Unit can be found in Appendix A.

B. Water Use – Aircraft

Use of helicopter dip-buckets can be an effective fire suppression tool for initial attack in unroaded areas that cannot be accessed by engines or in steep terrain where aerial retardant is difficult to apply. However, the potential for an aviation accident when dipping from Bull Run Reservoirs 1 and 2 or the Headworks diversion pool is a concern because the Bull Run is an unfiltered water supply. Therefore, the parties agree that there is a general prohibition on use of helicopter dip-buckets in those three water bodies (Reservoir 1, Reservoir 2 and the Headworks diversion pool) unless permission is granted on a case-by-case basis by the Water Bureau Administrator or his/her designee. The waiver request and approval will be based on weighing the strategic fire suppression benefits of utilizing these sources vs. the risk and consequences of an aviation fuel spill.

Although the Water Bureau manages Bull Run Lake as water storage facility, its use for helicopter dipping is permitted because of its remote distance from the water intake system in Reservoir 2 and the lack of a surface-flow connection with the upper Bull Run River. There are numerous small natural lakes in the Bull Run Management Unit (e.g., Blue Lake, Palmer Lake, Big Bend Lake, Hickman Lake, Goodfellow Lakes) that have no restrictions for helicopter dipping.

C. Water Use – Engine or Water Tender Drafting

Drafting water from the Reservoir 1, Reservoir 2, and Bull Run Lake is permissible to fill engines and water tenders. In order to protect resident fish, all engines and pumps used in the BRWMU need to be equipped with drafting foot valve screens 3/32” or smaller.
D. Retardant

During initial attack situations, the parties agree that the Incident Commander has discretion to utilize retardants deployed from aerial resources without requiring approval from the Water Bureau Administrator or his/her designee. Retardant use near water courses during initial attack is permitted within the framework of agency policy. In order to minimize adverse effects to water quality and aquatic resources, use of retardants will comply with the Forest Service’s national-level policy, which states:

- Waterways will be avoided and are given a minimum of a 300-foot buffer, including perennial streams, intermittent streams, lakes, ponds, identified springs, reservoirs, and vernal pools.

- These guidelines do not require helicopter or airtanker pilots to fly in a manner that endangers their aircraft or other aircraft or structures or that compromises the safety of ground personnel or the public.

In the event of accidental retardant spills to waterways, immediate notification will be made to the Portland Water Bureau, NOAA Fisheries and Oregon Department of Environmental Quality. See phone numbers in Appendix B.

In extended attack situations (refer to Section V. Appropriate Management Response C. Extended Attack), the agencies agree that use of retardant in the Bull Run water supply drainage or in lands that drain directly to the lower Bull Run River require coordination with the Water Bureau representative in the position of the Resource Advisor (Section V. Appropriate Management Response B. Resource Advisor).

The Forest Service and ODF agree to jointly provide PWB with updated lists of the retardants scheduled to be in use at airtanker bases that will be utilized by their fleets to potentially respond to fires in the Management Unit. PWB will notify the Forest Service and ODF regarding results of their review of the Material Safety Data Sheets (MSDS) to establish a list of approved retardant chemicals for use in the water supply drainage portion of the Bull Run Watershed Management Unit.

E. Foam

Firefighters frequently add foam to water pumped by engines, patrols or portable pumps in order to serve as a wetting agent to increase the efficiency of dispensed water. As with retardants, the Forest Service and ODF agree to avoid application of foam within 300 feet of waterways. The Resource Advisor should be consulted for foam use (Section V. Appropriate Management Response B. Resource Advisor). The Forest Service and ODF agree to annually provide the Water Bureau with updated lists of the foams that could potentially be used by their agency’s aviation fleets and ground-based equipment to respond to fires in the Management Unit. The Water Bureau will notify the Forest Service and ODF regarding their results of their review the Material Safety Data Sheets.
(MSDS) to establish a list of approved wetting agent chemicals for use in water supply drainage portion of the Bull Run Management Unit.

**F. Mechanized Equipment Use**

In some cases, use of bulldozers and other heavy equipment can be an effective tool for construction of fireline. However, it is acknowledged that their deployment (particularly in off-road areas and/or steep terrain) can cause significant soil disturbance. As with any fire-suppression resource, the Incident Commander will weigh the benefits associated with deployment of mechanized equipment with the risks of adverse impacts to water quality and other environmental resource values. During initial attack, the use of dozers or other heavy machinery to construct firelines, safety zones and re-open fire access roads is generally permitted at the discretion of the Incident Commander. The operational feasibility of re-opening decommissioned roads will be based on whether the roads have been actively or passively decommissioned. Actively decommissioned roads have had their culverts removed, which limits opportunities for heavy equipment access. It is important for Forest Service and PWB staff to periodically update road maps for the Bull Run and adjacent areas to incorporate updated information on the status of roads. Dozer use will be primarily limited to opening roads or on terrain generally less than a slope gradient of 50%. Consultation with Resource Advisors designated by the Forest Service and the Water Bureau is encouraged, but not specifically required, for use of mechanized equipment during initial attack. Long term impacts and rehabilitation shall be taken into account.

During extended attack, consultation and coordination with the Water Bureau Administrator or his/her designee is recommended for use of mechanized equipment for construction of fireline, and safety zones in previously unroaded and otherwise undisturbed areas in the Bull Run water supply drainage or areas that drain directly to the lower Bull Run River.

**G. Radio Use**

A frequency use agreement was generated by the Forest Service and City in 2006 for radio use. The agreement can be found in Appendix E. The City will work to update the Forest Service agreement and obtain similar authorization for the use of ODF radio frequencies through a frequency use agreement with ODF (The frequency use agreement expired in 2011 and will be renewed for 2015).

**V. Appropriate Management Response**

**A. Initial Attack**

The objective of initial attack is to stop the spread of the fire and put it out at the least cost while safely and efficiently managing the fire in conformance with existing policy and procedures set by each respective agency. Forest Service and ODF incident response is based on the “closest forces” concept, whereby the first resource on the scene will
assume incident command responsibilities. When an incident commander from one agency is the responder to a fire on the other agencies protection area they will remain in command until relieved of the duties by the jurisdictional incident commander. On private or City land, ODF would have incident command duties. On Forest Service land, the Forest Service would be responsible for the incident command duties. Portland Water Bureau personnel do not have initial attack responsibilities unless a fire is started by their actions, where they will make an effort to suppress the fire in conjunction with notification to the appropriate agency of the fire. The ODF and Forest Service may use Water Bureau personnel if and when all the proper training and agreements are set in place to do so (see Section III. Pre-suppression G. Training & Emergency Equipment Rental Agreements).

The Sandy Fire Department has responsibility for structure protection in the Bull Run watershed. Sandy Fire Department may request mutual aid from surrounding fire departments based on the scope or intensity of a fire. Sandy Fire maintains mutual aid contracts with surrounding jurisdictions, including Portland Fire & Rescue (PF&R), for the purpose of obtaining supplemental firefighting resources. Mutual aid resources are called for on an as-needed basis and are requested by the Incident Commander through his/her respective dispatch center.

PF&R is not the closest mutual aid firefighting resource to Bull Run facilities; however, it does maintain a response plan with Sandy Fire to provide structure firefighting resources to City of Portland assets in the watershed. This plan includes the immediate dispatch of any firefighting resources requested, up to and including a task force (five engines, two brush units and a battalion chief). If requested by the Incident Commander or PF&R battalion chief, a mobile command and communications unit may also be dispatched. Upon request of the Sandy Fire Chief or his designee, PF&R will also provide one engine company to staff Sandy’s main fire station (Station 71) while Sandy Fire Department resources are committed in Bull Run.

The FS and ODF by policy are prohibited from taking direct suppression action on structural or vehicle fires. Structure protection will be limited to exterior efforts and only when such actions can be accomplished safely and in accordance with established wildland fire operations standards. Sandy Fire Department will be notified through the 911 emergency system in case of structural or vehicle fires.

B. Resource Advisor and Liaison

As with other coordination aspects related to wildland fire suppression operations in the Bull Run, it is recommended that the Water Bureau designate a Resource Advisor (RA) for the incident. The RA position is designed to function within the framework of the Incident Command System and preferably is field-going. The RA anticipates impacts on resources as suppression operations evolve; communicates requirements for resource protection to the Incident Commander or Incident Management Team; ensures that planned mitigation measures are carried out effectively; and provides input in the development of short and long term natural resource and cultural rehabilitation plans.
In cases where the Bull Run may be susceptible to fire entering the area from outside the management unit boundaries (e.g., similar to the 2011 Dollar Lake Fire), the Water Bureau will designate a liaison that will facilitate communication between responding agencies and the Water Bureau and can quickly move into a RA position if the fire enters the Bull Run. The need for a liaison will be evaluated on a case-by-case basis depending on the proximity of the fire to the Bull Run and the threat of the fire entering the management unit.

C. Extended Attack

Extended attack is when suppression action on a wildfire has not been contained or controlled by initial action or contingency forces and for which more firefighting resources are arriving, en route, or being ordered by the initial attack incident commander. When a fire is on both Forest Service and ODF protected lands, a unified command structure will be established. If a fire escapes initial action on FS land, a fire complexity analysis will be used as a guide to determine the level of management organization required to manage the fire. On City-owned land, ODF will complete an analysis to determine the appropriate management organization. On Forest Service protected lands, a Strategic Risk Assessment (SRA) will be completed and documented in the Wildland Fire Decision Support System (WFDSS). An Operational Needs Assessment (ONA) will also be completed to determine the type of Incident Management Team necessary to manage the fire. The SRA and ONA will be developed for all Type 3, 2, and 1 complexity incidents and will be completed in conjunction with the ODF on all unified command fires. Type 5 fires are the least complex and Type 1 Fires are the most complex (see Appendix F for Characteristics of Type 5, 4, 3, 2, 1 Fires). It is strongly recommended that the Water Bureau provide a Resource Advisor who will coordinate through the established command organization. Under an extended attack circumstance, the command organization will order an Incident Information Officer (IIO) through their dispatch center. The IIO will establish on-site media protocols for managing site visits and release of information based on the direction from the respective agency administrators.

D. Large Fire Support

A state, regional, or nationally recognized incident management team will manage all Type 1 and 2 incidents. The jurisdiction where the fire is will be responsible for placing the order for the team and/or as agreed to by the jurisdictions on unified fires. Once the team is established they have authority to manage the fire for the agencies and are guided by set strategies and objectives as identified by the agency administrators designated by each agency. The Water Bureau’s role in the incident management team organization would be as Resource Advisor for the municipal water resource. In the case where the Bull Run is susceptible to fire from outside the management unit boundary, the Water Bureau may also designate a liaison (see above) to facilitate internal communications and preparations for fire entering the management unit. Duties of fire media and information...
contacts and protocols will be identified prior to the team’s arrival as to what media items the team will manage and what media items the respective agencies will manage.

**E. Special Considerations for the BRWMU**

The Water Bureau implements several unique policies within the BRWMU in order to comply with federal, state, and local regulatory requirements for source water protection. Security access to the BRWMU is strictly regulated by the Water Bureau through an electronic gate system. Responding agencies requiring ground access within the management unit should coordinate annually with the Water Bureau to ensure electronic gate keys are authorized and charged. Additionally, the Water Bureau implements a Human Sewage Containment Standard Operating Procedure to reduce the risk of pathogens entering the water supply and comply with state drinking water requirements. In the event that ground access is needed, sanitation practices aligned with those outlined in the Water Bureau’s Human Sewage Containment SOP will be followed provided such actions do not compromise firefighting or safety objectives (see Appendix K for sanitary guidelines for emergency fire suppression efforts in the Bull Run watershed).

**VI. Safety**

The Interagency Standards for Fire and Fire Aviation Operations, January 2014 (commonly known as the Red Book) is the basis for firefighter safety policy and direction. Below are excerpts taken from the Red Book.

“Firefighter and public safety is our first priority. All Fire Management Plans and activities must reflect this commitment. The commitment to and accountability for safety is a joint responsibility of all firefighters, managers, and administrators.

Every supervisor, employee, and volunteer is responsible for following safe work practices and procedures, as well as identifying and reporting unsafe conditions.
VII. Literature Cited


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VIII. Appendices

Appendix A - Block Card

Appendix B – Contact List

Appendix C - Evacuation Plan

Appendix D - Oregon Statues, OROSHA requirements

Appendix E - Radio Use Agreement

Appendix F - Characteristics of Type 5, 4, 3, 2, and 1 Fires

Appendix G – Visits to the Fireline


Appendix I – USFS Waiver Examples and Process

Appendix J – ODF IFPL Waiver Example

Appendix K – Forest Service Sanitary Guidelines for Emergency Fire Suppression Efforts in the Bull Run Watershed
## STAFFING LEVEL

<table>
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<tr>
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<tr>
<td>Hand Crew</td>
<td>Consider</td>
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<tr>
<td>Dozer</td>
<td>Consider</td>
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<tr>
<td>SmokeJumpers/Rappeller</td>
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<td>Check Availability</td>
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<tr>
<td>Air Tanker</td>
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<td>Check Availability</td>
<td>Check Availability</td>
<td>Check Availability</td>
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<tr>
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<td>Consider</td>
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<td>Staged or Order</td>
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<td>Consider</td>
<td>Check Availability</td>
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</tbody>
</table>
**Suppression Considerations:**

**Bull Run:** Inform IC and Others of fire Proximity to HAZMAT Areas. Refer to attached Map of HAZMAT Location

Bull Run Bucket Operation is not authorized in Reservoir 1, 2 and Headworks Diversion Pool. **Unless Firefighter safety at Risk.**

Must call Portland Water Bureau for permission.

Notify and request resources from **ODF-MOLALLA UNIT** for Incidents within 5 miles of boundary.

**Order Fire Investigator** for Human cause incident.

**DIPSITES:** Bull Run Lake & Upland Lakes

**Hazards:**

Military Training Route: IR 346

Powerlines

**Bull Run HAZMAT-Chlorine/Propane**

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**RADIO INFORMATION**

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<tr>
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<tr>
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<tr>
<td>Timberline</td>
<td>170.525</td>
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<tr>
<td>Hickman</td>
<td>170.525</td>
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<tr>
<td>Tumala</td>
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**AVIATION FREQUENCY**

- MHF Air to Ground (A/G 50) 1<sup>st</sup> 168.2875
- MHF Air to Ground (A/G 09) 2<sup>nd</sup> 166.9125
- GPF Air to Ground (A/G 41) 1<sup>st</sup> 167.4750
- GPF Air to Ground (A/G 28) 2<sup>nd</sup> 170.0000
- National Flight Following 168.6500 RX/TX Tone 110.9 RX/TX
Duty Officers:
West Zone Duty Officer
Forest Duty Officer
Columbia River Gorge Duty Officer: 541-667-7382

Dispatch Offices
ODF-Molalla Unit 503-829-4051

Fire Departments, Sheriff and 911 Offices
Clackamas County 911 503-655-8211
Hoodland RFD 503-622-3256
Sandy FD – 24/7 503-668-8093
Multnomah County 503-823-3873

Utility Companies
City of Portland- Water Bureau (24/7 Dispatch) 503-823-6084
City of Portland-Headworks 503-823-6157
Sandy River Station: 503-663-4030/4631
Bonneville Power Association (BPA) 503-283-2501
Oregon Department of Transportation (ODOT 24 Hours) 503-283-5859
Portland General Electric (Emergency) 800-544-1795

Notification: (As Appropriate)
Appendix B - Contact List

Dispatch Offices:

Columbia Cascade Dispatch (24 hour) – (360) 891-5140
ODF Molalla Dispatch – (503) 829-2216 ext.229

IFPL Approval Contacts:

Forest Service – District Fire Management Officer (503) 630-8783
ODF – Molalla Unit Forester ODF Office: Ken Cushman, Unit Forester

Retardant Coordination Contacts:

City of Portland Water Bureau Security Dispatch – (503) 823-6084

DEQ:

Oregon Emergency Response System (OERS) -- 800-452-0311

National Marine Fisheries Service:

Portland Office – (503) 230-5425

USFS and PWB exchange Bull Run primary contact lists on an annual basis; contact information for needs other than spill response can be located on those lists
Appendix C – Evacuation Plan

Bull Run Wildfire Evacuation Plan

1. Purpose:

The Water Bureau limits access to the Bull Run Watershed Management Unit (BRWMU) to employees and contractors who are authorized to enter the area for work-related activities and to members of the public that are part of an approved, escorted tour. Because of the wide variety of projects and activities that occur in the watershed, groups and individuals could be located at dispersed locations throughout the Bull Run on any given day during fire season. In the event that a fire within or adjacent to the watershed unexpectedly reached a size and was burning under conditions that threatened human safety, an effective notification and communication process must be in place to be able to safely evacuate non-fire management personnel.

The purpose of this plan is to define procedures for emergency preparedness, notification and evacuation of Water Bureau employees and contractors that work in the watershed, and for public groups that are in the watershed during Water Bureau-sponsored tours. It should be noted that Forest Service employees and contractors also conduct work in the BRWMU. It is assumed that the Forest Service utilizes safety procedures that allow an effective means for communicating evacuation orders from the Incident Commander to Forest Service non-fire management employees and contractors who happen to be working in the Bull Run during a wildfire. Therefore, this plan is focused exclusively on Water Bureau emergency notification protocols.

2. Applicability

As noted earlier, these procedures apply to City of Portland Water Bureau employees and Water Bureau contractors that are performing work in the BRWMU and to public tour groups led by Water Bureau staff.

3. Notification Procedures

In the interest of safety, the Water Bureau has instituted a variety of policies and procedures that provide a record of who is working in the watershed and a means to notify them in an emergency.

A. Two-way Radios: Water Bureau vehicles entering the watershed are equipped with either an 800 MHz mobile radio or 800 MHz handheld radio. Employees conducting off-road field work off, such as stream surveys and water quality sample collection, carry handheld radios. The Water Bureau’s Sandy River
Station has several “loaner” handheld radios that are made available to contractors that conduct work in remote areas of the watershed.

B. *Interagency Radio Agreements:* The City’s 800 MHz radios can be programmed to transmit and receive on other agency’s frequencies in the event of an emergency. The City updated its radio-use agreement with the Mt. Hood National Forest in June, 2006 to enable the City to continue to utilize the Mt. Hood’s frequencies in emergency incidents that require interagency radio communications. A similar agreement will be established between the City and ODF.

C. *Watershed Entry/Exit Notification:* All Water Bureau employees that are conducting field work in the BRWMU are required to notify Water Bureau Security Dispatch prior to entering and no later than two hours after exiting the watershed. Employees are required to provide Security Dispatch office with information on the estimated time of their entry and exit from the Bull Run, the entry/exit points that they plan to use that day, and the location of their field work. Upon exiting the watershed, employees will notify Security Dispatch by 6:00 p.m. or within two hours of the scheduled exit time that was originally communicated to Security Dispatch, whichever is later. This allows the Bureau to maintain a log of entry and exit, which can be used to quickly identify who is working in the watershed that particular day and their approximate location. In the event that employees cannot be reached by radio in an emergency, staff from Sandy River Station will use information provided by Security Dispatch to try to locate the employee.

D. *Maps:* Employees and contractors that work in the watershed are provided with copies of updated road-system maps that show the location of watershed gates.

3.2 Evacuation Alert and Evacuation Order

The decision to implement either an evacuation alert or an evacuation order is made by the Fire Incident Commander.

A. *Evacuation Alert:* An Evacuation Alert is a preliminary notification of possible danger. Alerts are issued to advise the Water Bureau that a fire burning within or adjacent to the watershed may present a significant risk to human life and property if conditions worsen. All persons are alerted that there may be a forthcoming Evacuation Order, but that evacuation is not required at this time.

B. *Evacuation Order:* An Evacuation Order is a directive by the Incident Commander to exit the watershed immediately because of an imminent threat to human life from the fire.
3.3 Notification

Upon receiving information that there is a report of a wildfire in the watershed, the Water Bureau’s Security Dispatcher shall notify all personnel in the watershed. The notification list will be based on log book data from the daily notification protocol and other available information. The Security Dispatcher will communicate information on the:

- location of the fire
- route being used by responders
- recommended route to use for safe evacuation, if evacuation has been ordered by the Incident Commander

If the Incident Commander has issued an evacuation order, in addition to notifying affected Water Bureau personnel and contractors working in the watershed, the Water Bureau Security Dispatcher will notify the following offices and individuals:

- Direct Responsible Charge (DRC) for Operations and Emergency Management
- Administrator
- Emergency Manager
- Group Directors for Operations, Engineering and Resource Protection
- Water Bureau employee designated as Resource Advisor
- Public Information Officer
- Headworks
- Sandy River Station
- Water Control Center

3.4 Traffic Control

Traffic control points will be established and staffed by Water Bureau staff to deny entry of unauthorized vehicles and document those who leave the area. These control points will also coordinate incoming emergency response vehicles and outgoing evacuees to prevent traffic congestion problems.

3.5 “All Clear” Declaration

After the risk of potential for loss of life and property from wildfire conditions has subsided and the Incident Commander deems it safe to do so, the declaration of “all clear” will be communicated from the Mt. Hood or ODF dispatch office (depending on which agency has the lead role on the fire) to the Water Bureau. The Water Bureau Security Dispatcher will then relay information about the all-clear conditions to Water Bureau personnel, who will then be allowed to return to the watershed.
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437-007-1300 Scope of Rules.

(1) The purpose of the rules in Subdivision N is to provide minimum safety and health requirements for all public and private employers who engage in wildland fire prevention, wildland fire suppression or prescribed fire that includes activities such as, but not limited to:

- Fire line construction
- Engine (fire truck) operation
- Dozer, skidgine and pumper-cat operation
- Snag felling
- Fire detection
- Forest patrols
- Helicopter operation
- Slash burning
- Mop-up
- Laying hose lines
- Tending dip-tanks
- Handling, mixing and applying fire suppression chemicals

Stat. Auth.: ORS 654.025(2) and 656.725(4).
Statute Implemented: ORS 654.001 through 654.295.
Hist. OR-OSHA Admin. Order 2-2305, f. 5/27/05, ef. 6/1/05.

437-007-1303 Application of Rules.

(1) Except as otherwise specified, the rules in Subdivision N apply to all personnel engaged in wildland fire prevention, wildland fire suppression or prescribed fire activities when there is potential for exposure to wildland fire hazards such as, but not limited to:

- Burn injuries
- Burning embers
- Extreme fire behavior
- Entrapment
- Falling snags
- Heat exhaustion
- Heat stroke
- Rolling materials
- Smoke inhalation
- Vehicle and machine operation

(2) The rules in Subdivision N do not limit the use of other applicable safety and health rules.

(3) The rules in Subdivision N do not apply to personnel assigned to wildland fire suppression support activities, such as fire camp support positions which will not expose them to wildland fire hazards.

Stat. Auth.: ORS 654.025(2) and 656.725(4).
Statute Implemented: ORS 654.001 through 654.295.
Hist. OR-OSHA Admin. Order 2-2305, f. 5/27/05, ef. 6/1/05.
437-007-1305 General Requirements.

(1) Tactical and command fire suppression communications must provide a clear line of communication to all affected personnel.

(2) When employees are required to handle, mix and/or apply hazardous chemicals, the employer must develop, implement and maintain a written hazard communication program meeting the requirements of Division 2, Subdivision 2/ZE, Toxic and Hazardous Substances, 1910.1200, Hazard Communication.

(3) During the initial attack on a wildland fire, when the fire and/or the fire suppression activity creates a hazardous condition for traffic and warning signs and/or flaggers are not controlling traffic, a vehicle with emergency flashing lights must be used to warn traffic.

NOTE: See Division 7 Subdivision F, 437-007-0510 Roads, Vehicles, Flagging and Flammables.

437-007-1310 Personnel Assignments.

(1) The employer and/or their authorized representative must take into account the physical capability of each employee to safely perform assigned tasks:

   (a) Prior to job assignment, and

   (b) While the employee performs those tasks.

(2) Personnel performing wildland fire suppression or prescribed fire activities except as provided for in OAR 437-007-1315(1) and (2), must:

   (a) Work in teams of two or more, and

   (b) Be positioned so they are close enough to render assistance to one another in case of an emergency.

NOTE: This rule does not prohibit the ignition and monitoring of burn piles and landings by one employee when a competent person has determined that conditions are such that the fire(s) will not spread beyond the fuels intended to be burned.
437-007-1315 Single Personnel Assignments.

(1) Single employee assignments such as watchers, security and forest patrol personnel may take appropriate action to contain, control or extinguish a fire upon discovery only when:

(a) They have first reported the fire, described their intended fire suppression activities, and agreed on a checking system as required by OAR 437-007-0210; and

(b) Their fire suppression activities are consistent with firefighter training and safety; and

(c) There is an escape route to a safety zone that will not be cut off if the fire increases in size or changes direction.

(2) A competent person must ensure that watchers, security and forest patrol personnel, and other single employee assignment personnel who are expected to perform fire suppression activities:

(a) Have received Basic Wildland Fire Safety Training as required by OAR 437-007-1325; and

(b) Are qualified in the operation of assigned fire suppression machines, equipment, and use of fire fighting tools; and

(c) Are advised of the requirements of OAR 437-007-1315(1) and other job site conditions, known by the employer, which could affect the extent of their fire suppression activities; and

(d) Are physically capable of performing assigned fire suppression activities as required by OAR 437-007-1310(1).

Stat. Auth.: ORS 654.025(2) and 598.728(4).

437-007-1320 Personal Protective Equipment.

(1) Personnel performing wildland fire suppression or prescribed fire activities must wear:

(a) Pants and a long-sleeved shirt made of cotton, wool, denim or other fire resistant materials.

NOTE: The employer is not required to provide the clothing listed in OAR 437-007-1320(1)(a).

(A) Clothing made from common permanent-press materials or synthetic fibers that melt when exposed to flame or heat must not be worn.
(B) When special protective clothing made of aramid or other fire resistant materials is required by the employer, the employer must provide it at no cost to the personnel.

(b) Footwear that:

(A) Covers and provides protection and support for the foot and ankle, such as heavy duty leather lace-up boots with an 8-inch high top.

(B) Provides for secure footing and traction for the assigned task.

NOTE: Caulked boots, in accordance with the requirement of OAR 437-007-0330, may be required for some fire suppression or prescribed fire duties.

(C) Is fire and melt resistant.

(D) Is made of or covered with chain saw cut resistant material when operating a chain saw.

NOTE: The employer is not required to provide the minimum basic footwear listed in OAR 437-007-1320(1)(b).

(c) Head protection in accordance with the requirement of OAR 437-007-0305(1) and (2).

(A) When wearing hard hats around helicopters, the hats must be secured by a chin strap.

NOTE: To reduce the possibility of blowing objects when working around helicopters, hard hats need not be worn when a competent person has determined there is no danger from falling or flying objects.

(d) Upper body cover and/or hard hats of a high-visibility color in accordance with the requirement of OAR 437-007-0310.

(e) Eye and face protection in accordance with the requirements of OAR 437-007-0315.

(f) Hand protection in accordance with the requirements of OAR 437-007-0320(1) and (2).

(g) Leg protection in accordance with the requirements of OAR 437-007-0325 when operating chain saws.

(h) Hearing protection in accordance with the requirements of OAR 437-007-0335.
437-007-1325 Training. The following requirements are in addition to the training requirements of OAR 437-007-0140.

(1) The employer and/or their authorized representative must ensure that all personnel who may be called upon to do wildland fire suppression and/or prescribed fire activities receive Basic Wildland Fire Safety Training as follows:

(a) Once a year, between January 1 and the legal declaration of fire season, for personnel who are employed at the time training is presented.

NOTE 1: Personnel who have previously received Basic Wildland Fire Safety Training need only receive refresher training on those portions of the curriculum outlined in Appendix 7-C that are relevant to the fire suppression activities to which they may be assigned.

NOTE 2: Basic Wildland Fire Safety Training is not required for personnel who are assigned to fire support positions that will not expose them to wildland fire hazards.

(b) Newly hired and/or reassigned personnel who have not received Basic Wildland Fire Safety Training must be trained within 17 days of being assigned or dispatched to wildland fire suppression or prescribed fire activities. In the interim, they may perform wildland fire suppression or prescribed fire activities provided they work under the direct supervision of a competent person who must:

(A) Brief personnel (prior to starting fire suppression or prescribed fire activities) about the escape route(s), safety zone(s), anticipated fire activity, and what to do if they get separated from the competent person; and

(B) Provide continuous on-the-job supervision; and

(C) Provide on-the-job fire safety training; and

(D) Supervise no more than 5 untrained personnel.

NOTE: When an untrained runner is enroute, direct supervision may be achieved by radio contact provided there is a competent person providing direct supervision at both the pick-up and drop-off points.

(2) Basic Wildland Fire Safety Training must:

(a) Be presented by a qualified person, and

(b) Provide instruction and training on the curriculum outline in Appendix 7-C, and

(c) Be presented in a language and manner that the employee(s) is able to understand.

(3) The employer must keep a current written record of Basic Wildland Fire Safety Training for each employee.
(4) Personnel who are issued fire shelters must receive instructions from a qualified person prior to issue, and at least once a year thereafter, on:

(a) How to inspect and care for the shelter, and

(b) How, when and where to deploy the shelter, and

(c) What a person needs to do in the deployed shelter.

NOTE: When fire shelters are required, an orderly transition for employee training must be consistent with fire suppression needs and employee safety.

437-007-1330 Equipment, Vehicles and Machines, General Requirements.

(1) Fire fighting equipment, vehicles and machines must be:

(a) Inspected for defects prior to the start of each shift.

(b) Maintained in accordance with the appropriate manufacturers' recommendations.

(2) Fire fighting equipment, vehicles, and machines that are defective or damaged so as to render them hazardous to operate, must be removed from service and not returned to service until repairs are completed.

(3) A safe and adequate means of access and egress such as steps, ladders, and handholds must be provided and maintained to all parts of vehicles and machines where employees must go.

(4) Machine and vehicle access must comply with the Society of Automotive Engineers' SAE J185-1988 or ISO 2867:1994, Access Systems for Off-Road Machines.

(5) An effective means of communication must be established when it is necessary for personnel to communicate with the operator of a vehicle, equipment or machine.

(6) When military vehicles are used to transport personnel, they must be equipped with standard military seating, backrests and end gates or equivalent.

Stat. Auth.: ORS 654.025(2) and 654.726(4).
Hist: OR-OSHA Admin. Order 2-2005, f. 5/27/05, eff. 6/1/05.
437-007-1335 Vehicle Operation.

(1) The operation of vehicles must comply with the requirements of OAR 437-007-0520 through OAR 437-007-0570.

(2) All equipment hauled on a vehicle must be adequately secured when the vehicle is in motion.

(3) Vehicles must be brought to a full stop before personnel disembark.

Stat. Auth.: ORS 654.205(2) and 656.726(4)
Stats. Implemented: ORS 654.001 through 654.295
Hist: OR-OSHA Admin. Order 2-2005, eff. 5/1/05; eff. 6/1/05.

437-007-1340 Machine Operation.

(1) When machines used for fire trail construction or fire fighting are operated on slopes in excess of the limitations for machine operation as defined in OAR 437-007-0935(1) and (2), a competent person must ensure that measures are taken to provide stability such as:

(a) Using the blade; or

(b) Tying to stumps, anchors, or other machines; or

(c) Using materials to limit the slope under the machine; or

(d) Limiting the operating range of movement and/or the machine loading to maintain stability.

(2) The machine operator and a competent person must agree how to safely operate on all steep slopes taking into consideration the:

(a) Experience of the operator.

(b) Limitations of the machine.

(c) The soil conditions.

(d) Direction of travel (traveling straight up and down the slope).

(e) Hazards of turning the machine on the slope.

(f) Weather.

(g) Load size.

(h) Any other adverse condition(s).

Stat. Auth.: ORS 654.205(2) and 656.726(4)
Stats. Implemented: ORS 654.001 through 654.295
Hist: OR-OSHA Admin. Order 2-2005, eff. 5/1/05; eff. 6/1/05.
437-007-1345 Helicopter Operations.

(1) Helicopter facilities must be kept clear of loose objects and unauthorized personnel.

(2) Personnel must not smoke within 50 feet of a helicopter, fuel storage, or fueling equipment.

(3) Unless authorized by the pilot or helicopter ground crew, personnel must stay at least:

   (a) 50 feet away from small helicopters (50 feet or less overall length), and

   (b) 100 feet away from large helicopters.

   NOTE: Helicopter overall length, includes the tail boom and the rotors fully extended.

(4) A competent person must provide a detailed briefing on helicopter safety procedures to all passengers prior to loading.

(5) Personnel assigned to ride in helicopters must:

   (a) Be briefed in the correct approach, riding and off-loading procedures for the particular type of helicopter.

   (b) Follow instructions of helicopter personnel at all times when around helicopter.

   (c) Carry all tools at their side (not slung over their shoulder) when around helicopters.

(6) Unless told otherwise by a competent person, personnel must approach and leave the helicopter in full view of the pilot.

(7) Personnel must stay away from turning tail rotors at all times.

(8) Personnel must not stand directly beneath a hovering helicopter unless they have been trained or are being trained in performing sling load hookup or bucket filling operations.

Stat. Auth.: ORS 654.025(2) and 656.720(4).
Stats. Implemented: ORS 654.001 through 654.295.
Hist.: OR-OSHA Admin. Order 2-2005, f. 5/27/05, ef. 8/1/05.

- END OF DOCUMENT -
Appendix E - Radio Use Agreement
Agreement No. 06-MU-11060600-778
FOR COOPERATIVE FREQUENCY USAGE
between
USDA FOREST SERVICE
MOUNT HOOD NATIONAL FOREST
16400 Champion Way
Sandy, OR 97055
and
THE CITY OF PORTLAND OREGON
BUREAU OF TECHNOLOGY SERVICES
1120 SW 5th, Suite 450
Portland Oregon 97204

This Agreement ("Agreement") is entered into by and between the USDA Forest Service, Mount Hood National Forest (the "Forest Service/FS") and The City of Portland Oregon (the "Cooperator"), hereinafter generally referred to individually as the Party ("Party") or, collectively, as the Parties ("Parties").

Purpose. The purpose of this Agreement is to build a framework for cooperation, to provide for the sharing of specific radio frequencies that are authorized and/or licensed to each Party.

IT IS MUTUALLY AGREED AND UNDERSTOOD BY THE PARTIES THAT:

1. Scope. This Agreement sets forth the terms and conditions controlling the Parties' implementation of efficient, cost-effective radio communications that will support the Parties' policies during the period commencing on the Effective Date and continuing for the term of this Agreement. Nothing in this Agreement shall be interpreted as restricting the Forest Service or the Cooperator from participating in similar activities with other public or private agencies, organizations, and individuals.

2. Task Orders. Task orders may be added to or deleted from this Agreement, without formal amendment to the Agreement, from time to time. If in writing and signed by an authorized representative of each Party ("Task Order"). Task Orders conforming to this section shall be effective upon the date last signed. Task Order One attached hereto is part of this Agreement, without separate signatures.

Task Order One - Implementing Interoperability between Cooperator's Radio System and Forest Service's Hickman Repeater Site.

3. Control of Radio Frequencies. The Parties shall maintain administrative control of their radio frequencies.
4. Equipment.

4.1 The Parties shall furnish their own radio communications equipment.

4.2 The equipment shall be and remain the property of the Party who furnished it and, accordingly, each shall be the licensee thereof pursuant to FCC and IRAC regulations.

4.3 The Parties agree to operate and maintain their equipment in accordance with FCC and IRAC regulations and operational parameters established by Task Orders under this Agreement.


6. Modification. No modification, amendment, or waiver of any provision of this Agreement shall be binding unless made in writing and signed by an authorized representative of each Party.

7. Principal Contacts. The principal contacts for this instrument are:

<table>
<thead>
<tr>
<th>Forest Service Project Contact</th>
<th>Cooperator Project Contact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mount Hood National Forest</td>
<td>The City Of Portland Oregon</td>
</tr>
<tr>
<td>16400 Champion Way</td>
<td>Bureau of Technology Services</td>
</tr>
<tr>
<td>Sandy, OR 97055</td>
<td>Portland, OR 92704</td>
</tr>
<tr>
<td>Attn: Julia Duncan</td>
<td>Attn: David Brooks</td>
</tr>
<tr>
<td>Lead Technician PNW Zone CSA1</td>
<td>800 MHz Radio System Manager</td>
</tr>
<tr>
<td>Phone: (360) 891-5033</td>
<td>Phone: (503) 823-4767</td>
</tr>
<tr>
<td>FAX: (360) 891-5030</td>
<td>FAX: (503) 823-5194</td>
</tr>
<tr>
<td>E-Mail: <a href="mailto:jsduncan@fs.fed.us">jsduncan@fs.fed.us</a></td>
<td>E-Mail: <a href="mailto:dbrooks@ci.portland.or.us">dbrooks@ci.portland.or.us</a></td>
</tr>
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<tr>
<th>Forest Service Administrative Contact</th>
<th>Cooperator Administrative Contact</th>
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<td>Mount Hood National Forest</td>
<td>The City Of Portland Oregon</td>
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<td>Bureau of Technology Services</td>
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<tr>
<td>Sandy, OR 97055</td>
<td>Portland, OR 92704</td>
</tr>
<tr>
<td>Attn: Gary Larsen</td>
<td>Attn: Matthew M Lampe</td>
</tr>
<tr>
<td>Forest Supervisor</td>
<td>Chief Technology Officer</td>
</tr>
<tr>
<td>Phone: (503) 668-1750</td>
<td>Phone: (503) 823-7030</td>
</tr>
<tr>
<td>FAX: (503) 668-1794</td>
<td>FAX: (503) 823-5194</td>
</tr>
<tr>
<td>E-Mail: <a href="mailto:glarsen@fs.fed.us">glarsen@fs.fed.us</a></td>
<td>E-Mail: N/A</td>
</tr>
</tbody>
</table>

8. Term/Termination. This Agreement is effective as of the date of last signature affixed hereto (the “Effective Date”), and shall continue in full force and effect until its expiration September 30, 2010, unless otherwise terminated in advance by either Party. Either Party may terminate this Agreement in whole or in part, at any time before its expiration by giving 60 days’ advance written notice to the other.
9. **Insurance.** The Forest Service and the Cooperator shall each be responsible for providing workers compensation insurance as required by law. The parties shall not be required to provide or show proof of insurance coverage.

10. **Disputes.**
   
   (a) Both parties shall try to resolve all agreement issues by mutual consent at the agencies' approving authority level, without litigation.
   
   (b) If the parties are unable to resolve a dispute and proceed to litigation, any such proceedings shall be held in the federal courts in the United States District Court for the District of Oregon.

11. **Severability.** If any provision of this Agreement is declared by a court of law to be illegal or in conflict with any law, the validity of the remaining terms, conditions, and provisions shall not be affected; and the rights and obligations of the Parties shall be construed and enforced as if the Agreement did not contain the particular provision held to be illegal or invalid.

12. **Non-waiver.** The Parties shall not be deemed to have waived any breach of this Agreement by the other Party except by an express waiver in writing. An express written waiver as to one breach shall not be deemed a waiver of any other breach not expressly identified, even though the other breach is of the same nature as that waived.

13. **Compliance with Laws.** In connection with each Party's activities under this Agreement, the Forest Service and the Cooperator shall comply with all applicable federal, state, and local laws and regulations.

14. **Indemnity.** The Forest Service is responsible for the acts, omissions, or negligence of its own officers, employees, or agents. The Cooperator is responsible to the extent permitted by the Oregon Tort Claims Act (ORS 30.260 – 30.300) and the Oregon Constitution Article XI, Section 9 only.

15. **Complete Agreement.** This Agreement consists of this Agreement and any Task Orders added from time to time pursuant to Section 2, above. There are no other contract documents unless specifically referenced or incorporated in this Agreement, or added or deleted by written amendment to this Agreement. As to the subject of this Agreement, this Agreement contains the entire agreement between the Parties and supersedes all prior written or oral discussions or agreements.
THE PARTIES HERETO have executed this Agreement.

GARY L. HARSEN  
Forest Supervisor, Mount Hood National Forest

TOM BERTER  
Mayor, City of Portland

Date  
7/19/2006

The authority and format of this instrument have been reviewed and the agreement is approved as to form.

/\ Ronald E. Boehm  
Forest Service Grants and Agreements Specialist

7/21/06  
Date

Approved as to form  

LINDA NUNZI  
CITY ATTORNEY

City Attorney  
May 17, 2006
Task Order Agreement No. ______

Task Order One

to the

AGREEMENT
FOR COOPERATIVE FREQUENCY USAGE

Implementing Interoperability between Cooperators' Radio System and Forest Service's Hickman Repeater Site

This Task Order One is subject to and by this reference incorporates the terms and conditions of the Agreement for Cooperative Frequency Usage ("Agreement") by and between the USDA Forest Service, Mount Hood National Forest (the "Forest Service"); and The City of Portland Oregon (the "Cooperator"), heretofore generally referred to individually as the Party ("Party") or, collectively, as the Parties ("Parties"). Unless otherwise defined in this Task Order, all capitalized terms shall have the same meaning as defined in the Agreement.

PURPOSE: This Task Order provides for the sharing of specific radio frequencies that are authorized/licensed to each Party in order to implement efficient, cost-effective radio communications intended to serve the mutual interests of the Parties and the public.

IT IS MUTUALLY AGREED AND UNDERSTOOD BY THE PARTIES THAT

1. Frequency use is limited to the restrictions contained within and mandated by the electronic sites RFA (Radio Frequency Authorization) supplied by the Forest Service and the Cooperator and may be installed in fixed radio equipment located at Cooperators' Lookout Mountain electronics site for operational use between the Forest Service and the Cooperator.

2. The Parties are authorized to operate their equipment for test purposes, maintenance, reliability checks and operational use.

3. The Cooperator shall submit an application through NTIA and/or the FCC to apply for license to operate on the listed frequencies. Federal licenses may be acquired without cost to Cooperator by submitting form FCC-601 (Main) FCC-601D (Location & Antenna Structure Information) & FCC-401H (Private Land Mobile & Land Mobile Auxiliary Radio Service Information) to the FCC at the following address:

Federal Communications Commission (FCC)
1270 Fairfield Road
Gettysburg, PA 17325

4. The Parties agree to abide by the following authorized frequencies and use.

   Frequencies and Use by
Forest Service's mobile and portables

<table>
<thead>
<tr>
<th>Transmit</th>
<th>Receive</th>
<th>USE</th>
<th>TX Tone</th>
<th>RX Tone</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>168.125</td>
<td>169.950</td>
<td>Hickman North</td>
<td>91.5</td>
<td>123.0</td>
<td>FS UNITS WILL USE: GOVERNMENT FREQUENCIES ONLY</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Repeater Access</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Frequencies and Use by
Cooperator's trunking radio system

<table>
<thead>
<tr>
<th>Transmit</th>
<th>Receive</th>
<th>USE</th>
<th>TX Tone</th>
<th>RX Tone</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>168.125</td>
<td>169.950</td>
<td>Lookout Mountain Link to Hickman North Repeater Site</td>
<td>91.5</td>
<td>123.0</td>
<td>Cooperator will use these frequencies at Lookout Mountain to link to the FS repeater site at Hickman North</td>
</tr>
</tbody>
</table>

Frequencies and Use by
Cooperator at Hickman North Repeater Site

<table>
<thead>
<tr>
<th>Transmit</th>
<th>Receive</th>
<th>USE</th>
<th>TX Tone</th>
<th>RX Tone</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>169.950</td>
<td>168.125</td>
<td>Hickman North</td>
<td>123.0</td>
<td>91.5</td>
<td>Cooperator will use these frequencies at Hickman North for communications with FS personnel and facilities</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Repeater</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

5. As to this subject of this Task Order, Cooperator absolves the Forest Service from all financial responsibilities related to the installation, maintenance and use of Cooperator's radio equipment. Furthermore, the Cooperator agrees to relieve the Forest Service from liabilities that may arise expressly as a result of this Agreement related to the following:

a. All costs associated with the procurement and update of Cooperator's radio equipment facilitating the link authorized under this Agreement ("Cooperator's Radio Equipment").

b. The installation costs of Cooperator's Radio Equipment.

c. Any and all operational and maintenance costs associated with Cooperator’s Radio Equipment (i.e. replacement/repair/maintenance of radios, duplexers/combiners, grounds and grounding systems, antennas, coax and or hardline, or tower and tower lighting owned or leased by Cooperator), provided such replacement, repair, or maintenance is not required as a result of any Forest Service act or omission.

d. Any facilities and building rents, leases, and or maintenance and replacement costs: (i.e. lightning protection systems, site access costs (roads and road maintenance, snow plowing, emergency repair helicopter trips, etc.), AC and DC power systems, battery systems, fences, doors, security monitoring and or systems, site utility costs (power, water, sewer), etc.), provided such rents, leases and maintenance or replacement costs do not arise from any Forest Service act or omission.

6. No modification, amendment, or waiver of any provision of this Task Order shall be binding unless made in writing and signed by an authorized representative of each Party.
ORDINANCE No. 180223

Authorize an Intergovernmental Agreement and Task Order One with USDA Forest Service Mount Hood National Forest for Cooperative Frequency Usage (Ordinance)

The City of Portland ordains:

Section 1. The Council finds:

1. From time to time the City requires the ability to operate radio equipment on frequencies licensed and operated by USDA Forest Service and conversely, the USDA Forest Service may require access to and operation of communications over frequencies licensed and operated by the City.

2. This agreement codifies understanding between the USDA Forest Service and the City to create a framework for cooperation that shall provide for the sharing of specific radio frequencies that are authorized and or licensed to each Party. The intent of the contract is to implement efficient, cost-effective radio communications intended to serve the mutual best interests of the Parties and the public.

3. The Forest Service is licensed to use frequencies 169.950 and 168.125 out of its Hickman North repeater site. The City desires to operate on the frequencies to be able to communicate with Forest Service personnel and facilities to support fire prevention specific to the Bull Run watershed area.

4. In order to facilitate the use of the frequencies to be able to transmit from City’s 800MHz radio system to USFS’ repeater at its Hickman repeater site, the City must install a patch in City fixed radio equipment located at City’s Lookout Mountain electronics site.

5. Task Order One to the agreement provides for the installation of the patch that shall support operational use on the frequencies as set forth in the Task Order and in accordance with the agreement.

6. This Ordinance authorizes execution of the contract to permit cooperative frequency usage between the City and the USDA Forest Service through September 30, 2010 and Task Order One thereto provides for installation of a patch in City’s fixed radio equipment located at City’s Lookout Mountain electronics site. The Parties shall be responsible for furnishing their own radio communications equipment under this agreement and furthermore the Parties shall be required to operate and maintain their equipment in accordance with FCC and IRAC regulations and operational parameters established under approved task orders subject to the contract.

7. The Intergovernmental Agreement is authorized pursuant to Chapter 190 of Oregon Revised Statutes and Section 2-105 (a) 4 of the Charter of the City of Portland.

8. This agreement does not call for any exchange of Funds.

NOW THEREFORE, the Council directs:

a. The Mayor and the Auditor are hereby authorized to execute the Agreement for Cooperative Frequency Usage between USDA Forest Service Mount Hood National Forest and City of Portland and Task Order One thereto substantially similar to the Agreement and Task Order One attached hereto as Exhibit A.

b. The Chief Technology Officer is hereby authorized to execute amendments to the Intergovernmental Agreement with the USDA Forest Service Mount Hood National Forest. The City Attorney shall approve all amendments as to form prior to their execution.

Passed by the Council, JUN 14 2006

Mayor Tom Potter
Matt Lampe

GARY BLACKMER
Auditor of the City of Portland

By [Signature] Deputy
Appendix F – Characteristics of Type 5, 4, 3, 2, and 1 Fires
Taken from Interagency Standards for Fire and Fire Aviation Operations
January 2014

Type 5 Incident Characteristics
- Ad hoc organization managed by a Type 5 Incident Commander.
- Primarily local resources used.
- ICS command and general staff positions are not activated.
- Resources vary from two to six firefighters.
- Incident is generally contained within the first burning period and often within a few hours after resources arrive on scene.
- Additional firefighting resources or logistical support are not usually required.
- May require a Published Decision in WFDSS

Type 4 Incident Characteristics
- Ad hoc organization managed by a Type 4 Incident Commander.
- Primarily local resources used.
- ICS command and general staff positions are not activated.
- Resources vary from a single resource to multiple resource task forces or strike teams.
- Incident is usually limited to one operational period in the control phase. Mop-up may extend into multiple operational periods.
- Written incident action plan (IAP) is not required. A documented operational briefing will be completed for all incoming resources. Refer to the Incident Response Pocket Guide for a briefing checklist.
- May require a Published Decision in WFDSS or other decision support document.

Type 3 Incident Characteristics
- Ad hoc or pre-established Type 3 organization managed by a Type 3 Incident Commander.
- The IC develops the organizational structure necessary to manage the incident. Some or all of ICS functional areas are activated, usually at the Division/Group Supervisor and/or unit leader level.
- The Incident Complexity Analysis process is formalized and certified daily with the jurisdictional agency. It is the IC’s responsibility to continually reassess the complexity level of the incident. When the complexity analysis indicates a higher complexity level the IC must ensure that suppression operations remain within the scope and capability of the existing organization and that span of control is consistent with established ICS standards.
- Local and non-local resources used.
- Resources vary from several resources to several task forces/strike teams.
- May be divided into divisions.
- May require staging areas and incident base.
- May involve low complexity aviation operations.
- May involve multiple operational periods prior to control, which may require a written Incident Action Plan (IAP).
• Documented operational briefings will occur for all incoming resources and before each operational period. Refer to the *Incident Response Pocket Guide* for a briefing checklist.
• ICT3’s will not serve concurrently as a single resource boss or have any non-incident related responsibilities.
• May require a Published Decision in WFDSS.
• May require a written Delegation of Authority.

**Type 2 Incident Characteristics**
• Pre-established incident management team managed by Type 2 Incident Commander.
• ICS command and general staff positions activated.
• Many ICS functional units required and staffed.
• Geographic and/or functional area divisions established.
• Complex aviation operations.
• Incident command post, base camps, staging areas established.
• Incident extends into multiple operational periods.
• Written Incident Action Plan required for each operational period.
• Operations personnel often exceed 200 per operational period and total personnel may exceed 500.
• Requires a Published Decision in WFDSS or other decision support document.
• Requires a written Delegation of Authority to the Incident Commander.

**Type 1 Incident Characteristics**
• Pre-established incident management team managed by Type 1 Incident Commander.
• ICS command and general staff positions activated.
• Most ICS functional units required and staffed.
• Geographic and functional area divisions established.
• May require branching to maintain adequate span of control.
• Complex aviation operations.
• Incident command post, incident camps, staging areas established.
• Incident extends into multiple operational periods.
• Written Incident Action Plan required for each operational period.
• Operations personnel often exceed 500 per operational period and total personnel may exceed 1000.
• Requires a Published Decision in WFDSS or other decision support document.
• Requires a written Delegation of Authority to the incident commander.
Appendix G - Visits to the Fireline
Taken from Interagency Standards for Fire and Fire Aviation Operations
January 2014

Visits (such as media visits or political/administrative tours) to hazardous areas of the fire or areas that pose a fire behavior threat will be managed by meeting the requirements below.

Visitors to the Fireline/RX Burns may be “Non-Escorted” or “Escorted” depending on the following requirements:

**Non-Escorted Visits**
Visitors must have an incident qualification with a minimum physical fitness level of “light” to visit the fireline unescorted.
- Must have adequate communications and radio training.
- Completed the following training:
  - Introduction to Fire Behavior (S-190).
  - Firefighter Training (S-130).
  - Annual Fireline Safety Refresher Training.
- Deviation from this requirement must be approved by the IC.

The law enforcement physical fitness standard is accepted as equivalent to a “light” WCT work category.

**Escorted Visits**
All non-incident, non-agency, visitors lacking the above training and physical requirements must be escorted while on the fireline.
- Visitors must receive training in the proper use of PPE.
- Requirement for hand tool and water to be determined by escort.
- Visitors must be able to walk in mountainous terrain and be in good physical condition with no known limiting conditions.
- Escorts must be minimally qualified as Single Resource Boss. Any deviation from this requirement must be approved by the IC.
Mt. Hood National Forest
Industrial Fire Precautions Inspections Guide
Revision 5
June 2002

Caution: This publication should be annually verified and reviewed by Fire and Sale Administration personnel by May 31 of each year in order to assure compliance with current direction.
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<td>Appendix</td>
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Mt. Hood National Forest
Industrial Fire Precautions Inspections Guide

Preface

Years of fire protection experience has taught us that certain fire precautions on industrial operations are necessary to ensure against the ignition of fires. Industrial operations fires often start in high hazard-fuel complexes and historically have resulted in some of our most costly and damaging fires.

All contracts and permits issued on National Forest lands will have considered and will require the precautions that are necessary to minimize the possibility of accidental fire starts resulting from operations. The Responsible Permit Administrator, (RPA), is to ensure compliance with contract specification regarding Fire Prevention and Suppression, (FP&S), measures and assure that requirements are administered in a firm, fair, and consistent manner. Forest Service projects will meet all FP&S measures.

This guide is intended to provide information and assistance to any person administrating contracts in the following areas and will assure consistency during administration:

- Conducting a industrial fire inspection
- Considering the issuing a waiver
- Management of industrial fire

For the purpose of this guide consider the terms Purchaser or Contractor to be one in the same.

______________________________________________

Date    GARY L. LARSEN

Forest Supervisor

Mt. Hood National Forest
Introduction

Fire Protection Requirements
All Contracts and Basic Ordering Agreements, Permits, Use Agreements and documents governing other activities which present the risk of human-caused fire will include appropriate Fire Prevention and Suppression, (FP&S), Provisions. Special provisions deviating from forest standards may be developed for unique situations with concurrence of Headquarters Fire Management, (HQFM). All USDA Forest Service equipment will be equipped with proper tools and spark arresters, as required. All USDA Forest Service projects will meet all FP&S requirements.

- All timber sales contracts will include appropriate C(T)7 provisions.
- All road contracts will include R6-FS-6300-52, 53, and 54.
- All service contracts will include R6-FS-6300-52. R6-FS-6300-53 and 54 will be required for all contracts in which the hazard and risk is similar to that presented by logging and road building jobs. Other contracts must be reviewed by the Responsible Permit Administrator, (RPA), and the District Fire Management Officer, (DFMO), to determine if other supplements are needed.
- Special use permits will include requirements as indicated in FSM 2783.11 f-1 thru 5.
- Geothermal, oil, and gas permits will include the Mt Hood Supplement developed for these projects.
- Cadastral survey projects will include R6-FS-6300-52.

Organization Responsibilities

The roles and responsibilities of various functions are:

District Fire Management Officer, (DFMO)
The role of the DFMO in Industrial FP&S inspections is to provide support and technical assistance to the RPA. Specific responsibilities include:

1. Providing technical assistance:
   a. Provision interpretation.
   b. Information on sources of inspection support equipment.
2. Annually participate in the initial inspection as requested.
3. Participate in periodic follow-up inspections as agreed to by the DFMO and the RPA.
4. Issue burning permits.
5. May review contracts, permits, or other agreements for appropriate FP&S requirements prior to advertisement or award.
6. Review all proposed waivers and makes recommendations prior to signing.
7. As requested, provide for inspections of all USDA Forest Service owned and operated equipment.
**Responsible Permit Administrator (RPA)**
The role of the RPA in FP&S is to perform and document all conducted industrial fire inspections. Specific responsibilities include:

1. To perform inspections as needed to assure contract or permit compliance.
2. Document all inspections on MH-5100-16 or R6-FS-2400-131 (Appendix 2 and 3).
3. Execute follow-up inspections when needed (refer to item 4 under Inspection Frequency Schedules page 8).
4. Distribute forms.
5. Receive waiver and burning permit request and forward to DFMO with recommendations and adequate advance notice to allow time for proper review. A minimum of 5 working days should be expected to obtain a smoke management number.
6. Give smoke management number, time of ignition, tons planned to bum and expiration date to DFMO when burning begins. Transmit actual ignition time and tons burned at the end of the permit.
7. Notify DFMO in advance of each pre-work meeting. On timber sale contracts with C(T) 7 - PLANS (3/89) or later, emphasize to the purchaser the “self certification” responsibilities of this provision.
8. Obtain needed materials and equipment to perform inspections.

**Documentation**
All inspections will be documented on MH-5100-16 or R6-FS-2400-131 and filed in the appropriate contract file.
All waivers will be requested in writing, and approved, denied, or cancelled on MH--5100-14, (Appendix 1), or appropriate contract letter.
Distribution of other forms or letters relating to inspections shall be the same as listed on the MH-5100-16 or R6-FS-2400-131

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Forest Interpretations and Definitions of C(T)7 Provisions and Guidelines for Administration of Fire Provisions in Service Contracts

*No Forest Officer has the authority to let any operation or any part of any operation operate if it is in violation of contract requirements.*

**C(T)7. PLANS**
C(T)7.1 uses the term "Fire Precautionary Period" which is the period in A1 6 or A(T) 13 of the timber sale contract. We have agreed with other Federal and State protection agencies to use the term "Closed Season" to mean the same as Fire Precautionary Period. All fire precautionary measures under Section B(T)7.2 and the various C(T) provisions are applicable only during the closed season in A16 or A(T)13 unless the Contracting Officer, (CO), extends the season.
Special provisions C(T)7.1 requires that the purchaser inspect their operations and certify in writing that all FP&S measures are in place and meets or exceeds contract
specifications and that all personnel have been trained to take action required by the contract. This inspection and certification is required at the beginning of operations annually and as often as necessary during the operations to assure contract specifications are being met. *An inspection by the sale administrator, (SA), that shows non-compliance or breach of FP&S specifications will require the purchaser to recertify his operations and have them approved by the Forest Service prior to work resuming.*

Due to the self-certification philosophy regarding timber sales, the SA in each phase of the operations must *make periodic unannounced inspections* to verify the purchaser's supervision in this area is adequate and FP&S specifications are being met. *Contract violations in the area of FP&S measures will result in an immediate suspension of all or part of the operations.* Repeated serious violations in the area of FP&S are cause for consideration of contract cancellation. Copies of all breach letters will be sent to the purchaser's or Contractor's surety.

**Inspection Frequency Schedules**

Inspection frequency schedules will be guided by the following, standards:

1. The DFMO will be notified by the RPA in advance of the start of each new operation.

2. Initial inspection will be conducted at the start of each new or moved operation. Focus the inspection on those items, which will automatically "shut down" the operation.

3. Further inspections should be made as needed. Consultation between the DFMO and RPA should occur.

4. Follow-up inspections completed to check items marked improve, (IMP). These will be completed no later than the second operating day following the regular inspection or as designated on the MH-5100-16 or R6-FS-2400-131.

5. All regular and follow-up inspections will be documented on MH-5100-16 or R6-FS-2400-131.

6. When other documents are used they should be distributed in the same manner as the MH-5100-16 or R6-FS-2400-131.

**C(T)7.2 – Special Fire Precautions (5/99)**

Current contract provisions refer to such terms as *readily accessible* and *serviceable.* *Readily accessible means an item is available for immediate use by those expected to use it.* For example, a fire extinguisher should be available without the user having to dig through toolbox, unlock doors, or otherwise have to hunt for it.

*Serviceable means functional,* the test of serviceability is: will the item perform the task it is intended to do? For example, will the fire truck of trailer deliver a supply of water in the quantities, within the specified time, and for the period of time required? Clearly, if the truck or pump motor will not start quickly, or the hose breaks or leaks the equipment is not serviceable.

In case of a fire start, the RPA shall make an immediate inspection of fire equipment for serviceability regarding suppression to determine liability under B(T)7.41 or B(T)7.42.
Fire Security
When the industrial fire precaution level is I or higher, unless a waiver is granted under C(T)7.22, purchaser will designate a person who shall be capable of performing fire security services listed:

1. Operating purchaser communications system, (CB's not acceptable).
2. Operating firefighting equipment.
3. Patrol areas of daily operations.
4. Respond to any fire within the distances specified in A17 or A(T)1 4.
5. Report any fire detected to the Forest Service within 15 minutes.
6. Shall be for one (1) hour after operations shut down.
7. Take immediate action to suppress any fire starts.

Tips For Conducting Fire Security Inspections:

1. Determine that harvesting operations did work that day.
2. Determine where active harvesting had occurred.
3. Determine time operations shut down for the day.

If present contact Fire Security:

1. Through conversation, determine if the person knows their responsibility.
2. Have Fire Security demonstrate that communications systems are working and monitored at the Purchaser's headquarters during required time period.
3. Have Fire Security demonstrate they know how to operate firefighting equipment.

If Fire Security is not present and you have determined that one is needed take the following action:

1. Notify the RPA or the Contracting Officer at once.
2. Document all facts that you have gathered that you based your determination that Fire Security was needed on MH-5100-16 or R6-FS-2400-131.
3. To the best of your ability perform the Fire Security duties.

Fire Extinguishers and Equipment (on Trucks, Tractors or Power Saws, etc)
Fire extinguishers are to be provided for use with each internal combustion engine and must be serviceable and readily accessible. The fire extinguisher is the first and most logical resource used to combat internal combustion engine fires to prevent their escape and spread. Therefore, the size, condition, and accessibility of the extinguisher are of the utmost importance. Serviceability can be determined by having proof of have being serviced by an agent in the business of refilling extinguishers, having a gauge to indicate the amount of charge, or by demonstrating its use. Extinguishers buried in pickup boxes or covered with oil or grease shall not be considered serviceable or accessible. In
addition to the extinguisher each power driven piece of equipment except portable fire pumps shall be equipped with one "D" handled or longer rounded point shovel, size 0 or larger and a double-bit axe or Pulaski, weighing at least 3 ½ pounds.

**Tips For Conducting Fire Extinguisher Inspections:**

1. All extinguishers must be rated at least 5 B, C or larger and have been rated by the Underwriter's Laboratory.
2. If you cannot determine the rating of a given extinguisher it shall not be accepted.
3. Check the nozzle or tip to see that it is clear, tight, and not bent or damaged.
4. If equipped with a hose, check its condition for cracks or cracks in the rubber and that all connections are tight.
5. All extinguishers shall be mounted in a manner that they may be removed and used with ease, (no wire).
6. One refill or new extinguisher for each size required will be available on the sale area. This will be located at an agreed upon location.

**If equipped with a pressure gauge:**

1. If the extinguisher is equipped with a gauge the reading must be in the green.
2. It shall not be loose.
3. Have any cracks in the face of the gauge.
4. Tap the gauge lightly to assure the needle is not stuck.

**Not equipped with pressure gauge:**

1. Must be a type that can be opened for inspection of seal.
2. Have the purchaser or operator disassemble the extinguisher for inspection of the seal.
3. Inspect its contents and the carbon dioxide (CO2) cartridge. If cartridge has been punctured or seal missing the extinguisher is not acceptable.
4. Have purchaser or operator reassemble extinguisher.

**Other fire extinguishers required:**

- **Helicopter Operations:** a 5 B, C rated extinguisher must be mounted and located with reach of the pilot. In addition a 20 B, C rated extinguisher is required at the service area for helicopters. This can be checked by weight. A current service card should be attached stating last day filled and checked.
- **Power Saws:** an 8-ounce capacity extinguisher is required to be in the possession of each person operating a power saw, except at the landing. The condition shall meet the same criteria as any other extinguisher. In addition one long handled shovel size 0 or larger shall be with in 1 minute of the operator. A second 5 B, C or larger extinguisher is required on each loader operating on the landings. This extinguisher must be located so that a person other than the operator can access from the ground.
The primary purpose of the fire tools is to have a second resource in the event the extinguisher fails. For the field tips regarding inspections of the shovel, axe, or Pulaski required in this section see fire tools.

**Spark Arresters and Mufflers**

*All internal combustion engines must be equipped with an approved muffler or spark arrester.* Most glass-pack mufflers will not meet the requirements because they have no baffles. If a question arises regarding glass packs, it is the responsibility of the purchaser to prove they meet standards.  

*If a spark arrester, muffler or the equipment is modified in any manner other than approved the modification voids the qualification of the spark arrester or equipment.* For example if a saw is tested and approved which has bumper spikes and chain break and they are removed the saw has been modified and no longer acceptable for use.

**Tips For Inspecting Spark Arresters and Mufflers:**

1. **Identification:**
   
a. Check for the required labeling or permanent marking which will give the model designation, not qualified if not labeled.

   b. Check that marking against the list of qualified and not qualified arresters in the current "Spark Arrester Guide." (SAG).

   c. If a given model is not included on either list, in all probability, the arrester has not been tested or approved. However, you should request HQFM to confirm with San Dimas that this is the case.

2. **Installation:**

   a. Check the SAG for the positions(s) the arrester is qualified for (vertical, horizontal, inverted). The arrester shall not be installed at more than 45 degrees tilt from the qualified position.

   b. If the arrester will only perform with the exhaust flow in one direction, make sure it is installed correctly (inlet and outlet shall be marked).

   c. Check to see that exhaust pipe has not slipped too far inside the arrester to cause it to malfunction.

   d. Check the inlet connection to see that it has no exhaust leaks and the arrester is snug.

3. **Condition:**

   a. Use a flashlight to direct light inside the arrester and check the internal condition (no burned out baffles or fins).

   b. Check all arrester body seams for leaks due to separation or corrosion.
c. See that the carbon trap is cleaned and properly covered. Have the operator open that arrester cleanout. Those having a threaded plug may be difficult to open. (Best time for cleaning carbon trap is when engine is cold.)

d. Check entire exhaust system for leaks at joints and broken or incomplete welds.

*Note: If engine is equipped with an exhaust driven turbo, spark arresters and mufflers are not needed.*

**Fire Tools**

Purchaser or Contractor shall furnish serviceable fire fighting tools in a readily accessible fire toolbox or compartment of sound construction with a hinged lid or door so arranged that the box could be secured or sealed. If it is a box it shall be painted red. The box or compartment shall be marked with the words "FIRE TOOLS" in letters at least 1 inch high.

**Tips For Inspection of Toolbox and Fire Tools:**

1. Fire Toolbox or Compartment Condition:
   a. Box shall be large enough to hold required number of tools.
   b. Shall be painted red if a box.
   c. If a box or compartment it shall be marked with the words "FIRE TOOLS" at least 1 inch high.
   d. Provided with a means for sealing such as a hasp, etc.
   e. If the fire toolbox is locked, it should be unlocked before beginning operations or all personnel in the area should know the location of the key or combination.

2. Fire Toolbox or Compartment Location:
   a. Shall be located at each operating site including, but not limited to, loading, and road construction.
   b. The fire toolbox shall be readily accessible. Regional policy is that "readily accessible" means box is within 10 minutes round trip of operating site.

3. Fire Tool Quantities:
   a. Two axes or Pulaskis with a 32 inch handle weighing at least 3 ½ pounds.
   b. Three adze eye hoes, (one Pulaski may be substituted for each adze eye hoe).
   c. Three long handled, round point shoves, size 0 or larger.

Note: the tool count for each type of contract may be different than those listed for a Timber Sale make sure to check your contract.

4. Fire Tool Condition:
   a. A serviceable tool is in adequate condition to safely perform the function for which designed. If in doubt about standards or desired functions, seek advice from DFMO. The purchaser is responsible for maintaining fire tools in a serviceable condition.
   b. Ensure all tool heads are tight on the handle. Either epoxy heads or metal wedges are acceptable.
   c. Ensure the purchaser has sharpened all cutting edges on these tools according to agreed upon specifications. This applies to all fire tools, whether they are in vehicles, in the fire toolbox, or carried by individuals (falters, and so forth). Exercise reasonable judgment when evaluating the serviceability of individual tools. Remember that a new tool, off the shelf, may not meet standard
specifications.

d. Ensure the purchaser has not taped, excessively oiled, or painted tool handles and handles are free of such defects as cracks, splinters, breaks, twist or warp, and slivers.

e. Check each tool to see that it is in serviceable condition.

f. Pulaski digging blades shall be at least 3 inches wide.

g. Hazel hoe digging blades shall be at least 5 3/4 inches wide.

h. Verify the list of contents inside the lid.

i. Record seal number on "List of Contents" (posted inside the toolbox) and on your inspection form. Seal the fire toolbox using a regular boxcar seal.

See appendix 4, 5, 6, 7 and 8 for diagrams that show tool specifications be considered when accepting for serviceability.

Tank Trucks and Trailers

Do not require a tank truck:

1. During road excavation (if the slash piles have been disposed of), placement of surfacing rock, road grading, and other road maintenance operations as identified in this guide, or if right-of-way felling/bucking is the only operations.

2. When hand felling and bucking of unit timber is the only operation.

The intent is to have a tank truck or trailer (or other water source and pump) that is effective in suppressing fires. In order to be serviceable, a fire truck must be able to operate and supply water effectively for a period of not less than 8 hours. Supplies such as fuel, oil, grease, tools, washers, and so forth, may be necessary, depending on the type of pumps, tanks, and equipment provided. **If the equipment fails and the fire escapes control, the purchaser could be found negligent and liable for all suppression costs.** It is, therefore, important to cover this item thoroughly in a prework conference.

A tank truck or trailer with no less than 300 gallon must be furnished when purchaser's operations occur during the Closed Season, except equipment servicing and falling with power saws. Falling with feller/bunchers require a tank truck or trailer be readily accessible since the equipment being used is basically skidding equipment and has the same capacity to start a fire as tractors, skidders and so forth.

Tank truck or trailer must meet a 10-minute round trip time, from each operating side, including any hookup time if a trailer. To be serviceable, the tow vehicle must be able to move the loaded trailer within the area stated in A17 or A(T)14 safely and efficiently.

The tow vehicle and tank trailer need not be hooked up ready for moving during purchaser's operations except as noted above.

When a water tank is needed that must be transported on a skyline or helicopter system in certain units, it must be shown on the sale area map. The water tank must meet the sale specifications as other tank trucks or trailers. An additional 5 minutes is available in this situation because of hookup times.

On helicopter operations, a water bucket may be substituted for the tank truck or trailer. However, a water source is required to provide quick access by helicopter to be effective.

Tips For Inspecting Tank Truck and Trailers:

1. Truck and or Trailer Condition
   a. Check the required fire tools and muffler system.
b. Check location to see it meets the response time of 10 minutes roundtrip.
c. Tire condition, (including spare).
d. Fuel supply, (8 hours running time).
e. Lights, Breaks, etc.
f. Will engine start if truck.
g. Distance towing vehicle away from trailer.
h. Will towing vehicle hook up to trailer.

2. Tank and Pump Condition
a. Check volume of tank; shall not be less than the required 300 gallons of water
   (see appendix 9 tank capacity calculations.)
b. Tank has no leaks and all fittings are tight.
c. Pump has no leaks and all fittings are tight, (inlets, outlets, and impeller case).
d. All hoses are in good condition
e. Required suction equipment is present for refilling process.
f. No oil or gas leaks.
g. If pump engine is other than the truck it must have a qualified spark arrester and
   enough fuel to run for 8 hours as well as oil.
h. Extra spark plugs if other than truck engine.
i. With pump engine running, close the nozzle. Engine should continue to run if
   bypass valve is working correctly.

j. Test pump capacity, (1) Use a garbage can, which is premeasured to 20 gallons.
   (2) Have operator pump through 50 feet of hose for one minute using a 1/4inch
   nozzle. (3) At the end of one minute, the can must have 20 or more gallons in it.

3. Other Required Items:
   a. 500 feet of serviceably hard rubber poly, rubber lined, or FJRL hose no less than
      1 inch in diameter.
   b. 250 feet of the 500 feet must be connected to the pump and ready for use at all
      times but it need not be charged or on a live reel.
   c. Enough fittings so that hoses can be connected together without leaking.
   d. Any wrench that is needed to fit hose connections.
   e. Nozzle must be a 1/4inch diameter and a spray pattern nozzle shall be
      immediately available for use. Both the Forester and Wilco nozzles will meet this
      requirement

Communications
Communications are required as a prompt and reliable means of contacting Purchaser's
headquarters in case of fire emergency. If communications are found defective, the entire
operation shall be shut down. The intent of this provision is to report fires to Forest
Service within 15 minutes of detection. CB radios are not considered adequate two-way
communication because FCC Regulations prohibit commercial use. When "dead areas" exist and
direct communication is impossible, Purchaser may need to establish a relay to make the system prompt and reliable.
Purchaser shall not rely upon the communication system of another who may or may not
be available at the time of need.
Have a Contractor's employee make a test call from the operating site to Purchaser's
headquarters during operating hours.
Follow the same procedure as when making a fire security inspection.
Smoking and Open Fire Restriction
Smoking and fires shall be permitted only at the option of the Purchaser. Purchaser shall not permit open fires without advance permission in writing from the Forest Service.

1. Smoking
   a. Request the purchaser provide smoking authorization in writing and designate smoking locations and safe smoking habits.
   b. A safe location is described as: 1. Cleared area of at least one-foot square to mineral soil, or 2. A parked vehicle equipped with an ashtray.
   c. A person smoking shall not be walking around or be on a piece of equipment such as a tractor.

Blasting
Blasting shall be permitted only for road construction purpose unless advance permission is obtained from the Forest Service, (C(T)7.2 (5/99)). When blasting is conducted on Level 11 or higher days, a second fire security person is required for an hour after blasting ceases. As the blasting area must be watched closely there would be no time for fire security to observe the other areas of the sale operation during this period.

Fuses may not be used for blasting. Blasting cord such as prima cord is very hazardous from a fire ignition standpoint and may be used only after Forest Service permission is granted.

Blasting may be used for other than road construction only by advance written permission by the Forest Service. Any such agreement should address the safety aspects of RPA making inspections and also public safety. If blasting caps or materials are found on the ground, stumps, or elsewhere on the sale area, such permission should be revoked. Blasting choker holes has been the source of major industrial fires in Region 6, and close supervision by the purchaser is critical.

Compliance with State Forest Laws
State laws are not applicable to Forest Service contracts. But this does not relieve the purchaser from the requirements of state law that may not be included as a part of the timber sale contract but may be applicable to such things as haul over state protected lands. RPA will not enforce state law under the timber sale contract. Even without this provision, state laws apply to purchasers. Inclusion in the contract only tends to clarify that point. Violations of state law may be reported to the appropriate state agency for enforcement. Current fire provisions of the contract have been coordinated with both states in Region 6, thus there should be few conflicts.

Aircraft Communications
Every aircraft used in conjunction with Purchaser's operations shall be equipped with an operable radio system. The radio system shall be capable of transmitting and receiving on VHF frequency 122.925 Megahertz with a minimum output of 5 watts at the transmitter. The system shall be located and installed so the pilot can operate it while flying. A shielded all weather broadband antenna shall be part of the system and properly installed and maintained.

Upon discovery or notification of a fire all aircraft controlled by the purchaser shall monitor 122.925 VHF when within 5 miles of a fire and broadcast their intentions.
Logging Block Equipment

Purchaser shall provide a serviceable 5 gallon backpack pump full of water, one axe, and one long handled round pointed shovel, size 0 or larger at each block through which a running line passes.

The area below such blocks must be kept clear of all flammable debris under 4 inches in diameter for a distance of 6 feet in all directions. Debris larger than 4 inches that poses a fire risk, such as punky logs, must also be removed.

Purchaser shall avoid line-rub on rocks or woody debris, which may result in sparks or sufficient heat build up to cause a fire start.

Tips For Checking Blocks and Lines

1. Check the required clearing to see that all readily flammable material less than 4 inches in diameter has been cleared for the 6 foot radius around the block. Material larger than 4 inches, which poses a fire risk such as punky logs, must also be removed. (This clearing shall be maintained during the period of time the block is in use.)
2. Check the condition of the blocks for damage and lubrication.
3. Tail block blankets are NOT acceptable.
4. The condition of the tools shall meet the same standards as other firefighting tools. Check backpack cans. (Full of water- no leaks, pump operates properly, hose and connections in good condition).
5. Check for line-rubs on rocks and woody material, (this would be a good item to cover with the fire security person).
6. *Safety is very important when working around lines never stand in their bite.*

C7(T).22 – Emergency Fire Precautions

A good reference for this material is the pocket guide; see the DFMO of the last revised card available.

Contractors and permittees may obtain the Industrial Fire Precaution Level 24-hour recording by calling 503-668-1650. They will need to know which of the four industrial fire protection units of the Mt. Hood National Forest in which they are working.

The Industrial Fire Precaution Levels are established for all industrial operation under contract, and for other private activities by Regional Forester Order #3. These levels are coordinated with other Federal and state fire suppression agencies within the boundaries of Region 6. There should be only one version of this provision in all contracts since it provides for changing the terms if needed to protect the National Forests. This is done by the Contracting Officer (CO) who notifies the purchaser in writing that a change is needed and encloses a copy of the new provision.

Under C(T)7.22 the Closed Season is identical to the Fire Precautionary Period found in B(T)7.2 and specified in Al6 or A(T)13. There are 4 levels of Industrial Fire Precaution (IFPL) provided for during the closed season on the sale area as discussed below:

IFPL Level I - Closed Season

This is the level of lowest fire hazard and risk. Fire precautions are necessary and all required equipment is to be in place on the sale area. Waivers may be granted by the CO and/or the Forest Service Representative, (FSR), if the actual conditions on the sale area are not as high as predicted and there is no need for the fire security or equipment. Waivers should be specific to what is waived and for how long as well as conditions of
revocations. Generally, waivers may be granted when there is no disadvantage to the Government such as when the conditions are wet and the equipment and personnel are not needed to prevent the ignition or spread of fire.

**IFPL Level 11 - Partial Hootowl**

This section of the provision provides the times when operations may be conducted. Basically, power saws, cable yarding, blasting and welding, or cutting of metal may not be performed from 1:00 p.m. until 8:00 p.m. daily. The use of power saws on landings are exempt from these restrictions. Waivers or substitute precautions may be granted where the restrictions are clearly not needed.

**IFPL Level III - Partial Shutdown**

At this level all cable yarding is shutdown all day except, gravity systems may be operated until 1:00 p.m. when all blocks and moving lines are 10 feet or more above the ground. There is still a need to be concerned about the carriage speed on the outhaul since the revolutions of the blocks can be faster than with other cable systems. Power saws are restricted throughout the day except on landings and on operations where tractors or skidders are the yarding.

In addition the following are permitted to operate between the hours of 8 P.M. and 1 P.M. local time tractor skidding, mechanized loading and hauling of any product, blasting, welding or cutting of metal, and any other spark emitting operation not specifically mentioned. *For any of these operations to occur they must be within 13,320 feet or ¼ mile of the active skidding operation.*

**IFPL Level IV - General Shutdown**

All operations are prohibited except servicing of equipment. This level does not allow welding or cutting of metal. Further restrictions may be made by the Regional Forester and/or State Forester to restrict entry to public lands.

**Other Information:**

The Mt. Hood National Forest has made the following interpretations for the Industrial Fire Precautions Levels. The following definitions shall apply:

A tractor is defined in the "other spark-emitting operation" category refers to wheeled and tracked vehicles when used for skidding, decking materials, site preparation, scarification and erosion control work.

"Mechanized Loading" and "Mechanized Hauling" includes machine loading or hauling respectively of any product of material. "PRODUCT" or "MATERIAL" is interpreted to include, but not be limited to, logs, firewood, slash, soil, rock, poles, posts, etc.

*Cable yarding systems:* A yarding system employing cables and winches in a fixed position.

**Closed Season (Fire Precautionary Period):** That season of the year when a fire hazard exists and as described in AI 6.

**Hauling:** Where hauling involves transit through more than one shutdown zone/regulated use area, the precaution level at the woods site shall govern the level of haul restrictions, unless prohibited by other than the Industrial Fire Precaution Level system.
Loading sites/woods site: A place where any product or material (including but not limited to logs, firewood, slash, soil, rock, poles, posts, etc.) is placed in or upon a truck or other vehicle.

Tractor/Skidder Operations: A harvesting operation, or portion of a harvesting operation where tractors, skidders, or other harvesting equipment capable of constructing fireline, are actively skidding forest products and can quickly reach and effectively attack a fire start. For any of these operations to occur they must be within 1,320 feet or 1/4 mile of the active skidding operation.

The CO, FSR, or District Ranger may only issue waivers regarding the above precautions. Such waiver, or substitute precautions under B(T)7.2 1, shall prescribe measures to be taken by Purchaser to reduce the risk of ignition, and/or the spread of fire. The CO or FSR shall consider site-specific weather factors, fuel conditions, and specific operations that result in less risk of fire ignition and/or spread than contemplated when precaution level was predicted. Consideration shall also be given to measures that reduce the precaution levels above. Purchaser shall assure that all condition of such waivers or substitute precautions is met.

Purchaser shall obtain the predicted Industrial Fire Precaution Level from the appropriate Ranger District headquarters. If predictions made after 4:00 P.M., local time, are significantly different than originally estimated, Forest Service will inform Purchaser when changes in restrictions or industrial precautions are indicated.

Waivers and Substitute Measures

All operations and equipment will be in compliance with their contract fire protection requirements, or have a current waiver, during Closed Season, (Fire Precautionary Period).

Waiver should only be considered if one of the following occurs:

*Additional fire prevention measures will be implemented which will reduce the IFPL to a level where operations would be allowed to continue.*

*OR*

*Additional fire suppression forces and equipment will be made available on the operation which meet defined initial attack standards.*

If the decision is to issue a waiver the following must occur:

1. Requested in writing by the Purchaser's/Contractor's Representative or, if for a force account operations, by the responsible person.
2. Documented on MH 5100-14.
3. Be evaluated against established waiver guidelines
4. Waivers will be recommended by the RPA and the DFMO and approved by the (FSR). Be sure the CO or FSR signs using the proper title and the District Ranger is notified.
5. All parties to a waiver must review the adequacy of each waiver as fire danger conditions change.
6. Cancellations must be signed by the CO or FSR and transmitted to the Purchaser's/Contractor's Representative and the District Ranger.
7. Restricted under Level III is "any other spark-emitting operation not specifically mentioned" from 1:00 PM to 8:00 PM. The "other" category will require interpretation and discretion, as it is so broad. Many of the "other" category
activities will involve work on roads by the Purchaser or Forest Service and guidance on waivers can be found in the "Waiver Recommendations For Road Crew Work".

**Waiver Process and Evaluation Criteria**

**IFPL IV:** When the declared IFPL in a precaution zone is IV, waivers generally will only be considered for those activities that do not require the use of power equipment. Give special consideration to requests, which meet evaluation criteria (defined for IFPL II or III below) and where minimal time is needed to complete a segment of work.

**IFPL II or III:** When the declared IFPL in a precaution zone is II or III, a request for a waiver is appropriate and may be granted if the request meets evaluation criteria defined below and the contractor agrees to implement the following "Best Management Practices" to reduce the probability of ignition source production:

1. All fire precautions are met at all times
2. No smoking is allowed on the operations area except in passenger vehicles.
3. Equipment is maintained at a minimum of the following intervals.
   a. Spark Arresters on motors shall be cleaned out each 3 days.
   b. Spark Arresters on power saws shall be maintained each day.
   c. All blocks, sheaves, and areas of possible rub points shall be checked daily
   d. All fire extinguishers shall be checked daily.
   e. All belly pans on tractor/skidders shall be cleaned daily.
4. Contractor shall consider implementing as appropriate the following measures
   a. Reducing the line speed when cable yarding.
   b. Do not use the motor on "motorized" carriages
   c. Keeping a motorized carriage as high off the ground as possible
   d. Cleaning equipment frequently to reduce buildups of oil, grease and woody debris.

See appendix 9 for flowchart that illustrates the process and flow given contractor and Forest Service decisions when evaluating a waiver request.

**Evaluation Criteria for Prevention Measures**

In addition to implementing the "Best Management Practices", measures can be evaluated to see if they will reduce the IFPL to a level, which would allow operations. The ignition component, (IC), can be reduced only by increasing the fine fuel, (1 hour time lag) fuel moisture. To increase in fuel moisture, water the area, which could reasonably be expected to receive a firebrand from operator's operations. By applying water CONSTANTLY for 5 minutes to the fuels, the fine fuel moisture can be increased to approximately 28%. Calculations using equilibrium moisture equations indicates it will take one hour under all shade conditions for the 1 hour time lag fuels to dry to 12%, the threshold value to reduce the IFPL one level. Hence, repeat watering for 5 minutes each hour is necessary.

Another acceptable prevention measure is the removal of all vegetative material to mineral soil. This changes the fuel model where the firebrands will light to one, which is non-flammable. Clear the area, which could reasonably be expected to receive a firebrand from operator's operation.

**Evaluation Criteria for Suppression Measures**

It is assumed that the ignition is in slash (Fuel Model 12) and starts as a single point source ignition and burns under dismal weather conditions. The contractor's measures proposed for a waiver must meet the following criteria:

1. A fire will be detected and reported to the responsible company official on the site within 5 minutes of ignition.
2. Control action will be started on the fire within 5 minutes and suppression forces defined in 3 and 4 below will be completely operational within an additional 10 minutes of the time the fire is reported to the responsible company official.

3. A water supply system must be provided which can provide a minimum of 1200 gallons per hour (20 gal/min. for 60 minutes) to the fire at a uniform rate. The capability to provide this flow rate must exist for a minimum of one hour. The water supply system will include both equipment and a crew.

4. The following fire line production capability is required assuming an expected fire spread rate of 12 chains/hour on the westside (Zones 2, 3, and 4) and 9 chains/hour on the eastside (Zone 1). The fire line production capability must be provided and operational which will produce a minimum of 36 chains/hour on the westside and 27 chains per hour on the eastside. The capability to provide this fire line production rate must exist for a minimum of one hour and be appropriate given the topography.

Measures will be evaluated against the following fire line production guides:

a. Water supply system defined in 3 above:
   i. with 3 people on the hose and nozzle = 7 chains/hour
   ii. with 2 people on the hose and nozzle = 5 chains/hour

b. Fire line construction with hand tools = .5 chains/person/hour

c. Dozer fire line construction:
   i. Light bulldozer (D-4) with swamper = 10 chains/hour
   ii. Medium bulldozer (D-6) with swamper = 17 chains/hour
   iii. Large bulldozer (D-7 +) with swamper = 27 chains/hour

Waiver Recommendations for Road Crew Work
Approved by Forest Leadership Team, April 15, 1987.

The following recommendations are expected to cover at least 90% of the situations on the Forest. Exceptions will occur whereby additional mitigation measures may be needed or are not needed as recommended. The statement "No Operations" is meant to indicate that 90% or greater of the time, the activity should be not be granted a waiver. However, special circumstances may occur whereby the activity may not present as great a risk as assumed and a request for a waiver is encouraged in these cases.

The following definitions apply:
Low Hazard Area (LHA) - Any area where the combination of the elements reduces the probability of fire starting and/or spreading.

High Hazard Area (HHA) - Any area not a Low Hazard Area.

Hauling Waiver Requirements (HWR) - A waiver is recommended if the following measures are utilized: A one person patrol with Forest Service communications is actively visiting areas where work has occurred during the current work day.

Water Truck (WT) - A tank truck or

No Additional Requirements for Waiver (NARW) - It is felt the activity with normal precautions is fire safe hence a waiver is recommended with no additional requirements.

<table>
<thead>
<tr>
<th>Activity Code</th>
<th>Activity Name</th>
<th>Recommendation for Waiver</th>
</tr>
</thead>
<tbody>
<tr>
<td>1010</td>
<td>Surface Blading</td>
<td>III - LHA: NARW</td>
</tr>
<tr>
<td></td>
<td></td>
<td>III - HHA: HWR</td>
</tr>
<tr>
<td></td>
<td></td>
<td>IV - LHA: HWR</td>
</tr>
<tr>
<td></td>
<td></td>
<td>IV - HHA: No Operations</td>
</tr>
<tr>
<td>Code</td>
<td>Description</td>
<td>III - LHA: NARW</td>
</tr>
<tr>
<td>------</td>
<td>--------------------------------------------------</td>
<td>------------------</td>
</tr>
<tr>
<td>1011</td>
<td>Surface Blading &amp; Watering</td>
<td></td>
</tr>
<tr>
<td>1050</td>
<td>Spot Subgrade Repair</td>
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</tr>
<tr>
<td>1080</td>
<td>Slide Removal W/Endhaul</td>
<td></td>
</tr>
<tr>
<td>1130</td>
<td>Surface Replace. W/Gravel</td>
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</tr>
<tr>
<td>1170</td>
<td>Premix Patching W/Machine</td>
<td></td>
</tr>
<tr>
<td>1171</td>
<td>Premix Patching by Hand</td>
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</tr>
<tr>
<td>1180</td>
<td>Seal Cracks</td>
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<tr>
<td>1181</td>
<td>Spot Chip Seal</td>
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</tr>
<tr>
<td>1190</td>
<td>Chip Seal Paved Surfaces</td>
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</tr>
<tr>
<td>1195</td>
<td>Macadam surface Treatment</td>
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</tr>
<tr>
<td>1220</td>
<td>Sweeping Paved Surfaces</td>
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</tr>
</tbody>
</table>
2010  Grade or Reshape Shoulders  III - LHA: NARW  
         III - HHA: HWR  
         IV - LHA: HWR  
         IV - HHA: No Operations  
2040  Bring shoulders To Grade  III - LHA: NARW  
         III - HHA: HWR  
         IV - LHA: HWR  
         IV - HHA: No Operations  
3010  Ditch Main. & Repair  III - LHA: NARW  
         III - HHA: HWR  
         IV - LHA: HWR  
         IV - HHA: No Operations  
3011  Drainage Main. & Hand  III - LHA: NARW  
         III - HHA: HWR  
         IV - LHA: HWR  
         IV - HHA: No Operations  
3040  Clean Culverts W/Machine  III - LHA: NARW  
         (Machine stays on Roadway)  III - HHA: HWR  
         IV - LHA: HWR  
         IV - HHA: No Operations  
3060  Culvert Repair Welding  II-WT  
         III - LHA: + WT  
         III - HHA: No Operations  
         IV - HHA: No Operations  
Backhoe (Stays on Roadway)  III - LHA: NARW  
         III - HHA: HWR  
         IV - LHA: HWR  
         IV - HHA: No Operations  
Hauling  III - LHA: NARW  
         III - HHA: HWR  
         IV - LHA: HWR  
         IV - HHA: No Operations  
3080  Culvert Replacement  III - LHA: NARW  
         III - HHA: HWR  
         IV - LHA: HWR  
         IV - HHA: No Operations  
4021  Brush Cutting W/Machine  III - LHA: WT, HWR  
         III - HHA: No Operations  
         IV - No Operations  
4022  Brush Cutting W/Power Saw  II - WT & within 25 feet of road edge  
         III - LHA: WT & within 25 feet of road edge
<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>III - HHA: No Operations</th>
<th>IV - No Operations</th>
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<tbody>
<tr>
<td>4120</td>
<td>Repair of Cut &amp; Fill Slopes</td>
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<td>HWR</td>
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<tr>
<td>5010</td>
<td>Logging Out (Road Clearing)</td>
<td>II - WT if using power saw</td>
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<tr>
<td>6140-6150-6170</td>
<td>Repair of Major Drainage Stru. Welding</td>
<td></td>
<td></td>
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<tr>
<td>6160</td>
<td>Repair of Roadside Facilities</td>
<td>II - WT if using power saw or welding</td>
<td></td>
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<tr>
<td>7011</td>
<td>Sign Repair &amp; Cleaning w/Power Saw</td>
<td>II - WT &amp; within 25 feet of road edge</td>
<td></td>
</tr>
<tr>
<td>7050</td>
<td>Striping of Center &amp; Fog Lines</td>
<td>III - LHA: NARW</td>
<td></td>
</tr>
<tr>
<td>8020</td>
<td>Hauling to Stockpile Site</td>
<td>III - LHA: NARW</td>
<td></td>
</tr>
<tr>
<td>8030</td>
<td>Manufacture of Coldmix from Pug mill</td>
<td>III - LHA: NARW</td>
<td></td>
</tr>
</tbody>
</table>

**Management of Industrial Fires and Other Trespass Fires**

The management of industrial fires is critical to successfully achieving our fire suppression objectives and to recovering costs in operations and negligent fires. When a fire occurs on an Industrial Operation's area, the following actions must occur:
1. A qualified fire investigator and Initial Attack Incident Commander, (LAJC) must be assigned to the fire.

2. The RPA and the Contractor/Purchaser's Representative will be notified and should go to the fire. The RPA should remain at the fire serving as liaison between the purchaser and the LAIC until released by the Forest Service Representative.

3. All actions must be thoroughly documented. The RPA must assemble all documentation relating to the fire and work in a format that assists both the fire investigator and CO in the resolution on contract administration issues posed by the contract. The RPA must document all activity, which occurs on the fire including the operator's apparent compliance, or failure to comply, with contract provisions, waivers, and or substitute measures in effect. Further, documentation should include the operator's response to the fire, names and times of operator's employees and equipment working on the fire, and all decisions regarding management, containment, and control of the fire.

4. The LAJC will assess the situation upon arrival at the fire. An official written notification must be issued to the Contractor/Purchaser's Representative through the RPA, if possible, of the existence of the fire and actions required to suppress it. Documentation should be updated and reissued as conditions change throughout the fire.

5. The LAJC must decide in consultation with the RPA and Contractor/Purchaser's Representative if the contractor/purchaser can handle the fire or if the USFS should assume responsibility for the fire. If you have any doubts about the contractor/purchaser's ability to suppress the fire, the USFS should assume responsibility. One of the two following situations will exist:

**Situation 1:**
The contractor/purchaser is capable of providing both the personnel and equipment needs in the agreed upon timeframe and is therefore capable of assuming responsibility for suppression of the fire.
The RPA and the LALC agree the Purchaser/Contractor can handle the fire. The LAJC should take the following action:

1. Document as fire conditions change.
2. Monitor the situation. Document progress and compliance as appropriate. If at any time the fire conditions change, such that the contractor/purchaser is no longer capable of fully meeting the personnel and equipment needs in the time required, then situation #2 exists.
3. Insure that the fire is contained, controlled and extinguished completely. (See definition of controlled bottom of this section.)
4. When the fire is declared out, insures that documentation is issued to that effect.

**Situation 2:**
The contractor/purchaser is not able to meet both the personnel and equipment needs in the agreed upon timeframe, and is therefore not capable of assuming responsibility for the
suppression of the fire. The contractor/purchaser may be able to provide some personnel and equipment.

The LAJC should take the following actions:

1. Through the RPA, notify the contractor/Purchaser's Representative that the Forest Service is taking full responsibility for the fire.

2. Organize the suppression effort in a cost efficient method utilizing the Mt. Hood Guide to Appropriate Suppression Response. Handle the industrial fire as any other wildfire, keeping in mind that fire costs may eventually be borne by the contractor.

3. Decide on action to be taken with the contractor's/purchaser's personnel at the fire site:
   a. Hire them. Contractor's/purchaser's employees can be hired under the casual fire fighter pay plan which requires the Pack Test and nomex be issued. If Pack Test and nomex requirements cannot be met, the personnel should be released as soon as practical (normally about 2 hours). An exception to the step test requirement is in the case of operators of equipment signed up under the "Operator with Equipment" provision of Fire Equipment Rental Agreement.
   b. Have personnel leave the area.
   c. Allow personnel to remain in order to protect or remove equipment as necessary. The Forest Service may order any of the contractor’s equipment, which hinders the suppression effort, including helicopters, removed from the scene.

4. Through the RAP maintain contact with the contractor/purchaser.

5. With the contractor/purchaser's concurrence, the responsibility for suppression of the fire can be returned to the contractor/purchaser after the fire is controlled. Under no circumstances should responsibility be returned to the contractor/purchaser until the fire is controlled. If the contractor/purchaser does not accept responsibility for the fire when it is controlled, the Forest Service retains responsibility until the fire is declared out. Whenever the responsibility for the fire is returned to the contractor/purchaser, such action must be documented on the "Record of Fire Condition," and issued through the RPA. The "Record of Fire Condition" should indicate what personnel and equipment the contractor/purchaser is required to provide. Additional "Record's of Fire Condition" should be issued daily or as the situation changes until the fire is declared out.

**Definition: Control A Fire:** (from Fireline Handbook, NWCG Handbook 3, PMS 410-1 NFES # 0065.) To complete control line around a fire, any spot fires there from, and any interior islands to be saved; bum out any unburned area adjacent to the fire side of the control lines: and cool down all hot spots that are immediate threats to the control line, until the lines can reasonably be expected to hold under foreseeable conditions. (See appendix 10 for flow chart regarding industrial fires.)
Appendix I – Waiver Examples and Process

Industrial Fire Precaution Levels

I. Closed Season - Fire Precaution requirements are in effect. A Fire Watch/Security is required at this and all higher levels unless otherwise waived.

II. Partial Hootowl - The following may operate only between the hours of 8 P.M. and 1 P.M. local time:

- power saws except at loading sites;
- cable yarding;
- blasting;
- welding or cutting of metal.

III. Partial Shutdown - The following are prohibited except as indicated:

- cable yarding - except that gravity operated logging systems employing non-motorized carriages may operate between 8 P.M. and 1 P.M. when all blocks and moving lines are suspended 10 feet above the ground except the line between the carriage and the chokers.
- power saws - except power saws may be used at loading sites and on tractor/skidder operations between the hours of 8 P.M. and 1 P.M. local time;

In addition, the following are permitted to operate between the hours of 8 P.M. and 1 P.M. local time:

- Tractor, skidder, feller-buncher, forwarder, or shovel logging operations where tractors, skidders, or other equipment with a blade capable of constructing fireline are immediately available to quickly reach and effectively attack a fire start;
- mechanized loading or hauling of any product or material;
- blasting;
- welding or cutting of metal;
- any other spark emitting operation not specifically mentioned.

IV. General Shutdown - All operations are prohibited.
NOTE: Where hauling involves transit through more than one shutdown/regulated use areas, the precaution level at the woods loading site shall govern the level of haul restriction, unless otherwise prohibited by other than the industrial precaution level system.

The IFPL system does not apply on lands protected by ODF east of the summit of the Cascades.

The following definitions shall apply to these industrial fire precaution levels:

Loading sites: A place where any product or material (including, but not limited to logs, firewood, slash, soil, rock, poles, etc.) is placed in or upon a truck or other vehicle.

Cable yarding systems: A yarding system employing cables, and winches in a fixed position.

Low hazard area: Any area where the responsible agency representative (BIA, BLM, FWS, NPS, ODF, USFS, WDNR) determines the combination of elements reduces the probability of fire starting and/or spreading.

Closed season (Fire precautionary period): That season of the year when a fire hazard exists as declared by the responsible agency official.

Waivers, written in advance, may be used for any and all activities. Activities for which waivers may be issued include, but are not limited to:

- mechanized loading and hauling.
- road maintenance such as sprinkling, graveling, grading and paving.
- cable yarding using gravity systems or suspended lines and blocks, or other yarding systems where extra prevention measures will significantly reduce the risk of fire.
- power saws at loading sites or in felling and bucking where extra prevention measures will significantly reduce the risk of fire.
- maintenance of equipment (other than metal cutting and welding) or improvements such as structures, fences, and powerlines.

Revised May 1997
STATE OF OREGON
Department of Forestry

PERMISSION TO OPERATE DURING THE PERIOD WHEN A
CLOSE-DOWN ORDER IS IN EFFECT

NOTIFICATION NO.: _______________ CLOSE-DOWN ORDER NO.: ____
CLOSURE LEVEL:____

Date: ________ , 19_ _ Time Issued: _______ [AM [ PM] Subdivision: ____________

Lot Mark: (Sale Name) ____________ Section: _______ T____S, R____W

Pursuant to ORS Chapter 477, approval is hereby granted:

To:

Address: ____________________________

PROVIDED THE FOLLOWING REQUIREMENTS LISTED BELOW ARE MET:

POWER SAW

*****COMPLY WITH REQUIREMENTS CHECKED*****

A. POWER SAWS EXCEPT AT LOADING SITES:
   [ ] Cutting unit is to be _______ trailed.
   [ ] A watchman will be provided for each set of cutters during the closedown period, and continue until ______ hours after shutdown for the day. The watchman will visually inspect the area where cutting has taken place.
   [ ] Watchman will have immediately available a 5 gallon pumper filled with water.
   [ ] Watchman will have immediately available a fire extinguisher with a UL rating of at least 2A-10BC.
   [ ] No felling of snags or bucking of windfalls permitted.
   [ ] Provide a communication system that will allow contact between the operation and the district office within a 10-minute period.
   [ ] Provide a _______ (minimum) gallon engine with pumping equipment and sufficient hose to reach all portions of the work area.
   [ ] Humidity and wind speed instruments will be kept on the site. Measure and record humidity and wind speed every ______ hour. Written record of date, time, measurements, and name of person taking measurements will be maintained on site, available for inspection.
   [ ] Cease operations when humidity reaches _______ % or lower.
   [ ] Cease operations when wind speed reaches _______ mph or higher.
   [ ] No cutting permitted after _______.
   [ ] If front exhaust discharge power saws are used, the area to be cut must be wet down immediately prior to cutting.

B. POWER SAWS AT THE LOADING SITE:
   [ ] Use of saws is permitted ON MINERAL SOIL until _______ at the loading site.
   [ ] Humidity and wind speed instruments will be kept on the site. Measure and record humidity and wind speed every ______ hour. Written record of date, time, measurements, and name of person taking measurements will be maintained on site, available for inspection.
   [ ] Cease operations when humidity reaches _______ % or lower.
   [ ] Cease operations when wind speed reaches _______ mph or higher.
   [ ] A _______ (minimum) gallon engine with pumping equipment and hose will be kept on site.

OTHER REQUIREMENTS

[ ]

[ ]

THIS PERMISSION IS VOID FOR NON-COMPLIANCE WITH ANY OF THE ABOVE REQUIREMENTS, AND MAY BE CANCELLED AT ANY TIME BY NOTIFICATION FROM THE STATE FORESTER. THIS PERMISSION IS VOID IF CLOSURE LEVEL CHANGES.

I agree to comply with the above requirements and certify the owner agrees with my request for waiver

X Signature of operator or authorized representative

By ______________________________ Authorized Representative

ORIGINAL
Appendix K: Forest Service Sanitary Guidelines for Emergency Fire Suppression Efforts in the Bull Run Watershed

**Background:** The Forest Service has been the City’s primary partner for wildland fire protection for the Bull Run watershed since the inception of the agency in 1906. Both agencies have worked to prevent the introduction of fecal pathogens into the drinking water supply, and no evidence exists of any contamination of Bull Run drinking water from human wastes. As a partner to the Portland Water Bureau, the Forest Service has agreed to establish sanitary waste guidelines for potential emergency fire events in the Bull Run watershed.

**Scope:** These guidelines are written to address the most likely emergency fire situation, which is a lightning-caused fire less than ¼ acre that involves one or two trees and a two to four person crew. This document also addresses the more unlikely, outlier scenario of a larger fire where a spike camp hosting several fire crews is established at a developed site within the watershed.

**Geographic probability:** These guidelines primarily address the presence of fire crews in remote locations in the watershed. The most likely scenarios for fires in the Bull Run are small-scale lightning-caused fires that are less than ¼ acre in size. The historical frequency of such fires is once every two years. Small-scale lightning fires in the Bull Run typically involve a two- to four person crew that access the fire by foot and extinguish the fire over a 24 to 48 hour period. Because of the watershed’s naturally low recurrence interval for a large-scale fire, the probability that such a fire would occur (and an associated large-scale suppression effort) during the time frame of the LT2 Variance is extremely low. Moreover, a large scale fire camp – and the need for sanitation facilities on a large scale -- is unlikely to ever be placed in the Bull Run due to the following limiting factors: electrical power, internet connectivity, phone reception, and access to highways. In the event that a large-scale fire occurred in the Bull Run, a more likely scenario is that the incident command base would be placed close to main access routes outside the watershed and a limited-scale “spike camp” would be established at an area inside the watershed such as the Bear Creek houses. If that were the case, the Forest Service and the Water Bureau would coordinate to assure that there are adequate numbers of portable toilets located at the spike camp and that they complied with the LT2 Variance requirements for setbacks from water courses and secondary containment.

**General Guidelines:** All Forest Service staff will, where possible, use existing sanitary facilities when in the Bull Run watershed. In the event of an emergency that requires the extended presence of emergency responders in remote locations in the water-supply drainage, the Forest Service will implement the following sanitary practices:

1. Fire crews will dig a 6” cat hole with hand tools and cover human waste.
2. If a camp is established, the Forest Service will contract for portable toilets and work with the Portland Water Bureau to comply with Section 3 of the Water Bureau’s Human Sewage Containment for Bull Run Water Supply Drainage Standard Operating Procedure.

The Forest Service reserves the right to do what is feasible and practical at the time based on the specific fire conditions and threat.