



## **Final Environmental Assessment**

### **Wahkiakum County Fire District No. 3 Grays River Fire Station Relocation**

FEMA-1817-DR-WA

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**FEMA**

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## ACRONYMS

ACM – Asbestos Containing Material

CEQ – Council on Environmental Quality

CFR – Code of Federal Regulations

DAP – Disaster Assistance Policy

DAHP – Washington State Department of Archaeology and Historic Preservation

EA – Environmental Assessment

EIS – Environmental Impact Statement

EMD – Washington State Emergency Management Division

EO – Executive Order

FEMA – Federal Emergency Management Agency

FONSI – Finding of No Significant Impact

LBP – Lead Based Paint

NEPA – National Environmental Policy Act

NHPA – National Historic Preservation Act

NMFS – National Marine Fisheries Service

NOAA – National Oceanic and Atmospheric Administration

SHPO – State Historic Preservation Office

SWCAA – Southwest Clean Air Agency

USFWS – U.S. Fish and Wildlife Service

WDFW – Washington State Department of Fish and Wildlife

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## 1.0 INTRODUCTION

In early January 2009, heavy rain and melting snow throughout Wahkiakum County resulted in flooding of Grays River. The lower floor of the Wahkiakum Fire Station #3 fire hall was submerged to a depth of 54 inches. A structural evaluation of the two-story wood structure following the flooding showed that the building is out of plum and leaning to the west, sheathing panels and door trim has pulled away from the walls, rollup doors are out of their tracks, the concrete floor and stem wall sustained serious cracks, and the electrical system has serious water damage. Inspectors determined the building to be unsafe for occupancy based on weakened structural integrity, saturated supporting soils and fill, and the possibility that additional shear force could cause catastrophic collapse of the building.

Wahkiakum County Fire Protection District #3 has applied through the Washington State Emergency Management Division (EMD) to the Federal Emergency Management Agency (FEMA) for funding to relocate the building to a nearby site about 1,300 feet north of the existing site. Relocation of the building was determined to be cost effective because of repetitive flooding at the existing site and the County requirement to elevate the structure 3 feet above the 54-inch high water mark (FEMA, 2009).

This draft Environmental Assessment (EA) has been prepared to assist FEMA in meeting its environmental review responsibilities under the National Environmental Policy Act (NEPA) of 1969, the Council on Environmental Quality's (CEQ) implementing regulations (40 CFR Parts 1500 through 1508), and FEMA's implementing regulations (40 CFR Part 10). FEMA is also using the draft EA to document compliance with other applicable federal laws and executive orders, including the Clean Air Act (CAA), Clean Water Act (CWA), the Endangered Species Act (ESA), the National Historic Preservation Act (NHPA), Executive Order (EO) 11988 (Floodplains), EO 11990 (Wetlands), and EO 12898 (Environmental Justice). This EA is prepared in accordance with FEMA Implementing Procedures, 44 CFR § 10.8(e), that "When a proposal is not one that normally requires an environmental impact statement and does not qualify as a categorical exclusion, the Regional Director shall prepare an environmental assessment."

This draft EA is limited to evaluation of potential environmental impacts of construction and operation of the new facility at the new site. It includes demolition of the existing structure at existing site but does not include the District's negotiated trade of land at the old site for the proposed new building site.

FEMA will use the findings in this draft EA and resulting public comments to determine whether to prepare an Environmental Impact Statement (EIS). If the action is determined not to significantly affect the quality of the human and natural environments, then FEMA will make a Finding of No Significant Impact (FONSI), and that preparation of an EIS is not warranted.

This document discusses the purpose and need for the Proposed Action, the project alternatives, the affected environment and potential impacts to that environment resulting from the alternatives, cumulative effects, public involvement, and resources consulted.

## 2.0 BACKGROUND

The Wahkiakum County Fire Protection District #3 is located in Grays River, Washington. District #3 provides fire protection and emergency medical service (EMS) to a population of approximately 1,200

residents over a 40 square mile service area in western Wahkiakum County. It is an all volunteer department with a total of 38 volunteer personnel (as of December 2009). Equipment includes a single fire engine, a rescue vehicle, and an ambulance.

### **Existing Facility**

The existing Fire District #3 Station is a two-story structure located at 3751 SR 4W in Grays River, Washington. It is bounded on the north by SR 4, on the east and west by small parcels fronting on SR 4, and on the south by a seasonal creek. Adjacent land uses include SR 4 and agricultural land to the north, residential / commercial uses to the east, west, and south.

The building faces north and appears to be between 30 and 50 years old (Cascade Engineering, Inc., 2009). It is conventionally-framed, constructed on concrete stem walls with a slab-on-grade first floor. Each floor measures approximately 36 feet by 60 feet for a total gross area of approximately 4,320 square feet. Two large rollup doors are located on the north side of the building, opening onto SR 4.

### **Flood Damage**

The building lies within the 100-year flood zone (FIRM Panel No. 5301930005B, 9/28/1990) and has experienced repetitive damage from four flood events in the last eight years. The depths of flood waters (measured from the first floor slab) were as follows: 2001-33.5", 2006-34.5", 2007-43.5", and 2009-54".

Following the 2009 flood event, a structural inspection of flood damage was conducted for the facility (Cascade Engineering, Inc., 2009). Major damage to the structure included:

- The lateral force of the flood waters shifted the entire building; both floors sustained residual shear deformation; structure is out of plumb, leaning to the west; the north wall is also out of plumb.
- Saturation of soils and fill beneath the structure resulted in cracks and settling of the concrete slab (up to 3 inches) and stem wall and outward rotation of the stem wall.
- Electrical systems on the first floor sustained substantial water damage.
- Major water damage to interior and exterior walls including drywall, siding, framing, insulation and vapor barriers.
- Substantial water damage to doors, frames, cabinets, countertops, etc. on first floor.
- Damage to first floor restroom, shower, drains, and septic system.

The total amount of loss was estimated at approximately 59% of fair market value (Wahkiakum County, 2009). Wahkiakum County (2009a, b) determined that the 2009 flood event resulted in "Substantial Damage" to the structure as defined in Wahkiakum County Flood Damage Prevention Ordinance # 142-06.

The Cascade Engineering, Inc. report (2009) concluded: "While the building is ... safe for temporary occupancy, the inadequate piers in their weakened state are cause for significant concern for the structural integrity of the building. If the piers experience significant shear forces again in the future, from a seismic, wind or flood event, they could collapse suddenly and catastrophically, leading to the complete collapse of the entire building." Because the structure is considered unsafe, the District has effectively abandoned the fire hall, dispersing District vehicles and equipment to the residences of volunteers throughout the service area.

### 3.0 PURPOSE AND NEED

Under the Stafford Act (42 U.S.C. § 5121 – 5207), the purpose of FEMA’s Public Assistance (PA) program is to provide financial assistance to local, state, and tribal governments to restore critical infrastructure damaged in a Presidentially-declared disaster. The purpose of this project is to provide funds to Wahkiakum County Fire Protection District No. 3 to replace or relocate the Grays River fire hall, which was severely damaged during the flood event that occurred during the January 6 through 16, 2009 period.

Because of the extensive damage to the building (repairs exceed more than 50% of replacement cost), the total replacement cost of Fire Station No. 3 is eligible for FEMA funding (Disaster Assistance Policy (DAP) 9524.4). Permanent relocation of the building to another site is also eligible for funding because of frequent flooding and repetitive loss at the existing site and the County requirement to elevate the structure 3 feet above the 54-inch high water mark (DAP 9580.102). Relocation of the building is a cost-effective alternative to reconstruction/repair of the existing building at the existing site.

Wahkiakum County Fire Protection District No. 3 is responsible for ensuring the health and safety of its residents by providing critical services, including fire protection and emergency medical (EMS) services. Fire Protection District No. 3 provides these critical services to the Grays River community, with a service area of approximately 40 square miles that covers approximately 1,200 residents. The need of the Proposed Action is to restore District No. 3 facilities to efficient operating condition in order to provide necessary services to the Grays River community and to alleviate repetitive losses from flooding at the existing site.

### 4.0 LOCATION

The existing fire hall site is approximately ½ acre in size and is located on the south side of SR 4 in Grays River. It is bounded on the north by SR 4, on the east by a residential property, on the south by an unnamed stream, and on the west by an undeveloped parcel.

The new site is approximately one acre in size and is located on the east side of Hull Creek Road, approximately 300 feet north of the SR 4 / Hull Creek Road intersection (see Appendix A Site Information). The site is bounded on the west by Hull Creek Road, on the south by several parcels of residential and commercial land that front on SR 4, on the northeast by a seasonal creek, and on the east by a large parcel. Adjacent land uses consist of forest land across Hull Creek Road to the west, the seasonal creek and pasture land to the northeast and east, and commercial/residential uses to the south.

The existing and proposed sites are in the southwest quarter of the southeast quarter of Section 12, Township 10 North, Range 8 West, Willamette Meridian.

### 5.0 ALTERNATIVES

#### ALTERNATIVE ANALYSIS

District No. 3 provides fire and EMS services to a resident population of approximately 1,200 people over a service area of approximately 40 square miles. The District operates three fire halls, one at Grays River, one at Skamokawa, and one at Raistakka Road. The existing fire hall at Grays River has served the Grays River community since the 1960s.

Recurring flood damage over the last ten years prompted the District to explore alternative sites for a new fire hall. The urgency of this effort increased following the flood event of 2009 and, subsequently, the County's requirement that the fire hall be elevated above the floodplain or be relocated outside the floodplain. Specifically, the County required that the existing structure be elevated 3 feet above the highest flood of record (54 inches on the first floor slab in 2009) as part of any repair or replacement, or be relocated outside the floodplain.

Because of the damage to the fire hall, the District determined it to be unusable and, on a temporary basis, dispersed District vehicles and equipment to the residences of District volunteers. This action was intended to be a temporary measure until the existing fire hall could be repaired / replaced or a new fire hall constructed at a different site. This alternative is the basis of the No Action Alternative.

### **On-Site**

#### *Repair*

The first alternative evaluated by the District following the flood was repair of the existing structure at the current elevation. After a damage inspection study was completed, an engineering study was conducted that indicated repair of the existing structure was possible. However, repair of the existing structure would not meet the County's requirement that that structure be elevated 3 feet above the high water mark. Further, the structure would continue to be subject to recurring flooding.

#### *Replacement*

This alternative involves demolition of the existing structure and its replacement including elevation of the structure as required by the County. An engineering evaluation indicated that, because of the small size of the existing site, the required pad area (including sideslopes) required to elevate the structure (7 1/2 feet) would place severe constraints on the movement of District vehicles to and from SR 4. This alternative would elevate the structure above the floodplain.

### **New Site**

At the same time, the District was also evaluating the possibility of relocating the fire hall to a new site. Although the site selection process was informal in nature, several criteria were important as the process progressed:

- **Floodplain.** The primary driver for a new site is to relocate the fire hall outside the floodplain. As a "Critical Facility," the new site must be located outside the 100-year and 500-year flood zones. A "Critical Facility" is one "...for which even a slight chance of flooding might be too great."(Wahkiakum County, 2009 a,b).
- **Response Time.** Historically, the District has selected sites for its fire halls that optimize (minimize) response times for its residents and businesses. This has resulted in fire hall locations within established communities in order to expedite emergency response. Beyond safety considerations, response times can be an important factor with insurance coverage for residences and businesses.

- Access to SR 4. SR 4 is the principal transportation facility within the District's service area and provides a critical route for travel to emergency locations throughout the District. A new station needs to be located on, or have easy access to SR 4.
- Site Constraints. A new site needs to be of sufficient size that it can easily accommodate the movements of District vehicles and equipment, as well as provide parking for volunteers and visitors.
- Volunteers. The existing Grays River fire hall is an all-volunteer department. As far as possible, any new site should be conveniently located for volunteers traveling to the fire hall from a variety of locations throughout the District service area.
- Cost. Cost is an important consideration for a small entity such as Fire District No. 3.

As it began its search for a new fire hall site, the District determined that it was important to find a new site within the Grays River community. The District has been an important part of the community for many years and provides needed fire and EMS service with relatively rapid response times. Relocating the fire hall to the east or west along SR 4 away from Grays River would reduce existing levels of service.

The requirement to elevate or relocate a new fire hall outside the floodplain effectively eliminated possible sites in Grays River south of SR 4, most of which are located within the 100-year floodplain. Similarly, potential sites north of SR 4 located within the floodplain were eliminated from consideration.

Early in the site selection process, the District began to look at potential sites north of SR 4 along Hull Creek Road and the Hull Creek Valley. Large portions of this valley had long been cleared for agriculture, primarily pasture. There were a number of locations that appeared to meet the criteria described above, foremost among them a location outside the floodplain.

The District initiated discussions with landowners regarding the availability of land in the valley. These discussions led to the possibility of a new site on the south side of Hull Road, several hundred feet north of its intersection with SR 4 and about 700 feet northwest of the existing fire hall. This one-acre site is above the 500-year floodplain. The District would obtain the site through a property trade for the existing fire hall site. Currently, the potential landowner has no plans for the new site.

## **ALTERNATIVES EVALUATED IN THIS EA**

NEPA requires the evaluation of reasonable project alternatives as part of the environmental review process. This draft EA evaluates two alternatives. Alternative 1 is the No Action Alternative, which serves as the baseline by which other alternatives can be compared. Alternative 2, the proposed action, is relocation of the fire hall outside the floodplain. The Executive Order 11988 Floodplain Management and FEMA Regulations (44 CFR Part 9) require selection of a location outside the floodplain if it is practicable. Thus, only two alternatives will be evaluated.

### **Alternative 1. No Action**

Under this alternative, FEMA would not provide to the District for repair / replacement of the existing fire hall. Because the existing fire hall is considered unsafe for use, the District would continue to operate with vehicles and equipment dispersed at the residences of volunteers throughout the service area. The dispersal of vehicles and equipment would compromise the District's capabilities (increased response times, reduced levels of service) to provide needed services to its residents.

In the absence of any repairs, the existing fire hall would continue to deteriorate and would continue to be subject to recurrent flood events. As an effectively abandoned, structurally unsound building, the damaged fire hall may present a hazard to the community and may be subject to vandalism.

Further, the No Action alternative would not meet the County requirement to elevate the structure 3 feet above the high water mark of 54 inches or to relocate the fire hall outside the floodplain (Wahkiakum County Building and Planning Department, 2009).

### **Alternative 2. Relocation of the Fire Station Outside the Floodplain**

Under this alternative, a new fire station would be constructed at a new location outside the floodplain. The proposed site is located on Hull Road, approximately ¼ mile from the existing facility. Permanent relocation is consistent with FEMA policy 9580.102 because of the potential for repetitive loss at its existing location. Relocation would also be consistent with the County's requirement to either relocate the fire station or to elevate the existing fire station approximately 7 feet above current grade. Floodplain evaluation has shown the new site to be outside the 500-year floodplain, a requirement for "Critical Facilities" such as fire stations, for which even a slight change in flooding may be too great."

The new fire station will be a single story 4,400 square foot (sf) structure on a 43,560 sf (1.0 acre) site off Hull Road. It will be 21.5 feet in height. There will be four vehicle bays with rollup doors facing south. The interior will include a multi-purpose area, two baths with showers, a kitchen, main floor storage area, and storage loft. The building will be sprinklered and provided with fire alarms. Utilities will include a pressurized on-site septic system, water and electrical service from the P.U.D., a new hydrant, propane tank and generator, and a storm drainage system. Vehicle bays open onto a 36 ft by 80 ft concrete apron, which is surrounded by a larger asphalt parking area. There will be a total of 8 parking spaces, one of which is wheel-chair accessible. From Hull Road, access is provided by a 50 ft wide, asphalt entrance way. Highway signage identifying the fire station will be provided on Hull Road both north and south of the new facility. (See Appendix A Site Information)

The new fire station will continue to provide fire protection and EMS services, but the new facility may also be used as a local emergency operations center (EOC) and temporary warming shelter during emergencies.

The existing fire station would be demolished and the site cleared.

This alternative would meet the County's requirement to relocate the structure outside the floodplain (or elevate the station above the floodplain) and would minimize the potential for repetitive flooding.

## 6.0 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

This section of the EA briefly describes the natural and human environments within and surrounding the project area, and compares alternatives based on their projected impacts on environmental resources. The proposed site was graded and crushed rock placed on most of the site approximately two years ago. Prior to that, the site had been used as pasture.

Table 1 shows the intensities of environmental effects for Alternatives 1, 2, and 3. These intensities are categorized as follows:

- **None:** There would be no effects on environmental resources.
- **Negligible:** The effects on environmental resources would be either undetectable or if detected, would have effects that would be slight and localized. Any impacts would be well below regulatory standards as applicable.
- **Minor:** The effects on environmental resources would be measurable, although the changes would be small and localized. Impacts would be well within regulatory standards as applicable. Mitigation measures would reduce any potential environmental effects.
- **Moderate:** The alternative would have both localized and regional scale impacts. Mitigation measures would be necessary and the measures would reduce potential adverse impacts.
- **Major:** The alternative would have substantial consequences on a local and regional level. Impacts would exceed regulatory standards. Mitigation measures to offset adverse impacts expected.

**Table 1. Environmental Impact and Intensity by Alternative (1 or 2)**

Environmental Resource (Law or EO)	None / Negligible	Minor	Moderate	Major
Clean Air Act (air quality)	1,2			
Clean Water Act (water quality)	1,2			
Environmental Justice (EO 12898)	1,2			
Floodplains (EO 11988)	2			1
Wetlands (EO 11990)	1,2			
Endangered Species Act (threatened & endangered Species)	1,2			
Public Safety	2		1	
Hazardous Materials and Toxics	1,2			

# PHYSICAL RESOURCES

## AIR QUALITY

### Affected Environment

Air quality in the Grays River community and western Wahkiakum County is generally good by virtue of its rural setting. Emissions in the area are typically generated by motor vehicles, wood stoves, recreational vehicles and outdoor burning. District No. 3 emissions typically consist of those associated with District vehicles and motor vehicles owned by volunteers.

Grays River and Wahkiakum County are located within the jurisdiction of the Southwest Clean Air Agency.

### Environmental Consequences

#### *Alternative 1 - No Action*

There would be no construction or demolition activities associated with this alternative. Current dispersion of existing resources require additional mobilization time resulting in slight increase in emissions. However, the impacts would be negligible.

#### *Alternative 2 - Relocation of Fire Hall at New Site*

Construction and operation of the new fire hall are not expected to result in any air quality-related impacts. Depending on season, construction activities may generate minor amounts of dust and equipment-related emissions. These emissions would be temporary in nature and would not be consequential. Operation of the new facility would result in minor emissions from vehicles and equipment, however, these would be of similar magnitude and frequency as those that occur at the present time at the existing fire hall. There will be no net increase in operational emissions.

Because of the age of the existing fire hall, asbestos-containing material (ACM) may be present in structural materials. In older structures, asbestos may be present in flooring, ceiling tiles, siding, insulation and a variety of other building materials. If the presence of these materials is suspected, the Southwest Clean Air Agency (SWCAA) should be contacted prior to demolition. It is possible that a pre-demolition inspection of the fire hall will be required under Asbestos Regulation 476 (SWCAA, 2008). The results of this inspection would determine the appropriate means for disposal of any ACM materials present. Overall, in terms of asbestos, demolition would not present any unusual issues, and no asbestos-related impacts are expected.

## HAZARDOUS MATERIALS AND TOXIC WASTES

### Affected Environment

Because of the age of the existing fire hall, lead-based paint (LBP) may be present in the structure. Lead-based paint (LBP) was widely used until 1978. No other hazardous or toxic materials or equipment (e.g. underground storage tanks) are thought to be present on the existing fire hall site (Strong, personal communication, 2009).

The proposed site for the new fire hall was formerly pasture land. There are no indications of any hazardous or toxic materials present.

### **Environmental Consequences**

#### *Alternative 1 – No Action*

Under the No Action Alternative, there would be no new construction or demolition activities. The existing fire station would continue to deteriorate and eventually be torn down due to safety concerns. Until removal of the structure, the continued deterioration would provide a potential waste stream of lead based paint (if present) at the site and eventually the Grays River during future flood events.

#### *Alternative 2 - Relocation of Fire Hall at New Site*

Construction of the new fire hall at the Hull Creek Road site is not expected to result in any hazardous materials or toxic waste-related impacts. The site was historically used as pasture and there are no known hazardous materials or toxic wastes known to be present on the site. The new fire hall will be constructed in compliance with applicable Wahkiakum County building codes and standards relating to building materials (Wahkiakum County, 2009). This will include design of the propane tank and generator located on the north side of the new structure (See plans in Appendix A Site Information).

If lead-based paint is determined to be present in the existing fire hall, Wahkiakum County Public Health shall be contacted prior to demolition to determine the level of concern and appropriate means for demolition and disposal of demolition debris. Generally, with whole building demolition, LBP is less likely to be a concern because of the small ratio of lead paint to the total waste mass (US EPA, 1993). Overall, any lead-based paint present in the existing fire hall should not present any unusual problems with regard to demolition and only negligible LBP-related impacts are expected.

## **WATER RESOURCES**

### **FLOODPLAINS (EO 11988)**

#### **Affected Environment**

The existing fire hall is located within a FEMA flood plain risk zone designation “Zone A no BFE” according to Flood Insurance Rate Map (FIRM) No. 530193B dated September 28, 1990 (FEMA, 1990). This designation describes Special Flood Hazard Areas inundated by the 100-year flood, but that base flood elevations (BFE) are not determined. No information is provided for 500 year flood zones. Additionally the hydrologic information for the area is sparse.

The existing fire hall has experienced severe flooding on several occasions. Most recently, flood events in 2001, 2006, 2007, and 2009 resulted in floodwater elevations on the 1<sup>st</sup> floor slab of 33.5, 34.5, 43.5 and 54 inches, respectively. The fire hall is also considered a “Critical Facility” defined as one “...for which even a slight chance of flooding might be too great.” As a result, Wahkiakum County Building and Planning Department (2009a, b) has required that a repaired facility would have to be elevated above the flood plain and floodproofed or relocated to a site outside the Special Flood Hazard Area. Specifically, a repaired

structure would have to be elevated 3 feet above the highest flood elevation, 54 inches, or a minimum of 7 ½ feet above the existing concrete slab elevation.

The current floodplain information is approximate in nature. Detailed hydrologic and hydraulic information is not available. FEMA evaluated all available data and determined that the new site is definitely out of the 100 year floodplain and it looks to be 6-7 feet above the 100 year flood elevation. Without more stream discharge information and modeling, the 500 year flood plain cannot be definitively determined. Based upon the amount of Federal investment and the potential flood damage to which it would be subject from various levels of flood risk, including consideration of the elevation difference of the site to the approximate 100 year flood level, and that the site has never flooded before, FEMA determines that the site is not likely in the 500 year floodplain.

Other functions and values associated with the floodplain that have potential impacts are discussed in other sections of this EA.

### **Environmental Consequences**

#### *Alternative 1 – No Action*

Under this alternative, there would be no new construction. Operations would continue at current dispersed locations. The existing structure would be subject to future flood events and possibly become debris during an event, due to its deteriorating state. Consequently, there is the potential for major floodplain-related impacts resulting from the No Action Alternative.

#### *Alternative 2 - Relocation of Fire Hall at New Site*

The new site was determined to be above the base flood level. Additionally, the site was subjectively determined to be outside the 500 year floodplain. Because a practicable alternative outside the 500 year floodplain exists, FEMA is required, per 44 CFR Part 9.9 to act on that basis. No impacts on the floodplain or from flooding are anticipated at the new site. Additionally, the new location would not promote further occupancy or modification to the floodplain as it is replacing an existing facility in kind.

The demolition of the existing fire station does have the potential to impact the floodplain. By limiting demolition to the none flood season, the impacts would be avoided resulting in no impacts to the floodplain.

### **WETLANDS (EO 11990)**

#### **Affected Environment**

No wetlands are located on the existing fire hall site and the proposed site. An unnamed seasonal stream runs along the northeast boundary of the new site, turning south under SR 4, and passing along the south side of the existing fire hall site. It then discharges directly into Grays River. The National Wetlands Mapper indicates a freshwater emergent wetland in the area. Ground reconnaissance confirms that the

construction area for the new proposed site has been filled with a gravel pad and that any possible wetlands are located in the vicinity of the seasonal stream along the northeast boundary.

### **Environmental Consequences**

#### *Alternative 1 - No Action*

Under this alternative, there would be no excavation and grading at a new site and no new facilities would be constructed. District operations would continue as at the present time. Consequently, no construction-related or long-term impacts on water quality would occur.

#### *Alternative 2 - Relocation of Fire Hall at New Site*

Construction is expected to take 6 to 9 months. No in-water work will take place. During this period, it is possible that site runoff could introduce sediments into the adjacent seasonal stream and increase turbidity. However, the contractor will utilize conventional construction measures (e.g. silt fences, hay bales) to control erosion of soils exposed during construction and avoid construction-related impacts that can potentially impact the stream or associated wetlands. The applicant will also minimize any impacts by conforming with County requirements associated with critical areas pertaining to any wetlands present in the area.

The new facility will use a pressurized on-site septic system located in the northern portion of the new site. This system will be designed in accordance with Wahkiakum County Public Health's requirements for on-site septic systems. It is anticipated that no impact will occur to nearby wetlands based upon design requirements and minimization requirements associated with permitting of the system.

## **WATER QUALITY**

### **Affected Environment**

The existing fire hall site and the proposed site are located within the Grays River and Hull Creek watersheds. Grays River, which discharges into the Columbia River, lies several hundred feet south of the existing fire hall. Hull Creek, whose watershed extends northeast of the Grays River community, discharges into Grays River approximately 1,000 feet south of the existing fire hall.

An unnamed seasonal stream runs along the northeast boundary of the new site, turning south under SR 4, and passing along the south side of the existing fire hall site. It then discharges directly into Grays River.

### **Environmental Consequences**

#### *Alternative 1 - No Action*

Under this alternative, there would be no excavation and grading at a new site and no new facilities would be constructed. District operations would continue as at the present time. Consequently, no construction-related or long-term impacts on water quality would occur.

#### *Alternative 2 - Relocation of Fire Hall at New Site*

Construction is expected to take 6 to 9 months. No in-water work will take place. During this period, it is possible that site runoff could introduce sediments into the adjacent seasonal stream and increase turbidity. However, the contractor will utilize conventional construction measures (e.g. silt fences, hay bales) to control erosion of soils exposed during construction and no construction-related water quality impacts are expected to occur.

A storm drainage system for the new site will be designed and submitted to the Wahkiakum County Building and Planning Department for approval as part of the building permit process. This system will be designed to meet all applicable criteria. The drainage system will be operated and maintained by the District in accordance with County guidelines and no adverse water quality impacts are anticipated.

The new facility will use a pressurized on-site septic system located in the northern portion of the new site (See Figure \_\_). This system will be designed in accordance with Wahkiakum County Public Health's requirements for on-site septic systems. Similarly, the District will operate and maintain the system in accordance with Wahkiakum County Public Health guidelines. No adverse impacts on surface or ground water quality are expected.

## **BIOLOGICAL RESOURCES**

### **VEGETATION AND WILDLIFE**

#### **Affected Environment**

The site of the existing fire hall is fully developed with the fire hall and surrounding paved areas for mobilizing District vehicles and parking. Vegetation on the site consists of the drainfield area south of the fire hall and riparian vegetation along the stream on the south side of the site. Riparian vegetation includes willow, alder and cottonwood. A cleared, but undeveloped parcel is located to the west and a residential property is located to the east. Overall, the fire hall site and adjacent properties provide limited habitat for species that are tolerant of human activity. These may include such species as coyote, raccoon, crow, English sparrow, and starlings.

The proposed site for the new fire hall is about one acre in size. Historically, it was a small part of a larger pasture complex that extends north of SR 4 up the Hull Creek Valley. At the present time (January 2010), most of the site has been graded and crushed rock installed. The extreme northern portion of the site remains in pasture grasses. The riparian vegetation along the seasonal stream that comprises the northeastern boundary of the site remains undisturbed. This riparian vegetation provides uable a valuable travel corridor and cover for species that might otherwise be exposed in the adjacent pasture land.

#### **Environmental Consequences**

##### *Alternative 1 - No Action*

No excavation, construction, or demolition would occur under this alternative. Consequently, no impacts on vegetation and wildlife would occur if this alternative were to be implemented.

##### *Alternative 2 - Relocation of Fire Hall at New Site*

Any impacts on vegetation and wildlife resulting from this alternative will not be consequential. The project will be designed and constructed in accordance with provisions of the Wahkiakum County Critical Areas Protection Ordinance (No. 131-00).

There will be a conversion of land use from open area to a developed site consisting of a new structure with surrounding impervious surfaces. The area involved will be less than one acre, however, and the loss of habitat and impact on vegetation minor. The riparian corridor along the northeast boundary of the new site will not be altered.

The level of human activity at the site will increase slightly. However, human activity on or near the site has been present for many years and any impacts on wildlife will not be measurable.

## **THREATENED AND ENDANGERED SPECIES**

### **Affected Environment**

Review of resource databases indicates that there are no terrestrial or aquatic wildlife species listed under the Endangered Species Act (ESA) in the immediate vicinity of the project site (Washington Department of Fish and Wildlife, 2009; FEMA, 2009). Grays River, approximately 700 feet to the south, supports several listed salmonids including Chinook, coho, and chum salmon and steelhead trout. Hull Creek, approximately ¼ mile to the south and east, supports listed Chinook and coho salmon and steelhead trout. Both streams are considered essential fish habitat (EFH) for Chinook and coho salmon under the Magnuson-Stevens Fishery and Conservation Act (Magnuson-Stevens Act).

Similarly, no critical habitats for marbled murrelet or northern spotted owl were identified (FEMA, 2009).

### **Environmental Consequences**

#### *Alternative 1 - No Action*

Under the No Action Alternative, no construction activities would be conducted nor have any listed species been identified in the vicinity of the existing fire hall. Consequently, no impacts to federally-listed threatened and endangered species would occur, nor would there be any impacts to Essential Fish Habitat (EFH) under the Magnuson-Stevens Act.

#### *Alternative 2 - Relocation of Fire Hall at New Site*

Although this alternative will involve site work and construction activities, federally-listed threatened and endangered species or their critical habitat is not present in the action area. This alternative will have no effect on ESA species or habitat. Appropriate construction BMP's would minimize any negligible impacts that have the potential to affect Essential Fish Habitat.

## **Cultural Resources**

### **Affected Environment**

The lower Columbia River valley, including the Grays River vicinity, has been occupied by Native American populations for thousands of years. At the time of European contact (beginning with the Royal Navy in 1792, followed by the Lewis and Clark Expedition in 1805), the residents of the area were speakers of the Chinook language family. They were permanent residents, drawn to the area primarily by the abundance of salmon. A brisk fur trade developed under the auspices of the Hudson's Bay Company in the early nineteenth century, but a combination of effects (decreasing fur prices in general, Native population loss due to smallpox outbreaks) caused this to decline in the 1830s. The land was finally ceded to the United States in 1846.

Wahkiakum County, of which the unincorporated settlement of Grays River is part, was established in 1854, shortly after the organization of the Territory of Columbia (later Washington). The area has been settled and developed for its natural resources, including salmon and timber, since that time.

There are several historic properties located within Grays River. Notable among them are the Grays River Grange, the Grays River Creamery and the Grays River Covered Bridge. The Grays River Grange is located . The Grays River Creamery is located approximately ¼ mile away from the new site along Hull Creek Road. Of particular note is the Grays River Covered Bridge, listed on the National Register of Historic Places, which is located about two miles from the project area. It is the last functioning covered bridge on a public road in the State of Washington.

The existing fire station dates from the 1960s and underwent major alteration in 1982. The proposed relocation site was previous pasture land. Approximate 2-7 feet of gravel fill was placed to provide a level pad. There are no other historic sites or archaeological properties known to exist within the footprint of this project.

### **Environmental Consequences**

#### *Alternative 1 - No Action*

No construction or demolition activities would be funded by FEMA, and there would be no direct effects to any historic or archaeological properties. However, this alternative would result in a decrease in fire protection in the area (the Fire District's nearest other stations are at Skamokawa 11 miles away and one at Raistakka Road five miles away). This could potentially have a minor negative effect on historic structures in the general area due to a reduction in responsive services.

#### *Alternative 2 - Relocation of Fire Hall at New Site*

Under this alternative, there would be no direct or indirect effect to any historic or archaeological properties, since all of the work actions will take place on disturbed ground and involve structures not eligible for inclusion on the National Register. The existing fire station does not have the significance required for inclusion on the National Register due to major alterations in 1982. Restoration of services at the new location will have a beneficial effect for nearby historic properties by maintaining the pre-disaster level of service.

# **SOCIOECONOMIC RESOURCES**

## **ENVIRONMENTAL JUSTICE**

### **Affected Environment**

Executive Order (EO) 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, requires each federal agency, to the greatest extent practicable and permitted by law, to achieve environmental justice as part of its mission. Consistent with EO 12898, FEMA has established policies and responsibilities with the objective of preventing disproportionately high and adverse human or environmental effects on minority or low-income populations. NEPA is the principal mechanism to implement provisions of this EO.

As of 2008, Wahkiakum County had an estimated population of 4,133 people, slightly higher than the 2000 Census population of 3,824 (Wikipedia, 2010). The racial composition was 93.46% white, 0.26% black or African-American, 1.57% Native American, 0.47% Asian, 0.08% Pacific Islander, and the remainder from other races or two or more races.

The median incomes for households and families in the county were \$39,444 and \$47,604, respectively. Approximately 6% of families and 8% of the population were below the poverty line, including approximately 11% of those under age 18 and 2.7% of those individuals age 65 and over.

### **Environmental Consequences**

#### *Alternative 1 - No Action*

Under Alternative 1, dispersal of District No. 3 vehicles and equipment would result in reduced levels of fire protection and EMS service to all residents within the District service area, regardless of racial status or income level. No disproportionately high and adverse impacts on minority or low-income populations would occur.

#### *Alternative 2 - Relocation of Fire Hall at New Site*

Relocation and construction of a new fire hall outside the floodplain would benefit all residents within the District No. 3 service area, including minority and low-income residents. No environmental justice-related impacts would occur.

## **PUBLIC SAFETY**

### **Affected Environment**

District No. 3 provides fire and EMS services to a resident population of approximately 1,200 people over a service area of approximately 40 square miles. The District operates three fire halls, one at Grays River, one at Skamokawa, and one at Raistakka Road. The existing fire hall at Grays River has served the Grays River community since the 1960s.

## **Environmental Consequences**

### *Alternative 1 - No Action*

This alternative has several adverse impacts on public safety. First, the existing structure, while "...safe for temporary occupancy...", places District #3 staff at risk because of the weakened structural integrity of the building. "If the piers experience significant shear forces again in the future, from a seismic, wind or flood event, they could collapse suddenly and catastrophically, leading to the complete collapse of the entire building."(Cascade Engineering, Inc., 2009). For reasons of safety, the District has abandoned the building and distributed vehicles and equipment to various locations (volunteer residences) about its service area.

Second, inadequate facilities and dispersed vehicles and equipment limit the capabilities of the District to respond to fire and emergency medical calls. Response times can increase and the levels of service experienced by District residents and businesses can decline. Further, in the event of a major widespread disaster that results in severe damage, the District could find itself unable to provide desired levels of service to District residents. District No. 3 would be forced to rely on other District No. 3 fire halls in Skamokawa and Raistakka Road, 11 and 5 miles distant from Grays River, respectively. These facilities might not be able to provide assistance in the midst of a widespread disaster event.

Third, the dispersed nature of sites where District vehicles and equipment are located is not conducive to regular maintenance. Further, out of necessity, some vehicles and equipment are being stored out of doors. Over time, maintenance of vehicles and equipment is likely to prove difficult and their condition may deteriorate.

Finally, the No Action Alternative would not be in compliance with the County's requirement to elevate the fire hall above the floodplain or to relocate the fire station to a site outside the floodplain (Wahkiakum County Department of Building and Planning, 2009).

### *Alternative 2 - Relocation of Fire Hall at New Site*

Under this alternative, the existing fire hall would be demolished and replaced by a new fire hall at a new site on Hull Creek Road. Alternative 2 would meet the County's requirement to be outside the flood zone and would not be subject to recurrent flood events.

This alternative would provide an improved working environment for District #3 personnel and would provide additional space for storage and maintenance of vehicles and equipment. The larger site provides safer access to and from SR 4 via Hull Road and more space for parking. The new site eliminates the occasional congestion that can occur at the existing fire hall when District vehicles and volunteer vehicles move about the small site.

The capabilities of the District would be enhanced by the space provided for potential use as an Emergency Operations Center (EOC) and/or emergency shelter.

Overall, the new site and structure would provide a safe operating environment for District No. 3 personnel and would enhance the capabilities of the District to serve its residents.

## 7.0 CUMULATIVE IMPACTS

As defined by NEPA, cumulative impacts are those effects on the environment that result from the incremental effect of the action, when added to past, present, and reasonably foreseeable future actions, regardless of what agency or person undertakes such actions. Cumulative effects can result from individually minor, but collectively significant, actions taking place over a period of time.

The primary intent of this project is to restore the fire protection and EMS services that existed prior to the flood event. Other than the positive benefits resulting from a larger, more efficient fire hall, free from recurrent flooding, no other cumulative impacts on the community are likely. The Grays River community has had a stable population for many years and the new fire hall is not expected to encourage nor discourage potential residents from settling in the area.

The transfer of the existing fire hall site from public to private ownership is not expected to result in any cumulative impacts on the community. There are several other undeveloped parcels in the immediate vicinity of the fire hall site, some of which front on SR 4 and no uses for the fire hall site are anticipated for the foreseeable future.

## 8.0 MITIGATION MEASURES REQUIRED

The following mitigation measures are required as a condition of FEMA funding:

1. The Applicant is responsible for selecting, implementing, monitoring and maintaining Best Management Practices (BMPs) as required by Wahkiakum County Building and Planning along with BMPs recommended by the Washington Department of Ecology, to control erosion and sediment, reduce spills and pollution, and provide habitat protection. Erosion controls must be in place prior to construction. If fill is stored on site, the contractor would be required to cover it appropriately.
2. No construction material or debris shall be staged or disposed of in a wetland or floodplain, even temporarily. Excess and unsuitable excavated material shall not be sidecast into or placed upslope of wetland environments.
3. Should any cultural material (e.g. prehistoric stone tools or flaking, human remains, historic material caches) be encountered during construction, the Applicant must ensure that work is immediately stopped and the State and FEMA are contacted. Under Washington state law, it is a misdemeanor to impact an archaeological site on public or private land, and under state law, impacts to Native American graves and cultural items are a felony.
4. If the “project limits” (including clearing, excavation, temporary staging, construction, and access areas) extend into an area not previously identified for environmental, historic cultural, or archaeological consideration, work in these areas shall cease until such time as the project is re-submitted through the State and FEMA for re-evaluation for compliance with national environmental policies.

5. This review does not address all federal, state, and local requirements. Acceptance of federal funding requires the Applicant to comply with all federal, state, and local laws. Failure to obtain all appropriate federal, state, and local environmental permits and clearances may jeopardize federal funding.
6. The applicant shall test the existing Fire Station for presence of lead base paint prior to demolition. If present, then the applicant shall contact Wahkiakum County Public Health to determine the appropriate methods for removal and disposal.

## 9.0 PUBLIC INVOLVEMENT

Wahkiakum County Fire District #3 has provided opportunities for the involvement of its residents, businesses, and local government entities in the decision-making process through district commissioners' meetings, which are open to the public. The status, progress, and condition of the fire station have been a matter of public record.

There was a 30-day public comment period for this EA. During this period, interested stakeholders, including local residents, were encouraged to comment. A public notice was placed in the *Wahkiakum County Eagle* announcing the availability of the document. A copy of the EA was available at Fire Station #3, 3751 SR 4W, Grays River, Washington 98647 and at the Wahkiakum County Building and Planning Department, 64 Main Street, Cathlamet, Washington 98612. The EA was also viewable from FEMA's website at: <http://www.fema.gov/plan/ehp/envdocuments/index.shtm>.

Comments were to be sent to Mark Eberlein, FEMA Region X's Regional Environmental Officer:

Mail:

Mark Eberlein  
FEMA Region X  
130 228<sup>th</sup> Street SW  
Bothell, Washington 98021

Fax: (425) 487-4613

E mail: [mark.eberlein@dhs.gov](mailto:mark.eberlein@dhs.gov)

The notice stated that when the 30-day comment period ends, FEMA will review these comments, revise the draft EA as appropriate, and then publish a final EA. If no substantive comments are received, then FEMA intends to issue a Finding of No Significant Impact decision. That decision will also be posted on FEMA's website.

FEMA received one email comment from Mark Cline, Wetlands/Shorelands Specialist with the Washington Department of Ecology, Shorelands and Environmental Assistance Program stating that the EA was silent on wetlands and that wetlands and shorelines may be present in the area requiring review by Department of Ecology. The EA was revised to reflect the wetlands review under Executive Order 11990. The County has already determined that the property is not subject to shorelines regulations.

## 10.0 REFERENCES

- Cascade Engineering, Inc. 2009. Structural Inspection Report: Flood Damage, Wahkiakum County Fire District #3, Grays River. Hillsboro, Oregon. February 17, 2009. 6 p.
- FEMA. 2009. Environmental Considerations Greensheet, Washington Disaster 1817. February, 2009. 4 p.
- FEMA. 2009. Repair vs. Replacement of a Facility Under 44 CFR §206.226(f) (the 50% Rule), FEMA Disaster Assistance Policy. DAP 9524.4. 6 p.
- FEMA. 2009. Floodplain Review – 8-Step Process. Floodplain Management – Checklist (44 CFR Part 9), Executive Order 11988. May 12, 2009. 6 p.
- FEMA. 2009. Project Worksheet. Wahkiakum Fire Station #3 – Building (PW No. 436.) August 25, 2009. Revised September 1, 2009.
- FEMA. 2009. ENVAS Database, Geographic Information System. Region X. Bothell, Washington. Accessed December 11, 2009.
- FEMA. 2007. *Public Assistance: Public Assistance Guide*. FEMA 322. Washington, D.C. June, 2007. 149 p.
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- Southwest Clean Air Agency. 2008. Guidance for Flood Victims Cleaning Up Asbestos (News Release). [http://www.swcleanair.org/nr\\_AsbestosLewisFlood.html](http://www.swcleanair.org/nr_AsbestosLewisFlood.html). Accessed January 12, 2010.
- Strong, Gene. 2009. Conversation and Site Visit. Fire Chief, Fire District No. 3, Wahkiakum County. Grays River, Washington. December 17, 2009.
- U.S. Environmental Protection Agency. 1993. Applicability of RCRA disposal requirements to lead-based paint abatement wastes. Final Report. EPA 747-R-93-006. Technical Programs Branch, Office of Pollution Prevention and Toxics. March, 1993.
- Wahkiakum County. 2009. Letter of July 27, 2009 from Charles J. Beyer, Building Inspector, Building and Planning Department to Gene Strong, Fire Chief, Wahkiakum County Fire District #3 regarding building repair requirements following flood damage. Cathlamet, Washington. 1 p.
- Wahkiakum County. 2009. Letter of May 29, 2009 from Charles J. Beyer, Building Inspector, Building and Planning Department to Gene Strong, Fire Chief, Wahkiakum County Fire District #3 regarding requirements for building repair or relocation following flood damage. Cathlamet, Washington. 1 p.

Wahkiakum County. 2009. Wahkiakum County Building Code Requirements. Building and Planning Department. Cathlamet, Washington. 1 p.

Washington Department of Fish and Wildlife. 2009. SalmonScape.  
<http://wdfw.wa.gov/mapping/salmonscape/>. Accessed December 10, 2009.

Wikipedia. 2010. Wahkiakum County, Washington.  
[http://en.wikipedia.org/wiki/Wahkiakum\\_County,\\_Washington](http://en.wikipedia.org/wiki/Wahkiakum_County,_Washington). Accessed January 7, 2010.

FEMA 2007. Robert T. Stafford Disaster Relief and Emergency Assistance Act, Public Law 93-288, as amended, 42 U.S.C. 5121-5207, and Related Authorities. Washington, D.C. April, 2007.

FEMA 1996. FEMA Implementing Regulations for NEPA. 44 CFR Part 10. Washington, D.C. October 1, 1996.

## 11.0 LIST OF PREPARERS

Stephen Bingham, Environmental Specialist, FEMA Region X

Mark Eberlein, Regional Environmental Officer, FEMA Region X

## **APPENDICES**

A – Site Information

B – Damage Inspection Report

C - Drawings, New Fire Hall (2)

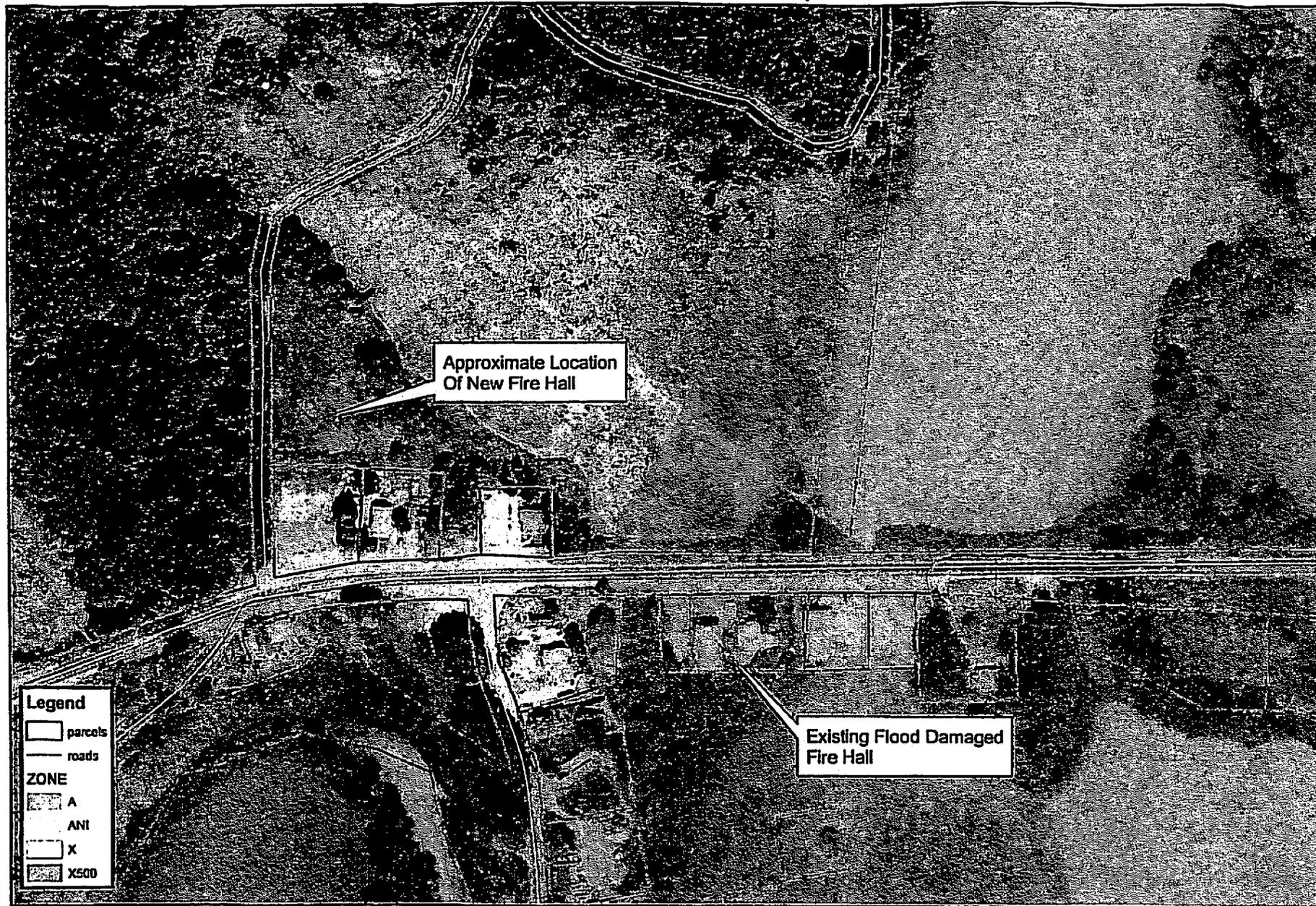
D – Floodplain Maps, Correspondence

E – Cultural Resources Correspondence

F – Environmental Correspondence, Wahkiakum County

G – Public Notice and comments recieved

# WAHKIAKUM COUNTY, WA



February 12, 2009

UTC Job Number 2405

Glenn Grogan  
United Technical Consultants  
PO Box 30  
Phoenixville, PA 19460

Dear Mr. Grogan,

On February 2, you contacted our office and requested that we provide a structural engineer to inspect the insured's (dwelling/building) and perform the following:

**SERVICES REQUESTED:**

1. Inspect, take color photographs and list structural damages caused by flood.
2. Determine exactly how the flood caused the listed damages to occur.
3. Please comment on the extent of the damage from the flood.
4. Did the damages occur before, during or after the flood?
5. Offer opinion on what % of existing damage is due to this one event.
6. Offer opinion on what % of damage existed before the flood.
7. Did pre-existing damage contribute to flood damage and, if so, how?
8. Comment on whether damage is from velocity flow against the structure or settlement. If settlement, how was settlement caused?
9. Also comment if damage is from poor drainage, wind, bad construction, or other.
10. Conclusions must state what damage was caused by moving surface flood water and/or hydrostatic pressure. If none, please state that.
11. Recommend repairs to pre-flood condition for damage caused only by moving surface water and/or hydrostatic pressure

**SITE OBSERVATION:**

- Site visit was performed on February 6, 2009.
- Location: 3751 SR 4 West, Station #1, Grays River, WA 98621

- In attendance at the inspection were Dmitri Wright PE (engineer), Eugene Strong (Fire Chief).
- The referenced location is a two story firehouse located adjacent to Grays River.
- The original building appeared to be 30 to 50 years old.
- The building is a conventionally framed, constructed on a concrete stem walls with a slab-on-grade first floor. The walls are 2X4 stud framed with a 2X6 mud sill. The exterior sheathing/siding is grooved plywood (T-111), and the interior sheathing is gypboard. The front of the building has 2 large roll-up door openings, leaving 3 tall narrow wall piers on that side of the building. The stem walls retain nearly four feet of the fill under the concrete floor slab.
- For the purposes of reporting, the front of the building is assumed to face North.

#### **OBSERVATIONS:**

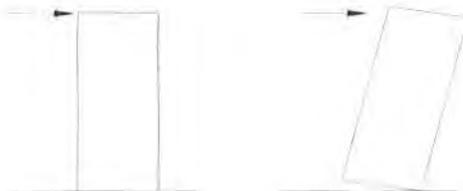
- The first floor walls were visibly leaning to the west. This is consistent with the fact that the flood waters were flowing from east to west. (Photo #1) The deflection at the north end of the building was measured using a plumb bob at more than 2 inches.
- Some sheathing panels pulled away from the wall studs and the door trim was pulled loose. (Photo #2)
- The roll-up doors were popped out of their tracks (Photo #3 & #4).
- The concrete floor slab is cracked across the full width of the room. The crack width is on the order of 1/2 inch. (Photo #5) There is also a crack at the slab-stem wall joint. (Photo #6)

## CONCLUSIONS:

Based on the above investigation and analysis and to a reasonable degree of engineering certainty, the following conclusions are provided:

- The structure was submerged to a depth of nearly 4 feet based on the high water marks on the building. Based on the pattern of damage, the building experienced hydrodynamic drag forces (velocity flow) as the flood water flowed from east to west.
- The lateral force on the building was resisted in shear by the north and south building walls. There were no significant interior walls at the first floor to resist the shear forces. The south wall is nearly solid with only a few small window openings, providing good shear resistance. The north wall has openings for the roll up doors leaving only 3 narrow piers to resist the shear forces. The piers did not appear to have any special nailing pattern for the sheathing nor did they have holdowns to resist uplift at the pier ends. The piers were noted as a weak point in the building structure in a 2001 structural condition report. They were reported to be in good condition at that time.

The large shear forces in the piers pushed them out of square (shear deformation), buckling and pulling the nails out of the sheathing. This also caused the roll-up doors to pop out of their tracks. Once the flood water receded, the walls shifted back toward their original position, but some residual shear deformation remained, resulting in the walls at the north end of the building being out of plumb as observed at the time of the inspection. It was not possible to determine the maximum deformation of the walls during the flood, but it was very likely significantly more than the 2 inches observed later.



- While the building is, in my opinion, safe for temporary occupancy, the inadequate piers in their weakened state are cause for significant concern for the structural integrity of the building. If the piers experience significant shear forces again in the future, from a seismic, wind or flood event, they could collapse suddenly and catastrophically, leading to the complete collapse of the entire building.

- The crack across the floor and the crack adjacent to the stem wall are likely related. The floor at the south end of the building is several feet above the outside grade. The concrete floor slab is bearing on fill, which is held in place by the concrete stem walls. As the flood saturated the soil supporting the stem walls and saturated the fill under the floor, the soil lost its strength. This resulted in increased outward lateral forces on the stem walls coupled with reduced resistance from the supporting soil. Additionally, the weight of the flood water on the floor slab added downward hydrostatic pressure on the slab and increased the outward forces on the stem walls. The outward lateral force on the stem wall caused it to rotate outward at its top, opening the crack at the joint with the slab. The movement of the wall allowed the fill to settle, leaving the slab unsupported. Without support, the slab cracked and settled.



- The damage to the floor slab was noted in a structural condition report in 2001. In my opinion, the damage was made worse by this flood event, and will likely continue to worsen over time as the fill continues to settle. While an annoyance, and unsightly, the damage does not threaten the structural integrity of the building.

Following is a list of the requested services with each point specifically addressed:

- *Inspect, take color photographs and list structural damages caused by flood.*  
See photographs #1 to #6. The structural damage observed included the building structure leaning, the exterior wall sheathing pulling away from the studs, and cracks in the floor slab.
- *Determine exactly how the flood caused the listed damages to occur.*  
The structure was pushed out of plumb by the hydrodynamic drag force (velocity flow) of the moving flood water. As the building leaned, the high shear forces in the north wall caused the sheathing to buckle and pull away from the studs. The cracks in floor slab were caused by the settlement of the saturated fill under the slab and the weakening of the saturated soil supporting the stem walls. The hydrostatic pressure of the flood water on the floor slab also contributed to the cracks.
- *Please comment on the extent of the damage from the flood.*



The visible structural damage was limited to the first floor walls at the north end of the building, including the north ends of the east and west walls which are out of plumb, and the floor slab and stem walls at the south end of the building.

- *Did damages occur before, during or after flood?*  
The structural damage to the walls happened during the flood. This is based on the fact that the doors were recently displaced, the sheathing damage was visibly fresh, and the piers were documented to be in good condition several years earlier. In my opinion, some of the structural damage to the floor slab occurred during the flood, but some of it was documented as existing several years earlier.
- *Offer opinion on what % of existing damage is due to this one event.*  
In my opinion, 80% of the structural damage to the piers occurred during this one event, and 40% of the structural damage to the floor was due to this one event.
- *Offer opinion on what % of damage existed before the flood.*  
In my opinion, 20% of the structural damage to the piers existed before this flood event, and 60% of the structural damage to the floor existed before this flood event.
- *Did pre-existing damage contribute to flood damage and, if so, how?*  
In my opinion, pre-existing structural damage did not contribute to the structural damage from this flood.
- *Comment on whether damage is from velocity flow against the structure or settlement. If settlement, how was settlement caused?*  
The structure was pushed out of plumb by the hydrodynamic drag force (velocity flow) of the moving flood water. The cracks in floor slab were caused by the settlement of the fill under the slab. The settlement was caused by the saturation and reduced bearing capacity of the fill soil.
- *Also comment if damage is from poor drainage, wind, bad construction, or other.*  
In my opinion, none of the structural damage is from poor drainage, wind, or bad construction.
- *Conclusions must state what damage was caused by moving surface flood water and/or hydrostatic pressure. If none, please state that.*  
The structure was pushed out of plumb by the hydrodynamic drag force of the moving (surface) flood water. In my opinion, 10% of the damage to the floor slab is from the hydrostatic pressure of the flood water on the slab.
- *Recommend repairs to pre-flood condition for damage caused only by moving surface water and/or hydrostatic pressure.*  
Repairs for the leaning north end of the building would require replacing all first floor walls that are out of plumb. The possible repair option to try to pull the structure back to plumb is unlikely to work

effectively, and will cause more damage than it corrects. The replaced north wall piers should have sheathing on both the inside and outside, with adequate shear strength to resist the building code mandated lateral loads. The piers should also have holdowns at both ends to resist the overturning uplift caused by the building code mandated lateral loads.

These conclusions are based on preliminary and limited examinations and analyses. We reserve the right to supplement or amend these findings and/or opinions should new information become available.

Respectfully submitted,  
Cascade Engineering, Inc.

Dmitri Wright, PE, SE  
Consultant

Attachments: Photographs

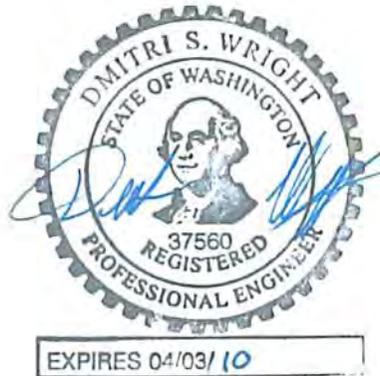


Photo #1. Roll-up door frames are out of square.



Photo #2. Shear deformation damaged sheathing and door trim.

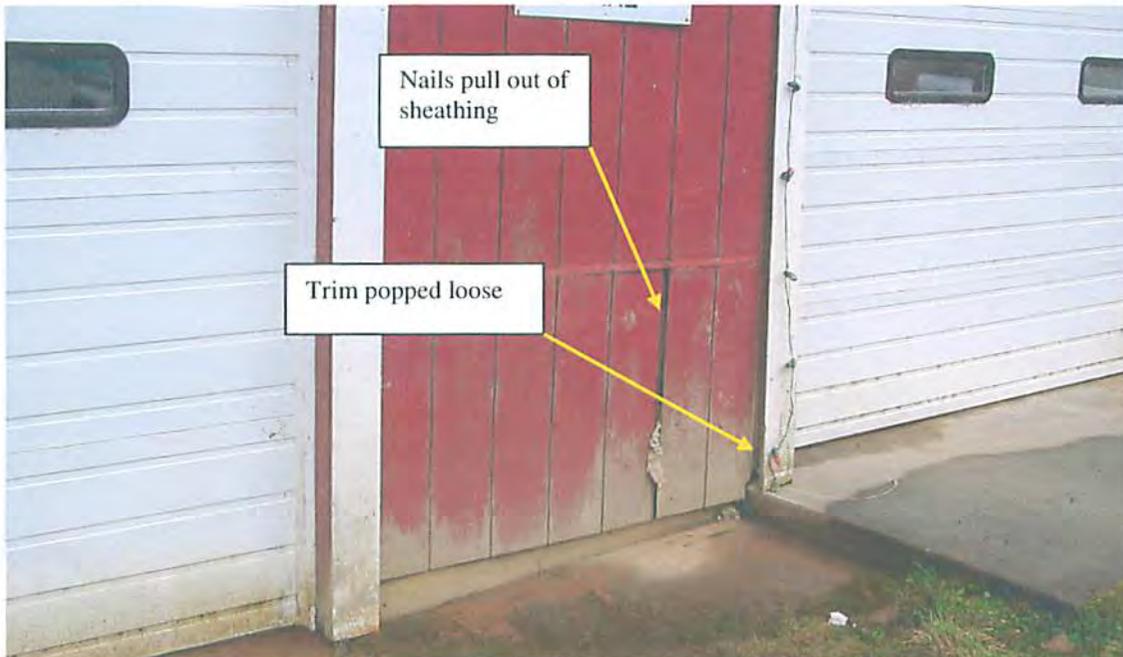
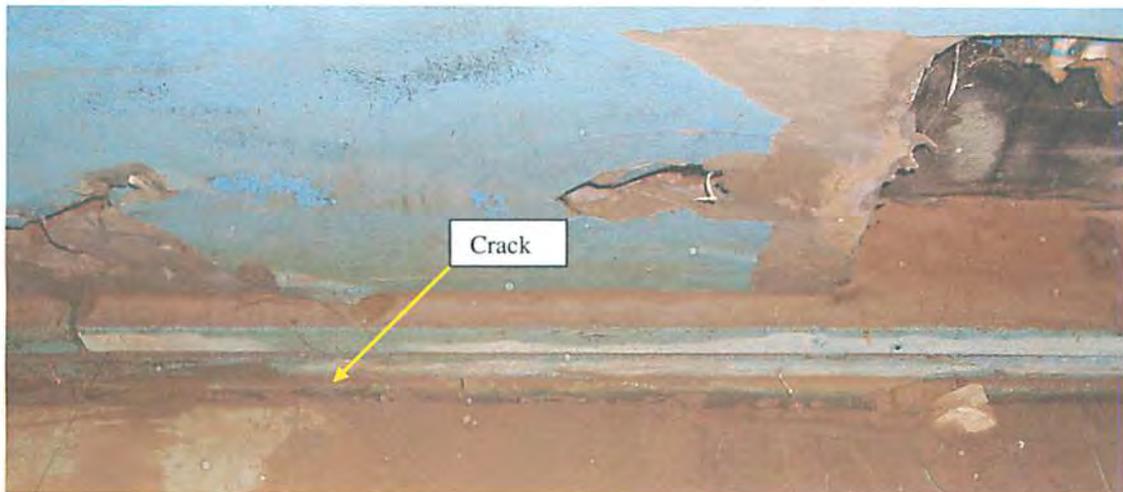


Photo #5. Crack in concrete floor slab is 1/2" to 1" wide.



Photo #6. Crack between stem wall and floor slab.



STEM WALL

Photo #3. Shear deformation pulled the bottom east door corner out of track.

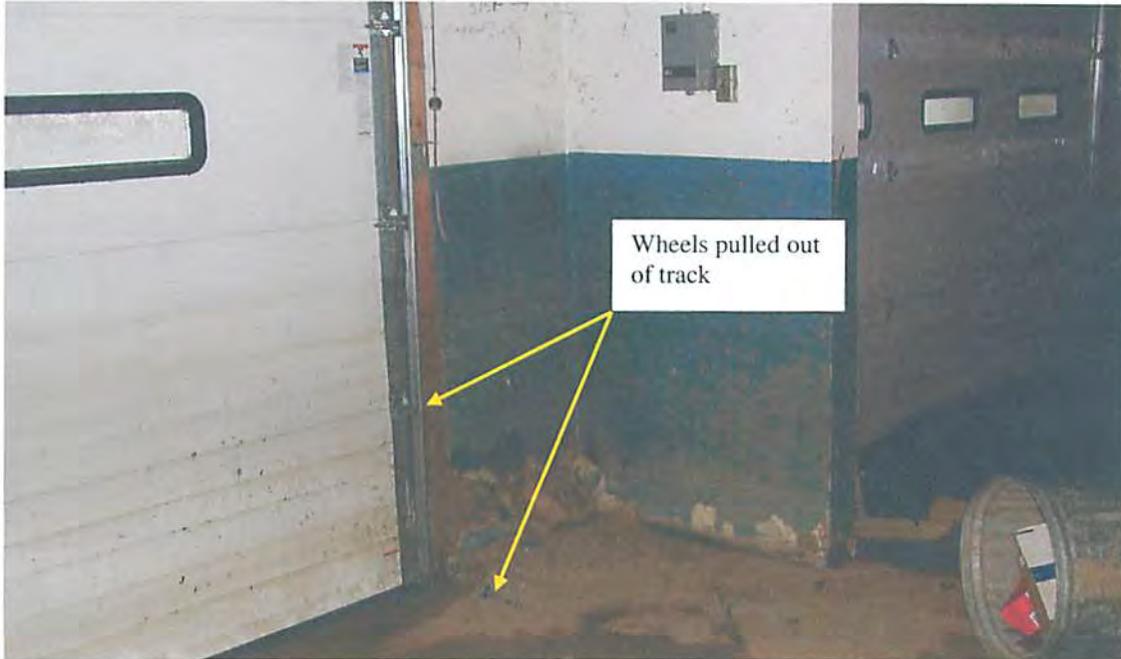


Photo #4. Shear deformation pulled the top west door corner out of track.



Photo #1. Roll-up door frames are out of square.

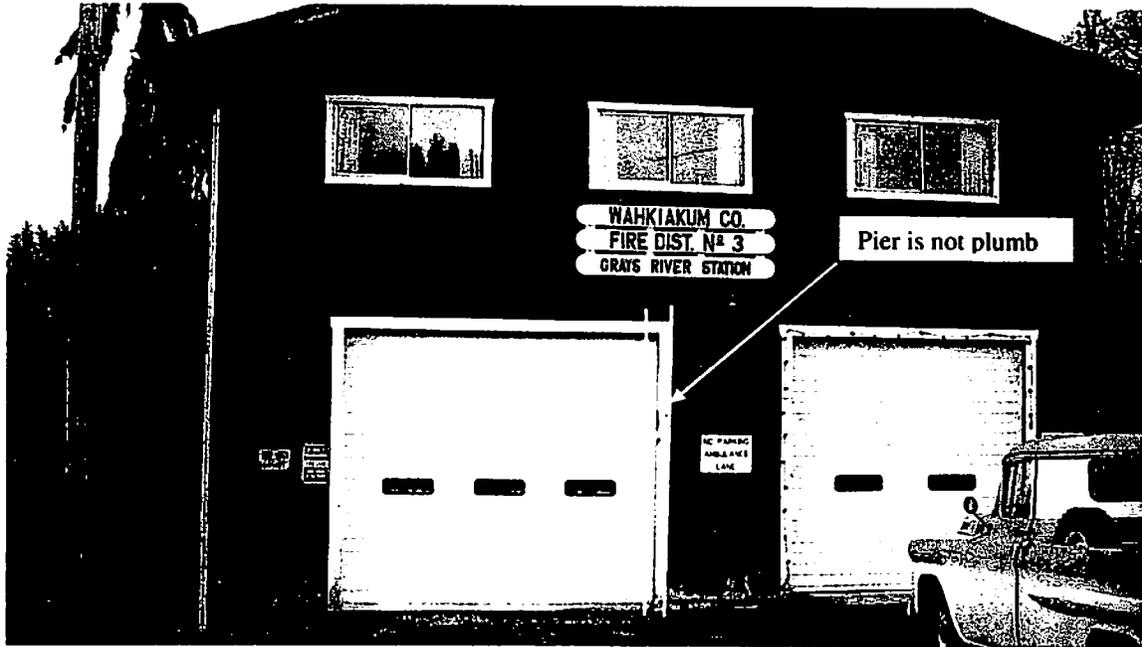


Photo #2. Shear deformation damaged sheathing and door trim.

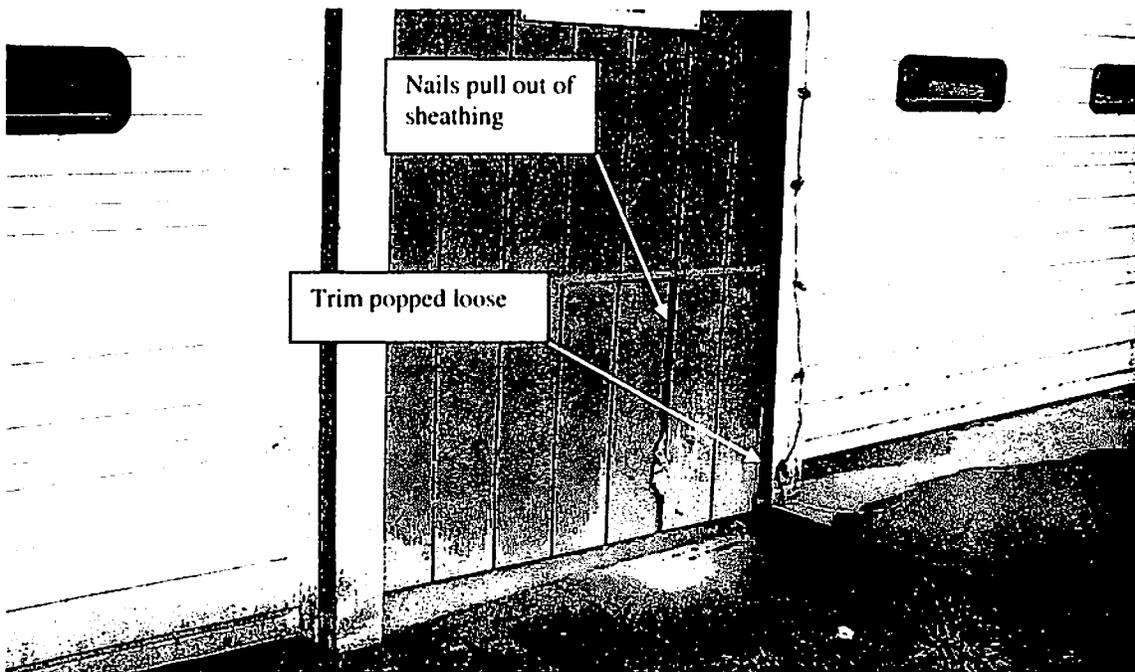


Photo #3. Shear deformation pulled the bottom east door corner out of track.

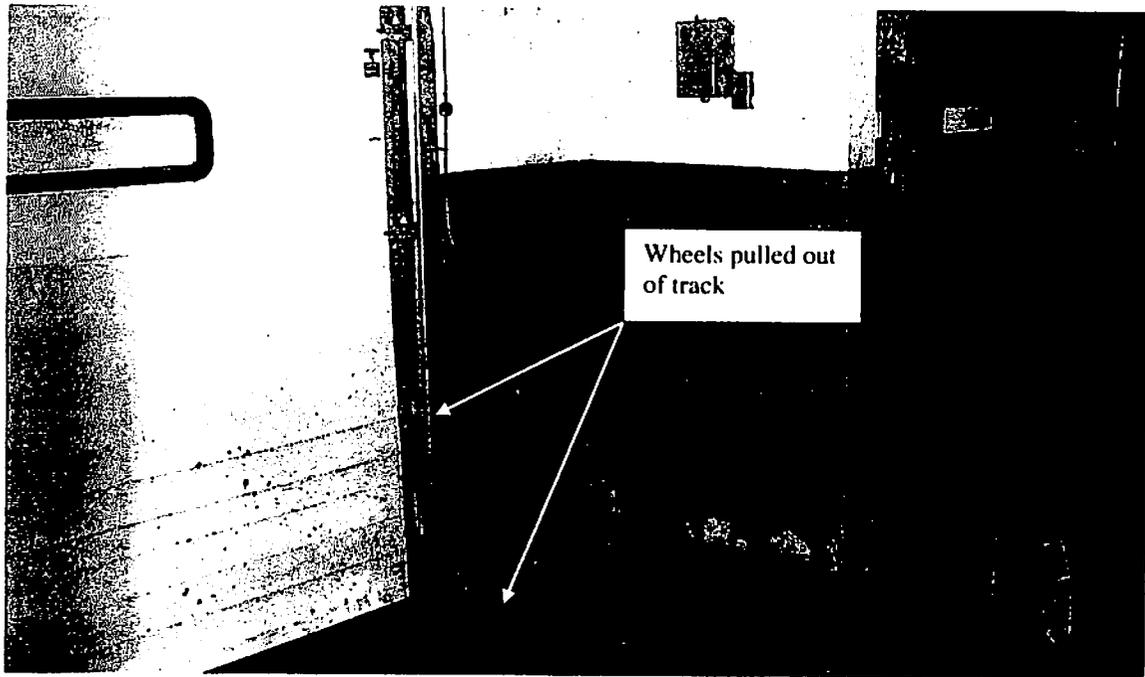


Photo #4. Shear deformation pulled the top west door corner out of track.

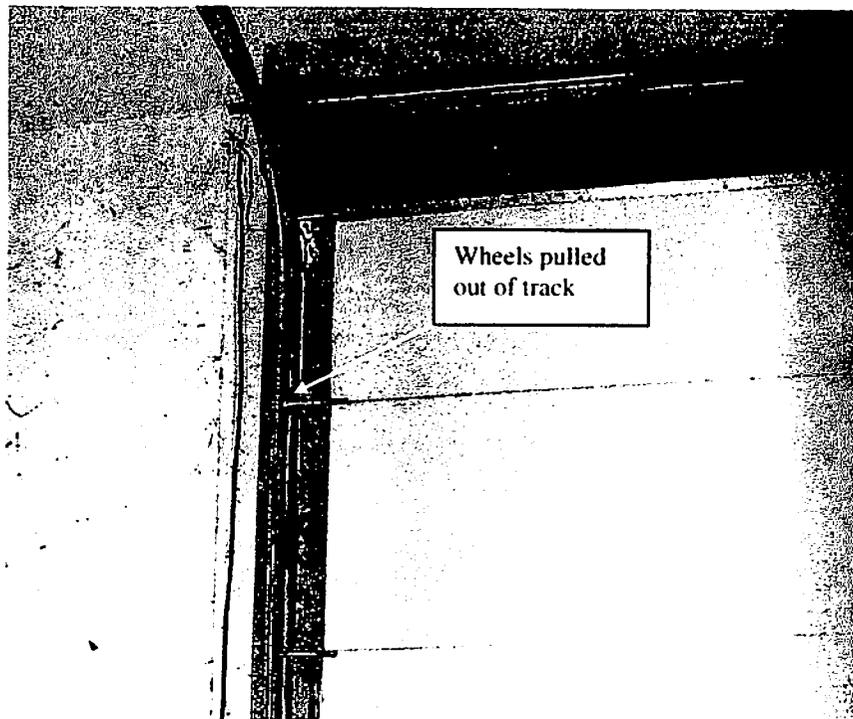
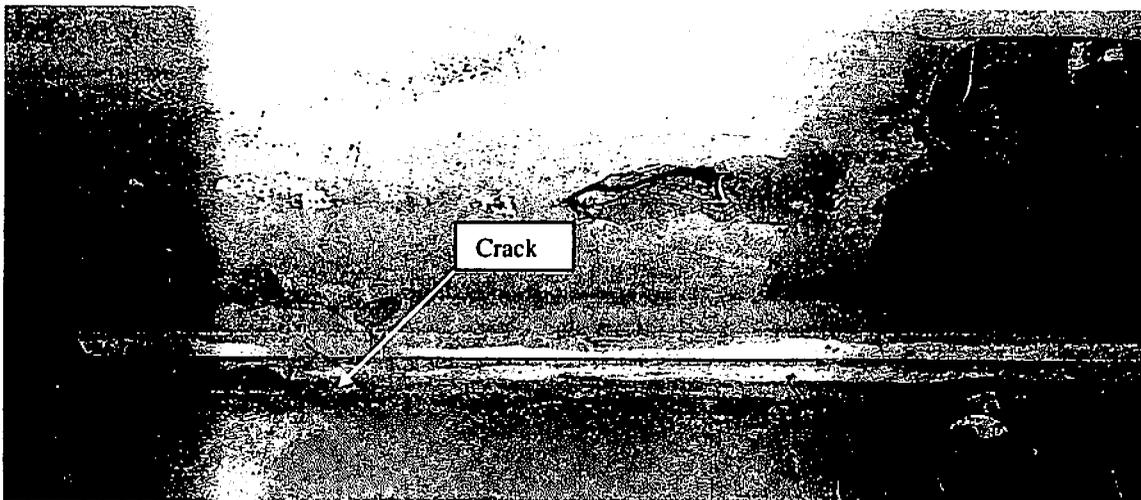
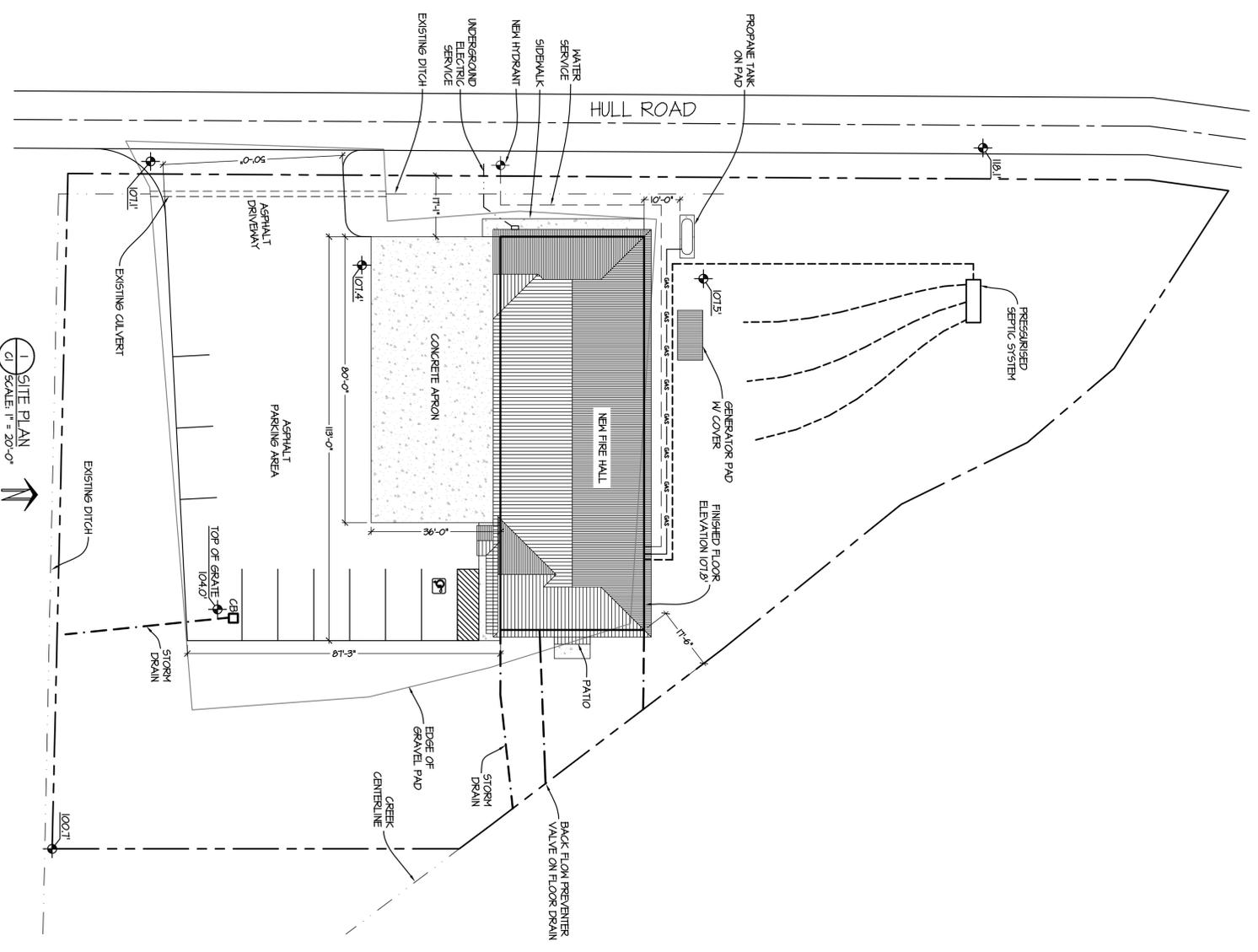


Photo #5. Crack in concrete floor slab is ½" to 1" wide.



Photo #6. Crack between stem wall and floor slab.





**PROJECT INFORMATION**

ADDRESS: 77 HULL ROAD  
GRAYS RIVER, WA 98621

OWNER: WAHAKIUM COUNTY FIRE DISTRICT No. 3

PROJECT SCOPE: NEW FIRE HALL BUILDING

CONSULTANTS: CASCADE ENGINEERING  
245 SE 4TH AVENUE  
HILLSBORO, OR 97123

**BUILDING CODE INFORMATION**

APPLICABLE CODE: 2006 INTERNATIONAL BUILDING CODE

OCCUPANCY GROUP: MIXED SEPARATED

CONSTRUCTION TYPE: V-B

FLOOR AREA: 440 S.F.

BUILDING HEIGHT: 21.9 FT.

NUMBER OF STORIES: 1

OCCUPANT LOAD: 23

FIRE SPRINKLED: YES

FIRE ALARMS: YES

ALLOWABLE AREA: 9,000

ALLOWABLE HEIGHT: 40 FT.

ALLOWABLE STORIES: 2

**SITE INFORMATION**

PARKING PROVIDED: 7

FULL SIZE: 1

ACCESSIBLE: 1

TOTAL SPACES: 8

TOTAL SITE AREA: 43,980 S.F. (1.0 AC)

**SHEET INDEX**

- C1 SITE PLAN
- A1 FLOOR PLAN
- A2 ELEVATIONS
- A3 SECTIONS
- S1 NOTES & DETAILS
- S2 FOUNDATION PLAN
- S3 LOT PRELIM PLAN
- S4 ROOF FRAMING PLAN
- MPE MECHANICAL PLAN

1 SITE PLAN  
SCALE: 1" = 20'-0"

**PRELIMINARY**  
NOT FOR CONSTRUCTION

#	Date	Revisions
0	??	ISSUE FOR PERMIT

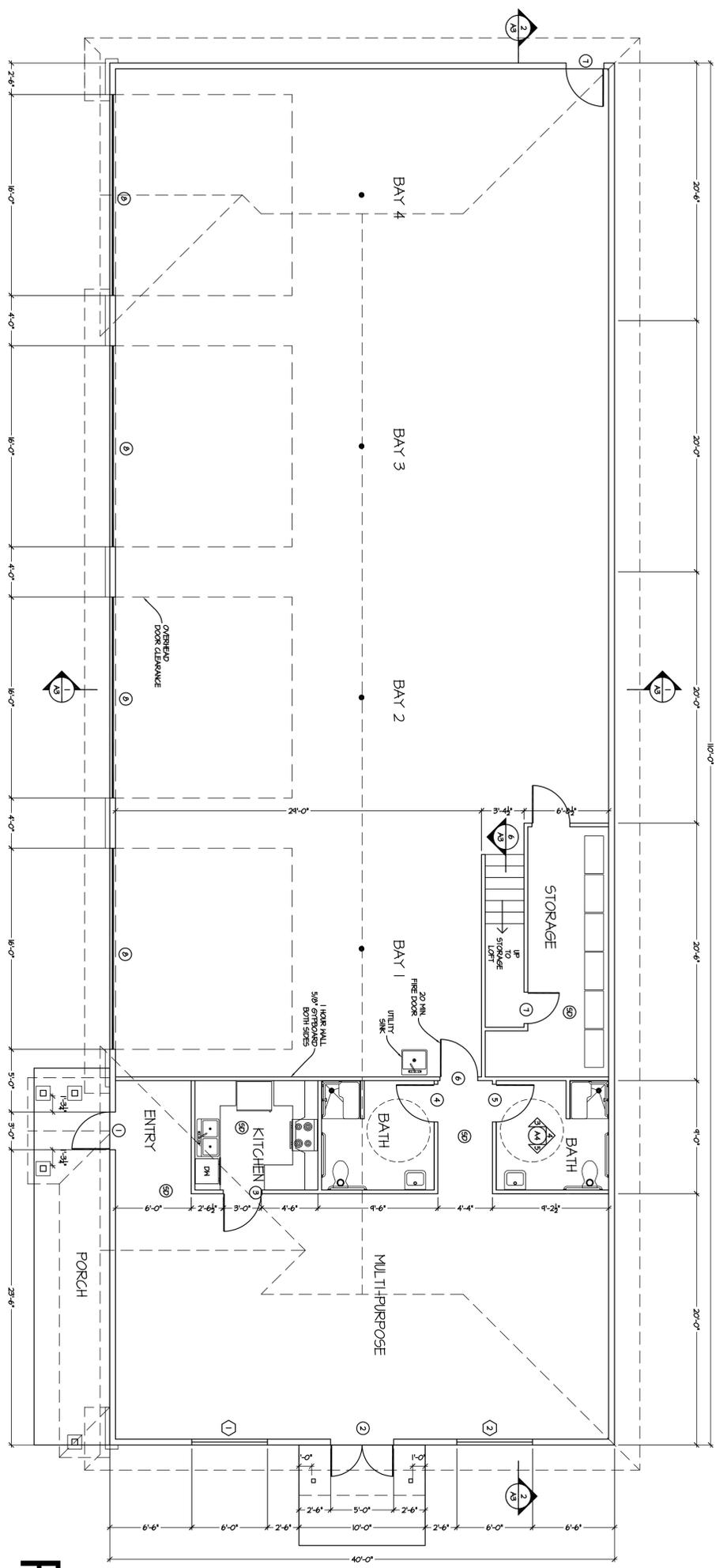
**CASCADE ENGINEERING, INC**  
245 SE 4th Ave, Suite A  
Hillsboro, OR 97123-4033  
503-846-1131 fax 503-846-1190

**WAHAKIUM FIRE DISTRICT #3**  
**NEW FIRE HALL**  
**GRAYS RIVER, WASHINGTON**

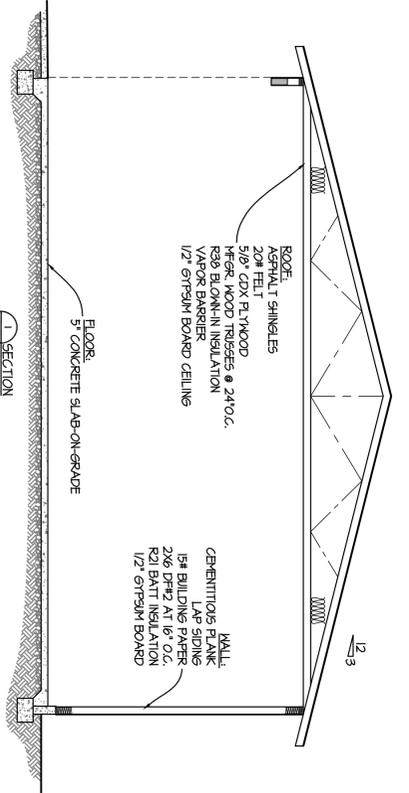
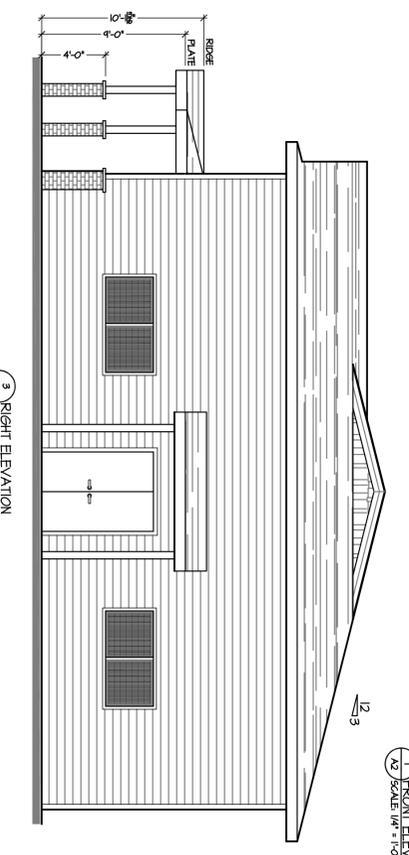
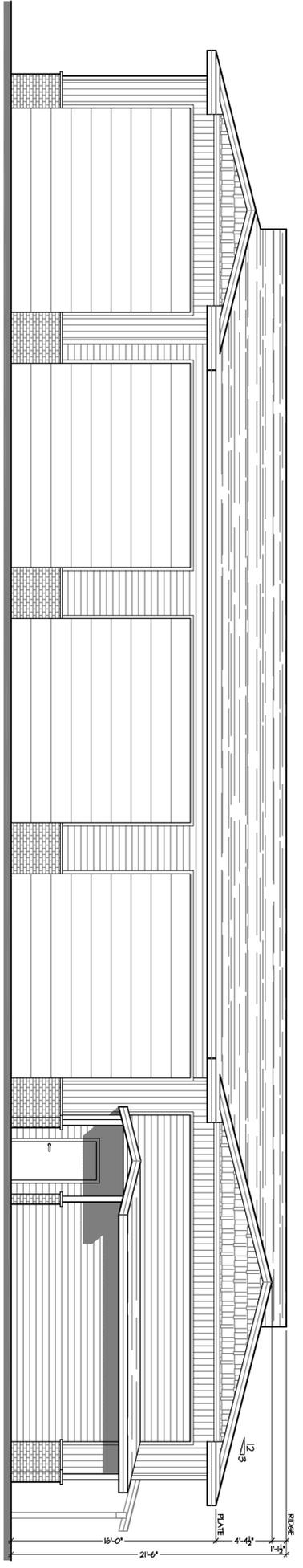
IF THIS DRAWING DOES NOT BEAR A LICENSED ENGINEER'S SEAL AND SIGNATURE, IT MUST BE CONSIDERED PRELIMINARY, FOR REVIEW ONLY, AND NOT FOR CONSTRUCTION!

Scale 1/4" = 1'-0"  
Drawn By TAG  
Checked DSW  
Date 10-8-09  
Job # 09118

Sheet #  
**C1**



**PRELIMINARY**  
NOT FOR CONSTRUCTION



**WAHAKIYAKUM FIRE DISTRICT #3**  
**NEW FIRE HALL**  
**GRAYS RIVER, WASHINGTON**

**CASCADE**  
ENGINEERING, INC  
245 SE 4th Ave, Suite A  
Hillsboro, OR 97123-4033  
503-846-1131 fax 503-846-1190

#	Date	Revisions
0	??	ISSUE FOR PERMIT

IF THIS DRAWING DOES NOT BEAR A LICENSED ENGINEER'S SEAL AND SIGNATURE, IT MUST BE CONSIDERED PRELIMINARY, FOR REVIEW ONLY, AND NOT FOR CONSTRUCTION!

Scale 1/4" = 1'-0"  
Drawn By: DSW  
Checked: DSW  
Date: 10-8-09  
Job #: 09118

Sheet #  
**A1**

**EXECUTIVE ORDER 11988**  
**FLOODPLAIN MANAGEMENT – CHECKLIST (44 CFR Part 9)**

**TITLE: JHHE007 - Wahkiakum Fire Station #3 - Building**  
**PROPOSED ACTION: Rebuild fire station out of floodplain**

---

**APPLICABILITY: Actions which have the potential to affect floodplains or their occupants, or which are subject to potential harm by location in floodplains.**

YES  NO

The proposed action could potentially adversely affect the floodplain.

Remarks:

YES  NO

The proposed action could potentially be adversely affected by the floodplain.

Remarks:

**IF ANSWER IS NO, REVIEW IS COMPLETED, OTHERWISE CONTINUE WITH REVIEW.**

Mark the review steps required per applicability:  1  2  3  4  5  6  7  8

---

**CRITICAL ACTION:**

YES      **Review against 500 Year floodplain**

NO      **Review against 100 Year floodplain**

**STEP NO. 1 Determine whether the proposed action is located in the 100-year floodplain (500-year floodplain for critical actions);**

**Flood Hazard data available (check the box that applies)**

- YES**  **NO** The project is located in a 100 Year floodplain as mapped by FIRM Panel No. 5301930005B Dated: 09/28/1990.
- YES**  **NO** The project is located in a 500 Year floodplain as mapped by FIRM Panel No. 5301930005B Dated: 09/28/1990.
- YES**  **NO** The project is located in a floodplain as mapped by a FEMA draft/preliminary study. Name Dated .
- YES**  **NO** The project is located in a floodplain as mapped by the local community. Name Dated .
- YES**  **NO** The project is located in a floodplain as mapped by another Agency (State, Corps, USGS, NRCS, and etc.) Agency, Name Dated .

**Flood Hazard data not available**

- YES**  **NO** The proposed action is subject to flooding based on evaluation from soil surveys, aerial photos, site visits and other available data. Evaluation material used in determination:
- YES**  **NO** FEMA assumes the proposed action is subject to flooding based upon on previous flooding of the facility/structure.

**IF ANY OF THE ANSWERS ARE YES, CONTINUE WITH THE FOLLOWING STEPS, OTHERWISE REVIEW IS COMPLETE.**

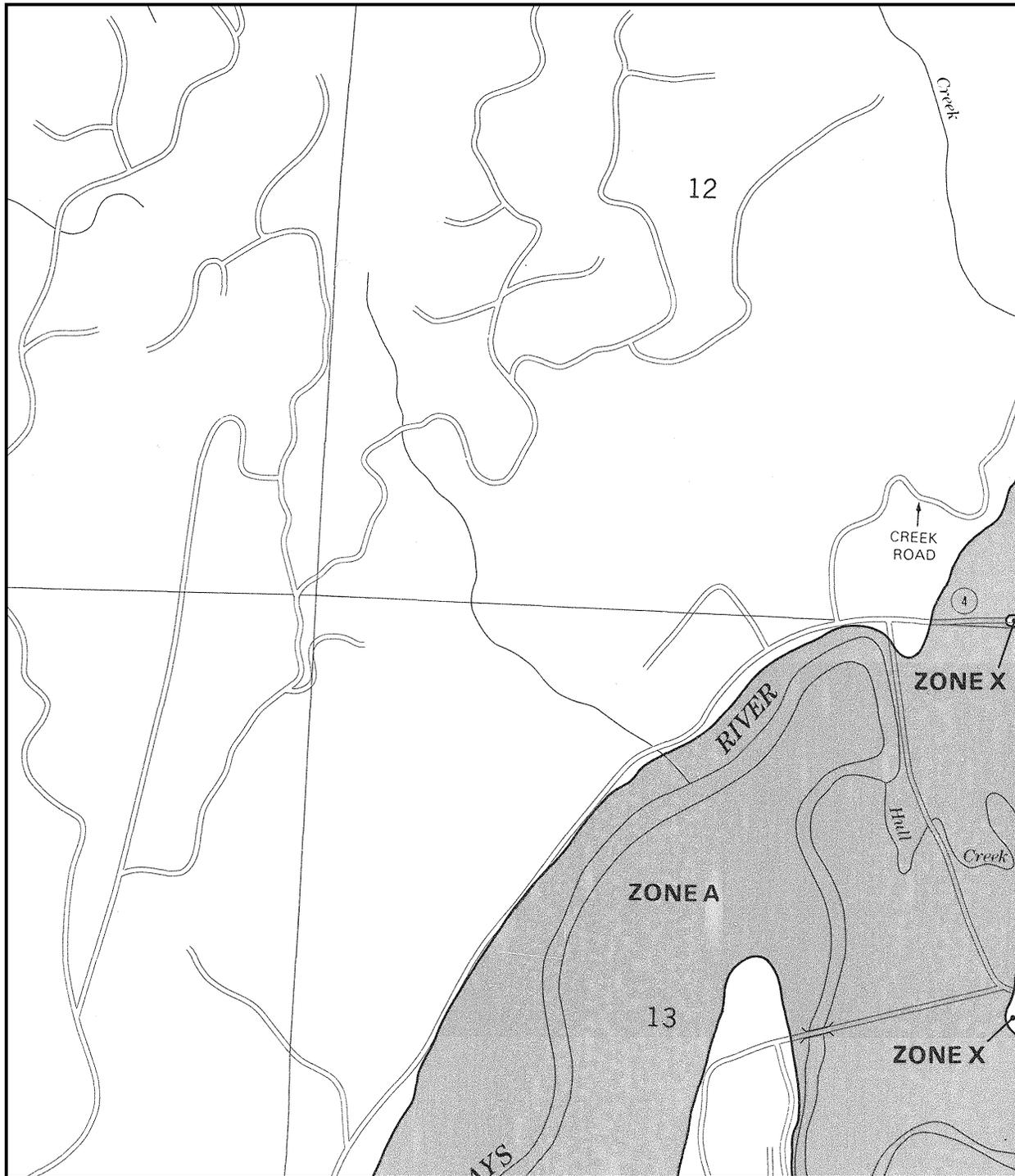
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**STEP NO. 2 Notify the public at the earliest possible time of the intent to carry out an action in a floodplain, and involve the affected and interested public in the decision-making process.**

- Notice was provided as part of a disaster cumulative notice.
- Project Specific Notice was provided by: FEMA
- Type of Public Notice:
- Newspaper, (name:)
  - Post Site, (location: )
  - Broadcast, (station: )
  - Direct Mailing, (area: )
  - Public Meeting, (dates: )
  - Other:

**Date of Public Notice:** March 9, 2009.

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APPROXIMATE SCALE IN FEET

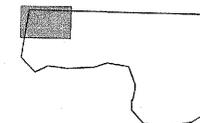
1000 0 1000

**NATIONAL FLOOD INSURANCE PROGRAM**

**FIRM**  
**FLOOD INSURANCE RATE MAP**

WAHKIAKUM COUNTY,  
WASHINGTON  
(UNINCORPORATED AREAS)

**PANEL 5 OF 70**  
(SEE MAP INDEX FOR PANELS NOT PRINTED)



PANEL LOCATION

**COMMUNITY-PANEL NUMBER**  
**530193 0005 B**

**EFFECTIVE DATE:**  
**SEPTEMBER 28, 1990**



Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at [www.msc.fema.gov](http://www.msc.fema.gov)

# ELEVATION SURVEY

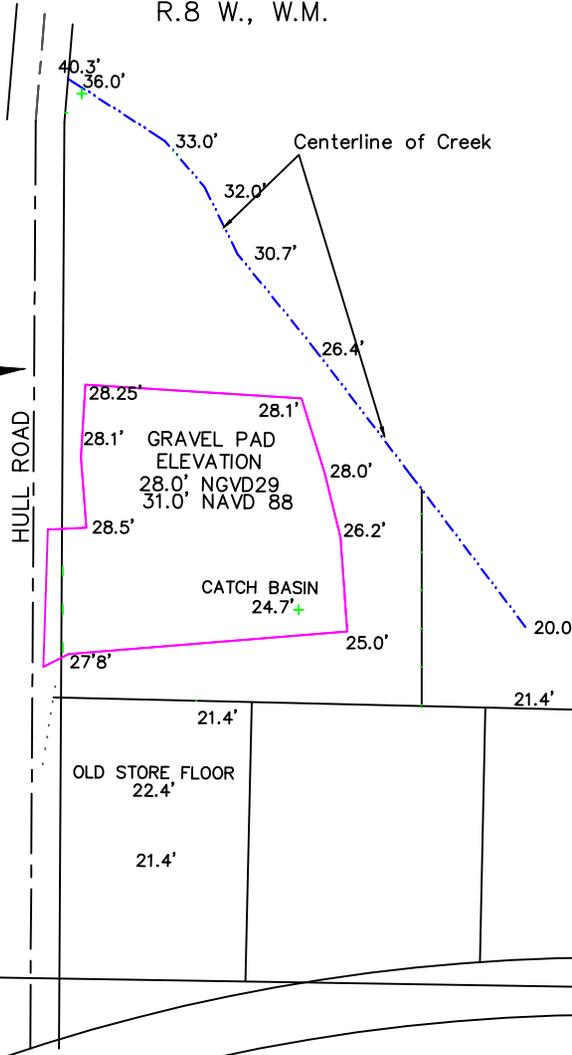
FOR: WAHAKIAKUM COUNTY FIRE PROTECTION DISTRICT NO. 3  
 TOWN OF GRAYS RIVER, WAHAKIAKUM COUNTY, WASHINGTON  
 SITUATED IN THE SE QUARTERS OF SECTION 12, T. 10 N.,  
 R.8 W., W.M.



SCALE 1' = 100'

NOTE: TAX LOT NUMBER  
 121008440004

Centerline of  
 Travelled Road



THE PAD ELEVATION FOR THE TOP OF GRAVEL  
 AT THE PROPOSED FIRE STATION BUILDING SITE  
 IS 28.0 NGVD 29 FEET AND 31.06' NAVD 83.

BENCH MARK NUMBER Z62  
 THE ELEVATION IS 26.93 FEET PER BENCH MARK  
 Z62 SET IN 1934 NGVD29 AND IS LOCATED ON THE  
 NW CORNER WALL OF THE OLD CREAMERY AND IS  
 APPROXIMATELY 4 FEET ABOVE THE EXISTING  
 GROUND.

TAX LOT  
 121008440004

REGISTERED  
 PROFESSIONAL  
 LAND SURVEYOR

OREGON  
 JUNE 30, 1997  
 BRYAN L. HILL  
 2821  
 EXPIRES 06/30/2011

TAX LOT  
 121008440004

FF OF TAVERN  
 BANK ELEV. 22.8'

TOP OF RIVER  
 BANK ELEV. 20.7'

TOP OF RIVER  
 BANK ELEV. 21.0'

**ACCURATE  
 LAND SURVEYS, INC.**  
 1170 NE 64TH LANE, #1204  
 HILLSBORO, OR 97124  
 PH. 503-522-3639



**FEMA**

April 15, 2010

Allyson Brooks, Ph.D.  
State Historic Preservation Officer  
Washington Department of Archaeology  
and Historic Preservation  
PO Box 48343  
Olympia, Washington 98504-8343

Dear Dr. Brooks:

The U.S. Department of Homeland Security's Federal Emergency Management Agency (FEMA) has taken steps necessary to identify historic properties or other cultural resources within the Area of Potential Effect (APE) for the following project per 36 CFR Part 800:

FEMA-1817-DR-WA, PW 436

Undertaking: Replacement of fire station in Grays River, WA  
Location: 46.35585° N, 123.60754° W  
Applicant: Wahkiakum County Fire District No. 3  
Determination: No historic properties affected

The purpose of this letter is to transmit project details and location information, and to request your concurrence with FEMA's definition of the APE and determination of effect.

The Wahkiakum County Fire District No. 3 has applied through the Washington State Emergency Management Division (WA EMD) for FEMA funding assistance for replacement of its station located in Grays River. The original building was heavily damaged during a flooding event in 2009, and is considered unsafe and unusable. Additionally, the location of the present station is within the flood plain, and is not a suitable location for a critical facility. Accordingly, the Applicant has prepared plans to relocate the station to a nearby site. Both the existing and proposed locations are shown on the enclosed map. In addition to this consultation letter, FEMA is preparing an Environmental Assessment for the project, which will also be provided to your office for review.

The existing fire station is located on a very small lot immediately adjacent to Grays River, and is susceptible to repeated flooding. Ground disturbing activities at that location will be limited to removal of the existing structure, minus the concrete slab and capping of utilities, which will not affect any previously undisturbed ground. The new location, which has been under consideration for several years, has already been developed by the current owner with the construction of a gravel pad and drainage along Hull Creek. This work was completed prior to the flooding event, and is not included in this review. An existing cemetery is on the far side of Hull Creek Road.

The fire station itself was constructed in the mid-1960s, and was heavily modified (including the addition of a second storey) in 1982. It is not of architectural significance, and, as noted above, it has been substantially damaged by the flood waters. FEMA considers this structure to be ineligible for inclusion on the National Register of Historic Places (NRHP). Photos of the existing station and of the proposed relocation site are enclosed.

FEMA determined that the APE for this undertaking consists solely of the existing fire station site, and the gravel pad at the proposed replacement site, amounting to less than two acres in total. A review of the records of the Washington Division of Archaeology and Historic Preservation reveals no reported archaeological or historic properties within the APE as so described. There are historic buildings within the Grays River community, including the Grays River Grange and the Grays River Creamery. Further, the Grays River Covered Bridge is listed on the NRHP. However, none of these properties are within the APE.

Given the lack of known historic properties within the APE, and the disturbed condition of the ground at both locations, the presence of any unidentified archaeological resources that might be affected by this undertaking is considered to be exceptionally low. Accordingly, FEMA has made a determination of "No Historic Properties Affected" for this undertaking, as outlined in 36 CFR 800.4(d)(1).

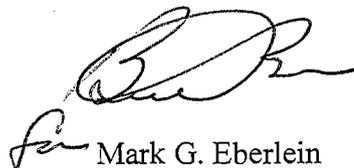
FEMA will include the following as a condition of funding:

In the event historically or archaeologically significant material or sites (or evidence thereof) are discovered during the implementation of this project, the project shall be halted and all reasonable measures taken to avoid or minimize harm to the property until such time as FEMA, in consultation with the State Historic Preservation Officer, determines appropriate measures have been taken to ensure that the project is in compliance with the National Historic Preservation Act.

I request your concurrence with this determination of the APE and effect. Per our Programmatic Agreement, should you not object to these findings within 14 days of receipt of this letter, FEMA will assume concurrence and FEMA's responsibilities under §106 of the National Historic Preservation Act will be fulfilled.

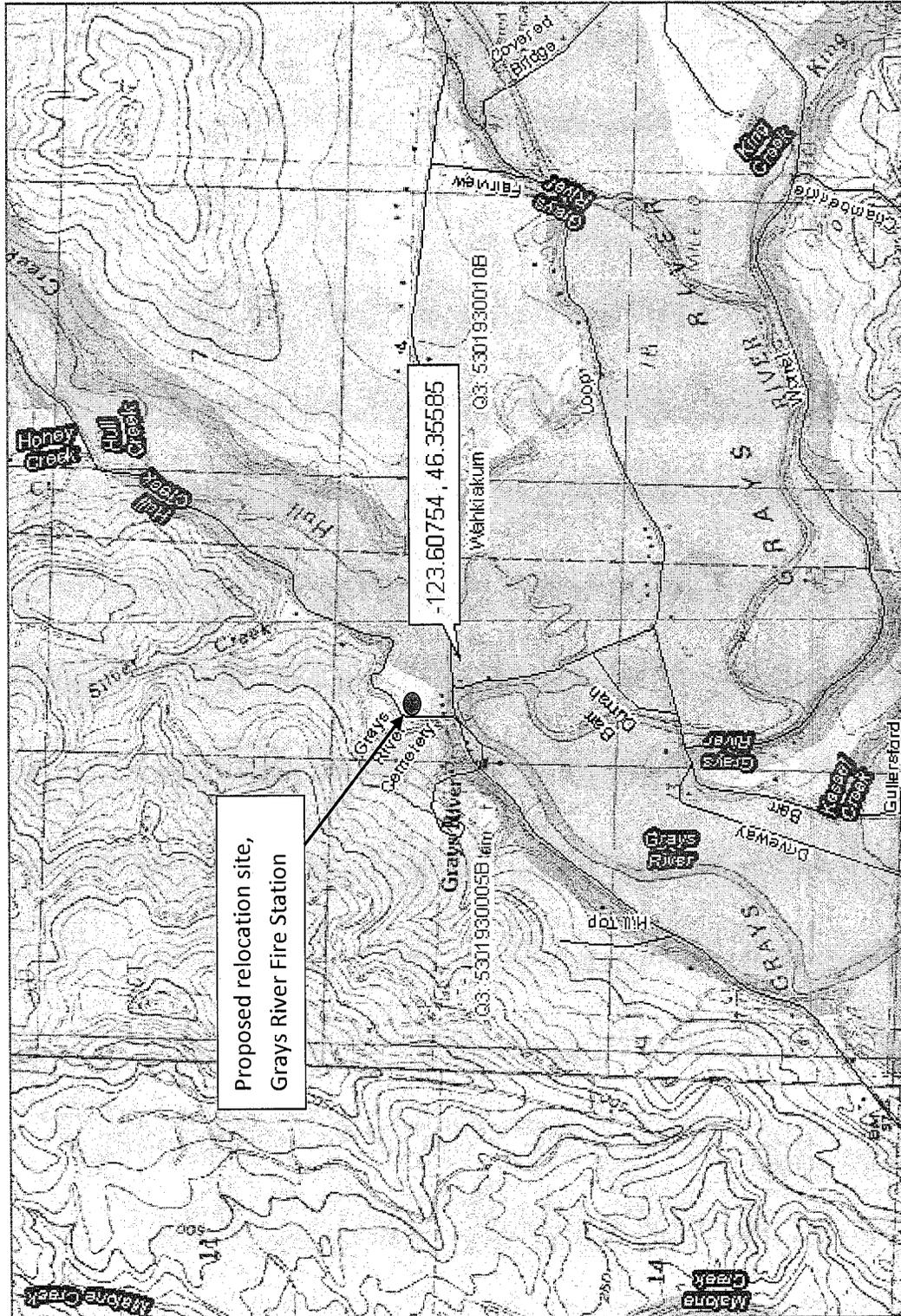
Thank you for your review of this project. If you have any questions, please contact Susan King at (206) 310-9681.

Sincerely,



Mark G. Eberlein  
Regional Environmental Officer

Enclosures



Location Map, Wahkiakum County Fire District No. 3 Grays River Station  
 Existing location at gps coordinates; new location shown in red

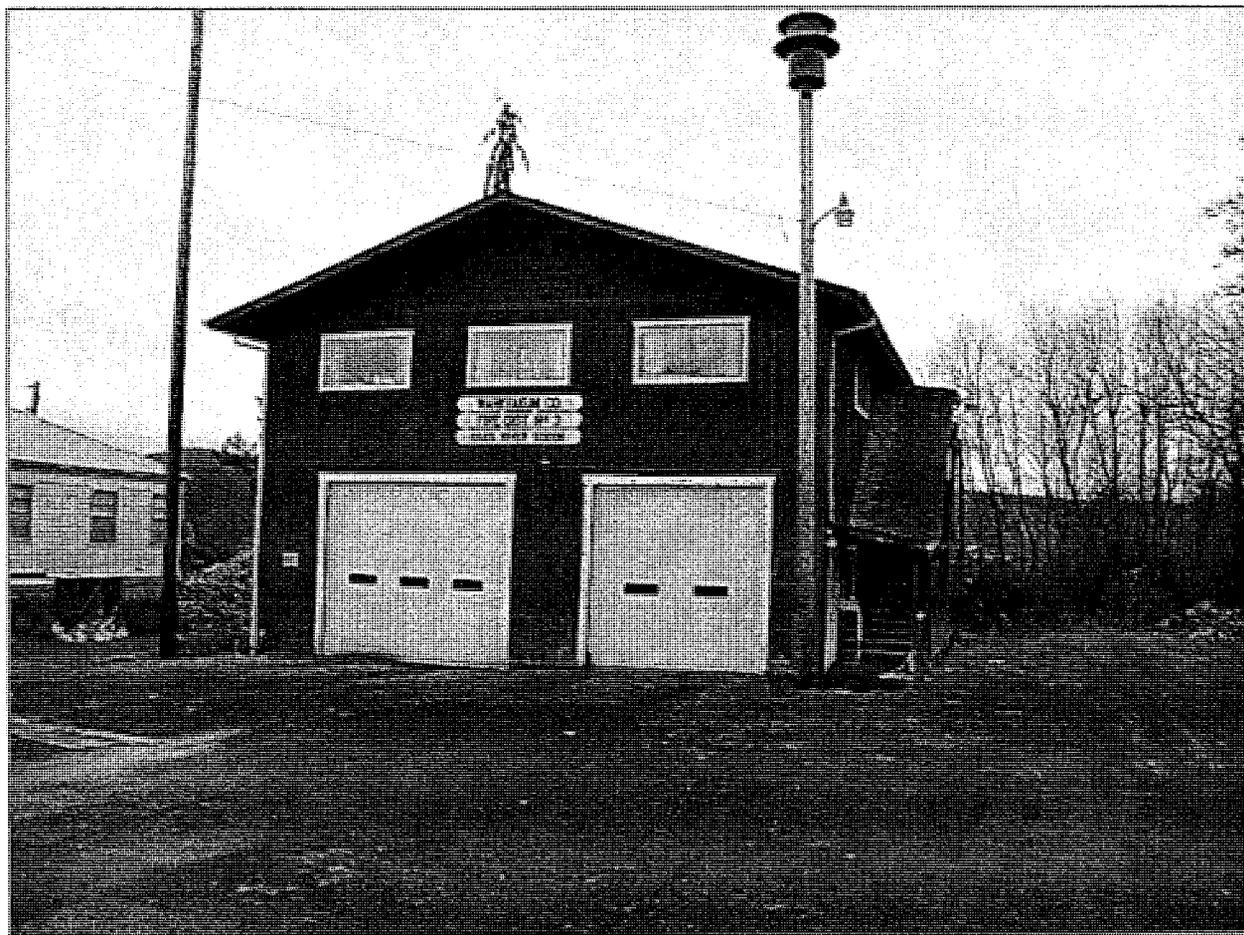


Photo 1: Grays River Fire Station, view south



Photo 2: Gravel pad at new Fire Station location, view NE from Hull Road  
(new station will be constructed at left side of pad)

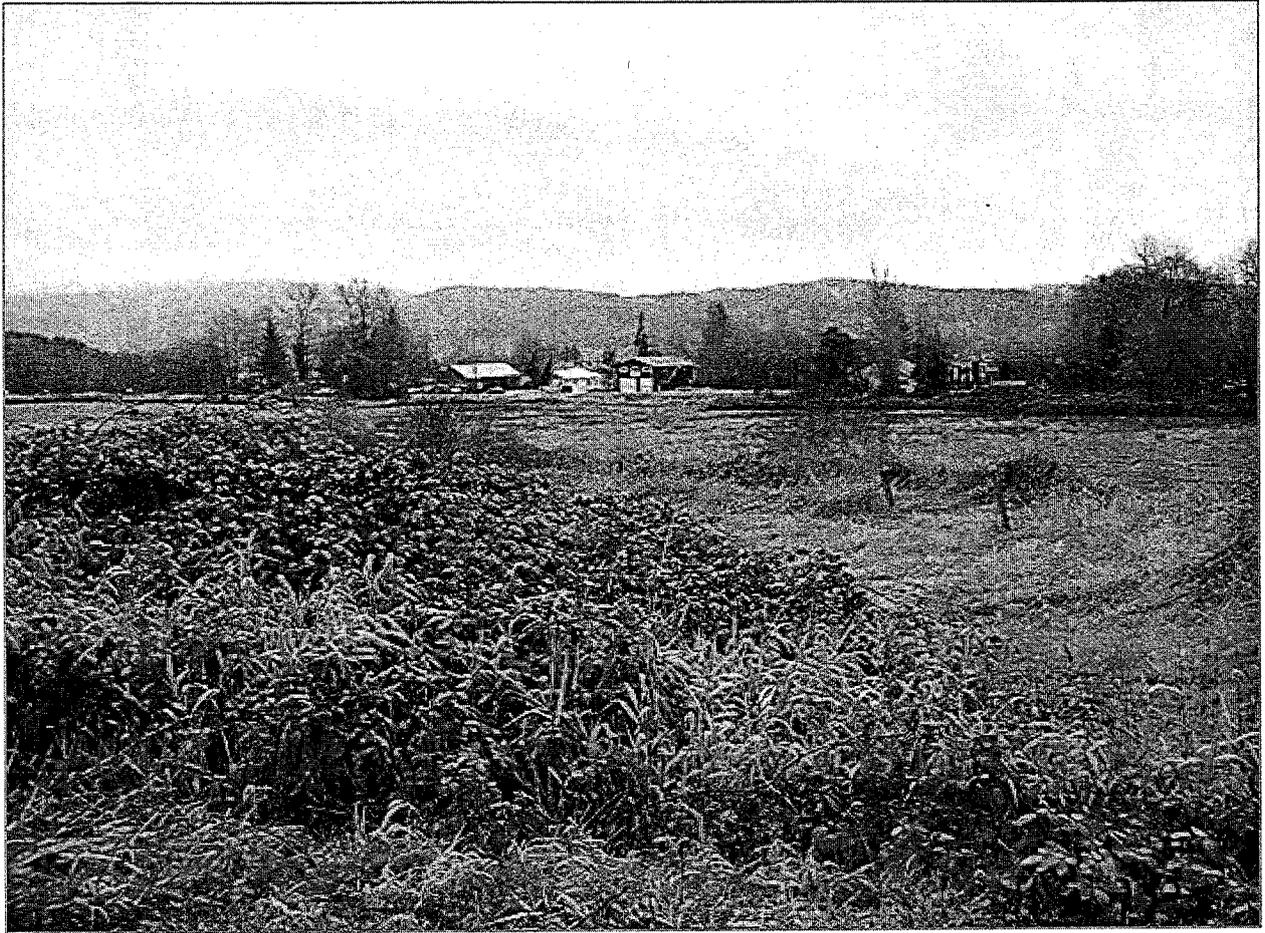


Photo 3: Old Fire Station, view S from new station location

April 15, 2010

Allyson Brooks, Ph.D.  
State Historic Preservation Officer  
Washington Department of Archaeology  
and Historic Preservation  
PO Box 48343  
Olympia, Washington 98504-8343

Dear Dr. Brooks:

U.S. Department of Homeland Security's Federal Emergency Management Agency (FEMA) proposes to provide partial federal funding assistance to demolish, relocate and reconstruct Grays Harbor Fire Station #3. The existing destroyed fire station is located at 3751 SR 4 near Grays River, Wahkiakum County, Washington. The fire station was destroyed during severe storms on January 2009, a presidential disaster was declared and designated as FEMA-1817-DR-WA. Funding is provided through FEMA's Public Assistance program.

This project proposes to demolish and replace fire station approximately 1,500 to the north of the old station. The new fire station will serve the same function and may also be used as an emergency operations center and temporary sheltering area during emergencies. The 4,400 square foot single story building will contain four vehicle bays, a multi-purpose area, two bathrooms with showers, a kitchen and storage areas. Paved parking area will be provided for eight vehicles. Utilities will include a pressurized on-site septic system, water and electrical service from PUD, a new hydrant, propane tank, a generator and a storm drainage system.

The purpose of this letter is to invite you to participate in the review for the attached Draft Environmental Assessment (EA) prepared by FEMA. The National Environmental Policy Act (NEPA) of 1969 requires FEMA to evaluate the effects of the potential alternatives of a proposed action on the human and natural environments. Alternatives including the no action alternative are compared in this Environmental Assessment (EA). We are asking your assistance to provide comments you may have regarding the scope of the project, the proposed alternatives, and any issues of concern that should be considered prior to FEMA determining whether to issue a Finding of No Significant Impact or a Notice of Intent to prepare an Environmental Impact Statement.

Please submit your written comments to me no later than the close of business on May 21, 2010. EA is available for viewing and comment on FEMA website at:  
<http://www.fema.gov/plan/ehp/envdocuments/index.shtm>. After comment period has closed, EA will be available at: [http://www.fema.gov/plan/ehp/environments/archives\\_index.shtm](http://www.fema.gov/plan/ehp/environments/archives_index.shtm).

Comments can be:

1. Mailed: 130-228<sup>th</sup> Street SW, Bothell, WA 98021
2. Faxed: (425) 487-4613
3. E-mailed: mark.eberlein@dhs.gov

Should you have any questions about this letter or would like to receive a hard copy of the document, please feel free to contact Science Kilner, Regional Deputy Environmental Officer, by phone at (425) 487-4713, or by e-mail at science.kilner@dhs.gov.

Sincerely,

Mark Eberlein  
Regional Environmental Officer

Attachments

cc: Gary Urbas, Public Assistance Program, EMD, Camp Murray

<p>Federal: Steve Landino Southwest Washington Habitat Branch National Marine Fisheries Service (NMFS) 510 Desmond Drive S.E., Suite 103 Lacey, Washington 98503-1273</p>	<p>Federal: Ken Berg U.S. Fish and Wildlife Service (USFWS) Western Washington Office 510 Desmond Drive S.E., Suite 102 Lacey, Washington 98503-1273</p>	<p>State: Greg Griffith Department of Archaeology and Historic Preservation (DAHP) 1063 South Capitol Way, Suite 106 Olympia, Washington 98501</p>
<p>State: Dave Bellinger Washington State Department of Transportation (WSDOT), Southwest Region 11018 N.E. 51<sup>st</sup> Circle Vancouver, Washington 98682</p>	<p>State: Mark Cline Washington Department of Ecology, Southwest Region Vancouver Field Office 2108 Grand Boulevard Vancouver, Washington 98661-4622</p>	<p>State:  Washington Department of Fish and Wildlife (WDFW), Southwest Region 2108 Grand Boulevard Vancouver, Washington 98661</p>
<p>State:  Washington Department of Natural Resources (WDNR) Pacific Cascade Region P.O. Box 280 Castle Rock, Washington 98611-0280</p>	<p>State: David Santoff, Emergency Management Division Washington Military Department Building 20-B / MS: TA-20 Camp Murray, Washington 98430-5122</p>	<p>Local: Jerry Strawn Southwest Clean Air Agency 11815 N.E. 99<sup>th</sup> Street, Suite 1294 Vancouver, Washington 98682 360-574-3058 ext 13 Email:</p>
<p>Local:  Wahkiakum County PUD No. 1, 45 River Street, Cathlamet, Washington 98612</p>	<p>Local: <b>DONE</b>  Wahkiakum County Fire Protection District No. 3 P.O. Box 10 Rosburg, Washington 98647</p>	<p>Local: Charles Beyer Building and Planning Department Wahkiakum County P.O. Box 97 Cathlamet, Washington 98612</p>
<p>Local: Pete Ringen Public Works Department Wahkiakum County P.O. Box 97 Cathlamet, Washington 98612</p>	<p><u>Tribal:</u> Taylor Aalvik Director of Natural Resources Cowlitz Indian Tribe P.O. Box 2547 Longview, Washington 98632</p>	<p><u>Tribal:</u> Ray Gardner, Chairman Chinook Indian Tribe P.O. Box 368 Bay Center, Washington 98527</p>



STATE OF WASHINGTON

**DEPARTMENT OF ARCHAEOLOGY & HISTORIC PRESERVATION**

1063 S. Capitol Way, Suite 106 • Olympia, Washington 98501  
Mailing address: PO Box 48343 • Olympia, Washington 98504-8343  
(360) 586-3065 • Fax Number (360) 586-3067 • Website: [www.dahp.wa.gov](http://www.dahp.wa.gov)

April 20, 2010

Mr. Mark G. Eberlein  
FEMA – Region X  
130 – 228<sup>th</sup> Street SW  
Bothell, Washington 98021-9796

RE: Grays River Fire Station Project  
FEMA-1817-DR-WA  
Log No: 042010-31-FEMA

Dear Mr. Eberlein:

Thank you for contacting our Department. We have reviewed the materials you provided for the proposed Demolition and Construction of the Wahkiakum County Fire District #3 Grays River Fire Station in Wahkiakum County, Washington.

We concur with the Determination of No Historic Properties Affected.

We would appreciate receiving any correspondence or comments from concerned tribes or other parties that you receive as you consult under the requirements of 36CFR800.4(a)(4).

In the event that archaeological or historic materials are discovered during project activities, work in the immediate vicinity must stop, the area secured, and the concerned tribes and this department notified.

These comments are based on the information available at the time of this review and on the behalf of the State Historic Preservation Officer in conformance with Section 106 of the National Historic Preservation Act and its implementing regulations 36CFR800. Should additional information become available, our assessment may be revised. Thank you for the opportunity to comment and a copy of these comments should be included in subsequent environmental documents.

Sincerely,

Robert G. Whitlam, Ph.D.  
State Archaeologist  
(360) 586-3080  
email: [rob.whitlam@dahp.wa.gov](mailto:rob.whitlam@dahp.wa.gov)





**WAHIAKUM COUNTY**  
**Building and Planning Department**

*Charles J. Beyer, Building and Planning Manager*  
*Mike Mamic, Cartographer & GIS Technician*

May 29, 2009

Gene Strong, Fire Chief  
Wahkiakum Fire Dist #3  
P.O. Box 10  
Rosburg, WA 98647

RE: Flood damage to Wahkiakum Fire Dist. 3 Station 1.

Dear Mr. Gene Strong,

The Fire Dist. #3, Grays River Station 1 located at 3751 SR-4 West, Grays River WA 98621, Parcel # 131008-110004 is located in a FEMA flood plain designation "Zone A no BFE" per FIRM Map # 530193-00005 suffix B, date September 28, 1990. The property was determined to have Substantial Damage as defined in the Wahkiakum County Flood Damage Prevention Ordinance #142-06. A contractor's estimate for repairs was submitted in the amount of \$184,050.75 (attached). The value of the structure prior to damage was determined to be \$303,185.09 (Sweet Claim Service Inc. Insurance Claim Report). The current loss equals 59% of the fair market value.

**Substantial Damage:** means damage of any origin sustained by a structure whereby the cost of restoring the structure to its before damaged condition would equal or exceed 50 percent of the market value of the structure before the damage occurred. Ordinance 142-06; Section 1, Definitions.

Wahkiakum County considers the subject property eligible for Increase Cost of Compliance funding based on the definition of ICC in the Wahkiakum County Flood Damage Prevention Ordinance #142-06.

**Increased Cost of Compliance:** A flood insurance claim payment up to \$30,000 directly to a property owner for the cost to comply with floodplain management regulations after a direct physical loss caused by a flood. Eligibility for an ICC claim can be through a single instance of "substantial damage" or as a result of a "cumulative substantial damage." (more information can be found in FEMA ICC Manual 301). (Ordinance 142-06; Section 1; Definitions)

In conclusion, Wahkiakum County Building and Planning is requiring Grays River Fire Station 1 be repaired through elevating the structure and flood proofing in accordance with Wahkiakum County Flood Hazard Prevention Ordinance 142.06 or relocate the structure to a location outside of the Special Flood Hazard Area.

Should you have any questions please contact Chuck Beyer at (360) 795-3067.

Sincerely,

Charles J. Beyer  
Wahkiakum County Building Inspector



# WAHIAKUM COUNTY

## Building and Planning Department

Charles J. Beyer, Building and Planning Manager  
Mike Mamic, Cartographer & GIS Technician

July 27, 2009

Gene Strong, Fire Chief  
Wahkiakum Fire Dist #3  
P.O. Box 10  
Rosburg, WA 98647

RE: Flood damage to Wahkiakum Fire Dist. 3 Station 1 Building Repair Requirements.

Dear Mr. Gene Strong,

The requirements for repairing the Fire Dist. #3, Grays River Station 1 located at 3751 SR-4 West, Grays River WA 98621, Parcel # 131008-110004 would be to elevate the critical facility a minimum of three feet above the highest flood of record. The January 2009 flood waters have been measured at 54" above finished slab, this water level is determined to be the highest flood of record. This would result in raising the building a minimum of 7' 6" above current concrete slab level.

Wahkiakum County Flood Damage Prevention Ordinance defines and requires the following for Critical Facility:

***Critical Facility:** means a facility for which even a slight change of flooding might be too great. Critical facilities include, but are not limited to, schools, nursing homes, hospitals, police, fire, and emergency response installations, and installations which produce, use, or store hazardous materials or hazardous wastes.*

### 5.2-3 Critical Facility

*Construction of new critical facilities shall be, to the extent possible, located outside the limits of the base flood plain. Construction of new critical facilities shall be permissible within the base flood plain if no feasible alternative site is available. Critical facilities constructed within the base flood plain shall have the lowest floor elevated to three (3) feet or more above the level of the base flood elevation at the site. Flood proofing and sealing measures must be taken to insure that toxic substances will not be displaced by or released into flood waters. Access routes elevated to or above the level of the base flood plain shall be provided to all critical facilities to the extent possible.*

The property was determined to have Substantial Damage per letter dated May 29, 2009 as defined in the Wahkiakum County Flood Damage Prevention Ordinance #142-06. With substantial damage determination the entire structure will need to be brought into compliance with section 5.2-3 Critical Facility Compliance.

Should you have any questions please contact Chuck Beyer at (360) 795-3067.

Sincerely,

Charles J. Beyer  
Wahkiakum County Building Inspector



**WAHIAKUM COUNTY**  
**Building and Planning Department**

*Charles J. Beyer, Building and Planning Manager*  
*Josh Tallman, Cartographer & GIS Technician*

---

November 3, 2009

Gene Strong, Fire Chief  
Wahkiakum Fire Dist #3  
P.O. Box 10  
Rosburg, WA 98643

RE: Grays River Fire Hall Project.

Dear Mr. Gene Strong,

The proposed Fire Dist. #3, Grays River Station 1 to be located at 8 North Hull Creek Road, Grays River WA 98621, is not subject to a Wahkiakum County Shoreline Management Master Plan. The subject property falls outside of the regulated shoreline area per shoreline atlas map of Section 13, T10N, R8W W.M. on file in the Wahkiakum County Building and Planning Department. A shoreline permit application (JARPA form) is not required by Wahkiakum County Building and Planning Department.

Wahkiakum County SEPA threshold determination is a Categorical Exemption (1)(b)(iii) The construction of an office, school, commercial, recreational, service or storage building with 12,000 square feet of gross floor area, and the associated parking facilities designed for forty automobiles.

Should you have any questions please contact Chuck Beyer at (360) 795-3067.

Sincerely,

Charles J. Beyer  
Wahkiakum County Building and Planning Manager

**From:** [Urbas, Gary \(EMD\)](#)  
**To:** [Eberlein, Mark](#); [Urbas, Gary \(EMD\)](#); [Nordstrom, Jill \(EMD\)](#)  
**Cc:** [King, Susan](#); [Bowen, Bert](#); [Burton, Dennis](#)  
**Subject:** RE: EA postings  
**Date:** Tuesday, April 27, 2010 1:45:24 PM  
**Attachments:** [image002.png](#)

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[http://www.waheagle.com/legals/article.exm/2010-04-22\\_no\\_52\\_10](http://www.waheagle.com/legals/article.exm/2010-04-22_no_52_10)

No. 52-10



Published on Thu, Apr 22, 2010

Read More [Legals](#)

## PUBLIC NOTICE

### Wahkiakum County Fire Station #3 Relocation

Notice is hereby given of the Federal Emergency Management Agency's (FEMA's) intent to provide funding for the relocation of Wahkiakum County Fire Protection District #3 fire hall to a new location approximately 1,300 north of the existing site. The existing fire station is located at 3751 SR 4 near Grays River, Wahkiakum County Washington. The fire station was destroyed during a flooding event in January 2009, which resulted in Presidential disaster declaration FEMA-1817-DR-WA. In accordance with the National Environmental Policy Act of 1969 (NEPA) and the implementing regulations of FEMA, an environmental review is being performed to evaluate the potential effects of the proposed action to ensure activities are considered for impacts to the human and natural environment.

This public notice also invites public comments on the proposed project in accordance with Executive Order 11988, Floodplain Management, and Executive Order 11990, Protection of Wetlands. These orders require that all federal actions in or affecting the base floodplain or wetland areas be reviewed for opportunities to relocate out of the floodplain or wetland. The proposed action is intended to re-establish a district station and relocate the facility outside the floodplain to avoid future adverse effects during flood events.

This draft EA is limited to evaluation of potential environmental impacts of demolition of damaged facility and construction and operation and maintenance of new fire station at a new location. It includes construction of a fire station of similar size and function as damaged facility. The new facility may also be used as an emergency operations center and temporary sheltering area during emergencies. The 4,400 square foot single story building will contain four vehicle bays, a multi-purpose area, two bathrooms with showers, a kitchen and storage areas. Paved parking area will be provided for eight vehicles. Utilities will include a pressurized on-site septic system, water and electrical service from PUD, a new hydrant, propane tank, a

generator and a storm drainage system.

The public is invited to comment on the proposed project. The draft environmental assessment will be posted at Rosburg Post Office, Rosburg, WA and Courthouse in Cathlamet, Washington on or about April 22, 2010. Interested persons may obtain more detailed information about the proposed action from FEMA's Region X Disaster Field Office in Bothell by calling Mark Eberlein, FEMA Regional Environmental Officer, at (425) 487-4735 or by email at [mark.eberlein@dhs.gov](mailto:mark.eberlein@dhs.gov). EA is available for viewing and comment on FEMA website at: <http://www.fema.gov/plan/ehp/envdocuments/index.shtm>. After comment period has closed, EA will be available at: [http://www.fema.gov/plan/ehp/environments/archives\\_index.shtm](http://www.fema.gov/plan/ehp/environments/archives_index.shtm). All comments regarding this proposed action should be directed to Mr. Eberlein no later than 5 p.m. on Monday, May 24, 2010.

Publish April 22, 2010



Gerard Urbas  
Public Assistance Program  
Emergency Management Division  
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**From:** Eberlein, Mark [<mailto:mark.eberlein@dhs.gov>]  
**Sent:** Tuesday, April 27, 2010 10:52 AM  
**To:** Urbas, Gary (EMD)  
**Cc:** King, Susan; Bowen, Bert; Burton, Dennis  
**Subject:** FW: EA postings

Gary, the Wahkiakum EA is not posted yet. FYI and please let the applicant know of the technical difficulties, should they get any inquiries.

Thanks  
Mark

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**From:** Shick, Laura  
**Sent:** Tuesday, April 27, 2010 10:20 AM  
**To:** Sullivan, Jack; Jadrosich, Megan; 'McManus, Catharine'; Ciampolillo, Amanda; Straw, William; Madson, Stephanie; Mueller, Nicholas; Ratliff, Amanda; Sessa, Kenneth; 'Hardegen, Steven'; Meyer, Donna; Amaglio, Alessandro; Eberlein, Mark; Kilner, Science; Teeter, Cynthia; Grisham, Michael; 'Pezzetti, Stephen'; Mcwaters-Bjorkman, Elizabeth  
**Subject:** EA postings

I apologize if you have already been notified via other channels...

From: Cline, Mark (ECY) [MCLI461@ECY.WA.GOV]  
Sent: Tuesday, May 25, 2010 8:53 AM  
To: Eberlein, Mark  
Cc: Steve Manlow; beyerc@co.wahkiakum.wa.us; Lund, Perry (ECY)  
Subject: Wahkiakum County FD #3 Environmental Assessment comments  
Attachments: Wahkiakum County FD 3 aerial.jpg

Mark,

Thank you for providing WA Department of Ecology (Ecology) an opportunity to comment on FEMA's draft Environmental Assessment (EA) for the proposed relocation of the Wahkiakum County FD #3 fire station. Ecology understands the devastating effects of the 2009 storms and is eager to assist communities as they recover. Moving the damaged fire station to a safer location seems reasonable and the submitted draft EA is a useful tool to examine potential environmental outcomes.

My review of the proposal focused on potential impacts to wetlands and shorelines, which are regulated by Ecology under RCW 90.48 and 90.58, respectively. Although the draft EA doesn't mention these two resources specifically, I searched Ecology's Coastal Atlas to look for potential concerns. The attached image is a screenshot showing that National Wetland Inventory polygons and state shoreline environments are mapped within the project area. This means it's possible that wetlands and state shorelines could exist at the proposed new facility. If so, wetland impacts would need to be authorized by Ecology and possibly the U.S. Army Corps of Engineers; shoreline impacts would need to comply with the Wahkiakum County's Shoreline Master Plan and Ecology's Shoreline Management Act requirements.

Given that these resources are not addressed in the draft EA, Ecology recommends that the final EA identify and analyze means to avoid, minimize, or compensate for potential impacts. If requested, Ecology can provide technical assistance to FEMA or the county to identify wetland and shoreline jurisdiction. Feel free to contact me at your convenience.

Regards,

Mark Cline  
Washington Department of Ecology  
Shorelands and Environmental Assistance Program  
Wetlands/Shorelands Specialist  
P.O. Box 47775  
Olympia, WA 98504-7775  
URL: <http://www.ecy.wa.gov/programs/sea/wetlands/index.html>  
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