Draft Environmental Assessment

Clark Creek Water Main Relocation
City of Longview, Cowlitz County, Washington

FEMA-1671-DR-WA (Public Assistance)

September 6, 2011

U.S. Department of Homeland Security
Federal Emergency Management Agency – Region X
130 228th Street Southwest
Bothell, Washington 98201-9796

Photo: Clark Creek and Clark Creek Road

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TERMS USED IN THIS DOCUMENT

Area of Potential Effect (APE) – the geographic area within which an undertaking may cause changes in the character or use of historic properties, if such properties exist. The APE is influenced by the scale and nature of the undertaking.

Best Management Practices (BMPs) – environmental protection practices applied to help ensure that projects are conducted in an environmentally responsible manner.

FEMA Floodway – that portion of the floodplain which is effective in carrying flow, within which this carrying capacity must be preserved and where the flood hazard is generally highest, i.e., where water depths and velocities are the greatest. It is that area which provides for the discharge of the base flood so the cumulative increase in water surface elevation is no more than one foot.

Floodplain – the lowland and relatively flat areas adjoining inland and coastal waters including, at a minimum, that area subject to a one percent or greater chance of flooding in any given year.

Nonattainment Area – the geographic area designated by EPA at 40 CFR Part 81 as exceeding a National Ambient Air Quality Standard for a given criteria pollutant. An area is nonattainment only for the pollutants for which the area has been designated nonattainment.

Subsidence – the sinking or settling of the ground.

ACRONYMS USED IN THIS DOCUMENT

APE	Area of Potential Effect
BMP	best management practice
CDID	Consolidated Diking Improvement District No. 1
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
DAHP	(Washington State) Department of Archaeological and Historic Preservation
DNR	(Washington State) Department of Natural Resources
EA	environmental assessment
Ecology	(Washington State) Department of Ecology
EFH	essential fish habitat
EIS	environmental impact statement
EO	(Presidential) Executive Order
ESA	Endangered Species Act
FEMA	Federal Emergency Management Agency
FONSI	Finding of No Significant Impact
MBTA	Migratory Bird Treaty Act
MSA	Magnuson-Stevens Fishery Conservation and Management Act
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NRHP	National Register of Historic Places
PHS	(WDFW) Priority Habitats and Species
REO	(FEMA) Regional Environmental Officer
ROW	right of way
SHPO	State Historic Preservation Officer
USFWS	U.S. Fish and Wildlife Service
WDFW	Washington Department of Fish and Wildlife
WISAARD	Washington Information System for Architectural and Archaeological Records Data
WNHP	Washington Natural Heritage Program
WRIA	Water Resource Inventory Area

The Robert T. Stafford Disaster Relief and Emergency Assistance Act of 1973 (Stafford Act), as amended, provides federal assistance programs for both public and private losses sustained in disasters. FEMA provides assistance to private citizens, public entities, and non-profit groups following declared disasters. The City of Longview applied, through the Washington State Emergency Management Division (EMD), to the U.S. Department of Homeland Security's Federal Emergency Management Agency (FEMA) for funding to relocate a portion of a water main damaged by a landslide. The project is located north of the City of Longview, in unincorporated Cowlitz County, in southwestern Washington (see Appendix A, Project Vicinity Map).

The National Environmental Policy Act (NEPA) of 1969 and the Council on Environmental Quality (CEQ) regulations implementing NEPA (40 Code of Federal Regulations [CFR] Part 1500 through 1508) direct FEMA and other federal agencies to take into consideration the environmental consequences of proposed federal actions, including federal funding. In compliance with NEPA and its implementing regulations, FEMA prepared this environmental assessment (EA) to analyze potential environmental impacts of the Proposed Action and other reasonable alternatives that would meet the purpose, need, and objectives of the project as well as a No Action Alternative. The No Action Alternative also serves as an environmental baseline against which the other alternatives can be compared.

FEMA will use the findings in this Draft EA and public input to determine whether to prepare an environmental impact statement (EIS). If the Proposed Action is determined not to significantly affect the quality of the human environment, then FEMA will issue a Finding of No Significant Impact (FONSI) rather than prepare an EIS.

The CEQ and FEMA regulations (44 CFR Section 10) that implement NEPA require NEPA documents to be concise, focus on the issues relevant to the project, and exclude extraneous background data and discussion of subjects that are not relevant or would not be affected by the project alternatives. Accordingly, the following subjects are not evaluated in detail for the following reasons:

Subject	**Analysis**
Air Quality	Construction would create dust and vehicle emissions; however, the impacts would be minor and temporary. Air quality impacts associated with traffic is not expected to increase above current levels.
Climate & Climate Change	Minor and temporary construction-related impacts (see description of the Proposed Action) would contribute a negligible amount to climate change or greenhouse gases.
Coastal Zone Management Act	The project is in Cowlitz County, which is not designated as a coastal county by the Washington Coastal Zone Management Program.

Noise	Construction activities would result in noise, which would be temporary. Noise associated with traffic is not expected to increase above current levels.
Land Use and Socioeconomics	Land use, including housing, public services and utilities, and socioeconomic impacts are not expected to result from relocating a portion of the water main.
Traffic	Traffic is not expected to increase above current levels as a result of relocating a portion of the water main.
Visual Quality	With any of the action alternatives, relocation of the water main involves removal of some vegetation. The visual impacts would be minimal in scope and there are no designated visual resource areas.

2.1 PURPOSE AND NEED

The purpose of the Robert T. Stafford Disaster Relief and Emergency Assistance Act of 1973 (Stafford Act), as amended, is to provide a wide range of federal assistance for states and local governments significantly impacted by disasters or emergencies or both. The purpose of the Federal Emergency Management Agency's (FEMA) Public Assistance (PA) Grant Program is to provide assistance to State, Tribal and local governments, and certain types of Private Nonprofit organizations so that communities can quickly respond to and recover from major disasters or emergencies declared by the President. Through the PA Program, FEMA provides supplemental Federal disaster grant assistance for debris removal, emergency protective measures, and the repair, restoration, reconstruction, or replacement of disaster-damaged or destroyed publicly owned facilities and the facilities of certain Private Non-Profit (PNP) organizations. The need for the FEMA action is to provide funds to the City of Longview (the City) to relocate a portion of a water main, which was damaged by a landslide during a storm event in the winter of 2006. The President declared a federal disaster for the region, making funds available to public entities for damage repairs.

Severe storms, flooding and slide activity in November 2, 2006 through November 11, 2006 caused extensive damage in and around the City. High winds downed or damaged approximately 30 trees, heavy rain saturated the area and caused two landslides, and storm debris plugged the storm drain system and flooded pump stations.

A landslide above the west bank of Clark Creek caused several sections of 10-inch diameter water main to separate and dislodge due to slide movement, damaging approximately 250 lineal feet of unrestrained ductile iron pipe. The 10-inch water main is an inter-tie in the distribution system which connects water mains on Clark Creek Lane and Clark Creek Road, and helps to boost system pressure farther out in the system. Emergency water service was installed to temporarily restore domestic water service to the affected residents but fire hydrants at the end of Clark Creek Road remain out of service due to inadequate water pressure.

A new 10-inch water main needs to be installed to permanently repair the damage and restore the City's distribution system to pre-disaster capacity. Approximately 22 residences on Clark Creek Road above the location of the inter-tie are impacted by reduced water pressure and lack of fire flow. The project is located in SE ¼ of Section 12 and the SW ¼ of Section 7, in T8N, R2W of the Willamette Meridian, Cowlitz County. It would span unimproved land (parcel WL1204001) beginning near 150 Clark Creek Lane, continue in an easterly direction over the hillside and cross under Clark Creek then connect with an existing water main along Clark Creek Road (see Appendix A, Waterline Reroute Plan).

2.2 PROJECT OBJECTIVES

The CEQ regulations require reasonable alternatives be identified, evaluated, and compared. Reasonable alternatives are alternative ways of meeting project objectives, but with varying degrees of environmental impact. Alternatives that would clearly result in substantially greater

environmental impact than the Preferred Alternative do not require detailed analysis. The following project objectives are identified by the City:

1. Permanently restore water system to pre-disaster pressure and capacity, including fire system protection on Clark Creek Road,

2. Provide the most effective reduction in potential for future landslide impacts on the water main (e.g. by avoiding the active landslide area),

3. Improve pipeline construction to resist future earth movement,

4. Minimize the length of relocated water main, disturbance to hillside, and construction-related environmental impacts, and

5. Construct the least cost alternative that meets the project objectives.

This section discusses the alternatives considered in this EA: (1) the No Action Alternative, (2) the Proposed Action (or Preferred Alternative) toward which FEMA would contribute funding, and (3) Other Alternatives Considered and Not Carried Forward in the analysis. A table at the end of Section 3 summarizes and compares the impacts of each alternative and the extent to which the alternatives meet the project objectives.

Topography and underlying geology (e.g. steep or unstable slopes) in the project area influence the identification of possible alternatives. The geotechnical report states:

> *The recent landslide was initiated during a heavy rainfall event. Heavy flow in Clark Creek likely eroded the toe of the hillside. In addition, the area soils became saturated and the addition of water from the rain provided enough additional driving force to create a slope failure. Heavy rainfall also contributed to the buildup of pore pressures in the soils. While it is feasible to slow or mitigate local slope movement, within this area, evidence of nearby recent movement suggests that the entire area within the mapped active landslide has the potential for future movement, and there is potential for the recent slide to retrogress (expand) upslope as well as laterally.*

Several alternatives were considered to permanently replace the broken water main and restore the water system capacity. Alternative No. 1, the No Action Alternative, would not repair the broken water main, requiring the City to continue to rely upon the undersized temporary main installed shortly after the disaster. Alternative No. 2, the Preferred Alternative, would re-use the upper section of existing main and re-route the lower section to avoid the slide area. This alternative includes the use of restrained joint pipe to resist any future slope failure. Alternatives 3 and 4 both involve replacing the water main in its present location, using different construction techniques to mitigate the potential for failure. Alternative 3 proposes use of a rock buttress to replace all or most of the slide mass with free draining rock. When installed properly and in combination with subsurface drainage, this would reduce the potential for accumulating pore water pressures, the driving force which contributes to landslides. A rock buttress is normally the most feasible solution for slope stabilization but was rejected in this case because the probability of failure due to movement in the immediate surrounding landslide material is relatively high. Alternative 4 proposes to bury the middle section of pipeline at a depth of approximately 20-feet, below the depth of the recent slide activity. This alternative would require extensive shoring during construction and significant dewatering effort using sumps or well points. As a result, the cost of construction is exceedingly high, making this option also not feasible.

3.1 ALTERNATIVE 1 – NO ACTION

The No Action Alternative is required by the CEQ regulations to be included in the analysis, serves to provide a baseline of existing conditions and current impacts to resources in the project

area, and is used to compare and contrast the impacts to resources of the other (action) alternatives.

In order to restore water service to residents on Clark Creek Road, an emergency connection water main was installed down Clark Creek Lane to Clark Creek Road. Clark Creek Lane is in the base pressure zone (Zone 243, Main Reservoir), while Clark Creek Road is in Zone 531, North 50th Reservoir. To accomplish this emergency connection, the customers along Clark Creek Lane were converted to Zone 531 service and the increased water pressure required that individual pressure reducing valves be installed at each service meter on Clark Creek Lane to avoid over-pressurizing and damaging the homeowners' plumbing. This restored water service to Clark Creek Road, but only at reduced pressure and volume due to the smaller emergency main and friction losses in the additional length of piping required to feed the water down Clark Creek Lane and back up Clark Creek Road. As a result, the existing connection cannot supply adequate pressure and volume to serve the Clark Creek Road service area.

Under the No Action Alternative, FEMA would not provide funding to restore the water main inter-tie. Without the 10-inch water main to maintain system pressure and flow, residents on Clark Creek Road lack adequate fire service protection and growth in that area is severely inhibited. For these reasons, the No Action Alternative does not restore the City's water system to its pre-disaster capacity and does not meet the project objectives (see Table 1).

3.2 ALTERNATIVE 2 – PROPOSED ACTION (THE PREFERRED ALTERNATIVE)

To minimize disturbance to the hillside, approximately 270-lineal feet of the existing water main will be capped and abandoned in place, except near the west bank of Clark Creek where broken pipe is visibly exposed and will be removed. Activity in the slide area will be kept to a minimum and to revegetate the area cleared by construction.

CONSTRUCTION

The Proposed Action includes construction of approximately 350-lineal feet of new 10-inch water main using restrained joint ductile iron or welded high-density polyethylene (HDPE) pipe designed to resist downward subsidence and slope failure. The replacement water main will re-use approximately 280-lineal feet of existing pipe in the upper portion which was unaffected by the landslide. The lower portion will be re-routed to follow an alternative alignment approximately 50 feet south of the existing water line to avoid the unstable landslide area. Construction will include a stream diversion for the creek crossing before the pipe terminates with a tie-in to an existing main on Clark Creek Road.

The existing easement must be modified and re-recorded to reflect the change in alignment of the lower section of piping. The land in and around the project site is privately owned and the City has not contacted the primary or adjacent property owners except to obtain Right of Entry agreements in order to conduct the geotechnical investigation and take soil borings. However, the City does not anticipate difficulty in acquiring new easements in this location because the

land is vacant and already encumbered by other easements including BPA overhead electrical transmission lines and large support towers.

New water main piping will be installed in an open-cut trench (approximately 3 feet wide and 5 feet deep) bedded and backfilled with native material above the pipe zone. The trench will be backfilled as pipe is laid to minimize the length of trench open at any one time. The installation will be stabilized as needed with the use of thrust blocks and/or slope breakers to secure the pipe. The creek crossing will be accomplished using a diversion culvert and sandbag berm to re-route Clark Creek around the work area at the point of crossing.

Rounded river rock will be used above native backfill to replace the upper 12-inches of material excavated for the pipe trench across the creek, leaving the elevation and gradient of the stream bed relatively unchanged. The bank of the creek will be armored using angular rock of sufficient size to prevent dislodging under high flow conditions. Approximately 12 cubic yards of cobbles and useable native material will be used as backfill in and surrounding the creek. Any unusable excavated native soil will be taken to an approved disposal site.

Prior to and during construction, sediment and erosion control measures and best management practices will be installed on and around the project site to minimize adverse impacts. As much as is practicable, runoff from the construction site will be diverted to the surrounding native land and away from the creek. Bare earth will be re-seeded and hayed to reduce the amount of sediment allowed to reach the creek in stormwater run-off, and silt fence will remain in place until the vegetation is re-established.

CONSTRUCTION

Staging and laydown area for vehicles, equipment and materials will utilize an existing area of open pasture off Clark Creek Lane. If the existing grade is too soft to support construction equipment traffic and maneuvers, 4 to 6-inches of crushed rock will be placed over geotextile fabric to construct a temporary gravel pad. All areas impacted by construction will be restored to the same or better condition which existed prior to start of construction. Gravel pads will be removed, and all vegetation re-seeded or replaced to the satisfaction of the property owner.

Construction is expected to take approximately 4 weeks to complete, starting in early summer. A preliminary construction schedule includes the following general tasks listed in order:

Task	Estimated duration (working days)
Mobilization	2 days
Install sediment and erosion control	1 day
Clear and grub	2 days

Excavate trench and install pipe (Clark Creek Lane to creek)	5 days
Install creek diversion culvert	2 days
Install creek crossing and connect mains at Clark Creek Road	2 days
Armor and restore creek flow; Remove diversion culvert	1 day
Pressure test	1 day
Hydroseed and re-plant native vegetation	2 days
Asphalt patching if required	1 day
Final inspection	1 day
Site clean-up	1 day
De-mobilization	1 day
TOTAL	22 days

Permits required for construction include a Cowlitz County SEPA checklist review and determination, Critical Areas permit for Aquifer Recharge Area, Washington Fish & Wildlife Hydraulic Project Approval (HPA), Ecology Section 401 Water Quality Certification and USACE Section 404 permit. Temporary construction agreements and permanent easements will be required from the property owner.

MITIGATION

As described under the Proposed Action, the project includes construction of approximately 350 lineal feet of new 10-inch restrained joint pipe to re-route the lower section of existing water line around the scarp of recent landslide activity. Approximately 270 lineal feet of existing damaged pipe will be capped and abandoned in place. The project will be designed to meet all local, state and federal requirements for water quality, critical areas, resource protection and habitat conservation so the project results in no net loss of critical area functions and values.

The following mitigation measures will be employed and are included as part of the Proposed Action (additional mitigation measures may be identified as conditions of permits and approvals by agencies with jurisdiction):

Resource	Mitigation
General	Construction and clearing limits will be clearly marked on the ground and will not extend beyond the minimum area required to complete the work.

	Sensitive areas, if any, will be flagged to delineate no-work zones. No machinery or equipment will access areas outside the construction limits. All mitigation measures will be clearly stated in the construction specifications.
Special Status Species	Tree and brush clearing will avoid the April 1 - July 31 nesting season. Several listed, candidate, or sensitive species are in Cowlitz County but none are known to be in the project area. In-water work will be completed during the June 15 – September 30 work window. The in-water work area will be isolated and dewatered during construction and a temporary stream diversion installed. Any fish will be herded outside of the isolated work area prior to dewatering.
Vegetation	Vegetation beyond the clearing zone will not be removed or damaged.
Water Quality and Soils	Construction activities will take place during dry summer months. All disturbed ground will be reclaimed using appropriate best management practices. The measures described below will be maintained until the grade is stable and vegetation is re-established to prevent sediment from reaching the creek. Sediment and erosion control will be implemented to prevent or reduce non-point source pollution and minimize soil loss and sedimentation in drainage areas. These practices may include, but are not limited to, silt fence, filter fabric, check dams, straw wattles, in-stream sediment mats, and seeding/mulching of exposed areas. Regular site inspections will be conducted to ensure erosion control measures are properly installed and functioning effectively. All in-water work will comply with state water quality standards for turbidity. A project-specific spill prevention control and countermeasures plan (SPCC) is required to be submitted and approved prior to the start of construction. Equipment, materials and procedures necessary to prevent and respond to hazardous spills will be maintained on-site at all times. There will be no in-water construction and no heavy equipment in or across the waters of the creek except as necessary to construct and remove the stream diversion facilities.

3.3 OTHER ALTERNATIVES CONSIDERED AND NOT CARRIED FORWARD

Two other alternatives were considered but dismissed from further evaluation because they did not meet the project objectives identified above and would result in greater environmental impacts than the Preferred Alternative (see Table 1 for a summary of how each alternative meets the project objectives).

ALTERNATIVE 3 – ROCK BUTTRESS

Alternative 3 proposes to replace the water line in its present location, using a rock buttress to replace all or most of the slide mass with free draining rock. When installed properly and in combination with subsurface drainage, this would reduce the potential for accumulating pore water pressures, the driving force which contributes to landslides.

A rock buttress is normally the most feasible solution for slope stabilization; however, the geotechnical study for this project concluded that the probability of failure due to movement in the immediate surrounding landslide material is relatively high in this case. Consequently, this alternative does not meet the project objectives (see Table 1).

ALTERNATIVE 4 – DEEP BURY WATER MAIN

Alternative 4 also proposes to replace the water line in its present location, but with the middle section of pipeline buried at a depth of approximately 20-feet, which would be below the depth of the recent slide activity. This alternative would require extensive shoring during construction and significant dewatering effort using sumps or well points. As a result, the extent and cost of construction is substantially greater than the Preferred Alternative and this alternative does not meet the project objectives (see Table 1).

Additional preliminary consideration was also given to relocating the water line to an entirely different location. However, the terrain does not easily lend itself to cross-county construction and significant expense would be invested just to construct an access road to an alternate location beyond the end of Clark Creek Lane. The process to acquire new easements from property owners with an established primary residence would be more involved and costly compared to modifying agreements over vacant land already encumbered by multiple easements. And the entire area is mapped within a large ancient inactive deep-seated landslide and subgrade conditions are expected to be similar along the length of Clark Creek Road. This alternative was dismissed without further evaluation because of greater environmental impacts and construction cost, which failed to meet the project objectives.

TABLE 1: SUMMARY OF ALTERNATIVES, IMPACTS, AND PROJECT OBJECTIVES

Alternatives	**Reliable and Permanent Solution**	**Avoid Unstable Areas**	**Improve Pipeline to Resist Earth Movement**	**Minimize Construction Impacts**	**Right-of-way Acquisition**	**Cost**-not including maintenance
1 - No Action	Temporary	Water line would not be relocated	N/A	N/A	N/A	N/A
2 – Proposed Action-Relocate water main	Permanent	Locate outside landslide area	Yes	300 cy of excavation & backfill.	One easement required	$116,928
3 – Stabilize with Rock Buttress	Temporary	Remain in landslide area	Yes	4,500 cy of excavation & backfill.	None	$374,040
4 – Deep Bury Water Main	Temporary	Buried under landslide	Yes	600 cy of excavation & backfill.	None	$455,620

After comparing the potential impacts from construction of the various alternatives, Alternative 2 (the Proposed Action) is also the environmentally preferred alternative because significantly less construction would be required compared to the other alternatives, and the active landslide area would be avoided.

This section discusses the existing condition of affected resources and the potential effects of the No Action and Proposed Action alternatives.

4.1 GEOLOGY AND SOILS

The project area was the subject of a geotechnical report, which describes the area as being located in an ancient landslide that contains a smaller, active landslide on the west bank of Clark Creek. The active landslide is roughly 650 feet wide and 300 feet long. The report states that the slide mass traveled down slope to the east-northeast, impacting Clark Creek. The recent landslide that caused the damage to the City's water main in 2006 is approximately 360 feet wide and 150 feet long.

The slide is located within a moderately steep slope (40 to 60 percent) within the Clark Creek drainage. Topography upslope and surrounding the active landslide is gently sloping and broadly irregular. Soil types include sand, silt, and clay and the report's stability analyses concludes that the "global factor of safety for these slopes is on the order of 1.4, which is an acceptable value. While the factor of safety is reasonable, it is important to understand that the slopes in this area consist of previous landslide debris. It should be expected that localized areas may experience ground movements similar to that experienced by the area currently under evaluation." (GeoEngineers 2009)

The proposed water main alignment would be approximately 50 feet south of the original water main location.

4.1.1 Environmental Consequences

Alternative 1 – No Action

Under the No Action Alternative, FEMA would not provide funding to relocate the water line. The City would continue to maintain the temporary water line until such time as funds become available for a permanent water line. Impacts to geology and soils are not anticipated under this alternative.

Alternative 2 – Proposed Action

The Proposed Action to relocate the water main around a geologically unstable area would result in less soil impacts and stability-related issues than any of the other action alternatives as this alternative would avoid the unstable area on which the original water main is located. The original water main will be capped and abandoned to further minimize impacts to the landslide area. Soil impacts from construction would be small and short-term based on the small scale of the project (350 feet long by 3 feet wide by 5 feet deep) and minor ground-disturbing activities.

In addition, best management practices (BMPs) for erosion control, as described in Section 3.2 of this EA, would be followed.

4.2 VEGETATION

The Clark Creek area is primarily rural residential, pasture, and farm land. The area directly adjacent to the creek is human-influenced riparian forest and, on the steep streambanks, includes disturbed vegetation and invasive plants such as ivy and Japanese knotweed. Outside of the streambanks on adjacent private property, much of the vegetation is pasture, residential landscaping and manicured or rough lawn, as well as evergreens such as fir and hemlock.

Trees in the riparian area include red alder and big-leaf maple, and the shrub stratum includes vine maple and salmonberry. The herb stratum includes ferns, creeping buttercup, horsetail, skunk cabbage and stinging nettle.

4.2.1 Environmental Consequences

Alternative 1 – No Action

Under the No Action Alternative, construction to relocate the water main would not take place and vegetation would not be removed.

Alternative 2 – Proposed Action

The creek bank consists mainly of grasses, blackberries, native shrubs and skunk cabbage with a scattering of maple and vine maple trees along the west bank. Fewer than approximately three trees will need to be removed and replanted as a result of construction. All clearing and grading will take place during the dry season, and best management practices for erosion control will be implemented. The area where vegetation was removed would be reseeded with native vegetation.

4.3 WATER

The project area at Clark Creek is located in the Elochoman Watershed, and in the Mill, Abernathy, Germany (MAG) Subbasin as defined by the Northwest Power and Conservation Council (Washington Lower Columbia Salmon Recovery and Fish & Wildlife Subbasin Plan, 2010). It is also located in Water Resource Inventory Area (WRIA) 25. Clark Creek, however, is located toward the southeast edge of the MAG Subbasin, and is also in the Coal Creek/Longview Slough Subbasin of WRIA 25 (WRIA 25 and 26 Watershed Management Plan, 2006). Clark Creek drains to the Coal Creek Slough, which in turn is a tributary of the Columbia River.

Clark Creek is a single thread channel confined by Clark Creek Road along most of its length (see photo on the cover of this EA). The creek has a relatively steep gradient and total confinement limits pool development. Turbidity, water temperature and other water quality issues are concerns in the Coal Creek watershed (or subbasin) in which Clark Creek is located; however, water quality data for Clark Creek was not provided in references found for the analysis in this EA.

There is currently no gauging station on Clark Creek to provide average stream flow data. However, using the USGS regression analysis method, estimated peak flood flow can be calculated at 2-, 5-, 10-, 50-, 100- and 500-year recurrence intervals. Based on available topographic information, the estimated drainage area which contributes run-off upstream of Clark Creek is approximately 1.97 square miles. Using a mean annual precipitation published by the US Weather Bureau of 45-inches, peak flow can be calculated as follows:

Recurrence Interval	Prediction Error	Peak Flow (cfs)
Q2	57%	113
Q5	55%	182
Q10	54%	218
Q50	54%	243
Q500	54%	271
Q500	54%	337

A modeling study commissioned as part of the WRIA 25 and 26 Watershed Management Plan concluded that as clearcut areas are replanted and existing younger timber matures, the predominant effect is anticipated to be a reduction in peak flows coupled with a reduction in low flows (i.e. flows are reduced). Peak flows are expected to decrease due to delay of runoff as forest cover increases. Low flows are expected to decrease because of the net increase in evapotranspiration, which removes water from the watershed. Despite reductions in low flows, changes in forest practices are expected to improve aquatic habitat.[1]

[1] Based on changes in the timber economy in recent years, harvest rates for southwest Washington over the next 50 years are expected to be lower compared with harvests of the last 50 years. At the same time, regeneration of formerly harvested forests is likely to continue. These changes will result in increased forest cover at the regional scale (Lower Columbia Fish Recovery Board, 2006).

4.4.1 Environmental Consequences

Alternative 1 – No Action

Under the No Action Alternative, FEMA would not provide funding to relocate the water main, and there would not be impacts to Clark Creek from construction associated with the Proposed Action.

Alternative 2 – Proposed Action

Construction activities associated with the Proposed Action include excavation and backfill of a trench, which will take place during dry summer months.

All disturbed ground will be reclaimed using appropriate best management practices. The measures described on pages 3-5 to 3-6 will be maintained until the grade is stable and vegetation is re-established to prevent sediment from reaching the creek. Pages 3-5 to 3-6 also describe additional mitigation measures that are part of the project description to prevent water pollution, ensure erosion control measures are functioning effectively, and ensure compliance with state water quality standards.

A project-specific spill prevention control and countermeasures plan (SPCC) is required to be submitted and approved prior to the start of construction. Equipment, materials and procedures necessary to prevent and respond to hazardous spills will be maintained on-site at all times.

There will be no in-water construction and no heavy equipment in or across the waters of the creek except as necessary to construct and remove the stream diversion facilities as discussed in Section 3.2 of this EA.

4.4 FLOODPLAINS (EO 11988) AND WETLANDS (EO 11990)

EO 11988 (Floodplains) requires federal agencies to reduce the risk of flood loss, minimize the impact on human health, safety, and welfare, and restore the natural and beneficial values served by floodplains. Under FEMA's implementing regulations at 44 CFR Part 9, FEMA must evaluate the potential effects of any actions it may take in a floodplain and consider alternatives to avoid adverse effects. Similarly, EO 11990 (Wetlands) requires that federal agencies take action to minimize the destruction, loss, or degradation of wetlands, and to preserve and enhance the natural and beneficial effects of wetlands. Federal agencies, in planning their actions, are required to consider alternatives to wetland sites and limit potential damage if an activity affecting a wetland cannot be avoided. Federal agencies are also required under 44 CFR Part 9 to provide public notice and review of plans for actions in floodplains and wetlands. The public notice for this disaster and public review of the Draft EA meet FEMA's public notice and review requirements.

The No Action and Proposed Action alternatives would not take place in FEMA-designated floodplains. The project area is on Flood Insurance Rate Map (FIRM) Panel #5300320140E, dated December 20, 2001. The area is designated Category C, which is not in a 100-year floodplain and has low flood hazard potential. However, for purposes of environmental impact analysis, FEMA assumes the project area is subject to flooding because the action would cross a stream channel.

The project would result in short term construction-related impacts to the Clark Creek channel. Short-term construction related impacts, such as water quality impacts, would be avoided and/or minimized with construction Best Management Practices (BMPs). There would be no long-term impacts to the floodplain, nor would there be impacts of the floodplain on the water main.

Based on the National Wetland Inventory and field observations, the No Action and Proposed Action alternatives would not take place in or affect mapped wetlands. Water was observed, however, seeping from the west bank of Clark Creek and some wetland vegetation such as skunk cabbage was present. Therefore, it is possible that part of the area (estimated to be approximately 30 feet long by 3 feet wide) for the trench may have wetlands. Although wetlands have not been delineated, the area cleared for the trench will be rehabilitated and revegetated, resulting in no net loss of wetland.

4.5 FISH AND WILDLIFE

The project area is primarily rural residential, pasture, and farm land. Clark Creek and its associated riparian corridor is a fish and wildlife habitat conservation area pursuant to Cowlitz County Code 19.15.130. Clark Creek is a Water of the State, Class 5, Type F perennial stream. Clark Creek is mapped as a fish-bearing, or Type F stream, by the Washington Department of Natural Resources (DNR). According to Steve West of the Washington Department of Fish and Wildlife (WDFW), Clark Creek contains resident cutthroat trout (personal communication, 2011).

Washington Department of Fish and Wildlife's SalmonScape does not map any anadromous salmonids in Clark Creek. Depending on flow volume and tide height, the creek is pumped or gravity fed via Ditch 6 to Coal Creek Slough and eventually flows to the Columbia River. The Consolidated Diking Improvement District No. 1 (CDID) operates the diking network and their operating parameters determine the mechanism of flow. Clark Creek is gravity fed to the slough only if the flow of water in Coal Creek Slough is low and tide is out. If flow or tide increases to moderate levels, Clark Creek is pumped to the slough using CDID's main pump station. At moderate to high flows, Clark Creek is bypass pumped around the main pump station to the slough. Under extremely high flows, Clark Creek is gravity fed through a spillway to a lower cutoff slough before being pumped out via the main pump station. Under all four hydraulic scenarios, the flow path from Clark Creek to the slough presents a significant barrier (if not a

total barrier per Ken Cachelin, CDID Diking Engineer) to fish passage due to the tide gate and slope of gravity lines.

Other studies referenced in this EA also indicate that the tide gate and a culvert restrict fish passage from Coal Creek Slough into Clark Creek and that the pumping station on Coal Creek Slough limits fish passage to Clark Creek. Over 4 miles of potential habitat is blocked by the culvert on Clark Creek (Lower Columbia Fish Recovery Board, 2010, 2006; and Washington State Conservation Commission 2002).

The existing utility corridor has been cleared of trees, as has the proposed water main alignment (see photo below). Thus, the upland portion of the proposed water main alignment is habitat to species common for the area such as deer, coyote, and raccoon.

4.5.1 Federally Listed Species and Critical Habitat

Species lists from state and federal agencies were reviewed to identify special status species with potential to occur in Cowlitz County or the Clark Creek vicinity. Additional records were reviewed such as WDFW fish distribution data (SalmonScape) and StreamNet database records, and Washington Natural Heritage Program's Priority Species and Ecosystems Inventory. Watershed management, and salmon and fish and wildlife recovery plans by the Washington Lower Columbia Fish Recovery Board were also reviewed for habitat data.

There are no federally listed amphibians, reptiles, invertebrates, or plants documented in Cowlitz County. Although federally listed birds, the marbled murrelet and northern spotted owl, are

listed by USFWS as potentially occurring in Cowlitz County, the project area does not provide suitable habitat for these species. A federally listed mammal, the Columbian white-tailed deer, is listed by USFWS as having potential to occur in Cowlitz County; however, the project site does not provide the Columbia River island and riparian habitat typically occupied by this species.

Fish

The Clark Creek project area is within Evolutionarily Significant Units (ESU) for several salmonid species listed under the Endangered Species Act, including the following:

- Coho – ESU, Lower Columbia River, Status: Threatened
- Ocean Chinook – ESU, Lower Columbia River, Status: Threatened
- Fall/Winter Chum – ESU, Columbia River, Status: Threatened
- Steelhead – ESU, Lower Columbia River, Status: Threatened

As previously discussed in this EA, fish passage from Coal Creek Slough to Clark Creek appears to be blocked, and data bases for fish and fish recovery studies do not indicate the presence of anadromous salmonids in Clark Creek. No known endangered, threatened or sensitive salmonid species are known to use Clark Creek for spawning, rearing or migration (WDFW PHS).

Essential Fish Habitat (EFH)

Although coho are not mapped as occurring in Clark Creek, the stream is within the historic range of this species, so it is still considered Essential Fish Habitat even if not actually occupied.

Migratory Birds

The project area provides habitat for a variety of migratory bird species, including songbirds and birds of prey. The USFWS Office of Migratory Bird Management maintains a list of migratory birds (50 CFR 10.13). The Migratory Bird Treaty Act of 1918, as amended, prohibits the "take" of migratory birds, their active nests, eggs, and parts from harm, sale, or other injurious actions. The applicant is responsible for compliance with the Act's provisions.

4.5.2 Environmental Consequences

Alternative 1 – No Action

Under the No Action Alternative, construction of the water main would not take place and plant and animal species would not be affected.

Alternative 2 – Proposed Action

Fish and Essential Fish Habitat (EFH)

The Proposed Action would have less construction-related impacts on fish and fish habitat than the other action alternatives because the proposed action would result in less ground disturbance. Potential for erosion and impacts to the creek during construction, particularly with implementation of the BMPs and other mitigation measures (discussed previously under soils and geology and water) would further reduce impacts of the Proposed Action. Thus, FEMA has made a determination of No Adverse Effect to coho EFH.

Migratory Birds

Under this alternative, the potential for construction-related impacts to migratory birds would be eliminated or greatly reduced by avoiding vegetation and land clearing activities during the most sensitive portion of the nesting season. The Proposed Action includes avoiding clearing vegetation during the April 1 - July 31 nesting season.

Wildlife

Construction activity and noise may cause temporary displacement of animals to other similar adjoining habitats. Similar habitat attributes to those affected can be found immediately adjacent to the project area. Therefore the Proposed Action is not expected to change wildlife populations beyond the status quo.

4.6 HISTORIC, ARCHAEOLOGICAL, AND CULTURAL RESOURCES

The project area is located within the Puget Sound – Willamette Valley physiographic province. A brief culture history of the prehistoric periods follows, which is adapted from Ludwig (2009:10). This area was first inhabited between 8,000 and 5,000 years ago by small nomadic groups that subsisted on hunting, fishing and gathering. From 5,000 to 2,500 years ago local inhabitants began to utilize more diverse environmental settings as they began to establish seasonal land use patterns in both riverine and prairie environments. After 2,500 years ago the population increased and settlements began to be located along rivers, especially near confluences. During this period sedentism (transition from nomadic to permanent year-round settlement) increased with the use of permanent winter habitation sites. Additionally, there was greater use of upland and lowland environmental settings in comparison to earlier periods. It was at the end of this period (late 1700s and early 1800s) that Euro-American explorers made their first appearance in the area.

Euro-American contact first occurred when W.R. Broughton (1792) and Lewis and Clark (1805) navigated the Columbia River. More significant contact began in the 1820s and 1830s with the expansion of fur traders from the Hudson's Bay Company. The 1840s saw increased European entrée into the area and formal settlements began to appear. Then, in 1852, local settlers

petitioned the U.S. Government to separate the area north of the Columbia River from the remainder of the Oregon Territory. The government agreed and formed the new territory of Washington in 1853. The remainder of the 1800s and into the early 1900s saw increased logging and milling. In fact, the city of Longview is a planned community related to an early lumber mill owned by the Long-Bell Lumber Company (CowlitzCounty.org).

A search of the records maintained by the Washington State Department of Archaeology and Historic Preservation (DAHP) revealed two recorded historic archaeological sites and no recorded prehistoric sites within 2 miles of the APE. Both unevaluated historic sites are located in the neighboring Coal Creek/Mosquito Creek drainage to the west. Additionally, one historic barn is located ca. 1.25 miles north of the APE. No historic properties eligible or included on the National Register of Historic Places (NRHP) are within or adjacent to the APE. A predictive model available on the WISAARD website shows the area to be a moderate to high risk for archaeological deposits. However, the terrain within the APE does not appear to support this as slopes range from 40-60 percent. With such steep topography, and with a flatter and more preferable terrain to the west, it appears unlikely that unknown archaeological resources are preserved within the APE. Regarding above-ground historic properties, the project does not hold the potential to affect the built environment as it is an underground pipe that will not be viewable when the project is complete, and no historic buildings are within the APE.

4.6.1 Environmental Consequences

Alternative 1 – No Action

Under this alternative, the project would not be funded and there would not be a potential to affect archaeological, cultural, or historical resources.

Alternative 2 – Proposed Action

The Proposed Action is to replace the damaged section of a water main with a new 350-foot segment outside the active landslide area, approximately 50 feet south of the existing pipeline location. Ground disturbance would include a trench 3 feet wide and up to 5 feet deep for the new pipe. The Area of Potential Effect (APE) for the undertaking is the area where ground disturbing activities will occur during trench excavation.

Based on the lack of historic properties within the APE, the severe slope of the local terrain, and the nature of the project, FEMA has made a determination of No Historic Properties Affected as outlined in 36 CFR 800.4(d)(1). Washington DAHP concurred with the determination in a letter dated August 23, 2011 (see Appendix D).

To identify potential religious or cultural properties in the APE, FEMA is consulting with the following tribes: Chehalis, Cowlitz, Grand Ronde, Nisqually, and Shoalwater Bay.

No (NRHP-eligible) cultural resources were found to be located within the project area. Therefore, the Proposed Action would not affect any known resources. In the event of an unanticipated discovery during construction, in compliance with various state and Federal laws protecting cultural resources, including Section 106 of the NHPA, all construction work shall cease in the immediate vicinity of the find until appropriate parties (including the SHPO and affected Indian Tribes) are consulted and an appropriate plan is established.

4.7 SOCIOECONOMIC AND ENVIRONMENTAL JUSTICE (EO 12898)

Executive Order (EO) 12898, Environmental Justice, directs federal agencies to identify and address, as appropriate, disproportionately high and adverse human health or environmental effects on minority and low-income populations in the US resulting from federal programs, policies, and activities.

The Proposed Action, to relocate 350 linear feet of water main approximately 50 feet from its present location would not result in disproportionately high and adverse human health or environmental effects on minority and low-income populations because of the small scale and limited nature of construction and temporary nature of impacts.

Water service would be restored to permit fire-fighting capability to area residents, which would be a benefit to area residents.

CUMULATIVE IMPACTS

Cumulative effects or impacts are defined as "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions" (40 CFR 1508.7). Cumulative effects are determined by combining the effects of an action with other past, present, and reasonably foreseeable future actions.

One other project is proposed near the project area and on Clark Creek. Cowlitz County Public Works Department is planning to replace a damaged 8-foot diameter corrugated metal culvert located upstream near 631 Clark Creek Road, with a 16-foot span structural plate bottomless arch bridge, concrete strip footings and retaining walls. The project is proposed to begin in early summer 2012, requiring approximately three months to complete the work, and will be accomplished using similar stream diversion methods, and best management practices (BMPs) to reduce impacts, as the water main project.

The contribution of noise and of dust from equipment and vehicle emissions during installation of the water main would not result in a measurable contribution to cumulative impacts on air quality to greenhouse gases, or to climate change.

Due to the limited scope of the work and the proposed mitigation (see description of the Proposed Action), project impacts are not expected to contribute a measurable amount to cumulative effects.

PUBLIC INVOLVEMENT

FEMA is the lead federal agency for conducting the NEPA compliance process prior to deciding whether to fund the road relocation project. As the lead agency, FEMA prepares NEPA documents, responds to any public comments, meets the spirit and intent of NEPA, and complies with all NEPA provisions. A scoping notice was sent to agencies, tribes, and local interested parties on July 27, 2011. The letter provided a description of the proposed project and requested comments on the alternatives and potential effects of the project. One comment from Washington State Fish & Wildlife was received regarding resident cutthroat trout in Clark Creek and the subject was addressed in the Draft EA.

The public will have the opportunity to comment on the Draft EA for 30 days after the publication of the public notice. The notice identifies the action, location of the proposed site, participants, location of the Draft EA, and who to write to to provide comments. FEMA will review written comments and revise the Final EA, as appropriate.

CONCLUSION

This Draft EA evaluated the potential environmental effects of the Proposed Action and alternatives. Based on findings to date, if the Proposed Action were implemented with the mitigation measures, best management practices, and conservation measures identified in this Draft EA and conditions of other agency approvals, no significant environmental impacts were identified that would warrant the need to prepare an environmental impact statement (EIS).

LIST OF PREPARERS

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Aaron Fogel, FEMA, Region X, Archaeologist

AGENCIES AND PERSONS CONSULTED

City of Longview

Jeff Cameron, P.E., Public Works Director
Amy Blain, P.E., Civil Engineer

Tribes

Confederated Tribes of the Chehalis
Cowlitz Indian Tribe
Confederated Tribes of the Grand Ronde
Nisqually Indian Tribe of the Nisqually Reservation
Shoalwater Bay Tribe

Washington Department of Archaeology and Historic Preservation

Allyson Brooks, PhD, State Historic Preservation Officer

Washington Department of Fish & Wildlife:

Steve West, Region 5, Habitat Program

Washington Emergency Management Division

Gary Urbas, Deputy State Coordinating Officer
Jill Nordstrom, Regional Public Assistance Supervisor

REFERENCES

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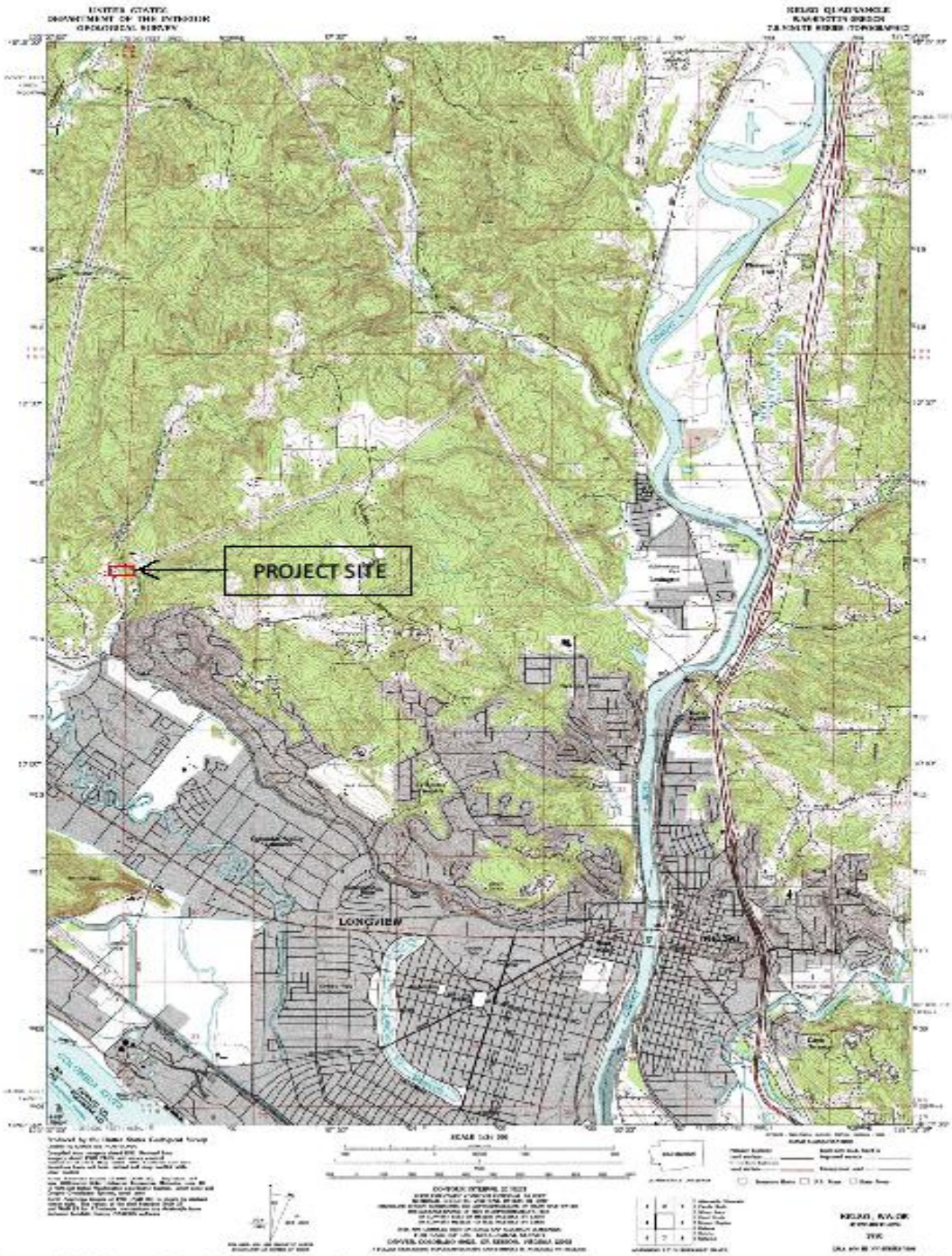
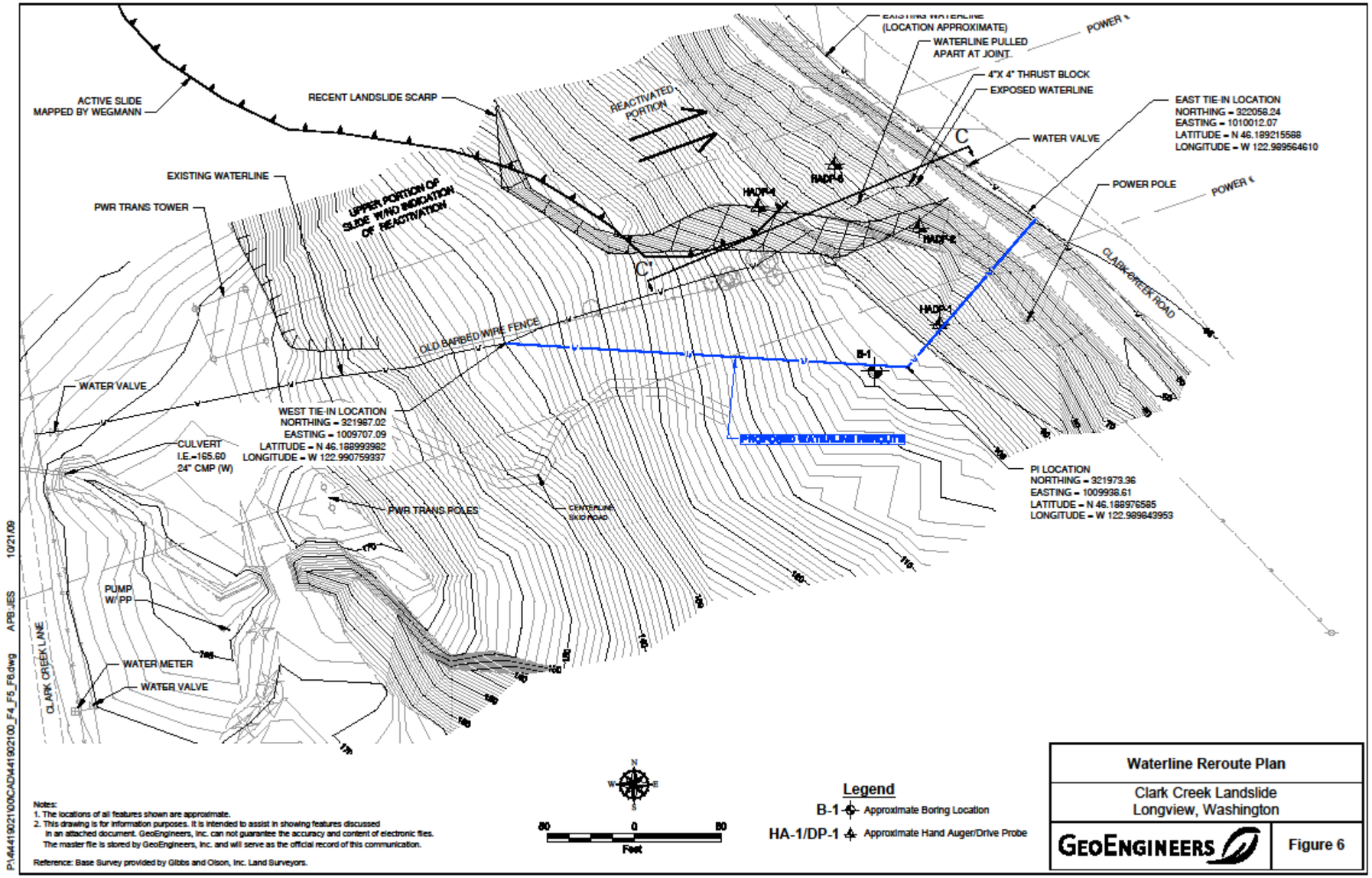
ATTACHMENT 1



Clark Creek Water Main Relocation EA July 7, 2011


ACTIVE SLIDE MAPPED BY WEGMANN
RECENT LANDSLIDE SCARP
REACTIVATED PORTION
EXISTING WATERLINE (LOCATION APPROXIMATE)
WATERLINE PULLED APART AT JOINT.
4"X 4" THRUST BLOCK
EXPOSED WATERLINE
WATER VALVE
EAST TIE-IN LOCATION
NORTHING = 322058.24
EASTING = 1010012.07
LATITUDE = N 46.189215588
LONGITUDE = W 122.989564610
POWER POLE
POWER
EXISTING WATERLINE
PWR TRANS TOWER
UPPER PORTION OF SLIDE W/NO INDICATION OF REACTIVATION
HADP-1
HADP-2
HADP-3
C
C'
CLARK CREEK ROAD
OLD BARBED WIRE FENCE
B-1
WATER VALVE
WEST TIE-IN LOCATION
NORTHING = 321987.02
EASTING = 1009707.09
LATITUDE = N 46.188993982
LONGITUDE = W 122.990759337
CULVERT
I.E.=165.60
24" CMP (W)
PROPOSED WATERLINE REROUTE
PI LOCATION
NORTHING = 321973.36
EASTING = 1009938.61
LATITUDE = N 46.188976585
LONGITUDE = W 122.989643953
PWR TRANS POLES
CENTERLINE SKID ROAD
PUMP W/PP
WATER METER
WATER VALVE
CLARK CREEK LANE
P:\44190210\0CAD\44190210_F4_F5_F6.dwg APB JES 10/21/09
Notes:
1. The locations of all features shown are approximate.
2. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers, Inc. can not guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication.
Reference: Base Survey provided by Gibbs and Olson, Inc. Land Surveyors.
N
W
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Feet
Legend
B-1 Approximate Boring Location
HA-1/DP-1 Approximate Hand Auger/Drive Probe
Waterline Reroute Plan
Clark Creek Landslide
Longview, Washington
GEOENGINEERS
Figure 6

LISTED AND PROPOSED ENDANGERED AND THREATENED SPECIES AND CRITICAL HABITAT; CANDIDATE SPECIES; AND SPECIES OF CONCERN IN COWLITZ COUNTY AS PREPARED BY THE U.S. FISH AND WILDLIFE SERVICE WASHINGTON FISH AND WILDLIFE OFFICE (Revised August 2, 2011)

LISTED

Bull trout *(Salvelinus confluentus)* – Coastal-Puget Sound DPS
Columbian white-tailed deer *(Odocoileus virginianus leucurus)*
Gray wolf *(Canis lupus)*
Marbled murrelet *(Brachyramphus marmoratus)*
Northern spotted owl *(Strix occidentalis caurina)*

Major concerns that should be addressed in your Biological Assessment of project impacts to listed animal species include:

1. Level of use of the project area by listed species.
2. Effect of the project on listed species' primary food stocks, prey species, and foraging areas in all areas influenced by the project.
3. Impacts from project activities and implementation (e.g., increased noise levels, increased human activity and/or access, loss or degradation of habitat) that may result in disturbance to listed species and/or their avoidance of the project area.

Sidalcea nelsoniana (Nelson's checker-mallow)

Major concerns that should be addressed in your Biological Assessment of project impacts to listed plant species include:

1. Distribution of taxon in project vicinity.
2. Disturbance (trampling, uprooting, collecting, etc.) of individual plants and loss of habitat.
3. Changes in hydrology where taxon is found.

DESIGNATED
Critical habitat for bull trout
Critical habitat for the marbled murrelet

PROPOSED
None

CANDIDATE
North American wolverine *(Gulo gulo luteus)* – contiguous U.S. DPS

SPECIES OF CONCERN
Bald eagle *(Haliaeetus leucocephalus)*
Cascades frog *(Rana cascadae)*
Coastal cutthroat trout *(Oncorhynchus clarki clarki)*
Columbia torrent salamander *(Rhyacotriton kezeri)*
Larch Mountain salamander *(Plethodon larselli)*
Long-eared myotis *(Myotis evotis)*
Long-legged myotis *(Myotis volans)*
Northern goshawk *(Accipiter gentilis)*
Northwestern pond turtle *(Emys (= Clemmys) marmorata marmorata)*
Olive-sided flycatcher *(Contopus cooperi)*
Pacific lamprey *(Lampetra tridentata)*
Pacific Townsend's big-eared bat *(Corynorhinus townsendii townsendii)*
Peregrine falcon *(Falco peregrinus)*
River lamprey *(Lampetra ayresi)*
Tailed frog *(Ascaphus truei)*
Valley silverspot (butterfly) *(Speyeria zerene bremeri)*
Van Dyke's salamander (*Plethodon vandykei*)
Western toad *(Bufo boreas)*
Cimicifuga elata (tall bugbane)

The following conditions and measures shall be followed:

- The applicant shall obtain all required local, state, and federal permits and approvals prior to implementing the Proposed Action Alternative and comply with any and all conditions imposed.
- The applicant is responsible for selecting, implementing, monitoring, and maintaining best management practices to control erosion and sediment, reduce spills and pollution, and provide habitat protection.
- Any change to the approved scope of work will require re-evaluation for compliance with NEPA and other laws and Executive Orders.
- In the event that archaeological or historic materials are discovered during project activities, work in the immediate vicinity should be discontinued, the area secured, and the State, affected Tribe, and FEMA notified.

STATE OF WASHINGTON

DEPARTMENT OF ARCHAEOLOGY & HISTORIC PRESERVATION

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August 23, 2011

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

RE: Clark Creek Water Main Relocation Project
FEMA# *: DR-1671-WA*
Log No: 082311-04-FEMA

Dear Mr. Eberlein:

Thank you for contacting our Department. We have reviewed the material you provided for the proposed City of Longview Clark Creek Water Main Relocation Project, Cowlitz County, Washington.

We concur with your 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

DEPARTMENT OF ARCHAEOLOGY & HISTORIC PRESERVATION

PUBLIC NOTICE

Federal Emergency Management Agency
Draft Environmental Assessment
Water Main Relocation
City of Longview
Cowlitz County, WA

The U.S. Department of Homeland Security's Federal Emergency Management Agency (FEMA) proposes to provide funds to the City of Longview (the City) to relocate a portion of a water main that was damaged by a landslide during a storm event in the winter of 2006.

FEMA prepared a Draft environmental assessment (EA) for the proposed project pursuant to the National Environmental Policy Act (NEPA) and FEMA's implementing regulations found in 44 Code of Federal Regulations (CFR) Part 10. The EA evaluates project alternatives and compliance with applicable environmental laws and Executive Orders #11990 (Protection of Wetlands), #11988 (Floodplain Management), and #12898 (Environmental Justice). The alternatives evaluated in the EA are the (1) No Action; and (2) Proposed Action (or Preferred Alternative) toward which FEMA would contribute funding, and 3) Other Alternatives Considered but not carried forward in the analysis.

A landslide above the west bank of Clark Creek caused several sections of 10-inch diameter water main to separate and dislodge due to slide movement, damaging approximately 250 lineal feet of unrestrained ductile iron pipe. The water main is an inter-tie in the distribution system which connects water mains on Clark Creek Lane and Clark Creek Road, and helps to boost system pressure farther out in the system. Emergency water service was installed to temporarily restore domestic water service to the affected residents but fire hydrants at the end of Clark Creek Road remain out of service due to inadequate water pressure.

A new 10-inch water main needs to be installed to permanently repair the damage and restore the City's distribution system to pre-disaster capacity. Approximately 22 residences on Clark Creek Road above the location of the inter-tie are impacted by reduced water pressure and lack of fire flow. The project is located in SE ¼ of Section 12 and the SW ¼ of Section 7, in T8N, R2W of the Willamette Meridian, Cowlitz County. It would span unimproved land (parcel WL1204001) beginning near 150 Clark Creek Lane, continue in an easterly direction over the hillside and cross under Clark Creek then connect with an existing water main along Clark Creek Road.

The Draft EA is available for review online at the FEMA environmental website at: http://www.fema.gov/plan/ehp/envdocuments under Region X. If no significant issues are identified during the comment period, FEMA will finalize the EA, issue a Finding of No Significant Impact (FONSI) and fund the project. Unless substantive comments are received, FEMA will not publish another notice for this project. However, should a FONSI be issued, it will be available for public viewing at http://www.fema.gov/plan/ehp/envdocuments under Region X.

Written comments on the Draft EA should be received no later than 5 pm on October 9, 2011, and sent to Mark Eberlein, Regional Environmental Officer, FEMA Region 10, 130 228th Street SW, Bothell Washington 98021-9796 or by e-mail at mark.eberlein@dhs.gov.