



Incident Report

Bucklin Hill Bridge Project Sewage Spills Silverdale, WA 19 August 2015

Date of Incident 1: 30 July 2015

Date of Incident 2: 4 August 2015

Executive Summary

Kitsap County Public Works is executing a bridge construction project on Bucklin Hill Road across the Clear Creek estuary in Silverdale, WA. The project includes extensive utility relocation work, including a 14" ductile iron sanitary sewer force main. In two separate incidents, construction activity resulted in non-permitted discharges of sewage into the Clear Creek estuary and Dyes Inlet.

Granite Construction, under contract with Kitsap County as the prime contractor for the bridge project, is the responsible party for all construction activity on the project site. Granite Construction and its subcontractors were performing utility work that led to both non-permitted discharge incidents. They are responsible for the incidents, required cleanup and repairs, and all costs incurred by Kitsap County.

Kitsap County Public Works staff and Granite Construction submitted the required incident notification to the Kitsap County Public Health District, the Washington State Department of Ecology (DOE), the Washington State Department of Emergency Management, and the National Response Center. The Health District issued health advisories for all of Dyes Inlet and the Port Washington Narrows that lasted from July 30th through August 11th. These health advisories were lifted when marine water testing indicated it was safe for human contact and shellfish consumption.

Kitsap County Public Works has directed that Granite Construction place additional control measures on all construction activity related to on-site utilities. Control measures include pre-planning meetings for each phased activity, completing a pre-excavation checklist prior to any work, remarking any utility location marks that have been disturbed, and providing additional hand excavation and spotters when necessary.

Kitsap County Public Works will also provide additional on-site construction inspection staff during critical activities and ensure appropriate utility coordination with county





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sewer staff as well as with all third-party utilities. Kitsap County Public Works met with Granite Construction project management concerning each incident, made it clear that these incidents demonstrate an unacceptable standard of performance that must be corrected, and clarified responsibilities for project safety and oversight. Granite Construction took responsibility for both incidents and committed to heightened diligence on the project site.

Incident 1

Description: 30 July 2015; Estimated discharge of 40,000 gallons

Granite Construction was removing an existing stormwater drain that was adjacent to a 14" ductile iron sanitary sewer force main. The 30 July incident was caused by a contractor's excavator bucket striking the sewer force main and causing a 2-3" hole. The location of the sewer force main was fully known and clearly marked by the County. The contractor responsible for the action was also fully aware of the location of the sewer force main. The contractor that was executing the demolition work on the stormwater structure judged that there was sufficient clearance from the sewer force main to complete the activity. That judgement was in error and during the course of executing the work the operator struck the sewer pipe with the excavator bucket.

Granite Construction is fully responsible for this incident and its impacts, including associated costs to the County.

Response:

The Public Works response to incident 1 is outlined in the sewer utility official report to the WA DOE Permit Manager, dated 7 August 2015, and attached as enclosure 1. County staff was first notified of the spill at 2:58 pm and responded immediately. County staff shut down pump stations, mobilized tanker trucks to haul sewage past the break point, controlled flows on both sides of the break point, and completed repairs to the punctured sewer force main. County staff completed the repair by 5:52 pm, pressurized the system to inspect for leaks, and returned the system to normal operation by 7:23 pm.

Granite Construction used its qualified environmental spill response subcontractor to direct the cleanup operation on the project site and conduct tests for any on-site contamination.





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Incident 2

Description: 4 August 2015; Estimated discharge of 16,000 gallons

The second incident on 4 August was the result of a planned construction sequence to create a bypass of the sewer main to remove a section of the line within the construction area. Granite Construction's subcontractor placed mechanical line stops in the sewer main in order to create the bypass. County sewer utility staff assisted in preparing for the operation by shutting down pump stations and holding flows during the line stop installation.

The line stops are a typical construction apparatus used for stopping or diverting flow in an operating line. Once Granite Construction had the line stops installed, County staff returned the system to operating pressure and flows were diverted into the temporary bypass. Granite Construction drained the bypassed section via pump truck for disposal and removed a portion of the pipe for installation of permanent gate valves. Once the permanent valves were installed, the line stops could be removed and the valves would hold the flow. Shortly after the pipe was cut for installation of the permanent gate valve, the line stop failed, allowing the discharge. Public Works has not determined the cause of the line stop failure. Marking and scoring on the rubber seal of the line stop indicate that it may have rolled under the backing plate.

Granite Construction chose the line stop procedure and is fully responsible for this incident and its impacts, including costs to the County.

Response

The Public Works response to incident 2 is outlined in the sewer utility official report to the WA DOE Permit Manager, dated 11 August 2015, and attached as enclosure 2. County staff supporting the bypass installation departed the site at approximately 9:50 am when the pressure test showed the line stops to be operational, but was called back by the contractor by 10:15 am, reporting the partial failure of a line stop and requesting assistance to control flows.

County staff responded immediately to the pump stations to control flows and shut down pumping operations. County staff observed that the spill into the estuary began at approximately 10:40 am and initiated spill protocol. County staff was hauling in tanker trucks to bypass the spill point by 11:45 am with additional contracted tanker trucks required to meet the flow demands. County staff was able to match hauling capacity to





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influent flows by 12:25 pm, stopping the discharge by 1:00 pm. Granite Construction then installed the permanent gate valves, removing the line stops by 6:00 pm and establishing flows through the bypass. County staff then returned the pump stations to normal operations and brought the system up to operating pressure. All valves and connection points were inspected for leaks or other problems. County staff departed once the system was confirmed to be safe to sustain operations at 6:45 pm.

Granite Construction used its qualified environmental spill response subcontractor to direct the cleanup operation on the project site and conduct tests for any on-site contamination.

Notifications

The Public Works Sewer Utility Operations and Maintenance Supervisor responded to both incidents and directed sewer utility operations to mitigate impacts to the extent possible. In accordance with County spill protocol, the Operations and Maintenance Supervisor notified the Washington State Department of Health-Shellfish, Kitsap County Public Health District, and DOE. Public Health District staff responded to inspect on-site conditions and released Public Health Advisories in response.

Granite Construction also notified WA Department of Emergency Management and the National Response Center which in turn notified all appropriate Federal and State Agencies with an interest in the incidents.

Kitsap County Public Works provided the official reports of each incident to the Department of Ecology permit manager in accordance with the County's sewer utility discharge permit under the National Pollutant Discharge Elimination System (NPDES). As the State agency overseeing NPDES permits, WA DOE has the authority to evaluate and require corrective measures as a result of non-permitted discharges such as these two incidents. WA DOE also holds the authority for determining any further sanctions, corrective requirements, or fines.

Corrective Actions

Kitsap County Public Works is directing the following actions to address issues found to be contributing factors to these two incidents.

The on-site project management team from Public Works, Exeltech construction management, and Granite Construction will hold pre-planning meetings prior to





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significant construction activity involving or adjacent to any utility on site. The purpose of the meetings is to review the scope of work, analyze any risk to utilities, and place controls to avoid any further incidents.

Granite Construction will implement and complete a daily Pre-excavation Checklist to review all utility locations in vicinity of excavation work and inform the operators of required actions to avoid impacting the utilities. (Enclosure 3)

Granite Construction is reaffirming utility locates and completing any additional potholing to confirm location and elevation of existing utilities.

Granite Construction will use hand excavations to fully expose and physically mark any live utilities that are relatively close to newly installed work. Granite will also use this information to select appropriate equipment to execute work.

County Public Works will add construction inspection staff to the current on-site inspection team during periods of significant construction activity or increased exposure of risk to utilities or other critical items of work.

Public Works Sewer Utility construction management staff will attend on-site construction progress meetings to monitor construction activity, provide information on sewer utility structures and operations impacted by the project, and coordinate any activity that may impact the sewer utility.

Granite Construction installed secondary thrust blocking on the sewer force main gate valves while the Engineer of Record reaffirmed calculations that the installed reverse thrust blocks were appropriate for the load to prevent movement of the temporary bypass system caused by flow energy. No further line stops will be used on the project.

Granite Construction will place additional sediment and erosion control measures throughout the project site and in the construction laydown yard to limit any site sediment discharges. County staff will monitor the integrity of the system to ensure constant maintenance and adjustment as necessary.

Contractual responsibility for the incidents

The County's contract with Granite Construction places full responsibility for the construction site and related activity with the contractor, Granite Construction. In accordance with Washington code, the contractor "holds harmless" the County, leaving





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liability for claims and fines on the contractor. The County's own additional measures taken to avoid further incidents does not constitute an admission of liability or fault by the County and has no effect upon the Contractor's liability for these two incidents.

Bucklin Hill Bridge project primary objectives

The primary purpose of the Bucklin Hill Bridge project is to provide roadway capacity. The estuary restoration, bike and trail amenities are a secondary benefit.

Widening between Silverdale Way and Tracyton has been a high priority on the Capital Facilities Plan capacity list since the early nineties. The current improvements between Blaine and Mickelberry (new bridge, utilities, and environmental restoration) are a phase of the larger project, arguably the most complex phase.

The Bucklin Hill project was widely endorsed by the Central Kitsap Community Council and community at large. The project was initiated in 1994 when Kitsap County completed an environmental study for the corridor improvements. By 2002, Public Works completed a design report for widening Ridgetop between Silverdale Way and SR 303. The Ridgetop Blvd widening is a very complex and costly project that also involves a bridge over Clear Creek. The Ridgetop Blvd project also poses significant right of way and access management challenges. Public Works continues to evaluate requirements along Ridgetop Blvd, considering that the upcoming Harrison Medical Center improvements to Ridgetop Blvd will increase capacity. However, additional work on Ridgetop Blvd may be needed in the future.

Kitsap County Public Health District actions

The Health District posted health advisories on all public beaches along Dyes Inlet and Port Washington Narrows beginning on July 30th and extended them until August 11th. The healthy advisory recommended no human or pet contact with the water and no shell fishing activity for the duration of the advisory.

The length of public health advisories issued after the sewage spills into Dyes Inlet are based on computer model predictions created by the Navy under project ENVVEST, and guidance from the Washington State Department of Health.

After a sewage spill, there is an increased risk of illness when people or pets are exposed to bacteria, viruses, or other pathogens during recreational water activity or consumption of shellfish. The bacteria tend to die off within a few days, but viruses can





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survive for a longer period of time in the marine environment. After 7 days, the bacteria and viruses from a sewage spill should be gone from the water, and shellfish purged of remaining pathogens. Based on what the Health District knows, this period of time is ample to protect public health.

As an additional step, the Health District collected water samples from public beaches in Dyes Inlet on Monday, August 10th. The Health District lifted the advisory on August 11th as a result of satisfactory test results.

Conclusion

Kitsap County Public Works is deeply concerned by the impacts of the two incidents on the local natural environment as well as the citizens of Kitsap County. Public Works strives to execute all work in compliance with all applicable laws, best management practices for construction activities, and within a mind-set for responsible public service. Public Works leadership and staff will continue to closely monitor and direct all activity on the construction site.

Authorized by:

Andrew B. Nelson, P.E.
Director

