

# Kenmore Interceptor Proviso Response



**King County**

Department of  
Natural Resources and Parks  
**Wastewater Treatment  
Division**

# KC Ordinance 18835

## Proviso P2

Requested that a report be prepared and submitted to Council that included a discussion of:

- The design and placement of the Kenmore Interceptor and efforts to avoid silt accumulation
- Silt accumulation beneath and around interceptor
- Impacts of silt accumulation on water fauna
- Analysis of interruption of sediment distribution from streams discharging to the Lake



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# Background

The 48-inch Kenmore Interceptor (Lake Line) was constructed in 1964.

Pipeline conveys wastewater from the Kenmore area south to the Matthews Beach Pump Station and the West Point Treatment Plant.

Section 2 of the pipeline is installed beneath the lakebed of Lake Washington between 75 and 200 feet offshore and 8-12 feet below water level.



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# Study Area





# How did WTD undertake Proviso response?

- Reviewed 2011 Kenmore Lake Line Sedimentation Analysis – October 2011
- Researched historical information
- Retained Environmental Science Associates (ESA) to review previous report and conduct additional Analysis
- Conducted remote operated vehicle survey of lake bed
- Conducted bathymetric survey



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# What did we find?

## Historical Information:

- 48-inch pipe was installed within a concrete casing that is pile supported
- Design drawings indicate the casing was installed within a trench that was dug into the lake bed
- Trench may have been backfilled or allowed to fill in naturally

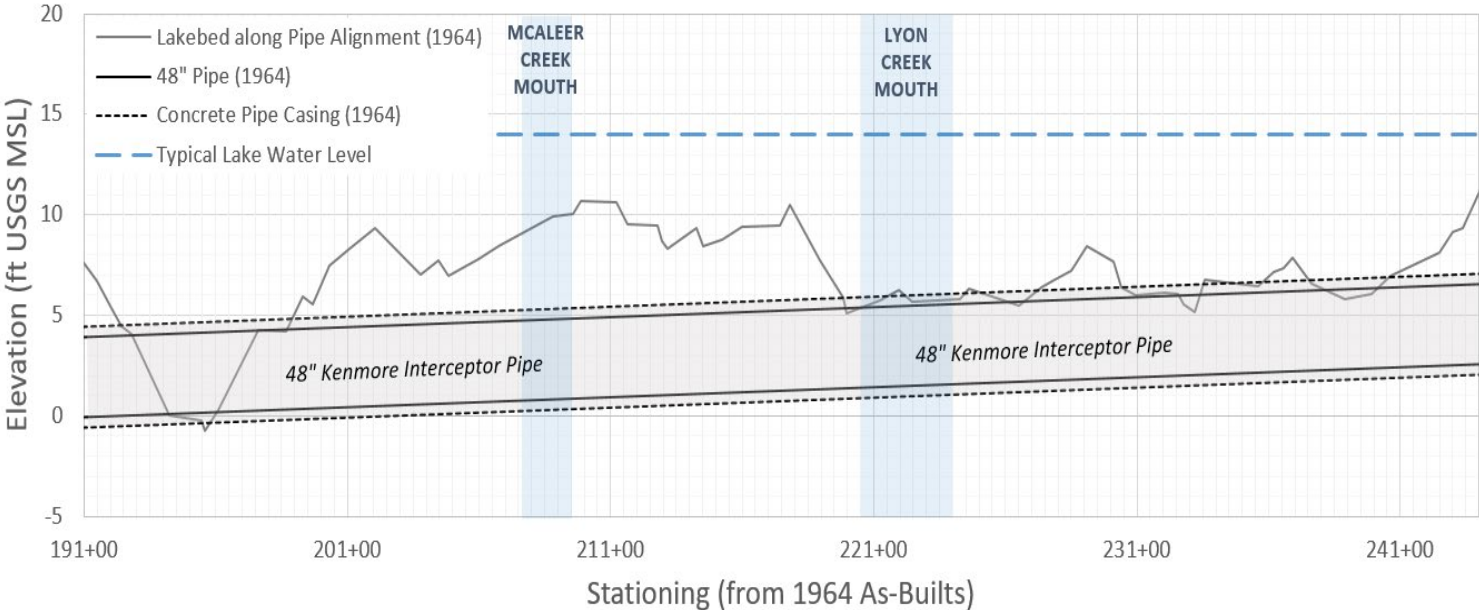


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# Schematic of lake bed contour based on 1964 drawings (not to scale)

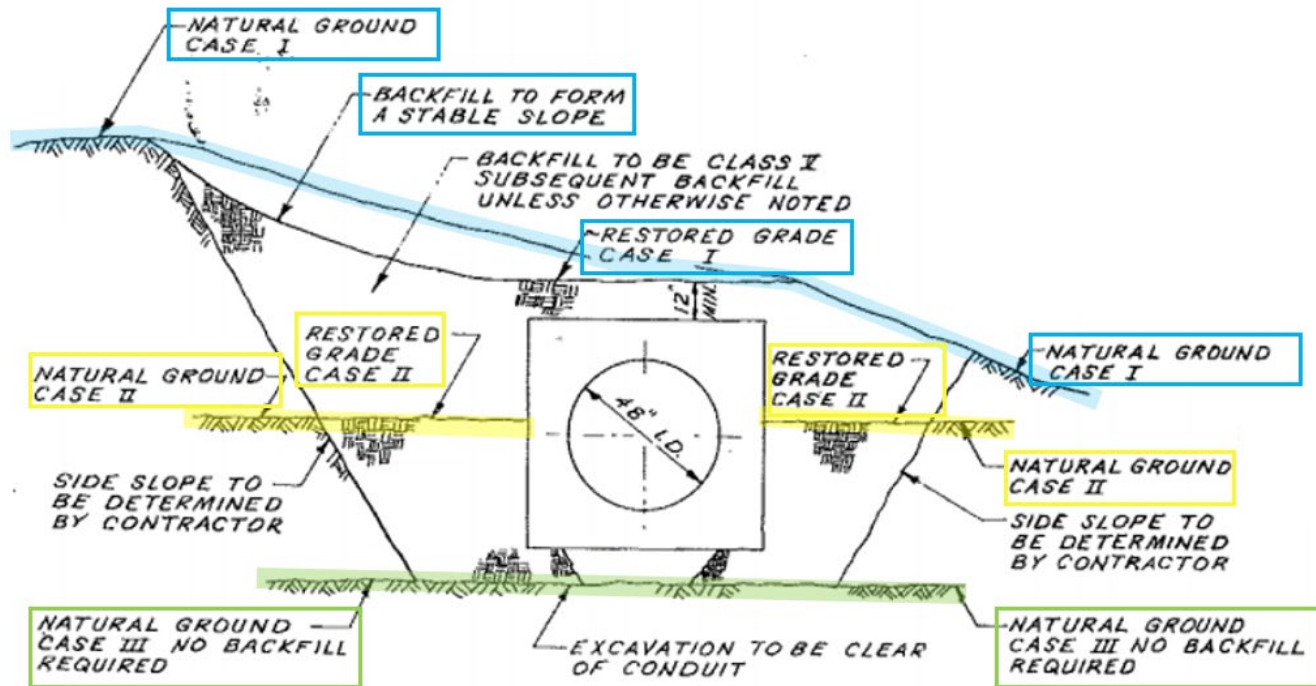


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# Original Schematic of Installation methods (1964)



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# Silt Accumulation Beneath and Around Lake line

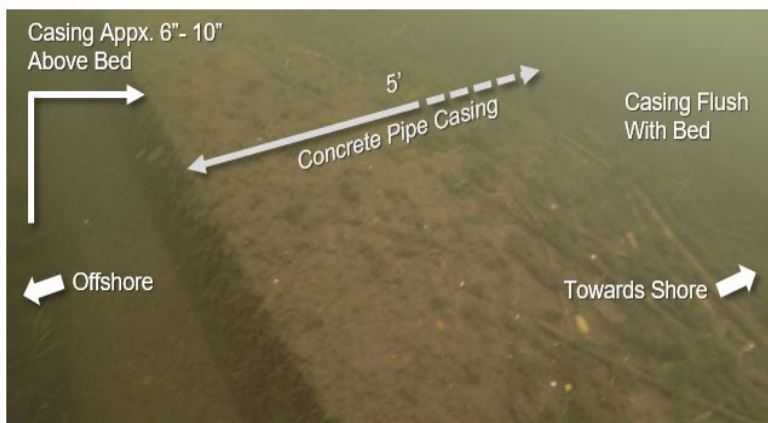
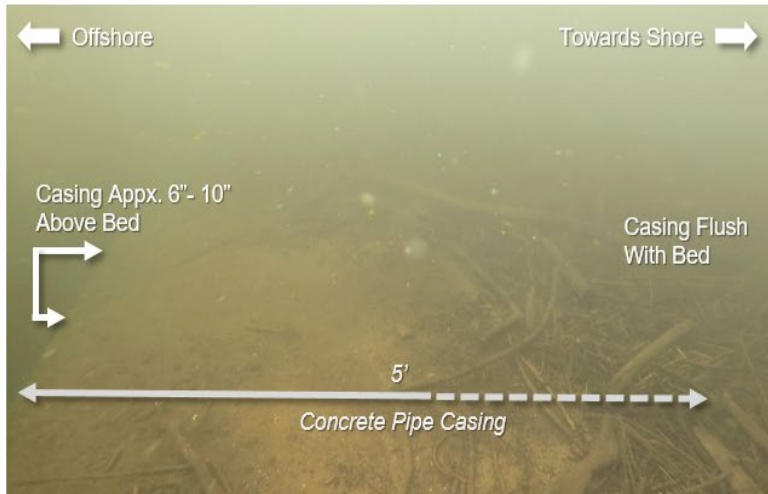
- Current conditions show lake line in the study area is 80% buried beneath lake bed; in remaining 20% of study area it is exposed by up to 10 inches
- Analysis showed minimal impact on downslope transport of sediment due to exposed casement
- In areas of exposed casement there is minimal difference in sediment accumulation between upslope and downslope sides



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# Impact of Sediment Accumulation on Water Fauna

- Numerous fish species in area. Salmon species in Lake Washington include Chinook, sockeye, coho and steelhead
- Lake Washington is an important migratory corridor for all salmonids produced in the watershed
- Lake line does not present a barrier to migration of fish since it is mostly buried
- In exposed areas fish can swim over and across



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# Analysis of Interruption of Sediment Distribution from Streams

- Two streams discharge into Lake Washington in the study area – McAleer and Lyon
- Analysis showed sediment accumulation in study area due mainly to deposition from streams; presence of milfoil that prevents sediment transport into deeper water; wind and wave processes of Lake Washington
- Study area is in an area of net sediment accumulation due to these processes



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# Conclusions

Sedimentation processes in the nearshore of the study area are not significantly affected by the presence of the Lake line. Sedimentation is mostly a result of:

- Sediment transport by area streams
- Thick stands of Eurasian watermilfoil in area
- Wind and wave processes at north end of Lake

Current condition of the Lake line beneath the lake bed or slightly above does not impact fish migration.



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# Questions?

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