## STAFF REPORT

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| **Agenda Item:** | 8 | **Name:** | Mike Reed |
| **Proposed No**.: | 2020-0162 | **Date:** | September 2, 2020 |

**SUBJECT**

Proposed Motion 2020-0162 acknowledges receipt of a report regarding the impacts of the Kenmore Interceptor, placed at the north end of Lake Washington, on sedimentation and on fish populations in the lake.

**SUMMARY**

Proviso P2, Section 108 of Ordinance 18835, requires an evaluation of the impact of a section of the Kenmore Interceptor, placed on the nearshore lakebed at the north end of Lake Washington, on silt accumulation and fisheries. The Wastewater Treatment Division, in responding to the requirements of the proviso, retained a consultant to evaluate the impacts of the Interceptor on siltation, and related fisheries impacts. The evaluation and report concluded, in sum, that the Kenmore Interceptor does not affect the processes that limit salmonid survival and migration, and does not contribute in a measureable way to other limiting factors to salmonids in Lake Washington.

Proposed Motion 2020-0162 acknowledges receipt of the report addressing the sedimentation and fisheries impacts of the Kenmore Interceptor.

**BACKGROUND**

In November, 2018, the Council adopted the 2019-2020 Biennial Budget that included a proviso requiring an evaluation of the impacts of a section of the Kenmore Interceptor on silt accumulation near the mouth of local creeks entering the north end of Lake Washington, and potential impacts on anadromous fish passage. Specifically, Proviso P2 in Section 108 of Ordinance 18835, reads:

Of this appropriation, $250,000 shall not be expended or encumbered until the executive transmits a report on the Kenmore interceptor impacts to fish populations and a motion that acknowledges receipt of the report and the motion is passed by the council. The motion should reference the subject matter, the proviso’s ordinance, ordinance section and proviso number in both the title and body of the motion.

The report shall include, but not be limited to: (1) a discussion of the design and placement of Section 2 of the Kenmore interceptor, with particular attention to the placement of the interceptor section and efforts to avoid the accumulation of silt and accommodate the movement of water fauna; (2) a characterization of the silt accumulation beneath and around the Interceptor in the intervening years since its construction; (3) an analysis of the impacts of the silt accumulation on water fauna, with particular attention to the ability of the fauna to freely access the lake environment on both sides of the interceptor, including any potential impacts on the migration of anadromous species; (4) an analysis of the interruption of natural upland soil distribution processes from area streams discharging into the lake in the area of the interceptor Section 2. The report shall additionally address the impacts on the nearshore environment of effectively creating a barrier resulting in functionally separated lake areas. The report shall discuss options to remedy identified impacts as well as associated costs, and recommend appropriate subsequent steps.

**Proviso Response**

In response to the requirements of the proviso, the Wastewater Treatment Division retained Environmental Science Associates (ESA) to evaluate sedimentation in the area of the subject pipeline segment, and associated impacts on fish populations. The study area was identified as that portion of the Kenmore Interceptor between Tracy Owen Station Park and Ballinger Way.

The Kenmore Interceptor conveys wastewater from Bothell, North Creek and Kenmore to the West Point Treatment Plant in Magnolia. The construction of the pipeline was an important element of the regional effort to keep wastewater out of Lake Washington undertaken by Metro as one of its primary regional responsibilities. Section 2 of the Kenmore Interceptor, which is the subject of the proviso language, is a 48-in pipeline that was constructed in the early 1960s, together with the remainder of the pipeline. In the construction process, the pipeline was built within a rectangular precast concrete casement, and placed in a trench excavated along the lakebed, between 75 and 200 feet offshore. The Interceptor is buried by sediment along 80 percent of the study area, and the remaining 20 percent is elevated from the lakebed by no more than ten inches. Recent inspections indicate that the pipe is in good condition, and is capable of providing service for years to come.

**Study Methodology**

The study methodology by ESA included review of the physical processes affecting sediment transport in the study area, an assessment of shoreline change over time, compilation of recent public works projects relevant to sediment transport, assessment of the constructed conditions of the lake line, and review of a 2011 report of an inspection and analysis of the area lakebed intended to address similar issues.

The ESA report identifies areas of the shoreline in the vicinity of Lyon and McAleer creeks where the shoreline appears to be dynamically filling and eroding, affecting sedimentation rates in the area. Historical survey data indicate that there has been substantial accumulation of sediment over the past 120 years; the nearshore has accumulated between one and four feet of sediment over that time, much of it in the late 1800s and early 1900s when logging around the lake and development activities resulted in increased runoff and uncontrolled erosion. The analysis concludes that continued accumulation in the nearshore area has been primarily caused by physical processes, such as sediment transport by Lyon and McAleer creeks, nearshore erosion caused by wind, waves and boat propeller wash, and the trapping of sediment by stands of rooted aquatic vegetation, including Eurasian watermilfoil.

A variety of fish species are present in lake Washington, including several species of native salmon and trout. Species migrating through the Ship Canal and Lake Washington migratory corridor include Chinook, Sockeye, Chum, Coho and Steelhead as well as Bulltrout and Cutthroat Trout.

**Study Conclusions**

According to the ESA report, primary limiting factors to the successful growth and migration of salmonids in Lake Washington include shoreline armoring and development, lack of suitable lakeside vegetation, water quality concerns from stormwater runoff, and the presence of aquatic plants such as Eurasian watermilfoil. The extent of shoreline armoring and overwater structures around Lake Washington has limited natural erosion processes, leading to sediment transport, and has altered out-migrating salmon behavior and introduced cover for salmon predators. The resulting composition of shoreline substrates does not contain habitat suitable to most salmonids. Analysis by ESA indicates that, based on the location of the local segment of the Kenmore Interceptor, primarily below the substrate, and with adequate depth of water over exposed portions of the interceptor casement, the Kenmore Interceptor does not play a significant role in local sediment dynamics and does not represent a migration barrier to fish, which can swim over and across the pipeline unperturbed by any challenge presented by the pipeline. In summary, according to the report, the Kenmore Interceptor does not affect the processes that limit salmonid survival and migration, and does not contribute in a measureable way to other limiting factors to salmonids in Lake Washington.

**Proposed Motion 2020-0162**

Proposed Motion 2020-0162 has been transmitted to the Council and dually referred to the Regional Water Quality Committee and the Committee of the Whole. The proposed motion would acknowledge the receipt of the report addressing the design and placement of Section 2 of the Kenmore Interceptor, and its impacts on sedimentation and fish populations. Passage of the motion by Council would release the withheld $250,000 of the Wastewater Treatment Division’s 2019-2020 biennial budget authorization.

**INVITED**

* Katherine Fischer, Environmental Programs Managing Supervisor, Wastewater Treatment Division

**ATTACHMENTS**

1. Proposed Motion 2020-0162
   1. Attachment A: Kenmore Interceptor Report, March 2020
2. Transmittal Letter dated March 26, 2020
3. Wastewater Treatment Division’s Key Findings