Issues
The issues identified during a site visit on April 29, 2013 centered on erosion of the steep gravel access road to the landing. Gravel is washing off the road and traveling down steep slopes of a ravine to the adjacent Gilbertson's Creek. A portion of the runoff flows down the hill and erodes the landing and parking areas in certain areas. The resulting gullies and rills in the roadway continue to deliver sediment to Gilbertson's Creek and the St. Croix River, and require constant maintenance – which involves adding more gravel material, that is subsequently washed out in the next storm event.

This continuous cycle of erosion and repair have led to a visible trail of sediment leading from the roadway into Gilbertson's Creek. The steepness and length of the access road’s slope, class V gravel material of the drive, and relatively high summer weekend traffic create a difficult problem in a high quality natural and recreational setting.

Concept Design Solution
This highly complex site will require additional investigation and engineering design to provide greater detail to the proposed solution. However, the attached feasibility study graphic and cross section illustrate a general approach that rebuilds the cross section of the road in order to slope it away from the steep ravine to the south. The road grade would direct water into curb and gutter section along the north side of the road with catch basins and pipes collecting and routing runoff to BMP features. A cellular confinement grid would be used to provide a porous parking surface adjacent to the road, incorporating clean gravel or vegetation. Siting BMPs in the landscape will be difficult and require additional data gathering and analysis, however, two BMPs could be integrated into City owned property adjacent to the road including:

A. A linear, infiltration feature halfway down the slope. Concept linear nature would minimize damage to mature trees. Overflow could be dispersed across the slope and be allowed to soak into downslope areas or routed back to the roadway.

B. A biofiltration facility located in the existing “no parking” area at the bottom of the hill. A drive lane would be preserved to allow vehicles to pull forward and align trailers before backing down the boat landing ramp. Overflow and filtration outlet would be in a controlled outlet to the river.

Both facilities would require pretreatment infrastructure that would collect sediment, deliver runoff in a controlled manner, and provide easy access for maintenance. Utilizing two facilities helps split the watershed treatment area into two manageable segments. If only one facility was provided at the bottom of the road, it would be exposed to a significant volume and velocity of runoff due to the road’s steepness and length. This would require significant infrastructure to control and treat the runoff.

Additionally, some regrading and stabilization measures near the boat ramp would correct existing erosion issues. However, these issues are minor compared to the roadway erosion problems.
The attached graphic and cross section provide a graphical representation of the design approach for the Loghouse Landing. A preliminary estimate of probable cost to stabilize the Loghouse Landing, pave 205th Avenue North with a stabilized parking lane, and implement rate and water quality treatment BMPs discussed above is approximately $170,000.
Loghouse Landing Feasibility Study

May 9, 2013
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