



Duprez Ravine Stormwater Bypass System City of White Rock

Duprez Ravine is one of a few significant watercourses through the City of White Rock. A mud flow from this ravine was the contributing factor to the costly and highly publicized flooding that occurred along Marine Drive in June 1999. Urban Systems was retained to develop a solution to this problem. The primary challenge in this design was accommodating the 4 m³/s design flow under supercritical flow. A number of options were reviewed, including both high flow bypasses and reconstructing the channel itself to manage the flows. It was determined that the practical approach was to divert the high flows out of the channel and reconstruct the channel for low flows only. The high flow bypass consists mainly of a 600 meter long, 1000 mm – 1200 mm diameter fused HDPE pipe, with some associated concrete storm sewer and chambers. The profile of the bypass reached 45 percent grade, with flow velocities of 17 m/s. Therefore, the system includes a cast-in-place concrete chamber 3 m x 4 m x 12 m in dimension to absorb the hydraulic jump at the downstream end, for which a 1:10 scale physical model was assessed in the UBC hydraulics lab as part of the design process. **Construction was successfully completed in the summer of 2004 and in 2005 it received an Award of Merit from the Consulting Engineers of BC.**



client
City of White Rock

project
Duprez Ravine Stormwater
Bypass System

services
Evaluation, Design and
Construction

year
2004

file
6.1325.0030.02

KEY PERSONNEL

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SCHEDULE

2002 – 2004