



**AWARD OF MERIT**  
2005 AWARDS OF ENGINEERING EXCELLENCE

**DUPREZ RAVINE STORMWATER BYPASS,  
CITY OF WHITE ROCK**

**URBAN SYSTEMS®**  
PLANNERS • ENGINEERS • LANDSCAPE ARCHITECTS



ON JUNE 8, 1999

A RECORD SETTING STORM FELL ON THE CITY OF WHITE ROCK AND SOUTH SURREY. THE EVENT CAUSED A DEBRIS FLOW IN THE DUPREZ RAVINE CLOGGING A MAJOR STORMWATER INLET, RESULTING IN EXTENSIVE FLOODING ALONG THE NORMALLY PICTURESQUE MARINE DRIVE - AN EVENT WIDELY PUBLICIZED BY THE LOCAL MEDIA.

FOLLOWING THIS EVENT, EROSION SENSITIVITY IN DUPREZ RAVINE REMAINED HIGH, PRESENTING CONTINUED RISK TO BOTH ADJACENT AND DOWNSTREAM PROPERTIES UNDER ALL MODERATE TO EXTREME STORM EVENTS.

URBAN SYSTEMS LTD. WAS RETAINED AS THE PRIME CONSULTANT BY THE CITY OF WHITE ROCK TO ANALYZE, EVALUATE, DESIGN, AND OVERSEE THE CONSTRUCTION OF A SOLUTION TO REDUCE THE RISK AND OCCURRENCE OF EROSION IN THE RAVINE. NO SPECIFIC SOLUTION WAS PRE-DEFINED BY THE CITY. THE CITY'S EXPECTATION WAS FOR URBAN SYSTEMS TO DEVISE A SOLUTION WITH PRIMARY CONSIDERATIONS FOR ENVIRONMENTAL STABILIZATION AND RESTORATION AND RISK REDUCTION.



THE PREPARED SOLUTION INVOLVED A 600 METER LONG HIGH FLOW BYPASS SYSTEM PROVIDING SAFE BASE FLOWS TO ENTER DUPREZ RAVINE. WHILE DESTRUCTIVE HIGH FLOWS ARE DIVERTED AROUND, REJOINING THE EXISTING TRUNK STORM SEWER AT THE FOOT OF THE RAVINE. THE SPECIFIC INTEREST OF THIS PROJECT LIES IN ITS DESIGN PROCESS, SITE COMPLEXITIES, SYSTEM CONFIGURATION AND MATERIAL SELECTION.

**PROJECT TEAM:**

- OWNER - CITY OF WHITE ROCK (CO-FUNDED BY THE CITY OF SURREY)
- PRIME CONSULTANT - URBAN SYSTEMS LTD.
- SUB-CONSULTANTS:
- GEOTECHNICAL - THURBER ENGINEERING LTD.
- HYDRAULIC SPECIALIST - DR. MICHAEL QUICK, UBC
- STRUCTURAL - KRAHN & ASSOCIATES ENGINEERING LTD.
- ENVIRONMENTAL - JACQUES WHITFORD ENVIRONMENTAL LTD.
- PRIME CONTRACTOR - WESTPRO CONSTRUCTORS GROUP.



AWARD 2005



Consulting  
Engineers  
of British Columbia