



# Corporate Report

NO: R155

COUNCIL DATE: July 24, 2006

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## REGULAR COUNCIL

TO: Mayor & Council DATE: July 14, 2006  
FROM: General Manager, Engineering FILE: 4806-307  
SUBJECT: Elgin Creek Base Flow Augmentation Project and Lower Chantrell Creek  
Re-alignment Project - Project Update

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## RECOMMENDATION

The Engineering Department recommends that Council:

1. Receive this report as information.
2. Authorize staff to continue with exploring the feasibility of the Elgin Base Flow Augmentation Project, seek funding partners for the project, and report back to Council on the matter.

## INTENT

To inform Council of the pertinent issues and current project status for both the Elgin Creek Base Flow Augmentation Project, and the Lower Chantrell Creek Realignment Project.

## BACKGROUND

The City of Surrey is committed to maintaining, enhancing, and restoring fisheries habitat throughout the City in our 1,500 km of open water systems. Large capital construction projects include improvements to fisheries habitat where possible. Often, these are in conjunction with Drainage or Road Capital Projects. Some of the notable successes in the last few years include:

- Robson Creek Day Lighting Project – involved removing an old culvert section of Robson Creek and constructing spawning and rearing salmon habitat – Completed 2005;

- Hunt Brook Stability Project – involved stabilizing a stream bank and rebuilding the channel and construction of off channel habitat for fisheries;
- Guildford Pond and associated Barrier Removal – construction of a detention system and fisheries pond/wetland. In subsequent years, staff have been working to remove in-stream barriers to allow for fish passage to the pond area;
- Knudson Creek Reconstruction – involved stabilizing the banks, constructing a high flow by-pass and reconstruction of a fisheries creek; and
- Surrey Lake – involved the construction of a lake facility and marsh wetland for flood works but provides for significant fish and wildlife habitat.

This years' projects include:

- Eugene Creek Realignment – involves the realignment of Eugene Creek to a more natural historic path providing for fish passage and access to spawning areas. Construction 2006 - 2007;
- McLellan Creek Culvert Replacement – involves the replacement of an old culvert with one providing better fish habitat and passage – To be constructed 2006;
- Scott Creek Realignment – reconstruction of Lower Scott Creek to provide for enhanced fish habitat – to be constructed 2006; and
- Sam Hill Creek Diversion – involves the construction of a high flow diversion from the main Sam Hill Creek. The diversion channel is considered as fisheries habitat – Construction 2006.

The City has also shown its commitment to salmon habitat preservation through the various environmental initiatives it conducts such as:

- The SHaRP Program – has run from 1996 to date, employing over 300 students in the 11 years to work on fisheries enhancement projects, the City having committed over \$3,000,000 to the program;
- The new Surrey Nature Matters Program (SNAP) – integrating all City environmental programs together, and running a more comprehensive year round initiative to promote environmental values and preservation in Surrey;
- Stream Classification Mapping – Surrey was the first to develop this in Canada leading other municipalities in recognizing fisheries creek within their jurisdiction and developing rules on how to manage those systems;
- Salmon Habitat Inventory Mapping (SHIM Mapping) – Surrey piloted the project with the Ministry of Environment having fully mapped the Little Campbell watershed, Upper Serpentine watershed, and Hyland Creek; and
- Water Quality Monitoring through Benthic Invertebrates – Surrey leads the region in this research and development. The GVRD uses Surrey data to help develop protocols for its integration into the Integrated Stormwater Management Plan (ISMP) process.

As part of our commitment to Salmon habitat, when possible, the City also tries to work with community stream keepers groups on specific projects. Often these are conducted through the SHaRP or SNAP initiatives however some are done as independent projects such as the Elgin Creek base flow augmentation and lower Chantrell Creek realignment. In the last week many questions have been raised regarding those two projects.

## **DISCUSSION**

### **Elgin Creek Base Flow Augmentation Project**

The RESCUE organization has been stewards on this creek system providing significant time and effort into sustaining and enhancing the fisheries values of the creek. They also run an unofficial hatchery near the base of the creek. The creek is primarily ephemeral, and base flows reduce to a trickle most summers. This lack of a year round base flow reduces the habitat value of the creek.

The RESCUE organization has wanted to augment the Elgin Creek base flows for at least eight years now. However, the project could not be advanced unless other funding partners participated to justify the City's involvement. In the fall of 2005, DFO implied it would move funds it was holding for the Lower Chantrell project to the Elgin project. It was at this time that the City committed to advancing the study and possible works.

Elgin Creek Base Flow Augmentation Project was initiated by Surrey staff in the spring of 2006 in response to their possible partnership. The works would provide more consistent base flows to the Elgin Creek system, in order to improve the fisheries habitat in the creek.

As part of the City's Groundwater Exploration Program, some additional wells were contemplated in the Sunnyside Acres/Softball City area. City staff discussed the possibility of augmenting flows to Elgin Creek, in conjunction with the Groundwater Evaluation Program. Until the City had determined the viability and amount of water required for the possible potable water linkage in the area, no groundwater could be committed to the Augmentation Project.

With the Council decision on deferring the groundwater project in the spring of 2006, and the commitment of some funding from Fisheries & Oceans Canada, the City advanced a feasibility study into how best to augment Elgin Creek flows. Associated Engineering was retained by the City in May to fully investigate the feasibility of the wells being used to augment base flows and to develop a preliminary design for this, or an alternate system, and come up with a long term maintenance and funding requirement.

During the week of July 10, 2006, pump tests were conducted at the well site. During the testing, an old water main broke, resulting in the test having to be postponed until the main could be repaired. The consultant team is continuing to investigate the options and costs associated with constructing the augmentation system. A draft report should be completed in August.

Unfortunately, the RESCUE group is now upset as they misunderstood our commitment to fully explore and detail out the project as a promise to fully implement it. Until the feasibility and long term funding have been identified, we are not in a position to recommend implementation. Fisheries and Oceans Canada has unofficially implied that some partnering funds maybe made available for the project.

## **Lower Chantrell Creek Realignment Project**

Chantrell Creek, downstream of Crescent Road, currently transverses private property in a series of confined open channels and culverts before it enters the Nicomekl River. The historic alignment for the creek was through the present day City's Elgin Park. Sometime between 1900 and 1940, the creek was realigned from the historic location to its current location.

When the City conducted the Elgin Park Master Plan, the idea of relocating the creek to its historic alignment was identified. This concept was brought forward again by Fisheries and Oceans Canada and RESCUE a couple years ago. The City retained a Consultant at that time to investigate and design the relocation works. These works have been estimated to be in the order of \$1 million to \$1.5 million.

During the course of the investigation, some erosion and slope stability issues were identified on the current alignment. Staff have since been investigating works required to address the stability issues and will be advancing those works in order to protect private property from damage.

In 2003, the City showed its commitment to the Chantrell Creek system by providing \$250,000 to reconstruct the Chantrell Creek culvert under Crescent Road to provide fish passage for migrating salmonids to upstream portions of the creek system. The City completed this project that was solely for the benefit of the fish habitat in the upper reaches of Chantrell without any external funding partners.

The larger realignment project would be beneficial to the local fisheries in the Chantrell Creek system from providing better Riparian and spawning habitat for the system, but is also very costly. The City needs significant funding partners in order to proceed further with this project.

## **CONCLUSION**

The City is very committed to maintain and enhance salmon habitat, and this is shown by the variety of projects and environmental initiatives it conducts every year. However, the enhancement of existing fish habitat is not a core City service, nor is it a legislated responsibility. Enhancement of habitat is most cost effectively carried out as part of projects that have multiple benefits (i.e., a culvert replacement, part of a larger capital project, etc.). City capital expenditures that are solely for habitat enhancement can only be justified if the costs are modest, relative to the benefits, or if there are other funding partners, such as the Federal Department of Fisheries and Oceans, or the Province.

As there is limited funding for enhancement projects, proper process must be followed to determine the feasibility, benefit and cost of each proposed project.

The Engineering Department will report back to Council in September on the feasibility of the Elgin Base Flow Augmentation Project.

Paul Ham, P.Eng.  
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c.c. - General Manager, Parks Recreation & Culture  
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