CITY OF KELOWNA

MEMORANDUM

Date: May 5, 2005
File No.: 5260-08

To: City Manager

From: Environment and Solid Waste Manager

Subject: **Central Okanagan Post-Fire Rehabilitation Project**

RECOMMENDATION:

THAT Council receives for their information the *Central Okanagan Post-Fire Rehabilitation Project Report;*

AND THAT Council support providing the information to the public on the City's Web Page.

BACKGROUND:

In August and early September 2003, the Okanagan Mountain Fire burned over 103,602 hectares (256,000 acres) on the south slopes within and surrounding Kelowna. The fire impacted the hydrology, terrain stability and erosion potential in the watersheds, created hazardous conditions with risks and consequence to people, property, infrastructure and the environment. The destruction of forest vegetation and creation of water-repellant soil conditions were deemed to be of significant concern due to the elevated risk of flooding should an intense rainfall event occur.

The Environment Division awarded a contract in April 2004 to Interior Reforestation Co. Ltd. to evaluate post-fire restoration opportunities and to provide recommendations for a rehabilitation strategy. The goal of the Central Okanagan post fire rehabilitation project was to mitigate the long-term loss of important ecosystems that were impacted by the 2003 Okanagan Mountain Fire.

A multidisciplinary team of technical and professional resource specialists from IR implemented the work plan. Priorities for field assessment were generally determined through consensus of the project team using information gathered from the City and RDCO staff in the project initiation meeting, from existing literature, and from contacted stakeholders.

In general, conditions within the 2003 Okanagan Mountain Fire indicated that immediate or significant environmental degradation should not be anticipated. The opportunities for in-stream habitat enhancement initiatives that would result in direct habitat gains for fish were much lower than originally anticipated. Some indirect impacts to fish and aquatic habitat are anticipated.

Much of the study area was seeded in the fall of 2003 and grass establishment was successful with improved aesthetics of the burn area by providing immediate green-up. As a result of the aerial seeding, some reduction in the risk of surface erosion has occurred. Until deeper rooted vegetation (trees and shrubs) can be restored, steep slopes will be prone to deeper failures. Planting programs were recommended to reduce the risk of future slope failures, especially during the critical period when tree stumps and root masses have decayed beyond the point of providing any soil retention capabilities.

Soils were examined for evidence of water-repellent layers during the overview assessment as part of the overall ecosystem risk analysis. In the eight to nine month interval between Dobson's assessment and this one, there was a substantial change in the physical and biological condition of the soil surface. The potential risk associated with water-repellent soils has diminished except in specific areas identified as high risk for ecosystem impacts. Upland plant communities within the Okanagan Mountain Fire have re-vegetated quickly as observed throughout the growing season. Species composition is dominated by the grasses that were aerially seeded after the fire but there is also recovery of a variety of native plants. A variety of birds are using the burned areas, painted turtles were observed in two wetlands, and ungulate tracks were observed in each of the drainages.

Conifer tree seedling establishment in the study area will be limited by summer drought and grass seeded after the fire that will intensify the moisture stress on tree and shrub seedlings. The transitional grass/shrub stage may be relatively long (>30 years) and the development of mature forest plant communities may extend beyond 120 years unless active conifer seedling planting programs are undertaken.

The "Post Fire Rehabilitation Project" produced a variety of tools to help local government coordinate and focus additional fire re-vegetation and restoration treatments. The tools include:

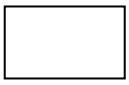
1) tree and shrub species that would be effective in post-fire planting projects
2) upland conifer stocking prescriptions with recommended stocking standards to meet a range of management objectives;
3) Multiple Attribute Evaluation Framework;
4) Re-vegetation/Restoration Treatment Decision Chart;
5) Treatment Opportunity Map
6) Restoration techniques field book.

These tools, when utilized in future rehabilitation and planning, will assist in the creation of natural self sustaining ecosystems, reduce future risk and provide a beneficial legacy for future generations.

The intended audience for this information is the general public and contractor/consultants involved in post fire replanting-restoration. This information will assist private landowners and City Staff and can be accessed from our website.

During the progress of this study 3 areas (Bertram and Lebanon Creek) were restored by IR and the Environment Crew. Wetland areas in neighborhood # 3 are planned for restoration in 2005.

To review the *Central Okanagan Post-Fire Rehabilitation Project Report*, simply open the City's *Daily InSights* page and click on *Documents, Departments, Works & Utilities, Environmental, Post-Fire Report.*



Approved for inclusion:
John Vos
Director of Works & Utilities

Mark Watt, Environment and Solid Waste

FS/ms

Attach: Executive Summary

cc: Urban Forestry Supervisor, City Long Range Planning, RDCO Planning Dept.

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The following is a list of the attachments that are **not** available with the electronic version of this report. The attachments can be viewed in the City Clerk's Department (3rd level, City Hall):

- Central Okanagan Post Fire Rehabilitation Project 2004 Summary Report, prepared by Interior Reforestation Co. Ltd., dated January 2005