



## CITY OF VANCOUVER

### ADMINISTRATIVE REPORT

Report Date: January 8, 2007  
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Meeting Date: February 13, 2007

TO: Vancouver City Council

FROM: General Manager/Fire Chief, Vancouver Fire & Rescue Services

SUBJECT: Purchase of Replacement Wildlands Firefighting Vehicle for Pacific Spirit Park (UEL funded)

#### RECOMMENDATION

- A. THAT, subject to the conditions set out in Recommendations B, C, D, and E, Council authorize the sole source purchase (without public tender) of a Wildlands Firefighting vehicle from Hub Fire Engines & Equipment Ltd. at a total cost of \$194,943, plus applicable taxes and Provincial Environmental Levy; source of fund to be the University Endowment Lands (UEL) Apparatus Replacement Reserve. Annual operating costs of \$1,500 will be funded as part of the Fire Services Agreement (UEL) between the City of Vancouver and the Province. There is no cost implication to the City of Vancouver's Plant Account, internal equipment rental rates, and operating budget.
- B. THAT, subject to the conditions set out in Recommendations C, D, and E, Council authorize an amendment to the Fire Services Agreement (UEL) between the City of Vancouver and the Province, whereby the Province legally commits to an increased annual contribution to the Reserve, for the increased replacement cost of this and other enhanced vehicles that are funded through this Agreement.
- C. THAT all legal documents required to implement Recommendation A and B, be on terms and conditions satisfactory to the General Manager/Fire Chief, Vancouver Fire & Rescue Services (VF&RS) and the Director of Legal Services.
- D. THAT upon approval of the terms and conditions of such legal documents pursuant to Recommendation C, the Director of Legal Services be authorized to execute and deliver them on behalf of the City.

- E. THAT no legal rights or obligations will be created by Council's adoption of Recommendation A, B, C, and D above unless and until such legal documents are executed and delivered by the Director of Legal Services.

### GENERAL MANAGER'S COMMENTS

The General Manager/Fire Chief recommends the purchase of a replacement Wildlands Firefighting Vehicle to combat fires within the forested areas of the University Endowment Lands.

### COUNCIL POLICY

On January 17, 1995, Council approved the provision of fire protection and related services by Vancouver Fire & Rescue Services to the University of British Columbia (UBC) and the University Endowment Lands.

Council approves allocation from reserves, including the UEL-funded Apparatus Replacement Reserve.

### SUMMARY

Vancouver Fire & Rescue Services is concerned about the danger of fires in the forested areas of the University Endowment Lands (UEL). These concerns can be summarized as follows:

- A performance review of the existing Wildlands Vehicle has shown it to be far less capable than other Wildlands Vehicles serving Stanley and Everett-Crowley Parks.
- Building developments adjacent to the park have increased dramatically, and use of the park has correspondingly increased.
- Changing weather patterns, including drier summers have increased fire risks.
- Swift and effective Wildlands Vehicle responses will sharply reduce the risk of forest fires. In the event of a major fire, bulldozers and water bombers would be required, creating substantial damage to Pacific Spirit Park.

In response, VF&RS is proposing to purchase a fast attack, highly manoeuvrable vehicle utilizing compressed air foam systems, similar to the two Wildlands vehicles that were purchased in 2002. These systems utilize environmentally friendly foam that can be delivered in high volumes to inaccessible forested areas.

The Department projects a minimum fifteen (15) year life cycle for this unit. Funding for this vehicle is provided from recoveries received through Fire's contract with the Province to provide firefighting services to the UBC Campus and Endowment Lands. A portion of these recoveries are reserved annually to provide for the future replacement of firefighting vehicles stationed at the UEL. Therefore, the purchase of the recommended replacement Wildlands vehicle has no funding implications for the City of Vancouver (COV).

## PURPOSE

This report recommends that Council approve an allocation of \$194,943 plus applicable taxes from the UEL Apparatus Replacement Reserve for the sole source replacement purchase of a specialized vehicle that is designed to attack and mitigate fires in a Wildlands/Forest Environment, utilizing the latest environmentally friendly technology available. No City of Vancouver funding is required.

## BACKGROUND

Since October 1995, the University Endowment Lands Firefighting Service has been amalgamated with the City of Vancouver. Under the terms of the agreement, the areas are to receive a level of service “comparable to those provided within the City of Vancouver.” In 2002, when two new Wildlands vehicles were approved, it was expected that these two vehicles, supported by a lower grade on-site Wildlands Vehicle protecting Pacific Spirit Park, would be sufficient to meet the Wildlands Firefighting capabilities for all three parks. Since that 2002 report, the VF&RS has determined that a vehicle of similar capabilities needs to be stationed permanently at Pacific Spirit Park. Revised risk assessments, potential changes in weather patterns, and increased development in areas adjacent to the park have all contributed to the need for changes to the earlier deployment strategy.

## DISCUSSION

### Fire Risks to Pacific Spirit Park

Pacific Spirit Park, located within the University Endowment Lands, is the largest park for which the Vancouver Fire & Rescue Service has firefighting responsibility. VF&RS staff have monitored conditions at Pacific Spirit Park and continue to be concerned about the Park’s conditions. The possibility of a major fire in this area is very high; a major fire would require a significant, intrusive response, including four fire vehicles staffed by twenty firefighters.

A substantial contributor to this high risk is the level of duff (partially and fully decomposed organic matter on the forest floor, underneath the litter), which in some locations measures to a depth of close to eight feet. By comparison, the level of duff in Stanley Park and Everett Crowley Park is measured in inches. This level of fire hazard makes immediate response capability a top priority, and precludes a redeployment strategy whereby a higher capacity unit could be shifted from Stanley Park.

Should a major fire occur, a situation similar to the September, 2005 Burns Bog Fire could develop. Due to the severe risk to life, firefighters would not be allowed to enter the Pacific Spirit Park and the tactical operation would be to “surround and drown” the fire. This approach would entail the deployment of heavy earth-moving equipment, water bombers, tree fallers and suppression apparatus surrounding the area. If a significant fire occurs, the costs to contain the fire and prevent structural loss to surrounding homes and buildings would be extensive and the environmental loss to the citizens of the City of Vancouver might include considerable loss of forest.

Other increased fire risks for Pacific Spirit include: climate changes, with more frequent drought conditions, increased use of the Park by residents of adjacent neighbourhoods, and an increase in the local population created by extensive building developments in the adjacent UBC Campus.

### Fire Apparatus Deployment

On May 14, 2002, Council approved the addition of two Wildlands vehicles to Fire's fleet, to be strategically located for deployment in the protection of Vancouver's forested areas. One was committed to Stanley Park, the second to Everett-Crowley Park. Initially, it was hoped that the Stanley Park vehicle would provide significant back-up to a lower capability Wildlands vehicle in Pacific Spirit Park. However, distances, increased traffic, and the high risk level at Pacific Spirit Park have made this redeployment strategy impractical.

As a result, the Wildlands firefighting capability in Pacific Spirit Park is significantly less capable than the other two Wildlands vehicles in the City. The existing vehicle assigned to Pacific Spirit Park is basically a retrofitted 4-wheel drive pick-up with an onboard mounted 100 gallon water tank and portable pump. A comparison of the two vehicles includes the following factors.

#### Existing Vehicle

- Gross Vehicle Weight rating of 9,000 pounds limits water tank capacity to 100 gallons.
- Current vehicle has no provisions for proper equipment storage.
- Portable water pump is limited to a discharge of 60 gallons per minute.
- Water tank and pump are not configured to simultaneously discharge foam and water.
- To make the pump operational it must be removed from vehicle, placed on the ground, started, connected to water tank supply, and then discharge hoses attached to the pump before the fire can be extinguished.
- Current vehicle does not have provisions to "Pump and Roll" and must remain immobile while water is being pumped. In the meantime a Wildlands fire could leap to an adjacent area outside the vehicle's reach.
- The 100 gallon water tank is less than half of the other Wildlands Vehicles.
- Emergency set-up time is significantly longer than the modern units which are custom built for rapid attack.
- The existing vehicle has considerably more difficulty in accessing areas of Pacific Spirit Park than the modern generation of Wildlands Vehicles.
- Current vehicle does not meet current NFPA Standard for Wildlands Fire Apparatus.

#### Proposed Vehicle

- Increased Gross Vehicle Weight rating to 15,900 allows for one 250 gallon water tank, one 15 gallon foam tank one Compressed Air Foam Module, Wildlands Equipment Inventory and seating for four Fire fighters .
- Fabricated truck body with engineered storage compartments provide easy access to deploy Wildlands loose equipment and proper hose beds for pre-connected hoses.
- Compressed Air Foam System consists of a combination air compressor and 120gpm water pump. This combination has rated capacity to provide two 1 ½ hose lines simultaneously with compressed air foam and water. Proper foam air water mixture equates to the equivalent of 900 gallons of finished foam solution to suppress fire.

- Compressed Air Foam System is mounted to chassis and pre-connected to water and foam tanks. Hoses are pre-connected which afford Fire Suppression Crews rapid deployment of hose lines and the ability to “Pump and Roll” the apparatus with hose lines deployed.
- Proposed vehicle is engineered for maximum under vehicle clearances to prevent high centering or bottoming out of body or truck components while operating in adverse terrain.
- The proposed vehicle meets or exceeds many of the requirements of NFPA #1906 Standards for Wildlands Fire Apparatus.
- The proposed vehicle is constructed primarily to deliver foam in volume. When water is used to douse a fire on a vertical structure, gravity removes 90% of the water and renders it useless on the ground. Unlike heavier water, light weight Compressed Air Foam adheres to any structure and removes the oxygen to smother the fire. In addition, hose lines delivering Compressed Air Foam Systems are normally 50% lighter in weight than those delivering water. Hose lines can be advanced throughout Wildlands with less effort, reducing firefighter stress and fatigue.

For the above reasons, VF&RS has an urgent replacement need, so that an adequate Wildlands Firefighting Vehicle can be deployed in Pacific Spirit Park before the summer of 2007.

#### Vehicle Replacement – Funding

The current Wildlands Vehicle assigned to Pacific Spirit Park is currently scheduled for replacement. However, the vehicle requested represents an upgrade and requires approval from Council and increased funding from the University Endowment Equipment Reserve.

The Fire Services Agreement between the City and the Province provides for an equipment reserve account to replace four vehicles including the current Wildlands Vehicle. However, the proposed replacement vehicle is substantially more expensive than the current equipment, and funding from the University Endowment Lands is not currently adequate to provide for this vehicle and replacement of other UEL vehicles over the next ten years. In recognition of the need for this new equipment, the Province has agreed to a one-time top up of the fund totalling \$100,000 and an additional \$25,000 per year, bringing its annual contribution to the UEL replacement fund to \$125,000 per year. These changes have no funding implications for the City of Vancouver.

In support of this new funding level VF&RS has a priority need to have the agreement between the City and the Province amended by the COV’s Legal Services Department so that this contractual change can be included with the 2007 Provincial Budget for the University Endowment Lands.

#### Vehicle Replacement – Purchasing

Due to the urgent nature of this upgrade, VF&RS proposes to sole source its purchase with Hub Fire Engines & Equipment Ltd. (“Hub Fire”), a local vendor that has on-site inventory of one Ford 550 chassis. This vendor has the capacity to build a Wildlands unit equal in capacity to those currently deployed for Stanley Park and Everett Crowley Park.

To ensure that the vehicle is ready for the 2007 fire season, on December 8, 2006, VF&RS has made a commitment to secure the chassis inventory at Hub Fire and a production spot for

subsequent vehicle construction. If VF&RS chooses to stop the order, there could be a re-stocking fee for custom-ordered components of up to \$15,000, which would be absorbed within the VF&RS's Operating Budget. Without the commitment, however, Hub Fire would not have guaranteed the delivery schedule.

A Notice of Intent to Contract was issued to ensure fairness and transparency with respect to the issue of sole sourcing without public tender. As of January 26, 2007 (closing date), no challenge has been received.

Additional benefits associated with sole sourcing in this instance include:

- Vendor has extensive experience in building Wildlands vehicles.
- Vendor has chassis inventory and has guaranteed delivery for the 2007 fire season, if an order is placed by February 28, 2007.
- Vendor is established with the City of Vancouver and supplies VF&RS with Fire Truck parts, and is a local supplier, based in Abbotsford.
- Vendor has an established relationship with the local Fire Truck manufacturing community as it builds and supplies trucks for large and small communities across Canada and the United States.

When completed, this Wildlands Vehicle will be substantially identical to those already deployed. This standardization will assist the Department in its Wildlands Training Procedures.

#### **FINANCIAL IMPLICATIONS**

The one-time capital cost of the vehicle (\$194,943 plus applicable taxes and levies) will be funded from the UEL Apparatus Replacement Reserve, and the annual operating cost of \$1,500 will be funded as part of the Fire Services Agreement (UEL) between the City of Vancouver and the Province. There is no cost implication to the City of Vancouver's Plant Account, internal equipment rental rates, and operating budget.

#### **PERSONNEL IMPLICATIONS**

Personnel would require some training on the new equipment. All VF&RS members at present have been trained in combating wildfires. There is no addition to staff levels associated with the purchase of this vehicle.

#### **ENVIRONMENTAL IMPLICATIONS**

A substantial forest fire in Pacific Spirit Park would likely include significant damage to the Park. The proposed equipment upgrade will provide a substantially better chance to avert such a substantial fire. (Although no mix of staff and equipment can offer complete protection for the Park.) The upgrade to Wildlands Firefighting capabilities at Pacific Spirit Park would therefore provide long-term environmental protection.

Secondarily, the new equipment employs a foam/air/water ratio that is environmentally preferable to the mix supplied by the existing vehicle.

**CONCLUSION**

Pacific Spirit Park remains at risk for wildfires because of its location and circumstances. Its current Wildlands Firefighting capability requires upgrading. Because of the emergency nature of this need, a sole source purchase from Hub Fire Engines & Equipment Ltd. is recommended, totalling \$194,943 (plus applicable taxes) with funding provided by the UEL Equipment Replacement fund.

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