

**Diesel Fumes/Carcinogens – Subsequent Recommendations**

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**Recommendation:**

1. That Attachment 1 of the April 12, 2006, Corporate Services Department report 2006COM005 (PHH ARC Environmental report dated March 1, 2006: “Worker Exposure Assessment Report – Diesel Components and Silica, Westwood Transit Garage”) be received for information.
2. That the Transportation and Public Works Committee recommend to the May 26, 2006, Special City Council:
  - a) that the transit garage air quality remedial strategies identified in the April 12, 2006, Corporate Services Department report 2006COM005 (enhancing the exhaust systems of Westwood, Ferrier and Mitchell transit garages, and increasing the number of engine overhauls) be undertaken starting in 2006, at an estimated cost of \$10.1 million;
  - b) that funding for the transit garage air quality remedial strategies be provided as follows:
    - i) \$5.6 million in Capital Project 07-75-4106, Bus Garage Ventilation Systems – Mitchell, included within the funded 2006-2010 Capital Plan;
    - ii) \$4.5 million from the City’s 2005 operating surplus/Ed Tel Endowment Fund special dividend, with the possibility of allocating up to \$3 million from the anticipated WCB rebate.

**Report Summary**

This report identifies remedial action proposed to be undertaken to significantly improve air quality in the three Transit Garages (Westwood, Ferrier and Mitchell), and the funding for this action.

**Previous Council/Committee Action**

At the April 4, 2006, Transportation and Public Works Committee meeting, the Committee considered March 15, 2006, Corporate Services report 2006COM004, responding to an inquiry by Councillor L. Sloan related to the possible employee health and safety risks associated with diesel exhaust and other potentially carcinogenic substances or processes in the City’s transit garages. The Committee passed the following motion:

“That Administration prepare a report for the May 2, 2006, Transportation and Public Works Committee meeting outlining subsequent recommendations to address the issue of diesel fumes in bus barns.”

**Report**

- As the March 15, 2006, Corporate Services report described, the air quality in the City’s transit garages meets the requirements of the *Alberta Occupational Health and Safety Act and Regulations*, and is below the guideline of the American Council of Government Industrial Hygienists. The Alberta Occupational Health and Safety Code requires that an employer not exceed Occupational Exposure Limits (OEL). The Code also places a duty on the employer to reduce exposure as much as practical, even if the employer does not

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exceed exposure limits. Section 16(1) of the Code states the following: “An employer must ensure that a worker’s exposure to any substance listed in Schedule 1 is kept as low as reasonably practicable, and does not exceed its occupational exposure limit.

- However, as that report also pointed out, employees have complained of sore throats, stinging eyes and lung irritation. Air quality in the transit garages continues to be a concern to management and staff.
- The three transit garages were designed to accommodate a total of 740 buses; they currently house 810. This number is more than the exhaust and ventilation systems were designed to handle. Compounding the issue of the number of buses accommodated is the fact that 210 of the buses are between 24 and 34 years old and have two-cycle Detroit Diesel engines; they are major exhaust fume generators.
- PHH ARC Environmental Ltd. was retained by the City to conduct an assessment of worker exposure to diesel exhaust components and silica in the Westwood Transit Garage. The assessment was conducted due to the identified concerns of staff and management, and for due diligence purposes. It was conducted between February 12 and 14, 2006. The assessment roughly follows a similar sampling protocol conducted in 2002 and 2004. The assessment sampled for coal tar pitch volatiles, diesel particulates, carbon monoxide and nitrogen dioxide (components of diesel

exhaust), and silica, on selected workers and in selected locations.

- The PHH ARC report on the Westwood Transit Garage has been received and is provided in Attachment 1. Given the similarities in the three garages, and the history of past test results, there is reason to believe test results from the two other garages would not differ significantly from the Westwood Garage results.
- The most effective long-run solutions to air quality issues in the City’s transit garages are:
  - more rapid replacement of older buses, particularly those with the two-cycle Detroit Diesel engines; and,
  - increasing the bus-storage capacity in transit garages.

With respect to the first, buses are being replaced under an approved Capital Project, but in recent years a number of the to-be-replaced buses have been refurbished and put back into revenue service to meet demand for increased transit service. With respect to the second, a new transit garage is planned for the southwest quadrant of the City, but is not scheduled for completion until 2008 or 2009. The plans for a new transit garage are not driven specifically by air quality concerns. They have to do with growing transit service needs generally, but a side benefit will be some amelioration of air quality issues. However, by the time it is built the bus fleet will have grown to the point that the existing garages will again be operating at design capacity.

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- It is apparent, therefore, that there is an immediate air quality concern which needs to be addressed, not waiting for either approval of a more rapid replacement of buses or for the expansion of bus storage through the building of a new transit garage.
- The City values its employees, and is concerned with their health and well-being. It is therefore the Administration's position, having reviewed the PHH ARC findings and the situation in terms of its impact on employees, that the longer-term solutions should be supplemented by efforts more directly focused on current occupational health and safety issues in the existing facilities. That is the objective of the recommendations of this report.
- The PHH ARC study notes that exposure increases the closer employees work to the exhaust of the buses. It notes that efforts should continue to clean up the sources of contaminants by increasing the overhauling and engine tune-up programs on the buses that are the worst offenders. It also recommends the use of respirators.
- Administration will make the wearing of respirators mandatory for employees who need to work long hours during peak times in the transit garages. There is no financial impact.
- The Mobile Equipment Services Branch has recently reviewed possible improvements to the ventilation systems at the transit garages.
- The estimate to undertake the engineering design work starting in

2006, with construction commencing in 2007, is in the order of \$10.1 million, as follows:

- \$8.6 million: for the improvement of the ventilation systems in the Mitchell, Westwood and Ferrier Garages.
- \$1.5 million: previously unplanned and unbudgeted engine overhaul, over the next five years.
- Annual operating costs will increase to heat the air as it enters the building.

### **Budget/Financial Implications**

- Capital Project 07-75-4106, Bus Garage Ventilation Systems – Mitchell is currently included in the funded 2006-10 Capital Priorities Plan for \$5.6 million starting in 2007. By adopting the recommendations in this report, capital budget approval will be provided to begin the project in 2006, with additional expenditures and funding of \$4.5 million. The change in project cash flows for this project will require adjustment to other projects over the 2007-09 time period, and will be undertaken as part of the 2007-2011 Capital Priorities Plan and Budget process.
- A significant one-time WCB rebate will be received in late May, which could be an alternative source to some of the 2005 surplus/Ed Tel Endowment Fund Special Dividend. WCB has confirmed that the use of the rebate on an occupational health and safety issue, would be highly appropriate.
- The annual operating cost for the garages would increase, to provide the

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additional heating of ventilation air. Those costs are unavoidable and required, and will be factored into annual operating budget requirements.

2. R. Millican, General Manager, Transportation Department
3. Peter Tarnawsky, General Manager, Corporate Business Planning Department

### Justification of Recommendations

1. Members of City Council are provided with the information in Attachment 1 so that they may be aware that, while the City is under no legal obligation to address air quality issues in the three transit garages, there are issues which the Administration judges need to be addressed. The PHH ARC Environmental Ltd. report provides an analysis of the air quality issue and provides recommendations.
2. There are two parts to Recommendation 2.:
  - a) 2.a) is an occupational health and safety focused proposal to address air quality issues in the transit garages without waiting for service-driven capital plans which would also address these issues. It is consistent with the findings of the PHH ARC report, and with the Occupational Health and Safety Codes hierarchy of controls.
  - b) 2.b) Beyond the existing financing already available in the funded Capital Priorities Plan, new financing is required to undertake the additional requirements.

### Background Information Attached

1. [PHH ARC Environmental report: "Worker Exposure Assessment: The City of Edmonton Westwood Transit Garage", March 1, 2006](#)

### Others Approving this Report:

1. W. D. Burn, General Manager, Asset Management and Public Works Department