



Agenda No: 6.1

Mtg Date: _____

Governance & Services Committee Report

TO: Regional Governance and Services Committee

FROM: Nicole Marzinzik, B.Sc., Regional Air Quality Program Coordinator

DATE: February 11, 2010

SUBJECT: 2009 Year End Summary and 2010 Program Summary and Draft Budget

RECOMMENDATION:

That the report "2009 Year End Summary and 2010 Program Summary and Draft Budget" be received for information.

BACKGROUND:

The Regional Air Quality Program is a joint initiative between the City of Kelowna, Regional District of the Central Okanagan (RD CO), and the Districts of Peachland, West Kelowna, and Lake Country.

The objectives of the program are to:

- ensure citizens in the Central Okanagan have healthy air to breathe;
- integrate regional air quality goals into all policies, including land use & transportation planning;
- educate and inform communities on air quality issues;
- lead by example and change behavior to protect air quality;
- ensure comprehensive monitoring of air quality;
- harmonize regional air quality initiatives with the objectives of other agencies and levels of government.

These objectives are achieved by implementing recommendations in the 2007 Central Okanagan Air Quality Management Plan, as directed by the Regional Governance and Services Committee. Regional Air Quality Program initiatives were managed by a couple of City of Kelowna staff persons in 2008/2009, until the current Coordinator was hired mid November 2009.

Since 2003, the RD CO also works on air quality issues in partnership with the Regional District of North Okanagan and Okanagan Similkameen through the Okanagan Similkameen Airshed Coalition ('Coalition'). The Coalition is committed to reviewing potential financial obligations and governance issues related to developing a valley wide air quality management plan in early 2010, with the hope that a plan will be endorsed by the three Regional Districts by year end.

Please find below a summary of the 2009 Regional Air Quality Program.

Great Okanagan Wood Stove Change Out Program

The Great Okanagan Wood Stove Change Out program is jointly coordinated by the Coalition. The Coalition applied for \$65,000 to run the 2009 program, exchanging 216 stoves with this funding. This is a significant improvement over the 140 stoves exchanged in 2008. 72 of the 216 stoves exchanged in 2009 were from within the Regional District of Central Okanagan.

An estimated 288 cords of wood were previously used annually by those who changed out their wood stoves (Source: BC Ministry of Environment equation: average non-certified woodstove uses 4 cords of wood). From information collected about the new stoves, we estimate the reduction in smoke particulate matter (PM_{2.5}) entering the Central Okanagan's atmosphere to be approximately 4,462 kilograms PM per season (Source: BC Ministry of Environment equation: 62kg/stove/season). This reduction in smoke particulate will translate into improved air quality for many neighbourhoods throughout the Central Okanagan Valley.

A "Burn It Smart" Workshop was also an integral part of the 2009 Great Okanagan Wood Stove Change out Program. The workshop was used to raise awareness of and educate the wood burning public about the importance of efficient, safe, smoke-free wood burning and to help those who heat with wood to improve their burning practices and make them aware of the advantages of new technology appliances.

The workshop was presented by Reid Harvey, a certified Wood Energy Technical Trainer. Each workshop encouraged attendance of chimney sweeps, hearth product retailers, insurance personnel, politicians and local government staff. The workshop was held on April 1st at the City of Kelowna Council Chambers. Approximately 70 people attended.

The goal for 2010 is to exchange 245 wood stoves among the Coalition members. The Coalition applied for an increase in funding to achieve this goal and was successful, receiving \$70,250.

Regional Agricultural Chipping Program

Thirty-four orchards registered for the 2009 chipping program, of which thirty were chipped by year-end. Four orchard chipping projects were delayed until early 2010 because of inclement weather. Chipping of the thirty orchards resulted in 7,528 cubic metres of wood chips. It is estimated this proactive chipping program eliminated 120 metric tonnes (MT) of PM and almost 300 MT of carbon from being released into our air. There is also value in this program beyond protecting air quality as it contributes to water conservation and soil amendment efforts.

The agricultural chipping program information guide has been updated and sent to all fire departments and placed on member municipality websites. Additionally, the program was advertised in the December BC Fruit Growers Association newsletter (BCFGA) and given one page of space in the BCFGAs February newsletter.

At the time of this report, eight orchards are registered for chipping in 2010 (approximately 20 acres) and the contract for chipping is out for tender, closing on February 9, 2010. Chipping will resume shortly after the tender closes. It is expected chipping costs will go up, based on feedback from the current contractor.

New this year, the RDOS and the RDCO will be applying for \$10,000 in funding to update and produce an 'Agricultural Waste Disposal Options' communication piece. This communication tool will include information on the RDOS and RDCO chipping programs, in addition to plastic recycling and proper burning requirements. The BCFGAs has committed to sharing this information with their members, the Ministry of Agriculture and Lands has committed translation services for bilingual production of the document and the Okanagan Tree Fruit Company will circulate the information with their Field Officers so that they may use it during their educational site visits to orchardists.

BC Scrap-it Program (formerly Cash for Clunkers)

2009 marked the first year of the province-wide BC Scrap-it program. Administered by the BC Scrap-it Society, the Scrap-it program offers qualifying vehicle owners incentives to scrap their older vehicles. Incentives include up to \$1250 towards a low emission vehicle, transit passes, \$700 towards a bike, \$1000 credits towards car and ride share programs, and \$300 cash for active transportation gear such as helmets, running shoes and bicycle locks.

The inaugural year was a success in the Central Okanagan region. 259 vehicles were recycled, which approximately doubled that achieved yearly by the former Cash for Clunkers program. Combining the yearly results from both programs, 1015 highly polluting vehicles have been removed from Central Okanagan roads since the programs' inceptions. It is expected that in 2010, the popularity of non-car incentive options, specifically transit passes, will increase as the BC Scrap-it Society is negotiating an agreement with BC Transit to provide the transit pass option throughout BC, and not just Vancouver and Victoria.

Municipality	Approved to participate	Actually recycled	Replacement Vehicle	Bike	Cash
Kelowna	262	218	158	24	36
West Kelowna	35	24	17	1	6
Peachland	11	6	4	0	2
Lake Country	14	11	8	0	3
Total	322	259	187	25	47

Air Quality Data and Monitoring

The 2009 air quality monitoring station results will not be available until March 2010; however it is fair to state 2009 was a typical year for air quality. Other than the smoke episodes related to this summer's fires, the province reports there were no significant events to note.

Particulate Matter (PM) - Kelowna's annual average of PM_{2.5} of approximately 4micrograms per cubic metre (mg/m³) remains well below the Canada Wide Standard (30mg/m³) and is below the BC objective (8 mg/m³) as well. However communities such as those in the Central Okanagan, whose efforts help maintain low annual averages for PM, should use the BC Planning Objective of 6mg/m³ as a maximum allowable target to help guide their future efforts.

The success at achieving and maintaining a low average output of particulate matter does not discount daily and hourly fluctuations, which can vary significantly. The source of the particulate matter causing these daily and hourly fluctuations is largely wood smoke from wood burning appliances. This means during certain seasons, and certain times of day, the amount of particulate matter in the air can near or even exceed the Canada Wide Standard (CWS). These exceedances of the CWS are detected at the neighborhood level; hence wood smoke is often termed a 'neighborhood issue'.

As for ozone, a statistical study has concluded there is a significant detectable upwards trend in ozone measurements in the Central Okanagan. The cause for this upward trend will be studied, but reasons could include increased vehicle use, pollution dispersion from other regions and various other variables.

Joint Initiatives

Air quality was also addressed by various other jointly administered City and RDCO initiatives. Air quality was either improved by, and/or our communities were educated and made aware of air quality issues, at the following events:

Active Transportation/TDM Events

- Bike to School and Work Week
- Commuter Challenge
- Carpool.ca Week
- Clean Air Day
- Car Free Day
- International Walk to School/Work Week

Educational Events

- Mayor's Environmental Expo
- Environmental Mind Grind
- School Assembly presentations
- Clean Air Day Poster Contest

2010 Workplan Summary and Draft 2010 Budget – Central Okanagan Regional Air Quality Program

Please see Attachment A for the Central Okanagan Regional Air Quality Program 2010 Workplan Summary.

There is no budget increase requested for 2010. The draft budget of \$155,000 includes \$80,000 for the agricultural chipping program and \$75,000 for the basic regional program budget which covers staff and programming.

The Regional Air Quality Program is also receiving 2010 funding through joint initiatives: \$23,500 for the Wood Stove Change Out Program (one third of \$70,250), and \$5,000 for a Wood Smoke Education Awareness campaign (one-third of \$15,000). The Coalition has also applied for a \$20,000 grant to develop the Valley-wide Airshed Management Plan, which includes monies to host an elected officials workshop. Additionally, the RDOS and RDCO are

applying for \$10,000 to develop an agricultural waste disposal options communication piece. The total 2010 contribution from Regional Air Quality Program funding partners is expected to be approximately \$105, 250. Attachment B outlines these details.

Future Budget and Program Considerations

Despite the fact that there are no changes to the Regional Air Quality Program's 2010 budget request from previous years, staff notes the following issues for future budget and programming consideration:

- This is the last year (2010) for provincial funding for the Wood Stove Change Out program
- New programs or initiatives related to anti-idling are likely, depending on the outcome of the anti-idling discussion at the next Coalition meeting.
- Development of the Valley-wide Air Quality Management Plan
- Possibility that funding for the Scrap-it program may be cut or reduced.

ATTACHMENT A

CENTRAL OKANAGAN REGIONAL AIR QUALITY PROGRAM 2010 WORKPLAN SUMMARY

Education and Communication

- Air quality education program in School District 23
- Receive and answer inquiries from staff, public, media, other departments, elected officials, municipalities, ministries and outside agencies
- Presentations to public interest groups
- Indoor Wood Burning Brochure and Nuisance Letter System
- Media Campaigns (News Releases, Advertising)
- Brochure development (outdoor burning targeted education campaign for orchardists)
- Mayor's Environmental Expo
- Internet website Development and Update (Air pollution monitoring results, outdoor burning information, indoor burning information, air quality index, reports, workshop results, etc.)
- Clean Air Day Celebrations (Breakfast on a Bus, Free transit, SD23 poster contest)
- Bike to Work/School/Worship Week, Commuter Challenge Week, Carpool Week
- Environmental Mind Grind (2 full day environmental quiz contest involving schools throughout the Central Okanagan and Okanagan Valley at Orchard Park Mall (local competition) and the Creekside Theatre (regional competition))
- Living Greener Calendar (This calendar is distributed to 50,000 households in the Central Okanagan.)
- Burn Smart Workshops (Component of the Great Okanagan Wood Stove Exchange Program)
- Workshops (input from the public and special interests) for new bylaw and program development.
- Anti Idling Signage and Campaigns
- Mayor's Youth Forum

Air Quality Management Planning

- Central Okanagan Air Quality Management Plan Implementation and Amendments (carry out the plan as directed by the Regional Governance and Service Committee)
- Okanagan Similkameen Airshed Management Plan Development
- Gather Information through research that is essential for an Air Quality Management Plan (i.e. Monitoring Information, Emissions Inventory, Emission Forecasting, Dispersion Modeling, Speciation Analysis, Health Studies, etc.)
- Air Quality Workshops/Focus Group Sessions (emission reduction strategy development)
- Seek out and apply to external funding opportunities
- Continue to collaborate with the Okanagan-Similkameen and North Okanagan Regional Districts on air quality research, emission reduction strategies and airshed plan development

Projects and Programs

- Great Okanagan Wood Stove Change Out Program (March and April 2010)
- Anti Idling Campaigns and Signage (Fall 2010)

- Agricultural Wood Residue Chipping Project (year long)
- Vehicle Scrappage Program (BC Scrap-it)

Research

Air quality research will continue in 2010 to help guide air quality management planning so that the Central Okanagan can maintain or improve air quality despite population growth. The following research depends upon funding, expertise and other resources from outside agencies (i.e. Environment Canada and Ministry of Environment).

Visibility Research – To be determined by Environment Canada. Environment Canada is in the process of developing a system for operational measurement of visibility. The Kelowna Airport will be one of the sites used for measurements.

Emissions Inventory (Accounting for emissions from all sources of air pollution)

The 1995 and 2000 emissions inventories are complete. A BC Ministry of Environment 2005 inventory was not done due to changing technologies, a lack of resources and because a new type of inventory is being developed in conjunction with Environment Canada. The new inventory will correlate with the work done for the annual National Pollutant Release Inventory.

Central Okanagan Transportation Model (EMME3)

The EMME3 transportation model is being developed for the Central Okanagan region. The model will be complete by end of year 2010. The EMME3 is a travel forecasting tool that allows City planners to input variables such as land use designations, road network changes, and population stats to test various scenarios. The model outputs changes to the load on the transportation network due to these various factors. The model will also be used to estimate the mobile emissions resulting from various travel network scenarios.

Emissions Forecasting: Emissions from all sources can be estimated for future years using sophisticated models and growth factors for the Central Okanagan. This data will help guide the Central Okanagan Air Quality Management Plan. Environment Canada has indicated that they will fund this work. The emission forecasting project is dependent on the Central Okanagan Transportation Model, which is not expected to be completed until late 2010.

Air Quality Valuation Model (AQVM)

An AQVM was developed by Environment Canada for the Central Okanagan region in 2006. The AQVM provides defensible estimates of the benefits of controlling air pollution in Canada. Given changes in ambient air quality data expressed either as a percent change from baseline or as unit changes in concentrations (e.g. ppb) the AQVM generates estimates of the avoided human health events and the corresponding monetary value. Further AQVM work recommended for the Central Okanagan involves linking the costs and benefits associated with air quality improvements. A comprehensive cost/benefit analysis would permit comparison of the benefits of specific emission reduction measures against their corresponding costs, resulting in economically efficient emission reduction measures.

Speciation Analysis (Analysis of particulate samples to determine their source)

This will be a joint study by the Ministry of Environment and Environment Canada. The partners are in the process of determining which technologies to use and the resources needed to complete the analysis. This investigation will be used to determine the origins of fine particulate pollution captured at monitoring sites throughout the Central Okanagan. Results of the study will show a profile of the sources contributing to particulates in the air (i.e.: the percentage of wood

smoke, vehicle exhaust, dust, etc.). The analysis will help the region better understand how vehicle exhaust and other pollutants are affecting air quality throughout the Central Okanagan as well as provide an enhancement to future dispersion modeling.

Dispersion Modeling (Used to predict how urban growth can affect air quality)

Environment Canada now has the capability to do dispersion modeling for the Central Okanagan region. This type of computer modeling is used to simulate the concentration and dispersion of pollutants throughout the airshed depending on weather conditions and sources of emissions. Modeling can be used to estimate pollution concentrations (loading) in the airshed given a predicted change in emissions. For example, by using an emissions model you can estimate the impact a new sawmill may have on air quality or the impact increased traffic may have on air quality. Pertinent data for the dispersion model will come from the emissions forecasting study which in turn is dependent on the progress of the Central Okanagan Transportation model, which should be completed late 2010.

Ozone Forecasting Program (Environment Canada)

Environment Canada has developed a computer modeling program to forecast ground level ozone levels within the Central Okanagan. This information is relayed to the community through the media so that citizens may take action to reduce emissions that contribute to ozone formation.

Statistical Analysis of Archived Pollutant Data (MoE)

Central Okanagan air quality monitoring data is collected, analyzed and presented by the Ministry of Environment on an annual basis.

ATTACHMENT B

Draft 2010 Central Okanagan Regional District Air Quality Program Budget

Description	Expenditures
Salary/Benefits/Misc.	\$60,000
Wood Stove Program	\$4,000
Anti-idling signage and campaign	\$3,500
Communications	\$5,000
Stakeholder Meetings	\$1,500
Training/Seminars	\$1,000
	\$75,000

2010 Central Okanagan Regional District Agricultural Chipping Program Budget

Description	Expenditures
Chipping Contractor Costs (~ 9,000m ³ of wood chips produced)	\$80,000

Total (AQ Program Costs + Chipping Costs)

\$155,000

2010 Regional Air Quality Program Funding Partners

PROGRAM	Funding Partners	Cash
Wood Stove Change Out	MoE, RDNO, RDOS, WETT BC, BC Lung Association, Terasen Gas, FortisBC	70,250
Okanagan Similkameen Airshed Management Plan development & Elected Officials Workshop		20,000
Wood Smoke Education Initiative	MoE, RDNO, RDOS	5,000
Total Cash Contributions		95,250

Program/Research	In-Kind
BC Scrap-it	\$100,000
Okanagan High Resolution Emissions Inventory	\$35,000
Emissions Forecasting (deferred)	
Dispersion Modeling (deferred)	
Visibility Studies (deferred)	