

CITY OF BURNABY

ENVIRONMENT AND WASTE MANAGEMENT COMMITTEE

HIS WORSHIP, THE MAYOR
AND COUNCILLORS

RE: MANAGING AGRICULTURAL STORM WATER RUNOFF

RECOMMENDATIONS:

1. **THAT** Council receive this report for information.
2. **THAT** a copy of this report be sent to Chair Robert Hodson, UBCM Environment Committee.

R E P O R T

The Environment and Waste Management Committee, at its meeting held on 2000 September 12, received and adopted the *attached* report providing an overview of a report prepared by the Ministry of Agriculture entitled "Managing Storm Water to Protect Agricultural Lands in British Columbia". The Ministry report contained recommendations for storm water directives to help alleviate the impacts of storm water on agricultural lands. To provide a consistent framework for future work by local governments in the area of storm water management, the Committee concurred that the Province should be urged to develop broad storm water runoff quality objectives in consultation with regional districts, local governments and community environmental stewardship groups.

Respectfully submitted,

Councillor D. Johnston
Chair

Councillor C. Redman
Member

Councillor B. Der
Member

COPY - CITY MANAGER
- DIRECTOR ENGINEERING
- DIRECTOR PLANNING & BUILDING
- DIRECTOR PARKS, RECREATION & CULTURAL SERVICES
- CITY SOLICITOR

TO: CHAIRPERSON & MEMBERS
ENVIRONMENT & WASTE
MANAGEMENT COMMITTEE

DATE: 2000 09 06

FROM: DIRECTOR ENGINEERING

FILE: 40-01-16

SUBJECT: MANAGING AGRICULTURAL STORM WATER RUNOFF

PURPOSE: To provide comments on the report entitled "Managing Storm Water to Protect Agricultural Lands in British Columbia" received from the UBCM

RECOMMENDATION:

1. **THAT** this report be forwarded to Council for information, and
2. **THAT** a copy of this report be sent to Chair Robert Hodson, UBCM Environment Committee.

R E P O R T

1. INTRODUCTION

Council at its regular meeting of 2000 August 14 received a notice from the Chair of the UBCM Environment Committee seeking comment from Council on a report entitled "Managing Storm Water to Protect Agricultural Lands in British Columbia" prepared by the Ministry of Agriculture for the Partnership Committee on Agricultural and the Environment. Arising from Council's discussion, Council referred the notice to the Environment and Waste Management Committee for consideration and requested a staff report be prepared on the subject report.

The purpose of this report is to provide Council with staff comments on the report that focussed primarily on storm water management in agricultural land. In discussing the report with the Ministry of Agriculture staff, it was learnt that the Partnership Committee was formed two years ago with a mandate to review agricultural drainage management practices. The Committee membership includes representatives from the Ministry of Agriculture, Ministry of Environment, Department of Fisheries & Oceans, Environment Canada, UBCM, and BC Agricultural Council (farming community at-large).

2. HIGHLIGHTS OF THE REPORT

The Ministry report provides an overview of storm water issues related to agricultural lands and recommendations for storm water directives in British Columbia to help alleviate the impacts of storm water on agricultural lands.

The report endorsed the concept of an integrated storm water management approach for urban runoff and stream corridor management. It also outlined drainage design guidelines for runoff management in agricultural lands. Conclusions and recommendations were presented in the report with respect to future storm water directives for urban centres and communities in British Columbia. Details on the report conclusions and recommendations and the corresponding staff comment are provided in Section 5 in this staff report. In the context of storm water management in urban centres and lowland farm lands, Sections 3 and 4 below provide a summary of past and current storm water management practices in Burnaby and the City's commitment under the GVRD's Liquid Waste Management Plan.

3. BURNABY POLICY ON STORM WATER MANAGEMENT

In 1995, Council endorsed the concept of alternative storm water management practices as the framework for urban runoff control in Burnaby. Based on the Council adopted principles, storm water management plans were developed for the watersheds of Froggers Creek (1997), Byrne Creek (1997), Stoney Creek (1999) and the Brunette Basin (2000). The plans currently are being used as guides for the implementation of storm water management improvement programs (flood protection and stream enhancement) in the City. Prior to the adoption of alternative storm water management by Council in 1995, the City had conducted master drainage studies for the Big Bend area which led to several major drainage and creek improvement projects in Byrne Creek, Nelson Creek, Froggers Creek and Jerry Rogers' Creek in the agricultural lands in Big Bend.

In recent years, the City has undertaken many flood protection and sediment control projects in the upland and lowland watersheds as part of the City's comprehensive storm water management program. In addition, the City also allocates annual operating budget towards ditch maintenance in the Big Bend area to maintain the drainage conveyance function of the lowland ditches.

In 2000/2001, staff will be developing a comprehensive storm water management design criteria and standards manual based on Council adopted policies and principles. The manual will address best management practices applications, development runoff control requirements, storm water runoff volume management, water quality and stream management. The manual is intended to cover both upland and lowland areas including agricultural lands.

4. BURNABY'S COMMITMENTS UNDER THE GVRD'S LIQUID WASTE MANAGEMENT PLAN (LWMP)

The GVRD in consultation with its member municipalities has completed the Stage 2 LWMP and submitted it to the Ministry of Environment, Lands and Parks for approval. The plan presents a program of policies and commitments to address the liquid waste issues including storm water runoff.

Under the LWMP, all District municipalities are committed to undertake a proactive integrated storm water management planning approach. The objective of the integrated approach is to blend storm water management into relevant municipal planning processes such as the Official Community Plan, parks plans and transportation plans to address the impacts of storm water runoff on community values. The recently completed Brunette Basin Watershed Management Plan will serve as a model for future storm water management planning work in Burnaby and other urban centres in the region.

5. STAFF COMMENTS ON THE MINISTRY REPORT

The conclusion and recommendations presented in the Ministry report and the corresponding staff comments are presented as follows:

“Conclusion:

While there may appear to be sufficient acts and regulations to deal with stormwater issues, there is a gap in the implementation of standards and practices. Stormwater management relies on local governments to implement a plan. This does not always occur in a manner that takes agricultural issues into consideration. As a result, farmers and agencies are striving to meet stormwater goals in a reactive framework, rather than proactive. Adequate lowland drainage planning should be a requirement prior to new developments being approved.

The municipal act allows municipalities to construct roadway ditches with little regard to the impacts of local landowners. The time periods allowed to make a claim for damages done by the work is only six months, much too short for most landowners as problems may not show up until a year or years later.”

Staff Comment:

Lowland drainage is an integral component of the City’s storm water management strategy. Past and current City commitment to lowland drainage improvements have demonstrated that drainage management in Burnaby lowlands is a priority within the City’s plan.

Under the Municipal Act, a municipality has the power to construct work for the purpose of drainage collection and conveyance. Notwithstanding the provisions within the Act that limit actions against a municipality to within 6 months of the completion of the work, British Columbia courts have accepted claims from landowners beyond the 6 months statute of limitation arising from work done by a local municipality. It has been the standard practice of the City to consult the streamkeepers and landowners on significant drainage improvement programs to ensure impact to adjacent landowners is kept to a minimum.

“Recommendation 1:

Ministry of Environment, Lands and Parks to establish clear stormwater objectives that take into account the protection of habitat, drainage infrastructure and the protection of lowland properties. Conveyance of stormwater through agriculture lowlands is of particular concern. Current direction given through the LWMP process is weak and not applied uniformly throughout the province. The directive should require local governments to establish:

- *Master Drainage Plans*
- *Stormwater Control Plans”*

Staff Comment:

Currently, there is an absence of Provincial standards on storm runoff quality. To address the issue of storm water quality management in a consistent manner for all communities, staff support the proposal of establishing broad Provincial storm water quality objectives. It is recommended that the Province be requested to develop broad runoff quality objectives that can be applied to urban and rural communities in consultation with local governments, regional districts and local environmental stewardship groups.

Under the GVRD’s LWMP, member municipalities are committed to undertake storm water management plans that incorporate the key elements of master drainage plans and storm water control plans. The model used by Burnaby for the Stoney Creek watershed can be used for storm water management planning processes within the region and in other communities in the Province.

“Recommendation 2:

Ministry of Environment, Lands and Parks and the Ministry of Agriculture and Food, in partnership with local governments develop drainage design criteria that address stormwater volume as well as quality. Agricultural drainage design criteria must be included if there are ALR land present.”

Staff Comment:

Detailed drainage design criteria may vary from community to community due to different land use, conditions, topography and community values. The responsibility of developing local drainage criteria should remain with local governments. Local governments are in the best position to develop the appropriate criteria and standards that would reflect the community needs and land use requirements over which they have jurisdiction. Many municipalities have already established drainage criteria that are

included as part of a subdivision bylaw and engineering design standards. Burnaby is in the process of updating its criteria incorporating the latest recommendations derived from the Stoney Creek and Brunette Basin planning processes. Agriculture drainage criteria will remain as part of the City wide drainage criteria.

“Recommendation 3:

*Local governments be encouraged to use their planning, servicing, land use, development approval and financial powers to address **existing** stormwater management issues. This includes funding for the construction and maintenance of required drainage works in lowland areas, particularly where these works are required as a result of upland development approved by local governments which has resulted in lowland drainage problems.”*

Staff Comment:

Many municipalities within the region including Burnaby have already taken steps to address lowland/agricultural drainage issues through land use planning, servicing requirements, capital project planning and storm water management plans.

“Recommendation 4:

*Local governments should be encouraged to establish development approval guidelines and bylaws for managing stormwater runoff and protecting the environment for **new development**. This would include:*

- *Implementing Best Management Practices to protect water quality and flows.*
- *Developing a Stormwater Drainage manual that outlines parameters and design criteria to be used by developers.*
- *Establishing and adhering to design and maintenance criteria that ensure drainage channels through agricultural lowlands are adequately sized and maintained to minimize flooding.”*

Staff Comment:

Under the LWMP process, member municipalities have worked with the GVRD to develop guidelines for storm water management and Best Management Practices (BMP's). Staff are in the process of developing a comprehensive storm water management manual of design criteria and standards that can be applied to all new and redevelopment projects in the City.

“Recommendation 5:

Establish farm bylaws that outline the stormwater management requirements for large impervious agricultural developments in the ALR such as greenhouses, dairy barns and feedlots. The “Guide for Bylaw Development in Farming Areas” to be updated to include this information.”

Staff Comment:

It is recognized that the creation of impervious areas will increase the peak storm runoff rate and the use of BMP’s can reduce downstream drainage effect created by increased imperviousness. In the development of storm water management standards, staff support the principle of applying common standards to both upland and lowland drainage management.

“Recommendation 6:

Local governments to establish long term agreements with regulatory agencies that allow for timely maintenance of drainage channels to ensure integrity and design capacity are kept. Agencies should be involved in all actions recommended above to ensure consistent and complementary actions are pursued.”

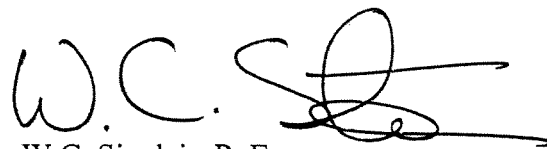
Staff Comment:

Burnaby and a few other municipalities within the region have been working with regulatory agencies toward the development of a memorandum of agreement for maintenance of drainage channels/streams with due consideration to environmental protection and drainage conveyance. The City is pursuing a stream mapping program that will complement the recently completed stream classification map and facilitate the development of the final stream maintenance protocol with the regulatory agencies. The objective of the protocol is to streamline the agency approval process and to provide the municipality with a more timely response to address stream maintenance needs, such as sediment removal, erosion protection and flood protection.

6. CONCLUSION

Urbanization and changes in land use often create more impervious surface which in turn increase peak flows in the receiving streams. The increase of flow has been determined to be the primary cause of flooding, stream degradation and loss of fish habitat. To mitigate the adverse drainage and environmental impact, many cities in North America have adopted a storm water management approach of balanced environmental protection and flood protection.

Burnaby and many municipalities in the Greater Vancouver region have recognized the importance of drainage management in agricultural lands as well as in urban development centres. While staff are in support of the principles of agriculture runoff management outlined in the report prepared by the Ministry of Agriculture, the commitments of local governments to storm water management as presented in the GVRD's LWMP have provided a clear direction for future drainage and environmental protection programs in the region. Burnaby, for many years has committed to protecting the natural environment as part of a comprehensive storm water management strategy for the City. The City will continue to take a leadership role in developing the appropriate standards, criteria and implementation programs to mitigate the impact of urbanization on upland and lowland areas. To provide a consistent framework for future work by local governments in the area of storm water management, staff concur that the Province should be urged to develop broad storm water runoff quality objectives in consultation with regional districts, local governments and community environmental stewardship groups.



W.C. Sinclair, P. Eng.
DIRECTOR ENGINEERING

LSC;jh

- cc: City Manager
- Director Planning & Building
- Director Parks, Recreation & Cultural Services
- City Solicitor