

ITEM 16
MANAGER'S REPORT NO. 83
COUNCIL MEETING Dec. 29/75

Re: LETTER DATED DECEMBER 11, 1975 FROM MRS. VELMA I. RUKUS, THAT WAS ON
THE AGENDA FOR THE DECEMBER 15, 1975 MEETING OF COUNCIL.
EROSION OF RAVINE BETWEEN KAYMAR DRIVE AND PATTERSON AVENUE

Council at its meeting of December 15, 1975, received the above-noted letter from Mrs. V. Rukus regarding erosion of the ravine between Kaymar Drive and Patterson Avenue. At that meeting, Council was advised that a staff report would be available at the December 29, 1975 meeting of Council.

Following is the report of the Acting Parks & Recreation Administrator, and attached is the Municipal Engineer's report regarding this matter. The Engineer's recommendation is "THAT the Commission concur with the recommendation of the Municipal Engineer and recommend that Council approve of proceeding to remedy the erosion problem as recommended by Golder Brawner Associates by implementing Alternative No. 1 Phase 1 of the Golder Brawner Associates Report of July 1973, which includes the piping of the watercourse from approximately 150 feet south of Carson Street to the lane south of Rumble Street, and the filling of the eroded stream bed to its original invert level at an estimated cost of \$231,000. (As this estimate is now one year old, it would have to be increased by 12%, i.e. to \$258,720.)"

This entails the expenditure of a sizeable sum of money, the funding for which must be arranged.

RECOMMENDATIONS:

1. THAT the Parks & Recreation Commission consider the recommendations of the Municipal Engineer and indicate its priority in the matter of funding Parks & Recreation Capital projects; and
2. THAT a copy of this report be sent to the Parks and Recreation Commission, and to Mrs. Velma I. Rukus.

* * * * *

TO: MUNICIPAL MANAGER DECEMBER 22, 1975.

FROM: ADMINISTRATOR, PARKS & RECREATION

SUBJECT: EROSION OF RAVINE BETWEEN KAYMAR DRIVE AND PATTERSON AVENUE

This report is given at the Municipal Manager's request and as a result of a letter received from Mrs. W. Rukus to The Mayor & Council.

This subject has been of concern to staff of the Engineering Department and Parks and Recreation Department, as well as the Parks and Recreation Commission, and has resulted in the attached correspondence and reports.

The area at 7949 Suncrest Drive was visited on December 12, 1975, to inspect the most recent slippage into the ravine. The owner's property was measured and would appear to be approximately 160' in length as opposed to the official 181' lot length, but a correct measurement would have to be taken by a legal survey which has not been done at this time. It would, therefore, appear that slippage has accounted for some 20' of the property involved adjacent to the ravine edge.

In the opinion of staff, the erosion problem is the result of wash action of the stream in the ravine, as well as seepage from the property.


In the Administrator's Report #16, dated August 6, 1975, it was recommended that an immediate clean out be made of the stream bed at a cost of \$3,500. This work has been completed.

Because of the continuing nature of this problem, the long range solution would require implementation of the recommendation of the consultants, Golder Brawner Associates, in their report of August 8, 1974, and, although the funds required are considerable, it is recommended that serious consideration be given to the implementation of this study.

RECOMMENDATION:

That serious consideration be given to the implementation of the study and report made by Golder Brawner Associates in July, 1973, and updated in August, 1974.

GS/elm
c.c. Municipal Engineer.


GORDON SQUIRE
ACTING ADMINISTRATOR.

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ITEM 6

ADMINISTRATOR'S REPORT NO. 16

COMMISSION MEETING Aug. 6/75

RE: KAYMAR-SUNCREST RAVINE

At its meeting of July 16th, the Commission referred the matter of the Kaymar-Suncrest Ravine back to staff for "further consultation with the Engineer regarding a cost-sharing basis for the consultant and work to be carried out". The reference was to:

1. A request for a consultant opinion on the design and building of stone weirs at an estimated cost of \$1,000, and
2. A simple clean-out of the stream bed at an estimated cost of \$3,500.

These matters have been thoroughly reviewed with the Municipal Engineer who has advised that funds have not been budgeted for either of the two items in the 1975 budget and in view of severe budget cut-backs experienced it is not possible to finance them from other sources within the existing budget.

The Engineer is still strongly of the opinion that the temporary measures under review should only be considered as a last resort and that the Commission should avail themselves of the option for complete piping of the ravine invert with the construction to be specially designed to retain an open flow of water at all times and that the August, 1974 cost estimate for such work in the amount of \$270,000. could be updated and recommended as part of a 1976 storm sewer drainage by-law.

If the Commission reconsiders and adopts this option, the Engineer is of the opinion that a simple clean-out of the stream bed is still advisable and if approved, should be undertaken immediately. In his opinion, it is not necessary to wait until the consultants have reported back on the possibility of weir construction should that be the Commission's decision, because the accelerated flow of water to which staff referred in the Administrator's Report No. 15 of July 16, 1975, would cause less damage than the present scouring of the bank caused by debris blockages.

If the Commission wishes to carry out the above consulting and clean-out work from the Parks and Recreation budget, funds are available for the clean-out in Minor Development Account No. 45-01 and for the consulting work in Park Design Consultants' No. 25-03-53.

Water Diversion into an Adjoining Ravine

The Engineer reiterated his comments embodied in his memo of the 23rd of June, 1975 which was communicated to the Commission at its meeting of the 16th of July, 1975 that such diversion of waters was not advisable because:

1. Such diversion would in all likelihood introduce the same problem into the second ravine as presently exists in the Kaymar-Suncrest.
2. The Kaymar-Suncrest is historically the ravine which accepts the major portion of the storm waters and diversion of the waters could place the Corporation in a compromising legal position if any damage resulted from such diversion.
3. The Municipal Act permits the Municipality to direct storm waters only down those ravines which have historically carried such waters and by making a diversion the Corporation would leave itself open for action on the part of the adjoining residents.

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COMMISSION MEETING Aug. 6/75

This latter point is made based on the fact that at some time in the early 1900's when Rumble Street was first constructed, those involved made a decision to cause the artificially directed storm waters to channel down the Kaymar-Suncrest Ravine. The basis for this decision is unclear, some sixty or seventy years later but it was presumably because the major portion of the natural flow was in that direction. Be that as it may, the history of this waterflow throughout the major timespan of the development of the Municipality has been down the Kaymar-Suncrest. The continuance of this flow falls within the parameters laid down in that portion of the Municipal Act which deals with storm drainage and diversion to other ravine areas would be contrary to the Act.

In view of the foregoing, your staff would reiterate the major portion of the recommendations of July 16, with the exception that the simple clean-out of the stream bed should be undertaken immediately and the long range review of the development of the ravine should be subject to an overall policy review of ravine development by the Commission.

RECOMMENDATION:

1. That Golder Brawner and Associates be requested to undertake a study to provide recommendations on the building of stone weirs at strategic intervals throughout the length of the stream bed, at an estimated cost of \$1,000. and that the funds be drawn from Account No. 45-01.
2. That an immediate clean-out be made of the stream bed at an estimated cost of \$3,500. with the funds to be drawn from the Minor Development Account.
3. That a date be set for the Commission to discuss the philosophy of the development of ravine parks and that staff be instructed to bring forward a plan showing alternate potential developments for the Kaymar-Suncrest Ravine.

COMMISSION MOTION OF AUGUST 6/75:

"That the Commission approve Recommendations 2 and 3."

CARRIED UNANIMOUSLY

re: STABILIZATION OF THE KAYMAR-SUNCREST RAVINE

The attached correspondence dated September 6, 1974, together with the Supplementary Report by Golder Brawner Associates on the above subject, has been received from the Municipal Engineer. The Supplementary Report is in response to certain questions raised by the Commission when they dealt with this matter on the 6th of March 1974.

The following are the questions asked by the Commission:

1. Many of the houses on the edge of the ravine have drain tiles discharging directly into the ravine as is the case with ditches and culverts from the street ends. Would the elimination of all these drain tiles and ditches from the ravine improve the situation sufficiently that no further slides would occur?

1a. Consultant's answer

The quantity of water discharge from drain tiles, ditches and culverts at the edge of the ravine is not believed to contribute substantially to the erosion of the ravine invert. Consequently, the expense of eliminating the sources of discharge is not justified, but additional drainage discharge into the ravines should not be permitted.

2. Would it be possible to divert water out of the piped water course at the upper end so as to guarantee the continual flow of water in the creek at all times, but not in sufficient quantities to cause erosion? It was suggested by one Commissioner that he would not like to see a stream flow of less than approximately five to six feet wide and one to two feet deep.

2a. Consultant's answer

As a result of this question, the Consultant has introduced an alternative construction proposal, Phase 1 of which could be invert repair with a combined culvert and open channel at a cost of \$260,000, which is \$50,000 more than the solution recommended by the Municipal Engineer in February of 1974; namely invert repair and culvert which it is now indicated would cost \$210,000 (1974 estimate to which should be added 10% inflation costs, giving a 1975 estimate of \$231,000)

3. Is there any kind of vegetation that could be planted on the slopes of the ravine to reduce the possibility of slides?

3a. Consultant's answer

Previous slides have been a result of the ravine invert erosion and have involved grass, trees and shrubs. The influence of such vegetation on deeper stability of the slopes is considered minimal, but seeding of the slopes is desirable as this will improve the erosion resistance of surface material.

At its meeting of March 6, 1974, at which the Commission asked the above questions, the following motion was carried unanimously:

"That the Commission's comments be transmitted to the Consultant through the Manager with the recommendation that the water course be maintained."

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ITEM 7
ADMINISTRATOR'S REPORT NO. 9
COMMISSION MEETING May 7/75

In view of the fact that the Supplementary Report submitted by the firm of Golder Brawner Associates has indicated that the water course could be maintained at an additional cost of \$50,000 (1974 figure), this matter is again being presented to the Commission for further consideration and recommendation.

It is staff's opinion that the ravines should be protected for future parks and trail linkage purposes; and that insofar as possible the integrity of the existing topography and natural conditions should be protected as this adds variety and interest to trails which must, of necessity in other locations, pass along travelled streets and on at-grade footpaths through subdivisions.

However, once the use of the ravines has been protected to this point, it is staff's opinion that the desirability of preserving a heavy open water flow for the length of a given section of linear park must be weighed against the cost involved. In view of the additional cost of \$50,000 to maintain a heavy open water flow, we would recommend against in this case. It should be noted that the filling of the scoured invert in which the pipe will be buried will provide a firm surface down which will flow those natural and storm sewer waters which are fed into the ravine between Carson Street and Rumble Street, providing a minimum open stream water in the rainy season.

Among the alternatives open for consideration by the Commission are the following:

1. That no action be taken at this time and that the observation period be extended indefinitely until such time as abnormal storm conditions require a re-assessment.
2. Instruct staff to consider the purchase of those private properties on the brink of the ravine which could be affected by further slides.
3. Control storm water by adopting one of the alternatives recommended by the consultants.

We support the Municipal Engineer's recommendation of February 27, 1974 in which he suggested that we undertake Alternative No. 1, Phase 1 of the original Golder Brawner Associates Report of July 1973, to include the piping of the water course approximately 150 feet south of Carson Street to the lane south of Rumble Street and filling the eroded stream bed to its original invert level for an estimated cost of \$231,000. It is further suggested that Phase 2 of Alternative No. 1 - the placement of the blanket of fill against the failed and steeper sections of the ravine edge be postponed to a future date when the matter could again be reviewed, because the possibility exists that the work undertaken in Phase 1 may stabilize the situation to such an extent that it would preclude or reduce the requirement for Phase 2.

It is understood that in view of the fact that the above is a solution to a sewer and drainage problem, the costs would apply against a source of funds identified for such purposes.

RECOMMENDATION

1. That the Commission concur with the recommendation of the

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COMMISSION MEETING May 7/75

Municipal Engineer and recommend that Council approve of proceeding to remedy the erosion problem as recommended by Golder Brawner Associates by implementing Alternative No. 1, Phase 1 of the Golder Brawner Associates Report of July 1973, which includes the piping of the water course from approximately 150 feet south of Carson Street to the lane south of Rumble Street, and the filling of the eroded stream bed to its original invert level at an estimated cost of \$231,000.

COMMISSION MOTION OF MAY 7/75:

"That this item be tabled and referred to a committee of the Commission to meet with the Administrator and the Engineer on site."

CARRIED UNANIMOUSLY

Committee will be Smith and Lock.

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ADMINISTRATOR'S REPORT NO. 9
COMMISSION MEETING May 7/75

THE CORPORATION OF THE DISTRICT OF COLUMBIA

INTER-OFFICE COMMUNICATION

TO: Parks & Recreation DEPARTMENT: Parks & Recreation DATE: Sept. 6/74
Administrator
FROM: Municipal Engineer DEPARTMENT: Engineering OUR FILE # Suncrest
SUBJECT: Erosion - Kaymar/Suncrest Ravine YOUR FILE # R10

Your memo 4 September, 1974 refers.

When forwarding to you the supplementary report prepared by Golder Brawner Associates in answer to several questions raised by the Parks & Recreation Commission, we should have advised that this supplementary information does not change our original recommendation i.e. that the Corporation proceed with Phase I of Alternative I originally recommended by the Consultant at an estimated cost of \$187,000. This would include piping the watercourse and repairing the eroded channel but does not include the side slope berm protection which could be undertaken at a later date and would be known as Phase II. Our original recommendation known as Alternative I, Phase I is referred to in the Consultant's supplementary report as Alternative II and the estimate has been revised to \$210,000.

We do not recommend Alternatives III & IV for the reasons pointed out by the Consultant on page 3, the most important of which is the possibility of extensive erosion damage to the invert fill that could occur if the stream flow should at any future date be deflected out of the channel from any blockage due to debris or slippage of the sides of the ravine.

We do not recommend Alternative V because of the extremely high cost involved should it be undertaken from Engineering Budget, however, if it is determined that no other course of action is acceptable other than an open lined channel. When we consider Alternative V would be essential as it would contain the greatest flow of water underground in a pipe and would minimize the possibility of erosion damage that would be caused by any blockage of the open channel.

VK:wlh


MUNICIPAL ENGINEER

RECEIVED IN
PARKS
AND
RECREATION
SEP 10 1974
To: []
By: []
[]

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ITEM 22
~~ADMINISTRATOR'S REPORT NO. 15~~
 COMMISSION MEETING July 16/75

RE: KAYMAR SUNCREST RAVINE

At its meeting of June 18, 1975 the Commission received a report from the Kaymar Suncrest Ravine committee and approved the following seven recommendations:

1. That staff make an immediate assessment of the cost of a simple clean-out of the stream bed with storage of debris on the banks of the stream.
2. That the Engineering Consultants be asked to recommend upon the placing of stone built weirs with costs.
3. That the Engineering Department be requested to consider the diverting of part of the Kaymar-Suncrest storm waters into an adjacent ravine.
4. That once this information has been provided, the Commission review the possibility of carrying out all or part of this work in 1975 with the remainder scheduled in 1976.
5. That the Commission agree in principle to the future piping of the ditch with funds to be expended to preserve the open waterflow.
6. That the Commission approve in principle the establishment of a more formal style of park by the construction of a walking trail and setting up of picnic areas in the Kaymar Suncrest Ravine.
7. That the implementation of the piping of the water course, including the preservation of an open waterflow and the establishment of a park site be postponed and be reviewed on an annual basis.

Staff were requested to investigate and report back on recommendations (1) to (3) inclusive.

Recommendation #1

The cost of a simple clean-out of the stream bed with storage of debris on the banks of the stream is estimated at \$ 3,500.

Recommendation #2

The Consulting Engineers, Golder Brawner & Associates have advised that the cost of providing information with recommendations to the Commission on the placing and construction of stone weirs would be \$ 1,000.

Recommendation #3

The Municipal Engineer has responded, that in his opinion it would not be possible to divert part of the Kaymar Suncrest storm waters into an adjacent ravine. A copy of the Engineers comments is attached.

RECOMMENDATIONS

1. That Golder Brawner & Associates be requested to undertake a study to provide recommendations on the building of stone weirs at strategic intervals throughout the length of the stream bed.

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2. That the Commission approve in principle that a clean-out of the stream bed take place at an estimated cost of \$ 3,500. with the funds to be drawn from the minor development account, but that the actual clean-out not be undertaken until the consultant's report on the building of weirs has been received and dealt with.
3. That in conjunction with the Engineering Department, Parks and Recreation staff be asked to prepare plans, estimates and a time-table for the development of a park site in the Kaymar-Suncrest Ravine following the guidelines laid down in recommendations (5) to (7) inclusive of the Kaymar Suncrest Ravine Committee submitted to the Commission on the 18 June 1975.

COMMISSION MOTION OF JULY 16/75:

"That this matter be referred back to staff for further consultation with the Engineer regarding a cost sharing basis for the consultant and the work to be carried out."

CARRIED UNANIMOUSLY

ADMINISTRATOR'S REPORT NO. 15
COMMISSION MEETING July 16/75

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THE CORPORATION OF THE DISTRICT OF BURNABY

TO: Parks and Recreation
Administrator

INTER-OFFICE COMMUNICATION
RECEIVED
PARKS

DATE: 23 June, 1975

FROM: Municipal Engineer

DEPARTMENT: RECREATION

OUR FILE #

SUBJECT: KAYMAR SUNCREST RAVINE

JUN 23 1975

YOUR FILE #

To	In	Date
		22/6/75

We have noted the queries raised in your letter of 19 June, 1975, and would advise as follows:

Recommendation No. 2

The Engineering Department has not budgeted to expend any consulting engineering monies in the Kaymar ravine during 1975, and due to the extreme curtailment of budget funds for 1975 we do not have any spare funds available for such unexpected items. We would, however, be most agreeable to coordinate between yourself and the consulting engineer regarding getting a further report on the Kaymar ravine; however, it is our opinion that any further expenditures as recommended by the Commission should come from the Parks and Recreation budget and we would appreciate being advised as to what Parks and Recreation budget account any further consulting engineering costs could be charged.

Recommendation No. 3

We do not consider that there is a suitable alternate ravine into which we could divert storm waters that now flow in the Kaymar Suncrest ravine. As the consulting engineer has pointed out, if you divert storm water into any other ravine you would in all likelihood be introducing the same problem into the other ravine and we would also point out that having made such a diversion there would be no question of liability on the part of the Corporation should any damage be caused to any property. As the situation now exists, the Kaymar ravine is historically the ravine to which a major portion of the west end of the south slope has discharged storm drainage and therefore the Corporation in using this ravine for the disposal of storm water is not in a compromising legal position, even though it may consider itself morally responsible for rectifying the problem, as it is the owner of the property through which the watercourse traverses. The consulting engineer in his original study considered the alternative of stopping the discharge of all storm water to the ravine at Rumble Street by diverting the major storm sewer on Rumble Street east to Patterson, then south along Patterson to Marine Drive, then west along Marine Drive and back to the same watercourse near Roseberry. This was by far the most costly of all alternatives considered and was not recommended because of the excessive cost involved.

[Handwritten Signature]
MUNICIPAL ENGINEER

VK:cmg

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TO: MUNICIPAL MANAGER

22 DECEMBER, 1975

FROM: MUNICIPAL ENGINEER

RE: STABILIZATION OF THE KAYMAR-SUNCREST RAVINE

Mrs. Velma I. Rukus, property owner at 7949 Suncrest Drive, has written to the Mayor and Council in a letter dated 11 December, 1975 pointing out that another small slide has occurred on the Kaymar Ravine.

The problems of slides and erosion in the Kaymar Ravine have resulted in a series of reports and recommendations to the Municipal Council and to the Parks & Recreation Administrator. The most recent comprehensive remedial report was made by the Parks & Recreation Administrator in May 1975 to the Parks & Recreation Commission (copy attached to Parks & Recreation Administrator's report).

The Engineering Department was in complete agreement with this recommendation of the Parks & Recreation Administrator to pipe the watercourse from 150 feet south of Carson Street to the lane south of Rumble Street and fill the eroded stream bed to its original level at an estimated cost of \$231,000. We advised the Parks & Recreation Administrator that if this recommendation was to go forward it would be necessary to place the amount of \$231,000 in the 1975 Capital Budget.

In May 1975 the Parks & Recreation Commission resolved to not proceed with the recommendation of the Administrator and it was decided rather at the time to clear trees and debris from the watercourse in order to improve the flow in the channel and help minimize erosion damage. The Parks & Recreation Administrator advises that this minimal work has been done.


RECOMMENDATION:

THAT the recent complaint of erosion received from Mrs. Velma I. Rukus at 7949 Suncrest Drive be referred to the Parks & Recreation Commission to reconsider the recommendation made to them by the Administrator, in May 1975 which was as follows:

"THAT the Commission concur with the recommendation of the Municipal Engineer and recommend that Council approve of proceeding to remedy the erosion problem as recommended by Golder Brawner Associates by implementing Alternative No. 1 Phase 1 of the Golder Brawner Associates Report of July 1973, which includes the piping of the watercourse from approximately 150 feet south of Carson Street to the lane south of Rumble Street, and the filling of the eroded stream bed to its original invert level at an estimated cost of \$231,000." (As this estimate is now one year old it would have to be increased by 12%, i.e. to \$258,720.)

VK:wlh

cc: () Parks & Recreation Administrator


ACTING MUNICIPAL ENGINEER