

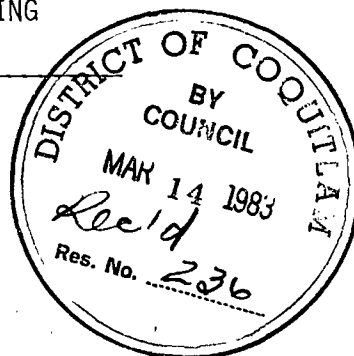
DRAINAGE COMMITTEE

DISTRICT OF COQUITLAM

MINUTES OF THE MEETING OF THE DRAINAGE COMMITTEE
1200h THURSDAY, MARCH 10, 1983, ENGINEERING
COMMITTEE ROOM

COMMITTEE: Ald G. Levi, Chairman
Ald. L. Garrison

STAFF: T. Klassen, Municipal Manager-Clerk
N. Nyberg, Municipal Engineer

ITEM 503-11983 DRAINAGE PROGRAMS

The Municipal Engineer reviewed the three major capital programs and the nine operating programs that comprise the proposed 1983 budget for drainage. The Committee requested that terms of reference for internal studies be brought forward to the next meeting for information.

Recommendation

That report 01 03 06 d 1983 03 09 be received by the Drainage Committee for information.

CARRIEDITEM 503-2TOWN CENTRE DRAINAGE PROJECT: STATUS REPORT NO. 1

The Committee noted that property owners in the proposed drainage area should be kept abreast of progress towards constructing the comprehensive Town Centre Drainage System. Part of the process of developing a Section 286 agreement with the Ministry of Lands, Parks and Housing involves a public information program, also mentioned in Agenda Item 503-6.

Recommendation

That Report 05 05 09 d 1983 03 09 be received by the Drainage Committee for information.

CARRIEDITEM 503-3DITCH ELIMINATION PROGRAM: STATUS REPORT NO. 1

The Manager-Clerk reported that the by-law creating the Special Reserve Fund had been given final adoption on January 27, 1983. Current interest rates were in the range of 9 to 10 percent, hence the interest proceeds would be somewhat less than the \$450,000 anticipated in the 1983 budget. The Committee requested that the question of additional funding be reviewed at the introduction of the 1983 amended budget. The Chairman requested a report on the methods of Municipal construction employed by Burnaby and Richmond for projects exceeding \$100,000 in value.

Recommendation

That the report 05 03 03 d 1983 03 10 be received by the Drainage Committee for information.

CARRIED

Minutes of the Drainage Committee
Meeting March 10, 1983

ITEM 503-4

CONTRACT ADJUSTMENT: COLONY FARM OUTFALL

The Municipal Engineer advised the Committee that the enlargement had been requested by the Ministry of Transportation and Highways, and that the general improvement to the Mundy Creek water course anticipated by the Ministry and the District would reduce potential flooding north of the Loughheed Highway. Funding will come from the special reserve for Riverview off-site costs.

Recommendation

That the contract for Riverview Water Supply and Drainage Improvements - Stage I awarded to Jack Cewe Ltd. in the amount of \$1,206,829.48 be increased by the amount of \$12,950 to increase the capacity of the Colony Farm Outfall; and that necessary change orders and documents be issued by the Municipal Engineer.

CARRIED

APP'D B
Co. R35
237/83

ITEM 503-5

DRIVEWAY CULVERT POLICY

The Committee reviewed the report on culvert policy alternatives. The Committee requested that provisions of the Streets and Traffic by-law be reviewed to reduce the amount of the deposit requested.

Recommendation

That a driveway culvert be defined as an open ended conduit of an approved design located on Municipal land, highway or right-of-way, which encloses a ditch, swale, watercourse or drainage path to allow passage of vehicles or pedestrians.

That driveway culverts which are installed in public roads and rights-of-way must meet standards of design, installation and construction established from time-to-time by the Municipal Engineer; and that installation of approved culverts shall be by:

- the applicant at his or her expense; or
- the Municipality at a pre-paid rate established from time-to-time by Council.

That applicants wishing a driveway culvert require the approval of the Engineering Department in advance of installation. In the event a private contractor is used; or a 'self help' installation is contemplated, a performance deposit shall be paid into the Treasury to ensure proper design, installation and materials, and this amount will be refunded on formal acceptance of the completed work by the Municipality.

That effective April 1, 1983, a driveway culvert installed by the Municipality shall be pre-paid at the rate of \$145/m for a 400 mm (nominal diameter) corrugated metal pipe.

That applicants who employ a private contractor to construct driveway culverts on Municipal lands, highways or rights-of-way must ensure that the contractor provides the Municipality with proof of insurance to the satisfaction of the Municipal Solicitor before start of work.

APP'D B
Co. R35
#238/83

Minutes of the Drainage Committee
Meeting March 10, 1983

ITEM 503-5 continued (Driveway Culvert Policy)

That applicants providing their own labour or using a private contractor to install driveway culverts shall contact the Municipality on completion of the work.

That driveway culvert installations which do not meet Municipal standards shall be corrected by the applicant within 30 days of receipt of written notification, or the culvert(s) will be removed from Municipal lands, highways or rights-of-way by the Municipality.

That henceforth, a capital budget estimate for driveway culvert installations, and a revenue projection for pre-paid culverts, should be incorporated into the annual budget estimates.

That Resolution 224, Feb. 28, 1961: Re. Driveway Culverts be rescinded.

That Resolution 1414, Sep. 23, 1969: Re. Driveway Culverts be rescinded.

That Resolution 1784, Nov. 7, 1977: Re. Driveway Culverts be rescinded.

CARRIED.

ITEM 503-6

286 AGREEMENT

Much of the Committee discussion centered on the need for public information and the timing of final review of the Committee and of Council. It was decided that the Committee would examine the public information plan in mid-June, and give direction as to its employment.

Recommendation

That this report be received for information by the Drainage Committee.

CARRIED

ITEM 503-7

CONTRACT ADJUSTMENT, STORM SEWER - FOSTER AVE. AND POIRIER STREET

The Municipal Engineer advised that the ditch enclosure was highly desirable owing to economic protection and construction factors. Funds are available in the Riverview off-site reserve fund.

Recommendation

That the contract for Riverview Water Supply and Drainage Improvements, Stage I, awarded to Jack Cewe Ltd. in the amount of \$1,206,829.48, be increased by the amount of \$83,495.43 to provide storm drainage works on Foster Avenue and Poirier Street and that the necessary change orders and documents be issued by the Municipal Engineer.

CARRIED

*App'd BY
Co. Res
228/83*

Minutes of the Drainage Committee
Meeting March 10, 1983

ITEM 503-8


WILDWOOD MOBILE HOME PARK FLOODING - STATUS REPORT

The Committee was briefed on the completion of the brushing operation in Popeye Creek by District staff. The Ministry of Transportation and Highways had improved ditches south of the Lougheed Highway, and were prepared to reconstruct the weir in Popeye Creek according to designs prepared by the Federal Ministry of Fisheries and Oceans: Canada. These improvements are the most extensive possible under the current Fisheries' regulations. The Municipal Engineer advised that an upstream diversion was being studied to further improve the flooding protection adjacent Wildwood Mobile Home Park.

Recommendation

That this report be received by the Drainage Committee.

CARRIED


Neil Nyberg, P. Eng.
Secretary


Ald. G. Levi
Chairman

DISTRICT OF COQUITLAM

Inter-Office Communication

TO: T. Klassen
Municipal Manager-Clerk DEPARTMENT: Administration DATE: 1983 03 02

FROM: N. W. Nyberg,
Municipal Engineer DEPARTMENT: Engineering YOUR FILE:

SUBJECT: SYNOPSIS OF DRAINAGE PROGRAMS: 1983 BUDGET OUR FILE: 01 03 06

FOR DRAINAGE COMMITTEE1.00 BACKGROUND

- 1.01 Three major capital drainage programs are projected for 1983 totalling almost \$1,950,000, and six operating programs are planned - \$212,500 for underground drainage maintenance and \$381,100 for surface drainage operation and repair.
- 1.02 This memorandum sets out the categories of activity and some expenditure and performance standards, for the information of the Committee.

2.00 CAPITAL PROGRAMS

- 2.01 Program 532342 Municipal Drainage Trunks comprises the planning, negotiating and implementation of the Town Centre drainage trunk network. A five-year program to install large underground storm sewers is anticipated. A pre-design study has been already approved by Council for 1983, and a program status report will be directed to the Drainage Committee. Providing all target dates, including those involving negotiations with the Province, can be met, a start of physical construction is possible in late 1983/early 1984. Cash flow for 1983 will be somewhat less than the budget figure of \$1,315,000.
- 2.02 Program 532343 Ditch Elimination Program was authorized by Council in 1982, and Four Million Dollars was deposited in a 'sinking fund' in early 1983. At current interest rates, up to \$400,000 could be accumulated as interest before year end. We anticipate completion of engineering for the first phase of the project, the Ranch Park area, by December 1983. A separate status report on the project has been prepared for the Drainage Committee.
- 2.03 The major storm outfall for the Riverview Development, Project 532344 Colony Farm Outfall will be constructed by Jack Cewe Ltd. in June of 1983. The contract cost of \$175,737 requires a moderate increase to allow for an enlargement of the flood box dimensions. A separate report to the Drainage Committee has been prepared. Completion date for the project is July 1983.

3.00 OPERATING PROGRAMS

3.01 Storm Sewer Operation and Maintenance. The enclosed system of pipes and manholes requires periodic maintenance to function. Major activities involve removing water borne silt and debris from underground conduits and catch basins. There are over 3,000 catch basins and 166,000 metres of underground drainage to clean and repair every year. The sub-programs are arranged as follows:

232100 Administration/Engineering/Storm Sewer O & M: \$33,900

- planning, organizing supervising and evaluating the storm sewer maintenance program.

232318 Drainage Pumping Operation and Maintenance: \$31,742

- weekly inspection, cleaning and adjustment of pumping facilities; site repairs, including painting; repairing breakdowns in the pumping system, and periodic dredging of intake areas and storage lagoons. Includes energy and telemetry charges.

232344 Scheduled Maintenance of Storm Sewer System \$111,761

- includes annual cleaning of 2,500 catch basins, and repairs to about 35; to flush sections of storm main susceptible to plugging; to replace an estimated 30 defective storm connections in 1983.

3.02 Surface Operations Drainage Maintenance

232341 Surface Drainage Maintenance \$299,979 comprises ditch cleaning, culvert and headwall repairs, inspection and repair of major road culverts and also covers operations during heavy runoff conditions.

232341 Drainage Maintenance. A ditch cleaning crew is employed for about 9 months of the year in cleaning, shaping and regrading up to 50,000 m of roadside ditch. About 60 culvert headwalls will be repaired; broken or missing grills and fittings are repaired or replaced; fences are repaired; and, in the event of storms, crews are placed on duty to clear plugged channels and to provide limited assistance to homeowners.

For Drainage Committee
Re: Synopsis of Drainage Programs: 1983 Budget

1983 03 02

3.02 cont'd

232342 Culvert Maintenance covers the inspection and cleaning of drainage conduits larger than about 600 mm, including repair of culvert grills and headwalls, at a cost of about \$22,983 for 1983.

232343 Driveway Culverts comprises the maintenance, cleaning and occasional replacement of driveway culverts in the open ditched portion of the Municipality. 1983 cost \$24,694.

232349 Channel Maintenance includes the surveillance, cleaning and repair of natural watercourses which form part of Coquitlam's surface drainage system, at a cost not to exceed \$33,519.

4.00 PROGRAM DEVELOPMENT

- 4.01 The Engineering Services Division is carrying out two works management studies for the Surface Operations Branch. One study examines about 80 separate locations in the District where flooding occurs periodically. Each designated location will be visited and an appropriate counter measure devised; either diversion or flood-proofing. This study will consume about three months of work. The second major assignment is the examination of drainage inspection procedures and maintenance method. This report is expected to improve the systematic detection and correction of drainage faults by using checklists and inspection schedules.
- 4.02 The Operations Division is carrying out a management study, comparing the costs of programmed ditch cleaning and maintenance with the possible services available from the private sector.

5.00 RECOMMENDATION

- 5.01 That this report be received by the Drainage Committee for information.

Neil Nyberg

N. W. Nyberg, P. Eng.

DISTRICT OF COQUITLAM

Inter-Office Communication

TO: T. Klassen
Municipal Manager-Clerk DEPARTMENT: Administration DATE: 1983 03 09

FROM: N. W. Nyberg
Municipal Engineer DEPARTMENT: Engineering YOUR FILE:

SUBJECT: TOWN CENTRE DRAINAGE PROJECT OUR FILE: 05 05 09
STATUS REPORT NO. 1

FOR DRAINAGE COMMITTEE1.00 BACKGROUND

- 1.01 In January 1982, the Engineering Services Division proposed a \$5.65 million program for a comprehensive trunk drainage for the Town Centre area, to serve an area of 265 Ha, bounded by the future David/Pathan highway to the north; Westwood Street to the east; the Barnet and Lougheed highways to the south; and Lansdowne Street to the west.
- 1.02 The original source of the plan was the 1977 Greater Vancouver Sewer and Drainage District Study Report on a Study of Drainage Alternatives for Northwest Coquitlam. This report gave the approximate size, approximate alignment and approximate current cost of several alternative piped drainage systems.
- 1.03 The District constructed the Hoy Creek Diversion to stabilize the long-term flows in Hoy Creek at the 'pre-development' level. The diversion dam on Hoy Creek allows a minimum flow of $2.84 \text{ m}^3/\text{sec}$. (100 cfs) to run in the stream bed, and diverts up to $16.1 \text{ m}^3/\text{sec}$. (570 cfs) to Lefarge Lake, in the event of a 100 year storm event.
- 1.04 In December 1982, Council authorized a pre-design study to be carried out by Engineering Consultants and financed from the Development Cost Charge Fund for drainage in the Town Centre.
- 1.05 This memorandum outlines current tasks, benchmarks and progress in the project. The budget submission contains the sum of \$1,315,000 for aspects of the 1983 program.

2.00 STATUS REPORT

2.01 Date of Report: 1983 03 01

2.02 Preplan

BENCHMARK TASK	CO-ORD.	COMPLETION STATUS	TGT. DATE
A. Base plan for Town Centre	JA	100%	Feb. 8
B. Topographic Overlay	JA	100%	Feb. 11
C. Green Strip (leave strip) Overlay	JA	80%	Mar. 10
D. Development Sequence Overlay	JA	80%	Mar. 03
E. Written Definition: Environmental Constraint	JM	75%	Mar. 10
F. Written Description of Natural Flow Regime	JM	75%	Mar. 10
G. Written Description of 'Developed' Flow Regime	JM	20%	Mar. 31
H. Graphical Concept for Minor storm (1:10) sys.	JM	90%	Mar. 04
J. Graphical concept for Major storm (1:100) sys.	JM	50%	Mar. 09
K. Graphical Concept: development sequence (1983/88)	JM	90%	Mar. 16
L. Field Survey	HA	100%	Feb. 22
M. Report: Pre-design Concept Plan	DAK	15%	Mar. 31
Presentation of Pre-design to Environmental Agencies:	DAK	0%	Mar. 31
Presentation of Pre-Design to Ministry of L,P.H.	DAK	0%	Mar. 31

2.03 Agreement

A. Complete Request for Proposal	DAK	30%	Mar. 11
B. Consultant Evaluation	DAK	0%	Apr. 07
C. Development Sequence Plan Frozen	DAK	0%	June 15
D. Financial Forecast Report	NWN	0%	June 30
E. Draft 286 Agreement	NWN	0%	June 30
F. Final 286 Agreement to Council	NWN	0%	Aug. 30

2.04 Design and Construction

A. Request for Proposal	DAK	0%	Sept. 30
B. Consultant Evaluation	DAK	0%	Sept. 24
C. Tender Call: Phase One	DAK	0%	Oct. 24
D. Contract Award: Phase One	DAK	0%	Nov. 24
E. Construction Acceptance: Phase One	SR	0%	Feb. 01

3.00 RECOMMENDATION

3.01 That this report be received by the Drainage Committee.

Neil Nyberg
N. W. Nyberg, P. Eng.

DISTRICT OF COQUITLAM

Inter-Office Communication

TO: T. Klassen
Municipal Manager-Clerk DEPARTMENT: Administration DATE: 1983 03 10

FROM: N. W. Nyberg
Municipal Engineer DEPARTMENT: Engineering YOUR FILE:

SUBJECT: DITCH ELIMINATION PROGRAM OUR FILE: 05 03 03

FOR DRAINAGE COMMITTEE1.00 BACKGROUND

- 1.01 In January 1983 final adoption was given to By-law No. 1294, 1982, the District of Coquitlam Municipal Lands Reserve Fund By-law, which authorized transfer of Four Million Dollars to a special reserve fund, the proceeds from which will finance the progressive enclosure of open ditches in the District of Coquitlam.
- 1.02 The scope of construction for the program depends on the interest yield from the account. The proposed 1983 capital budget contains \$450,000 of funds, based on a 12 percent average return over twelve full months. Expenditures for engineering could commence in spring, with work to start in fall or winter.
- 1.03 This memorandum outlines current tasks, benchmarks and progress.

FOR DRAINAGE COMMITTEE
Ditch Elimination Program

1983 03 10

2.00 STATUS REPORT

2.01 Date of Report: 1983 03 01

2.02 PREPLAN

BENCHMARK	TASK	CO-ORD.	COMPLETION	TGT. DATE
2.02 A.	Base Plan for Ranch Park	JA		83 05 15
B.	Topographic Overlay	JA		83 06 01
C.	Profile Date	JA/HA		83 06 01
D.	Graphical Concept for minor storm (1:10)	JM		83 07 01
E.	Graphical concept for major storm (1:100)	JM		83 07 01
F.	Graphical concept: development sequence	JM		83 07 01
G.	Report: Pre-design Concept Plan	JM		83 08 01
H.	Presentation of pre-design to Environmental Agencies	DAK		83 08 15
J.	Presentation of pre-design: Drainage Committee	DAK		83 08 15

2.03 ENGINEERING DESIGN

A.	Complete request for proposal			83 08 30
B.	Consultant Evaluation and Selection			83 09 20
C.	Review Contract Documents			83 10 20
D.	Tender and Bid Evaluation: Phase One			83 11 15
E.	Contract Award: Phase One			83 12 01

2.04 CONSTRUCTION

A.	Start of Work: Phase One	SR		84 01 02
B.	Construction Acceptance: Phase One	SR		84 06 01

3.00 RECOMMENDATION

3.01 That this report be received by the Drainage Committee.

N. W. Nyberg
N. W. Nyberg, P. Eng.

DISTRICT OF COQUITLAM

Inter-Office Communication

TO: T. Klassen
Municipal Manager-Clerk DEPARTMENT: Administration DATE: 1983 03 09

FROM: N. W. Nyberg
Municipal Engineer DEPARTMENT: Engineering YOUR FILE:

SUBJECT: CONTRACT ADJUSTMENT:
COLONY FARM OUTFALL OUR FILE: 05 02 83/01

Reference: A. Council Resolution 952 1982 11 08

1.00 BACKGROUND

- 1.01 On 1982 11 08 Council awarded the contract for Riverview Water Supply and Drainage Improvements to Jack Cewe Ltd., the low bidder, in the amount of \$1,206,829.48.
- 1.02 Following contract award, we met with the Ministry of Highways and Transportation to examine the long-range drainage implications of the Colony Farm tributary area. It may be recalled that the Nu West Industrial Park adjacent the Lougheed Highway has been a contentious issue owing to potential flooding from Mundy Creek. The meeting with the Ministry established a two-part initiative to resolve the problem:
- Coquitlam would increase the size of the Colony Farm outfall to accept a larger runoff than was anticipated, on a 25 year recurrence interval; and
 - the Ministry of Transportation and Highways would install enlarged culverts under the Lougheed Highway to accept larger flows on Mundy Creek, thereby reducing the need to impound water on the Nu West site.
- 1.03 The project is funded from the reserve account established for off-site services for the Riverview Project.

2.00 DISCUSSION

- 2.01 We have determined that Jack Cewe Ltd. would install a larger culvert and flood gate for a fixed amount of \$9,250; and Associated Engineering Services Limited would prepare the design for \$3,700. Since the installation is currently budgeted for \$175,737 (construction) the total sum of \$12,950 would represent an increase of 7 percent. The flood box and culvert would then provide the same level of flood protection as similar MOTH drainage systems. It is therefore desirable to increase the contract amount by the sum of \$12,950.

T. Klassen
Re: Contract Adjustment: Colony Farm Outfall

1983 03 09

3.00 RECOMMENDATION

- 3.01 That the contract for Riverview Water Supply and Drainage Improvements - Stage I awarded to Jack Cewe Ltd. in the amount of \$1,206,829.48 be increased by the amount of \$12,950 to increase the capacity of the Colony Farm Outfall; and that necessary change orders and documents be issued by the Municipal Engineer.



N. W. Nyberg, P. Eng.

NWN/mw

DISTRICT OF COQUITLAM

Inter-Office Communication

TO: T. Klassen
Municipal Manager-Clerk DEPARTMENT: Administration DATE: 1983 03 09

FROM: N. W. Nyberg
Municipal Engineer DEPARTMENT: Engineering YOUR FILE:

SUBJECT: CULVERT POLICY OUR FILE: 01 03 06

FOR DRAINAGE COMMITTEE

Reference: A. Treasury memorandum 1983 01 24
B. Engineering memo report 03 01 03 d 1983 02 08
C. Council Resolution # 224, Feb. 28, 1961.
D. Council Resolution # 1414, Sept. 23, 1969
E. Council Resolution # 1784, Nov. 7, 1977
F. By-law No. 1023, Subdivision Control By-law.
G. Engineering memo report 03 03 06 d 1983 03 09
H. Engineering memo report 03 01 04 d 1983 02 10

1.00 BACKGROUND

1.01 In 1961 Council adopted a policy of supplying free culverts for each parcel of land in Coquitlam. In 1980 Council adopted By-law 1023, the Subdivision Control By-law, which declares that all access and drainage improvements are the cost of the developer. Current subdivision standards require enclosed drainage. The consequence of having two mutually exclusive policies has caused a degree of confusion in the Treasury and Engineering departments:

- about \$18,497 was built up in a trust fund for culvert installations from 1961, but actual completions were never recorded;
- capital costs for installing culverts for private access were charged to operating accounts;
- "prepaid" culverts were charged for at the estimated amount irrespective of actual cost to the Municipality;
- two different standards were applied to subdividers: conventional subdivisions paid the entire cost of development; in-fill subdivisions were provided, in some cases, with 'free culverts' charged against operating accounts; and
- the original reasons for establishing a trust fund are not clearly understood.

For Council
Re: Culvert Policy

1983 03 01

- 1.02 The annual pre-audit check by Treasury disclosed some of the problems with the present system. The Operations Division carried out a detailed field examination of over 180 installations made since 1970. Some culverts have been removed as new subdivision activity established underground drainage. Records of culvert installations made before 1970 no longer exist. We have identified 32 outstanding installations where monies were collected but no construction has been carried out.
- 1.03 This memorandum recommends rescinding obsolete Council resolutions which are at variance with the Subdivision Control By-law; retaining the accumulated trust account to revenue surplus or such other source as the Treasurer deems advisable; establishing a reserve account for outstanding obligations on the part of the District; and adopting a new culvert policy by resolution for the guidance of staff.

2.00 DISCUSSION

- 2.01 Under Section 4.02(1)(b) of By-law No. 1928 (1971) as amended, the Municipal Engineer approves access for off street parking use (driveways). In practice, this means that driveway locations are approved at the Engineering Work Reception counter.
- 2.02 Under Section 5.12 of By-law No. 699, the Streets and Traffic By-law, the Municipal Engineer may grant written permission for persons to install access culverts, and may establish the specifications for such installations. Persons desiring to construct culverts may be asked to furnish security for proper installation in the amount of the Engineer's estimate of cost. Culvert installations normally arise from requests for access across roadside ditches.
- 2.03 Under Section 17.0 of By-law No. 1023, the Subdivision Control By-law, the owner of land being subdivided provides the land with a suitable piped drainage system. In the event the subdivision is on an unimproved frontage (i.e. drainage ditch), either the physical improvements are constructed (the ditches are enclosed) or a deposit in the estimated amount of the cost of upgrading is taken for deposit with the Municipality.
- 2.04 Council passed Resolution No. 224 on February 28, 1961, when the District was drained largely by open ditches. Subsequent amendments were made to the policy of providing free culverts to parcels of land, primarily to increase the price of extensions to reflect current installation costs. As the subdivision regulations changed in the 1970s, there were progressively fewer and fewer opportunities to apply the rule. Firstly, in 1980, with the adoption of the Subdivision Control By-law, it became impossible to reconcile the original Council resolution with the terms of the By-law.

FOR DRAINAGE COMMITTEE
Re: Culvert Policy

1983 03 09

- 2.05 It is clear that to avoid future confusion and unnecessary paperwork, a clear and simple policy should be adopted to cover the entitlement, the payment, the construction and the completion of roadside culverts.

Entitlement

Almost all subdivision activity in the District provides enclosed drainage systems as part of the servicing package. In isolated cases a deposit is accepted in lieu of servicing, because the current standard of services cannot be integrated with existing services of adjoining parcels. In such 'in-fill' areas, it is possible to require a road culvert and, as with other servicing improvements, such is required from the owner under By-law 1023. It is difficult to imagine the circumstances where a parcel of land does not have current physical access, unless a subdivision intervenes. Consequently, it would be consistent to rescind the obsolete regulations of free culverts, and instead to rely on the current by-laws to establish entitlements.

Payment

Culverts are a component of the surface drainage system and cost several hundred dollars to buy and install. In 1982 seven culverts were installed at a mean cost of \$675; in 1983 we would expect an average cost in the range of \$700 to \$750. There are three ways to establish cost recovery: predetermined rates; estimated 'pre-paid' costs, and actual costs of installation. We use 'pre-paid' estimates now, but 'lost' about \$1,360 in 1982 (excess of expenditure over revenue). We should establish a set of 'pre-paid' standard charges for culvert installation by District forces to eliminate excessive administration and follow up.

Construction

It has been customary for the Operations Branch to construct all culverts. It may be more convenient to give the applicant for a 'culvert permit' the option of using a private contractor or contributing his or her own labour. Each installation would have to meet a pre-determined standard, i.e. each would be inspected and officially accepted. To ensure an appropriate standard of work is maintained, a cash deposit would be held by the District to ensure performance. It is important to establish and maintain good standards of installation since new culverts become District property on construction.

FOR DRAINAGE COMMITTEE
Re: Culvert Policy

1983 03 09

- 2.06 There are about twenty-three properties where pre-paid culvert charges have been levied but no culvert installation has taken place owing to pre-existing access. The amounts collected range from \$55 to \$110, and represent only a fraction of the cost of installation. There are an additional nine lots for which culvert deposits have been collected but which remain unoccupied. The total balance accumulated in trust account T-844116-000 is almost \$18,500. If thirty-two culverts cost an average of \$700 to install, then the total cost would be \$22,400. It is apparent, therefore, that a refund, totalling about \$2,225 (the amount paid in by thirty-two properties) would be a more economical solution.
- 2.07 It is logical to assume that the current owners of the lots purchased the credit towards a culvert when they purchased the land. Subject to the Treasurer's and Solicitor's approval, it appears a refund is the most equitable solution to the accumulated culvert charges. The balance remaining in the trust account could then be transferred to general revenue surplus.
- 2.08 Appendix A to Reference E contains lists of culverts which are completed.
- 2.09 Appendix B to Reference F contains lists of culverts for non-existent lots.
- 2.10 Appendix C to Reference F contains lists of culverts which are not required.
- 2.11 Appendix D to Reference F contains lists of vacant lots for which deposits have been made.

3.00 CONCLUSIONS

- 3.01 To cut the 'Gordian Knot' of culvert legislation and practice, it is necessary to establish clear guidelines and regulations.
- 3.02 Obsolete Council resolutions should be rescinded for clarity.
- 3.03 Culvert installations are so few that the absolute minimum of paperwork should be generated with each application.
- 3.04 There should be an opportunity for applicants to either arrange installation of culverts privately, or to have the Municipality make the installation. If a contractor is employed, a performance deposit should be required. If the Municipality does the work, then a pre-paid amount should be levied at time of installation.

3.05 The unused balance of the trust account should be 'retired' in a manner approved by the Municipal Treasurer.

4.00 RECOMMENDATIONS

4.01 That a driveway culvert be defined as an open ended conduit of an approved design located on Municipal Land, highway or right-of-way, which encloses a ditch, swale, watercourse or drainage path to allow passage of vehicles or pedestrians.

4.02 That driveway culverts which are installed in public roads and rights-of-way must meet standards of design, installation and construction established from time-to-time by the Municipal Engineer; and that installation of approved culverts shall be by:

- the applicant at his or her expense; or
- the Municipality at a pre-paid rate established from time-to-time by Council.

4.03 That applicants wishing a driveway culvert require the approval of the Engineering Department in advance of installation. In the event a private contractor is used; or a 'self help' installation is contemplated, a performance deposit shall be paid into the Treasury to ensure proper design, installation and materials, and this amount will be refunded on formal acceptance of the completed work by the Municipality.

4.04 That effective April 1, 1983, a driveway culvert installed by the Municipality shall be pre-paid at the rate of \$145/m for a 400 mm (nominal diameter) corrugated metal pipe.

4.05 That applicants who employ a private contractor to construct driveway culverts on Municipal lands, highways or rights-of-way must ensure that the contractor provides the Municipality with proof of insurance to the satisfaction of the Municipal Solicitor before start of work.

4.06 That applicants providing their own labour or using a private contractor to install driveway culverts shall contact the Municipality on completion of the work.

4.07 That driveway culvert installations which do not meet Municipal standards shall be corrected by the applicant within 30 days of receipt of written notification, or the culvert(s) will be removed from Municipal lands, highways or rights-of-way by the Municipality.

FOR DRAINAGE COMMITTEE
Re: Culvert Policy

1983 03 09

- 4.08 That henceforth a capital budget estimate for driveway culvert installations, and a revenue projection for pre-paid culverts, should be incorporated into the annual budget estimates.
- 4.09 That Resolution 224, Feb. 28, 1961: Re. Driveway Culverts be rescinded.
- 4.10 That Resolution 1414, Sep. 23, 1969: Re. Driveway Culverts be rescinded.
- 4.11 That Resolution 1784, Nov. 7, 1977: Re. Driveway Culverts be rescinded.

N. W. Nyberg

N. W. Nyberg, P. Eng.

NWN/mw

c.c. V. Dong
H. Hockey
T. Edwards
H, Castillou

DISTRICT OF COQUITLAM

Inter-Office Communication

TO: T. Klassen
Municipal Manager-Clerk DEPARTMENT: Administration DATE: 1983 03 19

FROM: N. W. Nyberg
Municipal Engineer DEPARTMENT: Engineering YOUR FILE:

SUBJECT: SECTION 286 AGREEMENT
FOR PROVIDING WORKS OR SERVICES OUR FILE:

FOR DRAINAGE COMMITTEE

Reference: A. Section 286 Municipal Act RSBC 1979
B. By-law 5025 Corporation of the District of Surrey
C. By-law 6236 Corporation of the District of Surrey
D. By-law 5283 Corporation of the District of Surrey
E. By-law 3498 Corporation of the Township of Richmond

1.00 BACKGROUND

- 1.01 A section 286 Agreement under the Ministry of Lands, Parks and Housing Act provides a formula to impose all or part of the cost of works and services on the owners of real property in an area specified by Council, and for a loan from the Province to meet these costs.
- 1.02 On 1982 01 20 a consultation with Surrey officials was held to determine the results of their experience with development agreements under Section 286. On 1982 02 17, we met with representatives of the Ministry of Lands, Parks and Housing.
- 1.03 This memorandum sets out some objectives and timetables for negotiating a 286 agreement to finance the Town Centre drainage system.

2.00 OBJECTIVES

- A. To develop, via section 286 agreement, an avenue for different owners within the Town Centre area to provide a comprehensive municipal trunk drainage system.
- B. To demonstrate to the Ministry of Lands, Parks and Housing, via technical brief:
- that the proposed works are technically feasible;
 - that the full costs of the program are recoverable at interest rates up to and including 20 percent;
 - that there is a public advisory sub-program to advise owners of the plan; and
 - that there will be strong and consistent management of the program throughout the duration.
- C. To explain to the affected land owners why the proposed 286 agreement is a good value for money, via public information program.

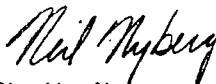
- D. To include all eligible costs under the umbrella of the 286 Agreement, including those for the technical brief and public information program.

3.00 TIMETABLE/BENCHMARK TASKS

Pre-design Concept Plan Complete	March 21, 1983
Presentation of Pre-design to MLPH	March 31, 1983
Presentation of Pre-design to Environmental Agencies	March 31, 1983
Financial Forecast: Construction	June 15, 1983
Public Information Program Design Complete	June 15, 1983
Draft of 286 Agreement to Manager	June 24, 1983
Penultimate draft of 286 Agreement to Committee	August 25, 1983
Final draft of 286 Agreement to Council	August 30, 1983
Draft Agreement to MLPH	September 2, 1983

4.00 RECOMMENDATIONS

That this report be received for information by the Drainage Committee.


N. W. Nyberg, P. Eng.
Municipal Engineer

NWN: mw

DISTRICT OF COQUITLAM

Inter-Office Communication

TO: T. Klassen DEPARTMENT: Administration DATE: 1983 03 10
FROM: N. W. Nyberg DEPARTMENT: Engineering YOUR FILE:
SUBJECT: CONTRACT ADJUSTMENT, STORM SEWER - FOSTER AVE. AND POIRIER ST. OUR FILE: 05 02 83/01

Reference: A. Council Resolution 952; 1982 11 08.

1.00 BACKGROUND

- 1.01 On 1982 11 08, Council awarded the contract for the Riverview Water Supply and Drainage Works to Jack Cewe Ltd., the low bidder, in the amount of \$1,206,829.48.
- 1.02 In reviewing the proposed watermain construction on Foster Avenue and Poirier Street, it became apparent that the construction would severely damage the existing boulevard amenities in this area, but more importantly, restoration would include reconstruction of an open drainage ditch through new backfill, resulting in demands for costly erosion protection and maintenance.
- 1.03 The project is funded from the reserve account established for offsite services for the Riverview Project.

2.00 DISCUSSION

- 2.01 Jack Cewe Ltd. has prepared a written quotation for storm sewer works in the amount of \$83,495.43. This quotation has been compared in detail to another recent storm sewer contract on Foster Avenue and appears to be in order.
- 2.02 The attached schedule shows how this additional expenditure can be accommodated within the Riverview off-the-reserve fund.

3.00 RECOMMENDATION

- 3.01 That the contract for Riverview Water Supply and Drainage Improvements, Stage I, awarded to Jack Cewe Ltd. in the amount of \$1,206,829.48, be increased by the amount of \$83,495.43 to provide storm drainage works on Foster Avenue and Poirier Street and that the necessary change orders and documents be issued by the Municipal Engineer.

N. W. Nyberg

N. W. Nyberg, P. Eng.
Municipal Engineer

TABLE 1

REVENUE
(From MLPH)

EXPENDITURES

<u>Description</u>	<u>Date</u>	<u>Amount</u>		<u>Description</u>	<u>Date</u>	<u>Amount</u>
Monies received for engineering costs	Feb.82	200,000		Consulting engineering services (Tasks I to IV)	Jan.83	151,000
Balance of monies owing from MLPH	Feb.83	1,640,468	rec'd	Consulting engineering services (extra costs over and above Tasks I to IV)	Jan.83	24,722
		<u>1,840,468</u>		District Engineering charges	Jan.82/Dec.82	35,000
				District Engineering charges (Inspection, plan processing managing)	Jan.83/Dec.83	81,000
				Construction Costs Mathewson Ave Main	Sept.82	195,500 Paid
				Construction Costs (Riverview Water Supply & Drainage Improvement Stage I contract	1983	1,206,800
				Cape Horn Pump Stn modifications (eng. cont. contract)	1983	50,000
				<u>PROPOSED</u> Drainage improvements Foster Ave	1983	83,496
				<u>PROPOSED</u> Oversizing of Colony Farm outfall	1983	12,950
				TOTAL:		<u>1,840,468</u>

Excess of Reserve over Expenditures:

DISTRICT OF COQUITLAM

Inter-Office Communication

TO: N. W. Nyberg
Municipal Engineer

DEPARTMENT: Engineering

DATE: 1983 02 07

FROM: S. Rondestvedt

DEPARTMENT: Engineering

YOUR FILE:

SUBJECT: WILDWOOD MOBILE HOME PARK FLOODING - STATUS REPORT

OUR FILE: 05 01 01

1.00 BACKGROUND

1.01 NWN report dated 82 10 14; copy attached.

2.00 OBJECTIVE

2.01 To reduce the chance of flooding the Wildwood Mobile Home Park by improving the Popeye Creek Channel.

3.00 METHOD

3.01 Remove obstructions from Popeye Creek in the area north of the Lougheed Highway.

3.02 Remove a weir obstructing the ditch on the north side of Lougheed Highway, east of Popeye Creek.

3.03 Provide an effective overflow channel on the south side of Lougheed Highway.

4.00 ACTION TO DATE

4.01 On November 5 a meeting of Coquitlam staff, Ministry of Environment and Federal Fisheries and Oceans, was held to determine whether or not the weir should be removed. We were advised that the ditch on the south side of Lougheed was an established fish habitat and must be maintained. They agreed, however, that the weir could be reconstructed to a more efficient design and that an overflow system could be established on the south side of Lougheed provided a minimum flow was maintained on the north side. They also agreed to the removal of overhanging brush and sod that was impeding the flow of Popeye Creek.

4.02 On November 8 we asked the Ministry of Highways and Transport to determine the best drainage route between the Lougheed and Trans Canada Highways. On November 15 they advised us that due to culvert sizes and existing ground levels, the most appropriate route would be along the south side of Lougheed Highway to the existing channel.

N. W. Nyberg
Re: Wildwood Mobile Home Park Flooding
Status Report

1983 02 07

- 4.03 On November 15 we made application to the Ministry of Environment for permission to clear brush and sod from Popeye Creek, reconstruct the weir in the Lougheed Highway north ditch, and create an overflow system to the south of the Lougheed Highway.
- 4.04 On November 22, Engineering staff met on site to determine method for clearing, and the amount of work involved, so a preliminary estimate of cost for the Municipal portion of the work could be established.
- 4.05 On December 10 we enquired re status of our application with the Ministry of the Environment. We were advised that due to their work load our application had not been processed, and further that the technician assigned was leaving on vacation until after Christmas.
- 4.06 On December 13 we again phoned the Ministry of the Environment and spoke to a supervisor who said he would expedite our application.
- 4.07 On December 14 a Water Management technician who said he would like to meet a representative of the Engineering Department at the Popeye Creek site to discuss our application advised there should be no objection to our application, and we could expect approval soon.
- 4.08 On December 15 we received a letter from the Provincial Fish and Wildlife Branch stating their concerns which should be addressed to in the final design and construction.
- 4.09 On December 20 a meeting was held with Jack Cewe and George Home regarding permission to enter Cewe property for the purpose of clearing Popeye Creek. They agreed to this, providing the Municipality assumed full responsibility with the Ministry of Environment. We agreed to give them a copy of the approval document, showing the Municipality as the applicant to carry out this work.
- 4.10 On December 22, we phoned Water Management Branch to determine the status of our application. We were told they were waiting for input from Federal Fisheries and Oceans.
- 4.11 On December 29, we again enquired regarding the status of our application. Due to vacations, there was no information available other than that they were possibly still waiting for Federal Fisheries comment.

N. W. Nyberg
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- 4.12 On January 7, we phoned regarding the status of our application. We were told our approval had been sent out and we should have received it. They agreed to send a photocopy. We were advised at this time that a plan for the new weir was not available.
- 4.13 On January 10, we phoned Richard Eliassen of the Federal Fisheries Office and enquired regarding the design of the new weir. He said he would send us a drawing.
- 4.14 On January 13, we received a photocopy of the Water Management Branch approval to carry out work in and around Popeye Creek. Also, we received original from Planning Dept. where it had been mistakenly routed.
- 4.15 On January 18, a letter with a copy of the approval was sent to Jack Cewe Ltd. as agreed to at our earlier meeting.
- 4.16 On January 20, we received from Richard Eliassen a sketch depicting the new weir and its location.

5.00 ACTION REQUIRED

- 5.01 Public Works to carry out brush clearing and related cleanup. A meeting will be held between S. Rondestvedt, W. Erwood and R. Nisbet during the week of February 7 - 11. This portion of Popeye Creek is on Jack Cewe Ltd.'s property. Permission has been received for municipal forces to enter onto Cewe property to carry out the work. George Home of Cewe Ltd. and Susan Latimer of the Provincial Fish and Wildlife Management Branch should be notified prior to work commencing.
- 5.02 On February 7, 1983, we discussed the matter of access to the site with R. Nisbet and he now advises that access must be obtained from the Mini Storage Company on Loughheed Highway. This written approval will be obtained as soon as possible.
- 5.03 To order a design and install a functional weir, we must determine the minimum flow required to maintain the fish habitat and, therefore, the minimum height required for the weir. Our Surveys Branch have been requested to provide the required cross sections to determine the above. When this information is available, John Meisl will calculate the flows and give a design elevation for the weir. When this elevation is determined, a site meeting would be called with the Department of Highways and Richard Eliassen of the Fisheries and Oceans to determine how, when and by

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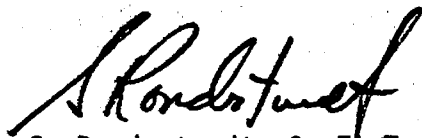
1983 02 07

5.00 Action Required

5.03 (cont'd)

whom the weir will be built. The approval from Water Management states that the weir replacement must be completed before work begins on the overflow channel.

- 5.04 To create an effective overflow channel requires removing the old weir; clearing the culvert under Lougheed Highway and widening and deepening the ditch on the south side of Lougheed from Schoolhouse Street east to the above-mentioned culverts. This work will be carried out by the Ministry of Transportation and Highways. Scheduling could be arranged at the meeting regarding the new weir. The Ministry of Transportation and Highways should be given a copy of the approval document from Water Management, along with copies of the Fisheries' comments related to this approval.



S. Rondestvedt, C. E. T.
Senior Project Technologist

VF:mw:ls