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AN EVALUATION of the FEASIBILITY OF CONTRACTING-OUT WATER QUANTITY DATA COLLECTION in BRITISH COLUMBIA

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September 1990

Inland Waters
Pacific and Yukon Region
Vancouver, B.C.

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INTRODUCTION

This evaluation was initiated by the Pacific and Yukon Region of Conservation and Protection to assess the feasibility of contracting-out the collection and computation of basic water quantity data.

The Water Survey of Canada (W.S.C.) has developed a national reputation for producing high quality data accepted by both its clients and the courts. A basic premise of this evaluation was, therefore, that contracting-out not have a detrimental effect on either the quality or continuity of data produced. A second basic premise was that the evaluation must be objective rather than protective of the status quo. Wherever possible uncertainty should be minimized in the contracting-out approach, thereby reducing the risk factor and contract costs.

Three documents were produced during the evaluation process. The first was an assessment of the in-house costs of collecting and computing water quantity data at the sub-office. (1) The second provided background information for a contracting-out assessment. (2) The third provided a preliminary cost estimate for contracting-out water quantity data collection and computation. (3) All three documents are based on the same scope of work and producing the same product.

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BASIS OF COMPARISON

The principal assumptions made for calculation of both the in-house and contracting-out costs were:

a. All functions now performed at the Fort St. John, Prince George, Williams Lake, Kamloops, Penticton, Nelson and Cranbrook sub-offices which operate 380 stations, 48 remote and 332 accessible, would be contracted-out.

b. W.S.C. would provide the contractor with the existing equipment located at each gauging station plus specialized hydrologic equipment, work manuals, standard forms and charts.

c. Major maintenance, construction of new stations and changes to and upgrading of instrumentation and station equipment would be done by W.S.C. at W.S.C. cost.

d. The contractor would provide qualified and experienced staff and, under W.S.C. direction, would administer the Career Development Program for training the contractors field technicians who had not completed the program.

e. All work done by the contractor would be subject to inspection and checking by W.S.C. staff to ensure that the quality of the data is not adversely affected.

f. Digitizing and final processing of data would be done by W.S.C. at W.S.C. cost.

g. The contractor would be responsible for the collection of data and for field computations, including the engineering level of data review. Final acceptance of data for publication would be the responsibility of W.S.C. Area Engineers.

h. The contract would be for a five year period.

Twenty-two field technicians are employed in seven sub-offices at the following levels:

Supervisors	EG-ESS-7	7
Technicians	EG-ESS-6	10
	EG-ESS-5	1
	EG-ESS-4	2
	EG-ESS-3	2

The background information specified that all supervisors provided by a contractor must have completed the W.S.C. Career Development Program and either have had experience in supervising a sub-office or have supervisory qualifications. About 75 percent of the technicians must have completed the Career Development Program and new recruits must have graduated as an engineering technologist.

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3. IN-HOUSE COSTS

In-house cost calculations were based on W.S.C. preliminary calculation of the total federal-provincial shareable operating cost for 1989-90 for the B.C. network. This cost was computed by W.S.C. in accordance with schedule B of the federal-provincial water quantity cost-sharing agreement.

Costs for the seven sub-offices were extracted from costs for the B.C. network. The extracted costs were then adjusted to remove the cost of factors which would not be contracted-out, e.g. computer costs for data processing. These adjusted 1989-90 costs were increased for inflation to provide the following estimate of adjusted shareable operating costs for 1990-91.

Salaries	$ 907,634
Operating	$ 618,801
Capital	$ 151,905
TOTAL	1,677,530

The cost of salaries does not include the effect of the new technicians salary scale. The new rate was not considered in either the in-house or contracting-out calculations.

Since Schedule B costs do not include all costs to the federal government for collection and computation of water quantity data at the field office level cost adjustments were made for:

a.	Sub-office Space for Field Staff. These costs, now paid by D.P.W., total		$124,700
b.	Personnel plus Finance and Admin. Support Pro-rated on the basis of population served for 22 field staff		$112,500
c.	Employee Benefits Paid by Employer. Based on Treasury Board rate, 15.5%		$140,700
d.	Stores and Materiel Management. Covers rental, staff, support and operations		$ 31,000
e.	Area Engineers Salaries, benefits, office space and support for functions contracted-out	$ 96,000	
f.	Miscellaneous	$ 15,400	

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Cost adjustments were not made for:

a. Taxes, cost of money, profit
b. Liability insurance
c. The cost of specialized hydrologic equipment issued and returnable in good condition
d. The one year cost of a seconded engineer to help with technical aspects of the work.
e. Ensuring safe conditions at gauging stations turned over to a contractor.

The total 1990-91 cost for operating the data collection and computation program at the field office level for the seven sub-offices would be $2.2 million.

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4. CONTRACTING-OUT COSTS

Contracting-out costs were obtained by having an established firm provide a preliminary estimate as to what contractor's tender prices should be expected in the event that bids were requested through the Department of Supply and Services. It was emphasized that the information provided for this purpose was not adequate for requesting tender prices.

A representative of the firm visited the Kamloops sub-office to discuss work procedures with the local W.S.C. staff and to see the type of equipment used. Typical gauging stations in the area were also visited.

The preliminary estimate of contracting-out costs assumes that 50 percent of the sub-office staff would join the contractor. The remaining 50 percent would be recruited from W.S.C. across Canada or by advertising the vacant positions nationally. Relocation costs were estimated at $25,000 per person. An area engineer, an assistant engineer and a secretary would be provided. The top pay scale was assumed for each level of technician and supervisor. The total of salaries and fringe benefits was estimated to be $1,104,655.

Vehicle costs were estimated on the basis of leasing new replacement vehicles to similar specifications as the present fleet. The cost of equipment was estimated as the cost of replacing each item.

Helicopter costs were estimated for remote stations on the basis of an average of 7 meterings per year. Calculated trip durations and hourly rates plus fuel costs were used to estimate costs for each sub-office.

Office rental costs were based on the extent of office, workshop and parking available at Kamloops.

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The major cost components are listed as:

Personnel Costs (Wages and Subsistence)	$1,191,000	(45%)
Office Rent and Support Costs	350,000	(13.3%)
Helicopter Costs	274,000	(10.4%)
Vehicle Operation and Maintenance	226,000	(8.6%)
Equipment Maintenance and Replacement	128,000	(4.9%)
Communications and Office	126,000	(4.8%)
Finance Costs	103,000	(3.9%)
Depreciation	74,000	(2.8%)
Insurance	39,000	(1.5%)
Management Travel	25,000	(1%)
Contingencies	100,000	(3.8%)
TOTAL	**$2,636,000**	**100%**

The report states that a private contractor would require "approximately $3,000,000 per year to carry out the on-site data collection in the seven districts". It is understood that this provides for slightly more than the normal 12 percent profit.

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5. CONTRACT MONITORING AND DATA VERIFICATION

The in-house cost calculations include both the cost of doing the work and of ensuring that national standards have been followed and that the integrity of data is not adversely affected. The contracting-out costs do not include costs for independent verification that national standards have been followed.

It has been assumed that under a contracting-out approach, 1.5 person years of area engineer time would be converted to contract monitoring and verification of data and that 4 senior hydrometric technicians, located in their working area, would be required to spot-check about 20 percent of the field measurements and data work-up done by the contractor. The estimated additional cost would be $450,000 or about 0.2 times the in-house costs.

With increased experience, confidence and trust this monitoring cost may reduce. It is unlikely however, that less than one engineer and three technicians at a cost of about $325,000 would be adequate, even under the most favourable conditions.

Neither of these estimates has a high level of accuracy, however, they should be adequate for purposes of comparison and evaluation.

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6. DISCUSSION OF COSTS

The in-house and contracting-out costs for the collection and computation, at the field office level, but including an engineering review of work and data, are:

	In-house	Contracting-out
Seven sub-office operation	$2.2 million	$3.0 million
Contract monitoring and data verifications	-	0.45 million
TOTAL	**$2.2 million**	**$3.45 million**

The largest single item in both in-house and contracting-out costs is salaries and benefits. Both calculations are based on the same scale, but the government benefit package without leave is 5.5 percent higher. This, plus the government indexed pension, raises some doubt as to whether current staff would elect to go to work for a contractor under a five year contract. Factors such as the Work Force Adjustment Policy, retraining of technicians for other federal positions and housing costs would all become important to each individual. The contractor's ability to meet the requirements for providing experienced staff could only be determined under actual tender conditions.

Although the contracting-out costs are developed on a different basis than that used for government budgeting, all work and cost items have been included. More importantly, there does not appear to be any significant way to reduce contracting-out costs to the level of in-house costs.

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CONCLUSIONS

The in-house cost of operating the seven sub-offices is $2.2 million.

Payments to a contractor for operating the seven sub-offices would be $3.0 million.

Government costs for contract monitoring and data verification would add an estimated $450,000 to a contractor's cost.

The total cost of contracting-out therefore becomes $3.45 million or 1.56 times the in-house cost of producing the same product.

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REFERENCES

1. Costs of Water Quantity Data Collection, E.M. Clark, September 1990.

2. Background Information for Contracting-out Assessment, Water Survey of Canada, Pacific and Yukon Region, July 1990.

3. Preliminary Cost Estimate for Contracting-out Hydrometric Field Survey Activities, XRAL Environmental, a Divison of SGS Supervision Services Incorporated, August 14, 1990.