

ITEM 5
MANAGER'S REPORT NO. 62
COUNCIL MEETING 1978 09 11

RE: FIRE PREVENTION, CONTROL STUDY AND MASTER PLAN

Following is a report from members of a proposed Technical (Working) Committee on a study relative to fire service in Burnaby.

RECOMMENDATIONS:

1. THAT a Technical (Working) Committee be established as described in this report and that it be co-chaired by the Director-Fire Services and the Director of Planning; and
2. THAT an Advisory Committee be established to advise the Technical Committee and to function as described in this report; and
3. THAT the general methodology as described in the Urban Guide and summarized in this report be followed; and
4. THAT authority be given to expend the 1978 funds as described in the "Budget Requirements" section of this report. (Council will have an opportunity to authorize 1979 expenditures in the 1979 Provisional Budget).

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Planning Department
1978 September 04
Our File #10.430(2)

TO: MUNICIPAL MANAGER
FROM: AS BELOW
RE: FIRE PREVENTION, CONTROL STUDY AND MASTER PLAN

INTRODUCTION

A study of Burnaby's fire service was last undertaken in 1968 and that study dealt only with the location of fire halls. Changes in the community since that time point to the need for a total overview of fire prevention and control within the municipality.

In this report a more comprehensive approach is being advocated. The study proposed will consider not only the location and relocation of fire halls but also will examine the possibilities of such alternatives as changes in fire prevention programs and a review of fire and building codes. The purpose will be to obtain the best possible value for expenditures on fire prevention and/or suppression consistent with the level of risk we are prepared to accept.

It is the intent of this report that:

- (1) Agreement be reached on conducting a study with the scope and methodology described in this report, which will lead to the preparation of a comprehensive Fire Protection and Control Master Plan;

- (2) A technical working committee be established;
- (3) An advisory committee be established;
- (4) Expenditures of funds now in the 1978 Planning Department budget be authorized in order to initiate work on the study.

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BACKGROUND

At the Council meeting of 1977 July 18, Council received a report from the Director of Planning entitled "Fire Hall Study", dated 1977 July 13.

The purpose of the 1977 report was to receive authorization for a grant for a fire hall study through the Municipal Research Support Program. Though the grant was not received the following general justification for a fire hall study is still applicable.

Studies of Burnaby's fire hall needs have taken place periodically over the years in order to give recognition to changes in the need for fire protection brought about by increased building, more people, and shifts in the development pattern.

A study undertaken initially in 1961 and then updated in 1968 proposed the provision of five fire halls, two of which have since been constructed, (the Central Fire Hall and the East Burnaby Fire Hall).

Though no comprehensive study has been undertaken by municipal staff since 1968, in 1973 proposals were made which did not in all respects coincide with the 1968 report and which included three new fire halls, the relocation of one fire hall, and the splitting of two others. In the same year the Insurers' Advisory Organization offered suggestions which involved the relocation of four fire halls and which coincided only in part with either of the other proposals. None of the various proposals made since 1968 have been implemented.

It is apparent that we should take an entirely fresh look at our fire hall plan. The reasons are overall growth, alterations in the development pattern, new development concepts adopted by the municipality for certain areas, a change in analysis techniques, and the high operating costs of fire halls.

When the last study was completed in 1968, the population was about 117,500, while in 1978 it is about 134,000, an increase of 14%. Perhaps more significant is that this has been accompanied by changes in the development pattern which were not fully anticipated. Examples are the rapid increase in the number of high rise apartments, emphasis on the development of condominiums and, as Burnaby has become more intensely urbanized, the concentration of high value commercial and office buildings in certain locations. It is reasonable to expect that these development trends have resulted in important changes in the need for fire protection and fire prevention in various areas.

We now have a much more clearly delineated picture than we had in 1968, of the way the community wishes to grow, and long range plans and policies have been advanced for specific areas, which reflect this wish. A prime example is the proposed "Metrotown" which will lead to major concentrations of development and which will result in needs for fire protection which have not previously been considered. A second example of probable change in the need for fire protection is the Big Bend Area where policies adopted by the Municipality should lead to some industrial development of higher quality, and hence higher value.

Over the last few years study methods have changed radically. Our last staff study of fire hall needs in 1968 relied on establishing service areas based upon circles of predetermined radius drawn around existing and proposed fire hall sites. At that time this was the generally accepted approach.

In recognition that techniques of study have changed considerably in the last few years, on 1977 July 19 staff met with Mr. Rick Dumala, a systems analyst specialist who works for the City of Vancouver in order to obtain comments and advice with respect to modern study methods.

At the above meeting, and at a subsequent further discussion with Mr. Dumala, he suggested:

- i. We should take a comprehensive look at the fire problem and consider not only fire suppression through the location of fire halls but also fire prevention through Code enforcement, etc.

(The operating costs of a fire hall are high in relation to the capital costs, largely because of the labour intensive character of fire protection. If fire halls are well located with respect to all relevant criteria an optimum protection service can be provided with a minimum number of fire halls; when this happens operating costs tend to be kept down and annual savings can be considerable. Because of this distinctive characteristic of fire halls, a comprehensive approach is especially important from the economic standpoint.)

- ii. We should use a new document entitled "Urban Guide for Fire Prevention and Control Master Planning", as the main basis of our study. This is a thorough and practical approach which can be supplemented by the use of three computer programs from the Rand Corporation.
- iii. It is important that a technical committee be set up to guide the progress of the study.

NO. 2 FIRE HALL - A SPECIAL SITUATION

The new aerial now on order for delivery this summer will be placed in No. 3 Fire Hall and it has been determined that the aerial now at No. 3 will fit into the bay at No. 2 without an addition.

To man the aerial at No. 2 hall additional accommodation will be required, but the question of whether a permanent addition should be made to the No. 2 hall is so closely related to decisions which are needed with respect to other fire halls, and with respect to systems other than fire hall construction, that it cannot be logically studied in isolation. Since a study and master plan for the whole community fire suppression and protection service would take from two to three years to undertake, an investigation will now be made in regard to the feasibility of providing a temporary facility at No. 2 hall to accommodate the staff for the aerial.

URBAN GUIDE FOR FIRE PREVENTION AND CONTROL MASTER PLANNING

The Urban Guide is a recent document which was published in 1977 March. It is a step by step manual which outlines the procedures for planning and implementing fire prevention and control master plans in urban communities. It was prepared for the U.S. Department of Commerce through a National Fire Prevention and Control Administration Grant. It has been tested on 13 communities in the U.S. and has been discussed and reviewed by 50 states. There is a good deal of enthusiasm for this guide in the U.S.

We wrote to all of the communities involved in the testing which led up to the development of the guide, and asked for comments on its effectiveness.

The replies included encouragement, some words of warning and some useful specific advice.

The following excerpt from the Project Leader of the Fire Services Study at the City of Richardson in Texas is self explanatory.

"I am very pleased to hear that you plan to do fire master planning using the Urban Guide developed by NFPCA. At first glance it appears to be very constricting from a planning standpoint, but as it is followed you will find that it works very well. We had initially "short circuited" some of the steps that we thought we could do without but later saw the importance and came back to them.

In my opinion, the strongest part of the planning is the potential of developing the alternate systems which potentially have the greatest effect on cost effectiveness and good operation. I cannot stress too highly the importance of operating with department heads of various departments if you possibly can and making sure you have command of their time with regard to planning."

Springfield, Illinois points out that following the Urban Guide Master Plan principles has already resulted in substantial reductions in fire losses, both property losses, injuries and fatalities. They expect that in the years to come they will also experience a reduction in the overall cost of fire protection. They advocate that we review the Urban Guide carefully and use it based on our problems and resources.

Fremont, California points out that the Master Planning approach in the Urban Guide is an essential ingredient in community fire protection. They warn that it is time consuming, detailed and frustrating but emphasize that if commitments are made and if the project is carried to its logical conclusion the results more than justify the expenditure in time and dollars. They stress the need for a strong commitment both by the top administrator and the Fire Department.

Virginia Beach, Virginia. They emphasize the need for a strong commitment from the top administrator for the planning project to be a success. Virginia Beach's opinion of the Master Planning process in the Urban Guide is encouraging:

".....Master Planning.....offers a unique opportunity to bring the fire service within the mainstream of contemporary management. It is a vital tool to equitable balancethe growing costs of providing fire protection. It will provide the elected officials, the city administrator and the community clearly definable choices for maintaining and providing reasonable levels of fire service delivery needs."

Azusa, California suggest we follow the Urban Guide carefully. They recommend that goals, objectives and criteria for selecting alternatives be approved by the Municipal Council.

Springdale, Arkansas point out that the Master Planning approach in the Urban Guide is thorough and complex. For any study involving only siting of future fire halls they suggest use of the Rand Corporation's "Fire Station Location Model".

Tulsa, Oklahoma appear to have assumed we were only concerned with the location of fire hall sites and suggested use of the method of relating response time and response distance relative to hazard and density measured against community criteria of acceptable risk.

Having reviewed the Urban Guide and taking into consideration the advice of the Vancouver Fire Department analyst and several of the U. S. communities which we have contacted we are proposing that we follow the methodology in the Urban Guide, as required by our own problems and consistent with the resources and time which we in Burnaby have available. We do not intend to follow it rigidly - we will use it as a guide for our own particular situation.

GENERAL METHODOLOGY AND SCOPE

Methodology and scope are grouped together because if the following methodology is adopted the scope of the study, potentially, may be expanded considerably beyond our original concept of a study the sole objective of which was to provide sites for future fire halls.

The methodology in the Urban Guide essentially follows the systems analysis approach, along the lines indicated in the Supervision II course in the Burnaby Municipal Employees' Development Program. Below is a consolidated version of the methodology which we are proposing. A summary of the steps involved is:

1. Establishment of need for a new study
2. Definition of the fire situation
3. Establishment of goals and objectives
4. Selection of criteria to analyse alternative concepts
5. Definition of alternative system concepts
6. Definition of system functions and resources
7. Analysis of system concepts
8. Comparing concepts and selecting the best system concept
9. Preparation of Master Plan

It is emphasized that this study will not be something undertaken exclusively by one department. It will be a municipal wide study, undertaken through the cooperation of the various departments. The Planning Department however will be responsible for spearheading and coordinating the whole project.

It is proposed that two committees be used during the study process, a Technical Working Committee made up of municipal staff and an Advisory Committee which would contain representation from organizations in the community which are likely to be interested in the fire prevention and control field. The content and the responsibilities of the Technical Committee and the Advisory Committee are described in more detail on pages 12 and 13 respectively.

1. Establishment of Need for a New Study-

General justification of the need has been covered above in the section entitled "Background".

2. Definition of the Fire Situation-

Before goals and objectives can be defined the nature of the fire problem must be identified and the fire situation defined. In order to do this certain basic data will be collected and recorded in a form that it can be analysed through use of the computer. Further data may have to be obtained at a later stage in the study when a decision has been made on the system to be adopted in the Master Plan.

- (a) Fire Management Areas have been established.
- (b) Response time to each fire from each fire hall, the type of fire (vehicle, building, etc.), and the type of land use and occupancy involved in each fire, has been tabulated and listings keyed to Fire Management Areas are awaited from the computer. Among the uses of this data will be the determination of whether response times reach acceptable standards; frequency of responses will also be used to measure the adequacy of the existing system.
- (c) Population current and projected. Population is being assigned to fire management areas. This will then provide one of the measures of intensity of the need for fire service, both now and with future growth.
- (d) Land Use (occupancies) and numbers of dwelling units. This will be used initially to determine in which kinds of occupancies fires are occurring as a means of measuring the adequacy of the existing system. It will also be used to project future needs when projections are made of future development by occupancy type. Data has been collected on the basis of FMA (Fire Management Areas) and a computer listing is awaited. Land use occupancy data are regularly updated by Planning staff as part of an ongoing process.
- (e) Assessed Value. The assessed value of all buildings in each FMA is being obtained. This, displayed in map form, will indicate the general location of high and low value areas. This will be part of the measure of the need for fire protection at present and also based on projected development.
- (f) Dollar value of fire losses. As a factor in determining the adequacy of the existing system the dollar value of fire losses is being tabulated by FMA. This also will be related to occupancy types for use in estimating fire protection service needs with both present and future development.
- (g) Injuries, fatalities and numbers of persons in buildings which have caught fire. These are being tabulated by FMA for measuring the existing system. Relating these to occupancy types may be of use in estimating protection needs for projected development.
- (h) Zoning. Presently available on our computer. Will be used to forecast future development types for the purpose of projecting demand for fire protection in the FMA.
- (i) Vacant Land. Obtainable from the computer as part of the present land use classification system. Will be used for projections of future development in the FMA.

- (j) Gross Floor Area. This is desirable to obtain as it is a measure of "what there is to burn" in different FMA. This has been tabulated for commercial and industrial properties and will be tabulated for residential, etc.
- (k) Age of Buildings. Desirable as an aid in calculating by FMA the fire damage potential and need for protection. The effective age of non-residential buildings has been collected from the B. C. Assessment Authority's records, and tabulated.
- (l) Number of persons employed during the day by FMA, and in major commercial and industrial buildings. This is a measure of the need for fire protection to calculate the adequacy of the existing system. This is currently being tabulated from the Contacts Influential Directory and assigned to FMA.
- (m) Availability of water supply. Location of fire hydrant and GPM fire flow capability. Being obtained from Engineering Department and plotted on FMA maps.

3. Establishment of goals and objectives-

The above basic data will be used to identify in a general way the kinds of problems which now exist and which are likely to exist with projected growth. In this way the fire situation can be defined.

With the advice of the Advisory Committee a report will be prepared by the Technical Committee listing the kinds of problems which have become apparent. This report will also contain alternative objectives which can be followed with recommendations. The Technical Committee will then forward its recommendations on goals and objectives to Council, which will be asked to formally adopt them.

To discuss goals, purely hypothetically, examination of the data might show that the present number of fires and the property losses, injuries and fatalities, when measured against our present Fire Department expenditures, are consistent with the degree of risk which we are prepared to accept.

If this were so, alternative goals might be:

- i. Maintenance of the present level of service at minimum cost, or
- ii. Maintenance of the present level of service at reduced cost, or
- iii. Reduction of risks with no increase in per capita costs (excluding inflation).

If on the other hand data showed that property losses were inordinately high our goal could be "reduced property loss due to fire".

If costs seem very high in relation to existing and projected fire dangers "reduced per capita fire protection costs" could be a goal.

If after examining the data it were felt that the public sector is bearing an unreasonably high share of the fire protection then a goal could be "control of public costs through establishing optimum balance between public and private fire protection responsibilities". (This goal could lead to an examination of the possibility of stricter building code enforcements, more sprinkler requirements, etc.).

As distinct from goals, which are fundamental and non specific, objectives should be specific and describe a level of service, if possible in a measurable way. Examples of possible objectives could be:

- * Reduction of injury rate to a predetermined percentage by 1983.
- * Installation of smoke detectors in all residences by 1983.
- * Provision of a certain predetermined fire flow capacity to all commercial, institutional and industrial properties.

There can, of course, be several objectives (and goals) and they can be listed in order of priority.

It should be emphasized that at this point we are providing just examples of goals and objectives in order to show how important is this step in the process. No decisions should be made on goals or objectives until the main problem has been identified and the fire situation defined following analysis of the basic data.

4. Selection of Criteria to Analyse Alternative Concepts-

After the goals and objectives have been adopted by Council the next step is to establish criteria which will be used in the selection of the best fire protection system from among alternatives.

"There is more than one way of skinning a cat." There is more than one way of improving the fire situation. Hypothetical examples of alternative system concepts could be:

- i. Concentrating on fire suppression and relying largely on the construction of further fire halls and the minimization of response times.
- ii. Greater emphasis on fire prevention by increasing inspection staff and concentrating on more rigid enforcement of existing fire prevention codes.
- iii. A concentration on raising existing fire code requirements, with greater enforcement. This, by requiring built-in protection systems, sprinklers, alarms, etc., would have the effect of increasing the costs to the owners of buildings while at the same time reducing fire suppression requirements.

N. B.

It is at this point that we are suggesting that the scope of the study be enlarged beyond consideration of only response times and the location of future fire halls. This is the comprehensive approach in the "Urban Guide". It is worth noting that Mr. Dumala, the Vancouver Analyst recommended that we include fire prevention and a greater degree of code enforcement in our study.

In order to examine alternative system concepts selection criteria must be decided upon. Criteria are selected which will lead toward the attainment of the objectives which will have been decided upon.

The criteria fall into the categories cost, benefit, legislative, affected groups and "other". Each objective decided upon should have at least one criterion applicable to it. Criteria may be weighted in order of importance.

A cost criterion could be for example "not to exceed \$10,000,000".
A benefit criterion could be "maximum reduction of fire losses".
A legislative criterion could be (for code amendments) "Maximum number of major risks affected".
An affected group criterion could be (public reaction resulting in) "Minimum complaints".

The criteria will be selected by the Technical Committee using the advice of the Advisory Committee and then will be sent to Council for approval.

5. Definition of Alternative System Concepts-

The purpose of this step is to describe in some detail alternative system concepts which meet the fire situation, the goals and the objectives previously determined. These would include the present system and one or more alternative systems. A brief description of three examples of systems is shown above under the section entitled "4. Selection of Criteria to Analyse Alternative Concepts".

The kinds of things which could be included in the description of alternative concepts could be:

- * Fire suppression strategy and tactics - minimum response times to fires.
- * Fire prevention programs and methods - the number and types of inspections for each occupancy (land use) category.
- * The use of well proven fire suppression or prevention technology.
- * Mutual aid policies.
- * Use of fire and building codes.

The alternative system concepts, which will be later analysed in great detail, are at this point submitted by the Technical Committee to the Council for approval.

6. Definition of System Functions and Resources-

The purpose of this step is to define the fire protection system and resources of each of the alternative system concepts which has at this point been defined and approved.

The "Urban Guide" provides a detailed step by step description of this process. In brief summary form taking each system concept separately the basic functions and sub-functions (what has to be done) and the basic resources (how much it takes to do what needs to be done), are defined.

Taking each selected objective separately the primary functions (suppression, prevention, and support) are shown and the various sub-functions, e.g. fire-fighting, code enforcement, training, etc., are shown under the primary functions in the form of a "Functional Tree". The sub-functions are further broken down as necessary until the resource factors required for each sub-function can be identified and computed. These resource factors are Person Hours, Fire Flow (GPM) and Response Time (Minutes).

The functional tree for each objective is used to prepare a composite functional tree for the whole system concept under consideration. The result of this is that for each system concept the person hours, fire flow and response time requirements are known.

Then, for each system concept a resource analysis is performed. This identifies the water resources available and the extent to which they accommodate or fall short of providing the GPM fire flow needed. The extent to which the

present fire station locations accommodate the required response times or fall short of requirements is calculated. The extent to which the apparatus and equipment resources meet or fall short of response time and fire flow requirements is calculated. A similar analysis is undertaken to determine the extent to which personnel meet or fall short of the needs for each system concept.

The end result is a comparative tabulation of the personnel, apparatus and facility requirements for each of the system concepts under consideration. This data will be used in the next step, the analysis of the system concepts.

7. Analysis of System Concepts-

Each system concept is subjected to:

- * A cost and revenue analysis
- * A benefit analysis
- * A legislative analysis
- * Analysis of reaction of affected groups.
- * Other analyses as required.

The criteria previously used, with their predetermined weightings, are applied.

In the cost and revenue analysis the costs are broken down into characteristic criteria determined in step No. 4. "Selection of Criteria". All costs of developing and operating each system over the planning period are included, both public and private. On the revenue side the sources, kind and amounts of funding which are available for each system throughout the planning period, are determined.

Similarly, previously determined criteria are applied to perform a benefit analysis, a legislative analysis, and an affected group analysis.

An "uncertainty" analysis is undertaken by assigning values to technological, environmental, operational and implementational factors.

Priorities are then assigned to rate the importance of the different analyses undertaken. The relative importance (weighting) of the cost, benefit, affected group and legislative criteria have previously been determined under step No. 4 "Selection of Criteria". The relative importance of the uncertainty still would have to be determined at this stage.

Lastly, the results of all the above analyses are tabulated showing, for each system the criteria or analyses factors (e.g. capital cost), the weighting or relative importance of each criterion and the selection measurements (e.g. not to exceed \$1.0 million).

8. Comparing Concepts and Selecting the Best System Concept-

The purpose of this step is to compare the alternative system concepts, and to select the best alternative. Each system is ranked with respect to each criterion and the ranking number is then multiplied by the previously determined weighting of the relevant criterion. Aggregation of the products establishes the ranking, with the highest number indicating the "best" system.

A report would at this stage be prepared by the Technical Committee for Council.

9. Preparation of Master Plan-

The "Urban Guide" provides a list of suggested chapter headings for a two volume Master Plan. Much of the plan would consist of a descriptive presentation of material, analyses, results, etc. obtained during the undertaking of all the previous steps listed above. In summary, the Master Plan would contain in the first volume:

- * The fire protection goals and objectives of the Community
- * A time phased description, both in text and tabular form, of the program formulated to achieve the goals and objectives through implementation of the selected fire protection system, and the funding required to support the plan.
- * Assignment of authority and responsibility and description of procedures for carrying out and updating the plan.
- * A synopsis of special projects and programs within the plan.

The second volume would contain the reference data for the Master Plan. This data would be continuously updated during the coming years to modify the plan as necessary.

THE USE OF COMPUTER MODELS

In connection with the element of the study which will deal with the location of fire halls, descriptions of several computer models dealing primarily with response times were obtained from the Rand Corporation. Following are the models being considered:

1. Square Root Model to Measure Average Travel Distances-

This describes and compares response distances in different areas. It can be used to establish the sites required to achieve a certain response distance standard. The effect of adding or subtracting units on response distances can be determined. Units (fire hall locations) can be assigned to different areas to achieve a desired level of average response distance.

This model is useful for obtaining rough estimates of general areas where fire halls are needed to meet predetermined response distance standards.

2. Travel Time Analysis Model-

This model is really like an extension of the previous one. Formulae enable one to obtain average travel times if one knows average distances and has determined a constant for influencing factors (congestion, etc.). This model would appear useful as a follow up on the previous model to arrive at average travel times for different areas.

3. Parametric Allocation Model-

This model can be used to compare average travel times and workloads among regions of a city to see whether or not the current distribution of fire companies is satisfactory. If imbalances are found the model can be used to determine how to reallocate the existing units among the regions to provide more balanced fire protection. If proposals for additional fire companies or for fewer fire companies are being considered, the model can be used to determine the regions that should gain or lose the companies.

The parametric model is used generally for rough applications rather than specific site allocations.

4. Firehouse Site Evaluation or Siting Model-

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This is a somewhat more sophisticated model than the previous three. It is used to compare various alternative arrangements of fire companies, using a variety of travel time and workload characteristics which have been defined as the relative criteria.

Mr. Dumala, Vancouver Fire Department analyst, suggested that we use Rand Computer models to supplement the basic work which would be undertaken along the lines of the "Urban Guide" methodology. He advised that we first experiment with the travel time and distance models and then the parametric. At this point we could determine whether the parametric model would suffice for our needs or whether we would find it advantageous to proceed to the rather more sophisticated Firehouse Site Evaluation or Siting Model.

Use of these models will it is expected require the outside services of a commercial data processing firm for programming and computer use.

This part of the report concludes the consolidated description of a very broad and comprehensive scope for the study, along the lines described in considerably more detail in the "Urban Guide" and supplemented with the models referred to. An early commitment is required if we are to take this approach, since obviously the number of man hours spent will be considerably greater than if we confine ourselves to a study of future fire hall sites.

ESTABLISHMENT OF TECHNICAL (WORKING) COMMITTEE

The Urban Guide and other sources, including Mr. Dumala, stress the need to establish a Technical Committee at an early stage in the study process.

The following membership is proposed:

Director - Fire Services	-	Mr. T. Nairn (Co-Chairman)
Director of Planning	-	Mr. A. L. Parr (Co-Chairman)
Municipal Treasurer	-	Mr. B. McCafferty
Municipal Engineer	-	Mr. E. Olson
Chief Building Inspector	-	Mr. M. Jones
Municipal Manager	-	Mr. M. J. Shelley (Ex-Officio)
Planner II	-	Mr. C. R. Lowther

Staff from the above and from any other department will be asked to attend the Committee as required. Representation from the Insurers' Advisory Organization will also be requested from time to time.

The Technical Committee will be responsible for data collection, data analysis, establishment of goals and objectives, selection of criteria for ranking alternative system concepts, formulation of alternative system concepts, system concept formulation, and plan preparation. There must be a commitment that this work will be undertaken on a priority basis by the departmental staff of the committee members.

Once the Advisory Committee has been set up the Technical Committee will consult it on major policy decisions such as those described. The Technical Committee will however be entirely separate in its function and in its responsibilities, from the Advisory Committee.

Lastly, the C.I.P. Committee will be brought into the picture only when the study and/or master plan demands decisions on specific capital expenditures being proposed.

As coordinator of the project, Mr. Lowther will prepare the various proposals and reports for the Technical Committee. He will request information and data from the other committee members who will, through the staff of their departments, supply such requested data for the purposes of the study.

The Technical Committee will report to Council, through the Manager, at all major stages of the report.

ESTABLISHMENT OF ADVISORY COMMITTEE

It is proposed that in addition to a Technical (Working) Committee an Advisory Committee be established. This Committee will assist the Technical Committee by advising it on broad policy matters. It will be separate in its function from the Technical Committee. It will provide advice on:

1. Goals and objectives
2. Criteria for analysis of alternative concepts
3. Alternative system concepts
4. Selection of "best" system concept.

The advice referred to above would follow presentation of specific recommendations made on the above by the Technical Committee. The Technical Committee will report to Council.

It is suggested that the Advisory Committee be made up by extending invitation to representatives from:

1. The Chamber of Commerce (Industrial Representative)
2. U. D.I. / HUDAC
3. Provincial Fire Marshall's Office
4. Insurers' Advisory Organization of Canada
5. Real Estate Board
6. Firefighter's Union - Local 323
7. B. C. Petroleum Association

BUDGET REQUIREMENTS

1. Assistant to Information Clerk-

Above has been listed the data which we would like to obtain in order to "Define the Fire Situation". In order to complete this stage and to move into further stages of the study a part time assistant to the present Information Clerk is required to work three days per week for a period of six months.

The Planning Department 1978 Annual Budget called for the employment of a Clerk 2 for one year at a salary of \$851/month (1977 rates). Eight months of this employment was allocated to 1978 at a cost of \$6648. However, a good proportion of the data accumulation has been completed during the summer by students and other part time help. And so, we are now requesting only a part time student at the Planning Assistant II level, in pay grade 17, for six months at 3 days per week. This would cost \$4489.20 at 1978 rates of \$1247/month.

Appropriate adjustments will be made in the 1978 reconst budget to reflect the staff reduction indicated above.

This part time assistant to the Information Clerk will:

1. Accumulate data from manual records and tabulate it on our recording forms in order to make it suitable for keypunching.

- ii. Undertake some liason with the Fire Department, Building Department, B. C. Assessment Authority and the Fire Protection Survey Services in connection with the obtaining of the source data.
- iii. Undertake liason with the Municipal Data Processing Division in connection with arranging for programming of data.
- iv. Undertake some drafting work in order to provide visual display of data as required.

2. Use of Commercial Computer-

This report has described the proposed use of some of the Rand Corporation computer models as an aid in determining the best location of future fire hall sites.

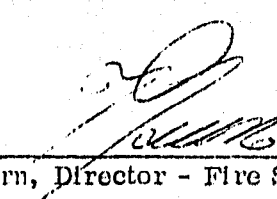
This has been discussed with the data processing division. The programs could not be handled by our present computer systems and we have been advised to make allowance for having work undertaken by an outside source.

The Planning Department budget included an estimate of \$10,000, \$5,000 of which was allocated to 1978. However, it has since become evident that we will not in 1978 be at the stage of the study where we will require these computer models; accordingly, the whole \$10,000 allocation is now assigned to 1979.

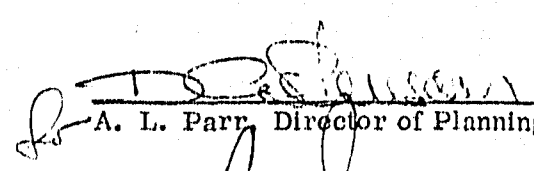
RECOMMENDATIONS

It is recommended:

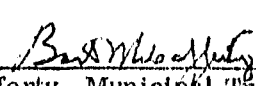
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- 2. THAT an Advisory Committee be established to advise the Technical Committee and to function as described in this report.
- 3. THAT the general methodology as described in the Urban Guide and summarized in this report be followed.
- 4. THAT authority be given to expend the 1978 funds as described in the "Budget Requirements" section of this report. (Council will have an opportunity to authorize 1979 expenditures in the 1979 Provisional.)



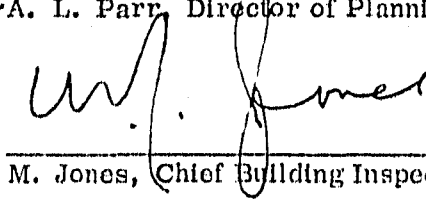
T. Nairn, Director - Fire Services



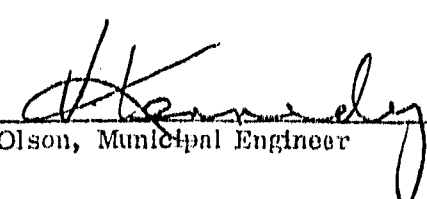
A. L. Parr, Director of Planning



B. McCafferty, Municipal Treasurer



M. Jones, Chief Building Inspector



E. Olson, Municipal Engineer

for
CRL/hf