

# NHA POLICIES AND PROGRAMS FOR THE SEVENTIES

## VOLUME 9

### **Research and Development Policy**



**Policy Planning Division  
Central Mortgage and Housing Corporation**

NHA POLICIES AND PROGRAMS FOR THE SEVENTIES

VOLUME 9

RESEARCH & DEVELOPMENT POLICY

Policy Planning Division  
Central Mortgage and Housing Corporation

## TABLE OF CONTENTS

<u>SECTION</u>	<u>CONTENT</u>	<u>PAGE</u>
I	Introduction	1
II	Context	3
III	Policy Options	11
	Manpower Development	24
	Institutional Support	30
	Information Systems	48
	Technological Forecasting	51
	Housing-Related Municipal Research	54
	Support for R & D in Industry	57
	Development Projects	60
	Dissemination of R & D Findings	65
	R & D Coordination	68
IV	Objectives	70
V	R & D Budget Implications	72
VI	Legislative Implications	77
VII	Intergovernmental Considerations	80

## I. INTRODUCTION

### Purpose

The purpose of this paper is to seek management's and Minister's approval for a comprehensive, coordinated research and development policy and program for CMHC.

### Background

1. Research currently can be funded explicitly by CMHC under two sections of the National Housing Act.
2. Section 23, Part III, permits payment of one-half of the cost of preparation of an urban renewal scheme, including the cost of all economic, social and engineering research and planning necessary therefore.
3. Part V of the Act directs that CMHC has a responsibility to cause investigations to be made into housing conditions in Canada and to cause steps to be taken to distribute information leading to the construction or provision of more adequate and improved housing, as well as the understanding and adoption of community plans in Canada.
4. In addition to research funded under these two Parts of the Act, a number of operating divisions (e.g. A & P Division, Economics and Statistics Division, Appraisal Division) have contracted for studies through the Corporations's administrative budget.
5. During the period 1954-1970, non-governmental agencies received 22.6%; universities and colleges obtained 18.4%: and provincial and municipal governments received 2.7%. In this

period as well, Part V activities concentrated on three main areas: housing - 36.2%; quality of the environment - 32.5%; and land use - 23.6%.

## II. CONTEXT

The questions to be asked about CMHC R & D activity are whether they are contributing to an integrated understanding of urban phenomena; whether they are providing useful knowledge for policy-making and programs; whether they are effectively related to the R & D activities of other federal, urban-oriented agencies, of provinces, municipalities, universities, industry and other institutions; whether they are relevant to the needs and desires of the public; and what new policies, if any, should be adopted in this field.

At present, CMHC has four methods of supporting research and development: grants to institutions promoting housing and planning and urban research and its use - e.g. NRC, CPA, CURR and ICURR; grants to individuals and groups for specific research projects and programs; fellowships and study grants for university students and individuals; and in-house research activities. Only for the last of these is there a set of research objectives.

By objectives is meant the specific end values to be attained and the instrumental values to be sought in order to reach these. Objectives are most usefully established for given time periods. Otherwise, they are largely statements of intent which may or may not be reached.

Strategies are ways of achieving objectives. They indicate which elements of the problem are the most critical, which are to be attacked first, and how resources are to be marshalled for the tasks at hand.

The concept of strategy is essential to the notion of housing and planning research and development being examined in this paper. R & D can be a catalyst for social change in given historical circumstances. It also can be an area on which agreement can be achieved even in the absence of a wider consensus on end goals.

### Typology

In general terms there are four basic types of strategy - defensive, absorptive, adaptive and preemptive. At any given moment in time, these reflect an organization's philosophy, orientation, dynamism, purpose.

Defensive Strategy - a purely defensive R & D policy addresses only present needs rather than future problem prevention. Resources are expended to solve immediate problems.

Absorptive Strategy - an absorptive stance draws upon results and developments wherever they occur and attempts to fit these into policies and programs. While it can provide some useful inputs, these occur in a random fashion with many questions left unanswered and application difficult. The haphazard nature of the flow of information and product minimizes their utility. This, in effect, has been the Corporation's approach with Part V in the past, with the emphasis on a responsive mode of supporting R & D.

Preemptive Strategy - "intentional or preemptive policy approaches are those in which government and other groups and institutions in the community actively sponsor and direct value change and maintenance in the interest of creating a new social order, improving the present order through invention and innovation, or freezing the status quo." In this context R & D activities are directed at examining potential change options without the pressure of expediency. They reflect normative considerations and objectives and increase control of technology. This strategy conceives of R & D as the cutting edge of policy and programs.

#### Policy vs. Programs

1. A clear distinction is necessary between policy and program R & D requirements. In the former case, research is imperative to:

- (a) provide a basis for choice among alternative strategies;
- (b) provide an analysis of priority research needs;
- (c) determine the state of existing knowledge about a subject and its relevance to the problem at hand;
- (d) obtain and store "building blocks" of critical information useful for resolving policy problems;
- (e) assess the impact and effectiveness of policies and programs;



- (f) develop clearer understandings of the relationship between Corporation activities and the external environment;
- (g) identify potential future problems and crisis situations and to propose alternative forms of delivery mechanisms for dealing with "hard core" problems -- e.g. low-income housing, land assembly and use, urban assistance, sewage, etc.;
- (h) prepare information and rationale to meet the Minister's needs.

2. With respect to programs, research and development is needed to:

- (a) test the feasibility of new building techniques and their effect on cost and delivery;
- (b) evaluate the performance of new materials and equipment;
- (c) experiment with new designs and forms of housing;
- (d) assess the reaction of users to various combinations of densities, layout, facilities, amenities, tenure, etc.;
- (e) develop lower-cost and more effective contractual arrangements;
- (f) measure the efficiency of operations;

In short, policy research focuses on information and problems which may lead to possible policy or program change,

while program research and development concerns itself both with operational matters flowing from the application of existing policy and programs, and with built efforts to test new approaches.

### Major Components

1. If the production, construction, occupation, and demolition or conversion of housing is viewed as a "system" of interrelated parts, then housing R & D can be defined in terms of this "system". That is, it encompasses all efforts to study, test and improve:

- (a) the materials, manufacturing processes, and distribution of the elements of the housing unit per se;
- (b) the site use, locational context, servicing, and construction of the units on-the-ground;
- (c) the social patterns associated with the "use" of the unit by different occupants;
- (d) the physical and other deterioration and change processes associated with the ultimate removal, change of function, or destruction of the unit.

2. Another dimension to research and development is its situational context. That is, it is part of a larger process within a municipal setting. As such, it is constrained by external parameters which include:

- (a) land use and zoning regulations;
- (b) building codes and by-laws;
- (c) municipal decision-making processes;

- (d) the quality of local administration;
- (e) municipal finance and services.

In this light, therefore, housing-related municipal research is a necessary component of R & D policy.

3. Besides research, a global perspective encompasses resource development as an essential element in the exploitation and diffusion of R & D findings. In this sense, the term "development" comprises:

- (a) manpower development;
- (b) institutional development;
- (c) encouragement of R & D in the building industry;
- (d) support for citizen groups to increase the level and effectiveness of participation in the housing-related planning process;
- (e) use of advanced information and management techniques;
- (f) prototype development.

### Role

Finally, research and development plays a similar role in both the macro-housing and associated planning system, and the micro-Corporation system. The feedback from R & D activities, as well as the impact of outcomes, serve to regulate the pace, direction and quality of change.

Diagrams I and II which follow illustrate the place of research and development in these systems.

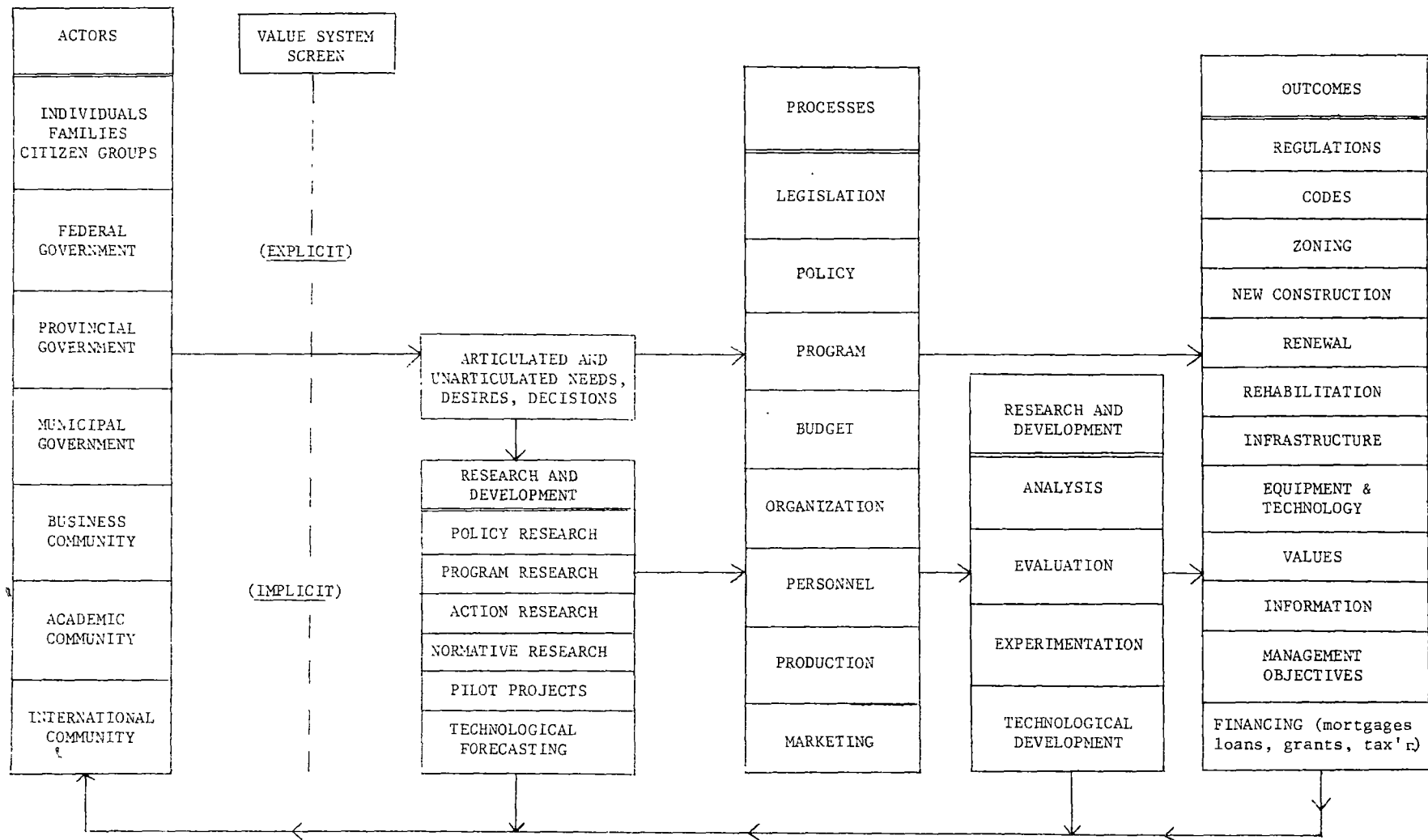


DIAGRAM 1 - R & D IN THE HOUSING AND PLANNING SYSTEM

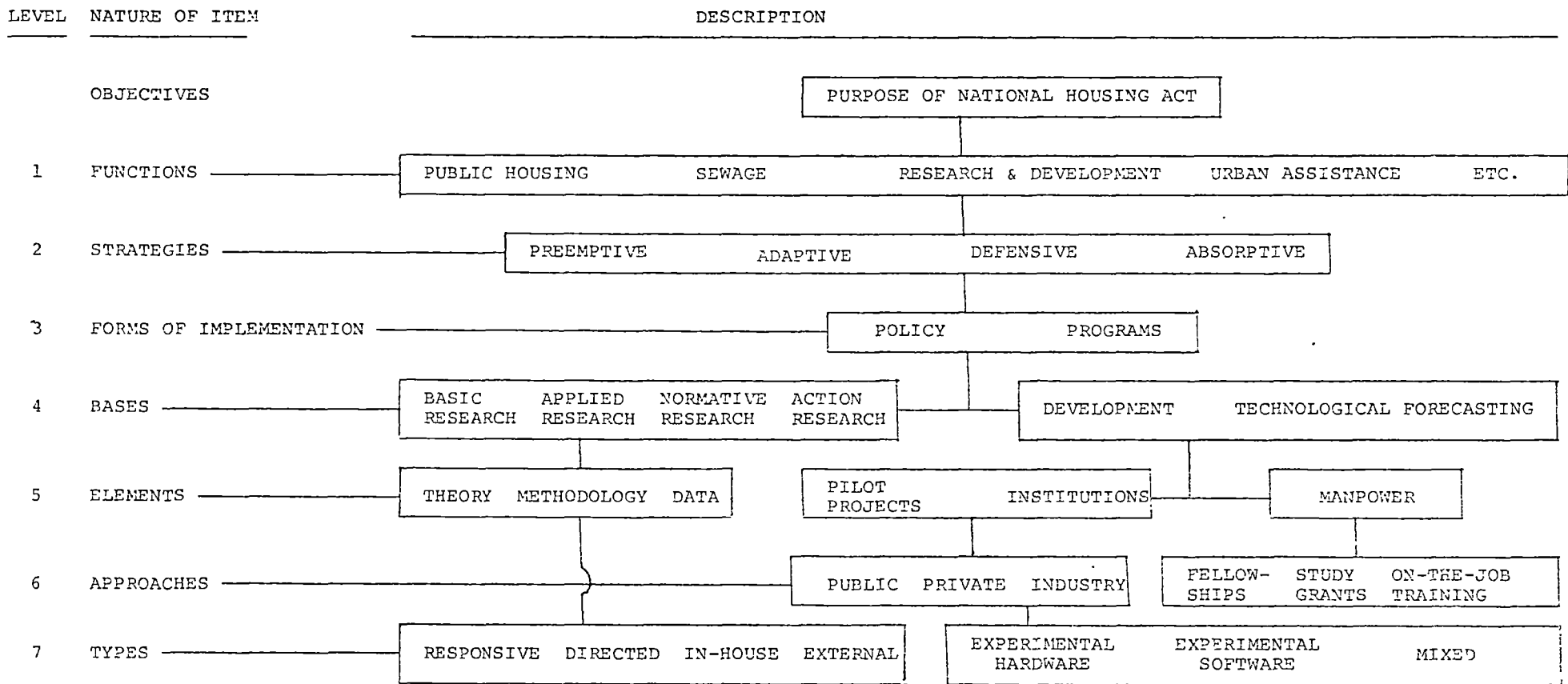


DIAGRAM II - R & D RELEVANCE TREE

### III. POLICY PLANNING OPTIONS

As was pointed out, research and development in CMHC includes housing R & D, housing-related municipal research and resource development as major components. For these to be translated into meaningful action, a number of questions need to be answered. These are:

1. Form of Research - what kinds of research should be supported - basic research, applied research, normative research, action research, evaluation research?
2. Form of Development - what types of development should be supported - manpower development, institutional development, prototype development, community development?
3. Approach - what modes should be adopted - responsive mode, directed or mission-oriented mode, performed in-house, performed by an outside agency, a mixture of two or more of these?
4. Entitlement - who should be eligible for support - public agencies, private organizations, community groups, academic institutions, industry, individuals?
5. Communication - how should R & D results be made available and to whom?

It is evident, in the light of these questions and the major components noted above, that there be a wide range of possible policy combinations to choose from. From the "package" point of view, however, there would seem to be only three basic long-term options to consider:

- A. complete withdrawal from R & D activities;

- B. Continuation of the present Part V framework,  
with adjustments made from time to time to  
resolve emerging problems;
- C. expansion of R & D activities to include new  
approaches and new organizational forms.

In view of the November 30, 1970 instruction from the Board of Directors and the indication to the Minister that a comprehensive R & D policy was under review, option A likely is not a feasible alternative.

While options B and C are not mutually exclusive, there is a substantial difference in underlying philosophy. The first may be characterized as a laissez-faire, adaptive stance, and the latter as a mission-oriented, pre-emptive model.

In the following "scenarios", the essential characteristics of the three options are explored and arguments are presented in favour of and against each alternative.

Long-Term Option A

Retreat-Absorptive Role - This future has CMHC withdrawing completely or almost completely from conducting or supporting R & D activities. It conceives of the Corporation making use of research and development done elsewhere, to the extent that it is aware of such work. The Urban Secretariat has the sole or major responsibility in the Ministry for providing the research base for policy and program and the Corporation functions as an implementation mechanism.

Arguments For

1. The funds now spent annually on R & D activities would no longer be required and could be used for other purposes within the Corporation, or transferred to the Ministry, or revert to the federal treasury for use in other programs.
2. There would be a reduction in the personnel establishment and salary costs, since most employees presently involved in R & D through Part V or the operating divisions would not be needed in their current roles. Certain staff still would be required, however, to try to keep abreast of R & D work outside of the Corporation.

Arguments Against

1. Such a decision might bring a strong reaction from individuals and organizations currently receiving support for R & D projects.



2. The external world may view such a move as evidence that the Corporation is staid and conservative, with little interest in new ideas or innovation and the Corporation's image may be tarnished.

3. Without control over the direction of R & D activities, CMHC would find it almost impossible to integrate the information available from others' work into its own policies and programs in a planned, coherent way.

4. There is evidence that companies, organizations and nations which do not strive to stay in the forefront of technology tend to stagnate and become obsolete.

5. It is likely that the quality of Corporation personnel would suffer over time as the more creative and highly-trained staff would tend to seek employment in organizations more committed to the advancement of knowledge.

#### Budget Implications

The Corporation's budget either would be reduced or the application of R & D funds to other areas could offset expenditure increases.

#### Legislative Implications

Part V would need to be repealed.

### Long-Term Option B

Laissez-Faire - Adaptive - CMHC funds research under Part V and continues its fellowship, study grants, and institutional support activities. It emphasizes directed research, however, in place of the current responsive mode. It channels its research efforts into areas which assume priority from time to time (e.g. low-income housing, mortgage financing, urban assistance, etc.). Findings are made available to all interested parties upon request. Research is conducted primarily through external agents by means of grants and R & D activities are controlled centrally with all proposals approved by senior management.

### Arguments For

1. This is a familiar style of operation which avoids the conflicts and risks attendant upon new thrusts and change.
2. CMHC maintains an image of being a forward-looking organization.
3. Since it supports R & D, the Corporation's relationships with the academic community, other levels of government and the private sector tend to be maintained unblemished.
4. The Corporation continues to make a contribution to the extension of knowledge about urban affairs.

### Arguments Against

1. While individual projects produce useful information,

absence of a Corporation-wide, integrated research and development plan tends to inhibit application of R & D findings.

2. Similarly, since application of R & D information and results outside the Corporation is left to chance, CMHC does not take advantage of the leverage possibilities of planned R & D activity.

3. Continuation of the current fellowship and institutional support programs, even with modifications, does not fully exploit their potential as policy-program tools.

#### Budget Implications

Current budget processes continue as they are.

#### Legislative Implications

There are none.

Long-Term Option C

Expanded - Pre-emptive - CMHC attempts to build a widespread network of R & D relationships in the fields of housing and planning, with the academic community, with other agencies and other levels of government, with industry and with community groups. While the main thrust is in directed applied research, a sufficient budget is reserved to respond to proposals received "over the transom". A measure of support is provided for basic research in order to help maintain the flow of new theories, concepts and methods.

The Corporation conducts in-house research and also contracts external work. It supports institutions provided that they formulate annual and long-term research programs with built-in consultation and evaluation procedures. Its manpower development programs encourage "exchanges" between industry, government and university. It not only shares the results of research and development work which it supports, but actively promotes their use and application.

The Corporation provides for evaluation studies for all new projects it undertakes and also evaluates existing policies and programs. There is a central coordinating mechanism to plan and use research findings. The Corporation experiments with new approaches such as "joint venture" development projects, "concerted action" research programs and other mechanisms designed to increase communication and

collaboration between the various sectors in the housing and planning system.

While it attempts to foresee problems and discover ways to surmount them, the Corporation applies effort to technological forecasting. It develops long and short-term R & D objectives in precise terms and communicates these to all interested parties. (e.g. universities, local government, industry, etc.)

In short, this option assumes that housing and associated planning processes are matters which require co-operative participation of the different sectors of society to realize the purposes of the National Housing Act; and that it is the role of the Corporation to try to bring this about. Its research and development activities are designed to support this objective.

#### Arguments For

1. Not only will R & D be an integrated function within the Corporation, but the effort to develop mechanisms of consultation and joint activity would tend to ensure maximum distribution of findings to users and producers of R & D.
2. The successful evolution of a network of agencies and groups would tend to significantly reduce the time lag between the development of a prototype and its diffusion throughout society.

3. With information direct from "the horse's mouth" via a network of agencies, the Corporation would be able to identify gaps, problems and needs more rapidly and with greater accuracy.

4. The image of the Corporation would take on added lustre through its efforts to increase participation in housing and planning R & D.

5. The exchange of people and ideas would serve to increase staff competence and would help recruitment of able people.

6. The marriage, so to speak, of university, community groups, industry and local government would tend to encourage academia to pay more attention to relevant, practical matters, and to expose the citizen, industry and local government to greater depth of understanding.

7. Continuing formal evaluation of projects, programs and policies would work to prevent stagnation and would introduce automatic, self-regulating "feedback" mechanisms into delivery systems.

8. Use of a PPB form of research planning would tend to ensure that all areas of the Corporation (PPD, operating divisions, field offices) have the opportunity to make inputs into an annual research plan.

9. The development of a technological forecasting capability would lend greater accuracy, awareness and long-range overviews to the decision-making processes.

### Arguments Against

1. Conflict can arise where joint actions or advisory bodies are operative.
2. Development of a network of agencies is a complex, time-consuming process which would require the attention of senior officials (e.g. Branch Managers, Regional Supervisors, Division Heads, Senior Officers) and this may interfere with their normal workload until appropriate staffing arrangements can be completed (some additional staff undoubtedly would be required to assist various managers).
3. The usual "resistance to change" syndrome might come into play and there may be a period of some dysfunction within the Corporation.
4. Certain decision processes, such as in the development of a pilot project, might be slowed while efforts are being made to bring together a diverse group of interests.
5. Attempts to have local government, industry, academia and the public brought together might produce adverse reaction in certain instances.

### Budget Implications

There would be a need for a sizeable increase in the R & D budget. Institutional support would be increased substantially. The growth in demonstration, pilot and research projects would necessitate more funds. A sophisticated information handling system would be required. One solution to this

problem, however, would be to adopt a phased approach over a five- or ten-year time span.

#### Legislative Implications

Amendments may be needed with reference to the \$15 million ceiling on Part V R & D funds, as well as in certain other sections of Part V. It may be desirable to include a new section in the Act which will make possible flexible financing of developmental projects to provide incentives to industry and others to try out innovative ideas on a pilot project basis.



Preferred Option

The preferred long-term option is C and the rationale underlying its choice is as follows:

- (a) there is a growing national emphasis on R & D as a necessary tool to help solve pressing social and economic problems. This implies expanded R & D activities at all levels.
- (b) the increasing complexity of urban issues requires greater understanding of the interaction and relationships of housing and associated planning with other elements.
- (c) the thrusts of the Corporation into low-income housing, urban assistance, infrastructure and other areas require an underpinning of research and experiment on which to base policy and programs.
- (d) housing and related planning problems can only be solved by a collaborative effort between the various sectors of society (e.g. government, industry, academia and citizen) and the Corporation's R & D efforts must be related to similar activities elsewhere.
- (e) increasing costs and dissatisfactions necessitate greater efforts to develop innovative approaches.

Although C is the preferred option, it is not an "all-or-nothing" proposition. The degree to which it can be achieved is determined by the policy choices made in respect of manpower and institutional development; housing-related

municipal research, developmental and pilot projects; coordination and direction of R & D activities in the Corporation; dissemination of information; and the availability of funds.

These matters are examined in detail in the following pages and a number of propositions are outlined as new dimensions to the Corporation's R & D role. Whichever of these is adopted, if any, it is suggested that implementation take place in phases over the next five years.

MANPOWER DEVELOPMENTFELLOWSHIPSCurrent Program

1. At present CMHC provides about 200 fellowships a year. Of these, approximately 1/3 are renewals and 2/3 new ones. The selection procedure for fellowships uses "merits" as the basic criterion. There is no conscious attempt to identify manpower skill gaps across Canada and direct the fellowship program to fill such gaps, even if it were possible to do so. The guiding principle is that freedom of choice of field of interest should be left to the scholar.

2. Between 1966, when an expanded Fellowship program was launched, and 1970 inclusive, a total of \$3,550,800 was approved for students proceeding to graduate degrees in various fields of housing and urban affairs. The current rate of commitments is about \$1 million/year.

3. While a total of 490 new fellowships and 300 renewals were provided since 1966, there has been a minor systematic attempt to evaluate the results. Little is known of what happens to the recipients of CMHC fellowships. How many stay in Canada? How many go elsewhere? How many follow an academic career? How many obtain positions in industry? In short, has the program contributed to overcoming the shortage of skilled manpower in the urban field? If so, how?

### Options

Although there is a lack of information concerning the degree to which the Fellowship program has helped to offset shortages of skilled manpower, it may be argued that support for advanced training benefits not only the field of urban affairs but also the student qua student, and as such is a "good" in itself. In any event, a number of options need to be considered:

1. Continue the program as is, with modifications as required;
2. Drop the program completely;
3. Phase it into the university institutional support program as outlined on pages 40 - 44.

### Discussion

1. The current program has generated expectations among potential students and the university community. If it were to be curtailed drastically or dropped completely in the near future, it is likely that considerable reaction and protest would be aroused.
2. While there is a benefit both to the student and society in providing opportunities for worthy students to advance their training, it is debatable whether CMHC should utilize scarce financial resources to subsidize graduate studies unless these fill an identified manpower gap. In addition, since the "merit" process of selection ignores the students' ability to pay, the program may in many instances be helping to support an already privileged class.

3. There would seem to be some advantage to phasing the Fellowship program into the university support program, if possible. The "quid pro quo" of working as a graduate research assistant in return for a bursary would tend to produce information of more direct relevance to the housing industry than does the present scheme wherein the student chooses any topic of interest to him which will satisfy his thesis requirement, and is within the field.

#### Recommendations

In view of these possibilities, it is suggested that the following approach be used during 1972:

- (a) undertake a survey in 1972 to determine what has happened to past CMHC Fellows. This would be part of the 1972 Directed Research program under Part V.
- (b) consult with industry, governments and the universities to determine, if possible, what are the immediate and long-term manpower shortages in the field of housing and planning.
- (c) submit a report for management consideration by September 1, 1972, in which recommendations would be included concerning changes or expansion of the program, its phasing out, or continuation as is.

## STUDY GRANTS

### Current Program

1. This activity allows qualified individuals to conduct personal research or full-time study outside of a university degree program. One of its objectives is to assist persons of established reputation since opportunities are rare for them to detach themselves from their regular duties.
2. The program serves to help individuals increase their competence and skills and is responsive in nature. In 1970, for example, 9 grants were awarded for a total of \$82,995.

### Options

1. Continue the program as is;
2. Let it lapse;
3. Promote its expansion as is;
4. Add new dimensions.

### Discussion

1. In the first instance, the program is used by relatively few individuals and therefore likely has little practical impact on the housing and associated planning systems.
2. While dropping the program would free funds for other uses, there is some advantage to its continuation in that university teachers and other well-qualified individuals have an opportunity to increase their knowledge and thereby are able to contribute more in their professional capacity.

3. Expansion of this activity as is may accomplish little beyond satisfying the personal interests of applicants and, pending evaluation of the use to which grant recipients put their newly-acquired knowledge, would not seem feasible given scarce resources.

4. It is recognized that municipal government lacks well-qualified people. If the study grants program could be extended to include support for municipal officials involved in housing and planning activities to spend a year attending post-secondary courses to improve their skills, and for university graduate students or professors to work for a municipality in these areas for a year or two, it is likely that considerable benefit would accrue to both.

5. The practical experience would help the university professor in his teaching, and the opportunity to study would help municipal officials to upgrade their competence. In the case of graduate students, some of them may wish to remain in municipal government and their academic training thus would contribute to bettering the level of municipal manpower.

#### Recommendations

1. The details of this program would need to be established and it is recommended that pilot projects be undertaken to test the idea. A number of municipalities, local universities and community colleges could be approached in 1972 to enlist their cooperation. Part V funds would be used to fund the venture.

2. A ceiling may need to be established on the total program, as well as on the amount of an individual grant, which might cover an applicant's regular salary plus an allowance for living expenses. If the program takes hold, it might require annual funding in the order of \$2 - 3 million in due course, to provide for 150 - 200 exchanges per year.



INSTITUTIONAL SUPPORTA. Non-University InstitutionsCurrent Program

1. In the past five years, CMHC has made grants totalling \$2,432,590 for continuing support of five institutions - National Research Council (\$750,000); Canadian Housing Design Council (\$267,400); Community Planning Association of Canada (\$741,446); Canadian Council on Urban and Regional Research (\$586,000); the Intergovernmental Committee on Urban and Regional Research (\$87,744).

2. While these grants rest on the assumption that each institution does useful work, there has been little evaluation of how CMHC's contributions are used.

3. The Division of Building Research of the National Research Council is concerned with the general field of materials, building systems, testing, and experimental work in housing construction. Thus, this institution may be said to look after certain aspects of the "hardware" side of R & D for CMHC.

4. The Canadian Housing Design Council and the Community Planning Association of Canada, in turn, may be said to look after certain aspects of the "software" side of R & D. The former's purpose is to enlist producers, designers and consumers in collaborative efforts to improve design. Its major program has been in "Design Awards" to focus attention on the best work being done in various regions of Canada.

CPAC's role, on the other hand, is to promote public understanding, education, and participation in urban and regional planning. It brings together professionals, municipal officials and citizens in sustaining the planning movement across Canada.

5. The Canadian Council on Urban and Regional Research (CCURR) is concerned with fostering private research related to Canadian urban regions and the Intergovernmental Committee on Urban and Regional Research brings together federal and provincial governments to share urban research information.

6. Support also is available for other institutions. These range from the Institute for Urban Studies at the University of Winnipeg to the Regent Park Community Improvement Association. In these cases, assistance has been provided on the basis of specific projects and for a limited time period such as 3 years.

#### Options

1. Continue the program as is;
2. Phase it out;
3. Provide support to existing or new institutions for limited time periods - e.g.: 3 or 5 years;
4. Expand activities and support without time limitations.

#### Discussion

1. At its meeting of February 22, 1971, the Board of Directors noted that it would be appropriate and preferable

for the Urban Ministry to take responsibility for non-housing research, including institutional and research support related to non-housing matters. It was pointed out, though, that a "gray area" existed in which housing and non-housing research overlapped, particularly in the relationship between housing and other urban factors.

2. It would seem desirable, therefore, for the Ministry to occupy the primary role in relation to CCURR and ICURR. Both of these institutions are concerned with the urban scene as a whole, and this now is the Urban Ministry's direct role rather than that of CMHC. With respect to representation on ICURR, there is logic to having both the Ministry and CMHC represented on the Committee and for both agencies to share in its financing.

3. In the case of the Division of Building Research, it may be timely to consult with NRC to determine to what extent it would be possible to allocate the annual \$150,000 grant to specific research, testing or construction. If this is feasible, then CMHC would indicate its particular needs each year to NRC and DBR would do the necessary work. If NRC is not prepared to operate in this fashion, then it may be more effective to use these funds elsewhere to purchase developmental work CMHC wishes to pursue.

4. With respect to the Canadian Housing Design Council, it is debatable whether its "Design Awards" program is producing materials which are exploitable for programs such as low-

income housing, northern housing or student housing. These areas should be explored with CHDC to determine whether it is willing to pursue such design objectives. If not, the Corporation may wish to consider reducing its grant to CHDC and using the funds saved by this action to promote design competitions through other agencies for the purposes mentioned.

5. It is an open question at this time whether or not CPAC is the most effective instrument to promote the social as well as the physical aspects of planning. The organization has been requested to submit long-range plans with its request for funds for 1972 and this will provide an indication as to how relevant CPAC will be to the Corporation's social goals in planning.

Because of CPAC's activities in relation to urban and regional planning, the Urban Ministry has an interest in its program and should participate in the review of its long-range plans.

6. The criteria for supporting these and other organizations in future might include:

- (a) submission of annual and five-year plans in which concrete projects are specified in relation to detailed objectives targetted for particular time periods.

- (b) a detailed report upon completion of each project should be forwarded to CMHC for evaluation of its fit with the organization's objectives for the period and for assessment of the quality of the work. In some cases this evaluation would be done by outside consultants.

- (c) the annual plan should include provision for distributing a report on each project to organization members, as well as to specified groups such as citizens' organizations, professional societies, universities, national and regional libraries. Although it would be up to each organization to develop its information public, a distribution plan should be included with the annual plan submitted to CMHC.
- (d) provision for administration of the organization should not exceed 50% of the grant requested. This would be negotiated with each organization individually and would depend on its purpose and program. The Institute for Urban Studies, for example, might require the full 50% of its grant for administrative purposes. HUDAC, on the other hand, likely should have its administrative budget covered by its members and its submission should include only project costs.
- (e) to control costs, the maximum grant to any organization over the next five years should not exceed \$150,000.

#### Recommendations

1. The Urban Ministry and CMHC should jointly review the activities of CPAC and evolve a strategy as to their future

course of action, having regard to their respective interests in the work of CPAC.

2. The Urban Ministry should assume responsibility for relating to CCURR and for providing the necessary support.

3. Both CMHC and the Ministry should have representation on ICURR, with the question of who funds the federal share of ICURR's costs of operation to be determined in consultation with the Ministry.

4. NRC and CHDC should be consulted to determine whether they would be prepared to accept some guidance from CMHC with respect to the use of Corporation grants. If not, support should be withdrawn from these agencies and the funds used elsewhere to meet the Corporation's needs in these areas.

5. Both annual and 5-year plans should be requested from all other institutions seeking CMHC assistance. These plans should include built-in evaluation procedures.

6. Assistance to all institutions should be provided on a 5-year renewable basis, with a formal joint review (CMHC and the agency concerned) of their activities made at the end of the second and fourth years.

## B. Citizen Group Research

The Corporation has assisted a relatively small number of citizen groups over the years, mainly through the medium of demonstration grants for limited time periods. To date, this activity has been responsive in nature and little evaluation has taken place of the effectiveness of these groups in working towards their goals.

### Options

1. Continue as is;
2. Stop supporting citizen groups R & D activities;
3. Expand with changes.

### Discussion

1. Of all the interests involved in housing and associated planning, the citizen groups usually are the most ill-informed about a particular situation and generally have the least resources to obtain information. The builder or developer has the capital to hire the necessary talent to keep him well-informed and plead his case. By definition, the various levels of government are knowledgeable about a particular development or planning decision; and the university community has the skills and the competence to analyze a given situation.

If one considers that the last three sectors all received financial support from the citizen through some form or other of taxation, it seems not unreasonable for government to provide assistance to citizen groups seeking to learn more about housing

and related planning matters which will affect their lives and the decisions which led to these events.

2. On this basis, the minimum requirement would be to continue the program as is. In view of the social dimension of planning, however, it would seem desirable to ensure citizen participation in the planning processes. This can be achieved by CMHC--initiated projects, projects initiated by a municipality, or projects initiated by local groups. The essential parameters for such projects might be:

- (a) the project must be concerned with a housing problem and/or associated planning processes;
- (b) the purpose of the project is to obtain data and information which can be used by the group to participate in the planning process in a more knowledgeable way;
- (c) an outline of the project has been discussed with municipal officials so that both parties have the opportunity to share their respective points of view and attitudes;
- (d) a qualified researcher participates in the design and conduct of the project as a consultant and observer;
- (e) a detailed record is kept of the genesis of the project, its development and its implementation;



- (f) a written report is issued at the conclusion of the project so that the experience can contribute to the growing fund of knowledge about participation processes and their effects on decision-making;
- (g) where necessary, CMHC fund a portion of the operating costs of the group which are directly related to the project, plus 100% of the actual costs of the research (research consultants and staff, interviews, data processing, project design, analysis of results, etc.);
- (h) projects on behalf of low-income groups take priority over others.

3. This proposal would enable citizen or community groups to deal more effectively with local problems. In effect, it is a way of "redistributing" knowledge.

4. This suggestion does not provide general support for citizen groups. It is focussed on housing and related planning research and development specifically and not on aid to citizen groups as such.

#### Recommendations

1. CMHC should assist citizen group R & D along the lines proposed in item 2 above.
2. To control costs, a ceiling should be set on the funds available for this purpose. This might be in the order of \$1 million per year and the approach to this maximum should

be in phases over the next 5 years. This figure would support between 25 and 50 projects per year across Canada, an average of perhaps 3 or 4 per major urban centre.

### C. University Support

1. Some assistance has been provided since 1956 to graduate planning schools to maintain full time teaching staff and for library facilities and student aid. At present, however, support for universities is on the basis of individual projects and for limited time periods.
2. This support has been responsive in nature and has not to date been part of a coordinated plan to harness university research skills to practical housing and planning needs.
3. The following quotation from the 1969 OECD Review of National (Canadian) Science Policy suggests a key consideration for a university support program:

"An extremely important element in the conduct of applied science is to create circumstances that ensure confrontation of scientists with practical problems."

"Where relations between the universities and industries exist at all, their superficial nature struck us (OECD examiners) as one of the most regrettable features of the Canadian scientific scene... Furthermore, they raise the question of the relevance of research... It would be of benefit to the country if Federal institutions, instead of conducting research themselves, were to adopt a wide programming policy under which much of the applied research needed to discharge their missions was contracted out to universities and firms...."

Options

1. Continue as is;
2. Provide grants without conditions attached;
3. Provide grants with conditions attached;
4. Develop "concerted action" programs.

Discussion

1. Continuation of the present program, although it assists some universities in particular fields, does not ensure that R & D findings will be applicable to priority housing and associated planning problems.
2. Similarly, unconditional grants would maintain the tradition of academic freedom but again would provide no assurance that university R & D activities in housing and planning would be relevant to particular needs.
3. What would seem to be required is the provision of incentives to promote the development of better working relationships between universities, governments, community groups and industry on a local and regional level, as well as to ensure that R & D efforts are relevant to local problems.
4. What is envisaged, therefore, is a model which would in effect achieve three goals. It would provide municipal government with a continuing research capability in housing and associated planning. It would provide university researchers with a long-term source of funds to support their research and training requirements in those fields, and it also would

provide CMHC Fellowships for graduate students in work directly related to the Corporation's field of interest. The model is as follows:

- (a) CMHC would make an annual grant of up to \$100,000 for participating university researchers provided that they formulated annual research plans based on the research requirements established by the Regional Resource Centre described in the next sub-section of this paper.
- (b) research projects developed as a result of this process would be funded in the first instance by the annual grant. Should additional funds be required, applications would be made to CMHC to be dealt with in the usual manner as part of its responsive Part V program.
- (c) a further stipulation of the grant might be that one fellowship be offered for every \$10,000 of support. The applications for fellowships would be handled by the universities concerned, and the recipients would be expected to do their research work on one or more of the projects financed by the annual \$100,000 grant. Fellowships might vary between \$3,000 and \$5,000, depending on the school, the work and the region involved (e.g. - fee and cost-of-living differences).

5. The long-term costs of this program may be approximated as follows: The 1970-71 edition of "Opportunities in Canadian Universities for Education in Urban and Regional Affairs" lists 24 universities offering graduate programs related to some aspect or other of urban studies. Every province, except Newfoundland, is represented in this group.

At \$100,000 per research institution, this would amount to \$2,400,000 per annum if all 24 universities participate.

6. Another element in a university support program might be "concerted action" activities funded by CMHC. An example of this is a modification of the McGill University Design Workshop storefront operation. Under a "concerted action" program, the Design Workshop would be invited to join with a local community group (e.g. Point St. Charles) to form a non-profit corporation for the purpose of buying and rehabilitating a block of older houses in the local neighbourhood.

The university would provide both design and research capability to such a corporation, and this again would serve a dual role. On the one hand, the local group would have the use of certain skills, and on the other hand the university would have a real-life setting for training its students in research and development work.

### Recommendations

1. It is recommended that pilot projects be undertaken to test the feasibility of the university support program

described in item (4) above. York University, University of Toronto, the University of Montreal and UBC might be initial candidates for such projects.

2. It also is suggested that a "concerted action" pilot project be tried, possibly with the McGill Design Workshop as one partner, in a venture such as outlined above.

3. If the demonstration projects are successful, the full program should be implemented in phases over the next five years.

#### D. Regional Resource Centres

1. This is a new program designed to bring together governments, universities, community groups, labour and industry in a cooperative effort to apply research and development resources to local housing and associated planning problems in certain areas.

2. The vehicle for this would be regional resource centres which would be located in the larger urban centres and might take the following form:

- (a) a small staff (1 coordinator, 2 research officers, 2 clerical support);
- (b) an office - including a board room, library and reproduction facilities;
- (c) an Advisory Board consisting of representatives from governments, the local universities participating in the university support program, the larger builders and developers, labour unions, local financial institutions, interested community groups, and certain service agencies (e.g. - welfare and health).

3. The operating costs of these centres would be approximately \$100,000 each per annum and their functions would be:

- (a) to determine the priority local R & D needs by consultation with a wide range of organizations and through the work of the Advisory Board;



- (b) to work out an annual research plan in collaboration with the researchers participating through the university support scheme outlined previously;
- (c) to provide a local centre for active promotion of the use of housing and associated planning R & D information;
- (d) to assess the degree to which R & D findings are applied in practice.

#### Options

1. CMHC Regional Offices establish and administer the centres.
2. Independent centres are created.
3. The municipalities establish and administer them.
4. They are administered by the participating universities.

#### Discussion

1. While the Regional Offices would seem to be the logical site for these centres, jurisdictional problems and bureaucratic attitudes might limit their effectiveness. Provincial and municipal governments may not be willing to participate in a structure controlled by CMHC.
2. If the centres were to be administered by the universities involved, there would be a danger that R & D projects would be developed more on the basis of particular researchers' interests than because of their relevance to local problems.

3. Similarly, if the municipalities administer the program then it is possible that R & D efforts will focus primarily on their interests to the detriment of other needs.

4. Independent centres likely would have the advantage of freedom from vested interest bias, would provide an open forum for development of community-wide R & D activities, and likely would enjoy freer relationships with all concerned.

5. In view of the Urban Ministry's interest in a similar form of research centre, it is essential that joint consultation take place between the Ministry and the Corporation so that a full exchange of information and views be maintained. The broad guidelines for coordination of the resource centres' roles and for evaluation of their impact and effectiveness would evolve from this consultation process.

6. To determine the most appropriate structure, function, form of administration and funding for such centres, it would be desirable to conduct and evaluate a number of pilot projects.

#### Recommendations

1. It is recommended that a series of demonstration projects be developed over the next 5 years in consultation with the Urban Ministry, and in conjunction with the pilot projects suggested in recommendation (1) of the university support program. These demonstration projects would be designed to test the feasibility of the resource centres and the most appropriate way to fund and administer them.

INFORMATION SYSTEMSCurrent Situation

1. A growing concern has become manifest during the 1960's that the acquisition and effective use of knowledge and information for housing and planning purposes, indeed for the entire urban management process, was a matter that required urgent attention.
2. This has led, inter alia, to a major study of information for urban affairs sponsored by the Canadian Council on Urban and Regional Research, to the formation of a Committee (COMRIM) of the Canadian Federation of Mayors and Municipalities to deal with this question, and to the formation of the Inter-governmental Committee on Urban and Regional Research.
3. On the practical side, the National Capital Commission has been working on a computer program to store and retrieve municipal data and the Department of Industry, Trade and Commerce has been developing its BEAM program.
4. In the research field, this need for access to data also has led to a number of efforts to develop national information exchange services, including that of the National Research Council.
5. CMHC has provided support in recent years for a number of these activities and likely will be called upon to do so again. In view of the many different approaches to the problems, and the competition for funds which is extant at present, a policy is required to rationalize CMHC funding in this area.

Options

1. Continue to fund information projects in a responsive manner.
2. Stop funding such projects.
3. Promote new approaches and support these on an individual basis.
4. Promote a unified, systematic attack on the problem on a national basis.

Discussion

1. In light of the importance of the problem and CMHC's own need for considerable quantities of information, the Corporation has a vested interest in the development of an integrated information system. So has the Urban Ministry.
2. To continue to fund individual projects in an "ad hoc" way may be a waste of resources and does not provide any assurance that the results will be implemented across Canada in an organized fashion.
3. Active promotion of new approaches on an individual basis suffers the same defect of problematic implementation on a national basis.
4. If interested parties could be persuaded to work together on a national system, the problems could be solved much sooner and the eventual system which was developed likely would be readily accepted by most users across the country.

Recommendations

1. Since this problem is broader than housing and related planning per se, a joint attack should be mounted by both CMHC and the Urban Ministry. Consultation therefore should be undertaken with the Secretariat to work out a common approach.
2. In the meantime, it is suggested that CMHC stop funding isolated, individual projects and concentrate on trying to promote a consensus among interested bodies on how to pursue the issue further.
3. Without prejudicing the discussions between the Corporation and the Ministry, a feasible method of dealing with the problem should include the following:
  - (a) interdepartmental consultation to determine the degree to which federal departments and agencies involved in urban affairs would cooperate in the development of a national urban information exchange system;
  - (b) consultation with CCURR, CFMM and others to determine who might organize a series of national conferences aimed at developing a unified plan of action;
  - (c) an undertaking that CMHC jointly with the Urban Ministry would fund the development of a national clearing house or information system over a period of several years.

### TECHNOLOGICAL FORECASTING

1. The Secretary-General of OECD has noted that "the influence of Technological advance is becoming ever more important in many sectors of national activity. While it has until now been most striking in industry and defence, technology is gradually invading many other sectors...and its direction is becoming a major pre-occupation of governments as well as of private enterprise."
2. "Technological forecasting emerged as a recognized management discipline around 1960 (and) it has been adopted on an increasingly wide scale in industry and research institutes since the late 1950's. The value of technological forecasting has been proved, not only in terms of the accuracy of specific forecasts but even more effectively in terms of its contribution to the definition of long-range strategies... It may be estimated that about 500 to 600 medium and large-sized American companies have established a technological forecasting function as part of their operations."

#### Techniques

1. A 1967 report identified approximately 100 distinguishable forecasting techniques or elements of techniques. Important among these were the "Delphi" techniques; extrapolation of time-series on a phenomenological basis (e.g. - precursive events, envelope curves); learning curves; contextual mapping; morphological research; discounted cash flow; horizontal and

vertical decision matrices; operations research; relevance tree schemes; network techniques; systems analysis; and feedback techniques.

### Discussion

1. The process of policy planning that has begun to emerge in CMHC and elsewhere in government (e.g. - the PPB system) involves consideration of alternative "futures" which may result as a consequence of policy decisions.
2. To date, these projections have been characterized more as an art than as a science. If policy alternatives are to be weighed adequately, however, it is essential that they be based on more or less accurate assessment of the social and technical implications of various decisions. Technological forecasting techniques can aid this process since they:
  - (a) clarify the role of individual input factors and compel a comprehensive consideration of such factors;
  - (b) tend to reduce prejudice and bias;
  - (c) permit the evaluation of complicated patterns of input information and facilitate the systematic evaluation of alternatives.
3. Technological forecasting is one of the latest additions to a family of systematic forecasting activities which include economic and business forecasting. In general, the economic and business areas have developed sophisticated techniques

only for short-range forecasts, whereas the main interest for technology is in long-range forecasts.

4. It must be recognized that technological forecasting as a function cannot be tied to day-to-day operational matters. It is future oriented in outlook and should not be expected to produce information and materials for the expediency of the moment.

#### Recommendations

1. In view of the close relationship to policy planning, it is recommended that a technological forecasting unit be established in Policy Planning Division.

2. The responsibilities of this unit would include:

- (a) keeping abreast of developments in the field;
- (b) studying the possible application of the various techniques to CMHC policy planning activities;
- (c) developing detailed proposals (structure, costs, benefits, objectives, etc.) for Management consideration;
- (d) preparing technological forecasts in due course as backup material for policy decisions;
- (e) exchanging information with the Urban Ministry and other federal agencies on matters of mutual interest.



HOUSING-RELATED MUNICIPAL RESEARCH

1. The field of municipal research is wide-ranging and complex and there are overlaps between the mandate of the Ministry and those of various departments and agencies (e.g. - CMHC, Department of the Environment, Department of Transport, Department of National Health and Welfare, etc.). Any CMHC-directed R & D policy and program in this area therefore should be focussed on problems directly related to housing and related processes.

2. In this light, a CMHC "municipal research and planning" policy might have a set of specific, time-related objectives as its underpinning. The key areas which relate to the NHA are:

(a) Of Primary Interest to CMHC

- (i) land use and assembly;
- (ii) codes and zoning;
- (iii) municipal services (including sewage treatment);

(b) Of Joint Interest with Urban Ministry

- (i) planning and the participation of residents in the development and implementation of official plans;

(c) Of Secondary Interest to CMHC

- (i) municipal decision-making processes;
- (ii) municipal manpower development.

### Options

Within these areas the policy options which might be considered include:

1. continue to receive and dispose of ad hoc municipal R & D submissions as at present, and within available resources at any given moment;
2. fund the Canadian Federation of Mayors and Municipalities or other appropriate agencies to conduct research on municipal problems;
3. fund municipality-originated research projects on a shared-cost basis;
4. establish an annual "municipal research" plan in consultation with municipal representatives, perhaps through the CFMM, and within a ceiling on funds;
5. a mixture of one or more of the first four alternatives.

### Discussion

1. Option (1) provides information in a random, haphazard fashion and there is little opportunity to develop a coherent structure of research which would produce results of benefit to all municipalities.
2. While the major urban centres would have an opportunity to draw upon R & D resources through the university support and regional resource centre programs, the smaller municipalities would not have access to these resources and assistance should be provided in other ways.

3. Funding CFMM or municipality-originated projects would assist municipalities but would not provide any assurance that CMHC would obtain timely data for its particular requirements.

4. Option (4) would satisfy CMHC interests but may not relate to the priority needs of municipal governments.

#### Recommendations

1. It is suggested that a combination of Options (2), (3) and (4) be adopted. Each year, CMHC would establish one or two sectors for intensive research. Projects which were initiated by municipalities also would be eligible for funding, provided that the municipalities concerned were prepared to contribute a percentage (perhaps 25%) of the costs of the projects.

The shared-cost provision is proposed as a control mechanism on municipal submissions. If CMHC were to fund 100% of the costs, it is possible that R & D projects would be developed without priority considerations at the municipal level. On the other hand, if municipalities have to share in the cost of projects, it would tend to ensure that submissions represent local priorities.

2. To control costs, it is suggested that a maximum of \$1 million be committed annually for this purpose. After providing for CMHC-initiated projects and for support of CFMM and other agencies, the balance remaining in the \$1 million fund would be available for shared-cost projects with individual municipalities.

SUPPORT FOR RESEARCH AND DEVELOPMENT IN INDUSTRY

1. Section 33 of the NHA provides for developmental work by industry, for training of personnel, and for the sale of certain low-cost equipment and component parts in rural areas.
2. These provisions have not been used to any extent by industry and it is possible that many companies may not even be aware of their potential since the Corporation generally has not promoted activity in those areas. The responsive nature of the Part V program to date has left it to the entrepreneur to take the initiative in most cases.
3. If the Corporation wishes to stimulate research and development in the housebuilding industry and to accelerate the diffusion of new ideas and innovative behaviour, it will have to take a more active role than in the past. The options presented below are based on this assumption and have been formulated to benefit both the individual firm and the industry as a whole.

Options

1. Fund industry associations such as HUDAC, UDI and CCA to conduct their own R & D projects.
2. Offer incentives to individual companies to become engaged in R & D activity.
3. Develop an information system to keep industry informed on R & D results and their potential application to the production and disposal of housing.

Any single option above will not accomplish the twin objectives of encouraging R & D in industry and speeding up the diffusion processes. All three seem to be necessary for a program of this nature to be effective and the recommendations therefore provide a plan to promote activity in relation to each option.

#### Recommendations

1. CMHC should identify a set of specific components, materials, techniques or equipment which, if improved or modified, have the potential to reduce housing costs and which it believes worthy of investment for that purpose.
2. Companies capable of conducting the necessary research and development work should be invited to bid on a project basis on individual items. It would be understood that the Corporation would fund 100% of the development costs of accepted projects.
3. If a successful innovation is produced, the inventor should be paid a bonus according to some predetermined scale and also should be permitted the exclusive use, if possible, of the new product or technique for a limited period of time (perhaps 3 to 5 years). At the end of that time, CMHC would promote its diffusion to the industry as a whole.
4. CMHC also should support industry associations such as HUDAC to conduct their own R & D work. For this purpose, each association should be required to present an annual research

plan and the Corporation would fund these within a ceiling each year for this activity. This might be in the order of \$ $\frac{1}{2}$  million per year.

5. The Corporation should undertake a study of the industry to determine the nature of the innovation process, the reasons for the success or failure of particular innovations, the costs associated with introducing innovation, and the characteristics of innovative organizations.

6. A research group should be established immediately in the Corporation to study the technical and information needs of the housing industry. This group should be charged with preparing recommendations by June 1, 1972 for a comprehensive information and technical services program for the production side of the industry.

DEVELOPMENTAL PROJECTS

1. In a memorandum to the Minister concerning a South Shore Developmental Project in Montreal, Mr. MacLennan pointed out that:

"Canada needs to develop new forms of housing which can better serve the social and economic needs as well as the varying interests of families of different sizes and incomes. Such experience can best be obtained by large-scale social experiments."

2. The memorandum further noted that the aims of the project were to test new concepts and new forms so that valuable experience might be gained and adapted for use in future private and public sector housing activity.

3. The proposal also indicated that "private market mechanisms do not generate innovation in housing developments to the degree found in other fields of activity".

4. Given the Corporation's interest in this area, a "developmental projects" policy therefore should have two primary objectives:

- (a) to test new forms and concepts by putting housing on the ground; and
- (b) to promote greater interest in developmental work on the part of other levels of government and the private sector, both as experimenter and as beneficiary.

5. An added benefit from objective (b) would be that it not only would increase the probability of generation of new ideas, but also would tend to reduce the time lag in their diffusion through society.

### Barriers to Innovation

While it is possible to achieve the first objective in some degree through CMHC-initiated projects, there are a number of problems facing other governments and the private sector in any attempt to undertake developmental activity.

These include:

- (a) lack of funds to implement ideas at significant levels of scale;
- (b) unfavourable "opportunity costs" as between investing in innovative projects and more traditional ones;
- (c) too great an element of risk;
- (d) attitudes.

### Options

In this context, there would seem to be three options open for consideration:

1. Continue the present approach of CMHC initiating projects.
2. Provide incentives to encourage developmental activity.
3. Create a new section in the NHA to cover experimental financing of R & D projects.



### Discussion

1. In view of the external world's lack of interest and competence in many instances, the Corporation has little choice but to initiate its own projects if it seeks new forms and ideas for housing. There is no indication at present that the provinces, the municipalities, or the private sector would take initiatives or are likely to invest funds in large-scale developmental work.

2. Assuming that it is desirable to encourage other governments and the private sector to participate in developmental activity, it is reasonable to anticipate that provincial and municipal governments might undertake developmental projects if the federal government were to share 50% or 75% of the development costs in excess of those normally charged to a conventional project, and there was some assurance that the experimental units would rent or sell as well as conventional ones. Similarly, private entrepreneurs probably would be more interested in innovation if they also had assurance that the risk element was minimized.

3. At present, Section 14 of the NHA provides for a guaranteed annual return of rentals for rental housing projects. This section stipulates an annual return of up to 85% of agreed unit rentals, subject to payment of a graduated scale of premiums by the builder. One way to reduce the risk to private entrepreneurs and other levels of government that losses might

be suffered in experimental rental housing, would be to guarantee a 100% return of annual rentals without charging any premium for the extra 15% protection.

4. Similarly, an incentive scheme which provided for CMHC underwriting the development costs, for a rebate of perhaps 10% to the original purchaser of an experimental unit, for a buy-back guarantee such as in section 38(2) (c) of the NHA, and for 100% loans, likely would encourage private builders and developers to take initiatives in developmental work.

5. It is obvious that there are many combinations of incentives possible. Since the essence of the concept of a "developmental project" is to experiment with new ideas, it would be preferable to have a mechanism in the Act which allows considerable flexibility in testing innovative concepts and approaches. This argues either for amendments to various existing sections of the NHA (viz: sections 14, 15, 16, 19, 35 and 38) or for a new section in Part V to permit various financing arrangements to be tried in practice before considering their inclusion in the regular loan sections.

6. A disadvantage to amending existing loan sections is that of the number of changes which might be required, whereas an entirely new section in Part V of the Act would clearly relate experimental lending to research and development activity.

#### Recommendations

1. CMHC should continue to initiate "developmental projects".

2. Pilot projects should be initiated in 1972 to test the feasibility of incentives such as 100% guarantee of rentals, 100% loans for low-income and low-rental housing, certain kinds of buy-back guarantees, rebates on purchase price and bonuses for successful innovation, as devices to encourage other governments and the private sector to undertake developmental projects.

3. A new section should be incorporated in Part V of the NHA to permit experimental financing of developmental projects.

### DISSEMINATION OF R & D FINDINGS

1. During the Part V policy review and in the consultations that led to this paper, one of the most frequent topics of discussion was the need to make the results of the research which CMHC conducted or funded available to external interests.

2. Distribution of R & D results has not received sufficient attention in the past and it is imperative that a policy and procedures be established as soon as possible in relation to this issue.

#### Options

There are several approaches which might be used to resolve this problem. These are:

- (a) include a clause in each contract that the grantee or contractee will undertake to distribute his report to a group of institutions selected by CMHC, in addition to his own choices;
- (b) the Corporation undertakes to publish all R & D reports and distributes them free of charge to selected groups;
- (c) the Corporation publishes all reports but charges a fee for copies which are requested by external parties;
- (d) the researcher provides a predetermined number of copies of his report as part of the contract.

These would be distributed by the Part V administration to the National Library, to the NRC

Library, to the CMHC Library, to the operating divisions, to each regional office, to PPD, to senior management, to CCURR, to the Urban Secretariat, to ICURR, and to a number of national organizations such as HUDAC, CFMM, CCSD, etc.

- (e) CMHC obtains copies and acts as in (d). In addition, Information Division publishes an "accession" list in each issue of "Perspective" and "Habitat". The Corporation also develops selected mailing lists, including community groups, municipalities, provincial governments, other federal departments and agencies, industry associations, university libraries, schools of architecture, planning schools, etc. Every quarter, CMHC forwards an "accession" list to all groups on its mailing lists, with information where copies of studies are located, for anyone wishing to review a particular report. The Corporation also prepares brief abstracts of research reports and distributes these free to a selected list of potential users (e.g. - university libraries, large developers, national organizations, etc.).
- (f) the Corporation only publishes reports which meet certain standards and distributes these to a limited number of people and groups.

Recommendations

1. In order to ensure the widest possible distribution of information, at a reasonable cost, some combination of (c) and (e) is preferable.
2. It is suggested that Information Division, in conjunction with PPD and the Directors of certain operating divisions (e.g. - A & P, E & C, E & S, S.D. and Appraisal), study this matter in depth to determine the costs of options (c) and (e), as well as the personnel requirements to administer the distribution program, and to submit a report and recommendations to the Executive Committee at the earliest possible date.
3. These recommendations imply that the Corporation should make public the results of all research it funds. There may be certain cases, however, where policy considerations suggest that a report be kept confidential for a time. It is suggested, therefore, that future submissions to the Executive Committee or other authority for approval of a project include a recommendation concerning the publication status of the results of the project, pending a decision by the Corporation on the recommendations arising from the study noted in 2 above.

R & D COORDINATION

1. To date, development of research proposals, selection of researcher or agency, project monitoring, etc., has devolved upon the Division or group having the specific functional responsibility (e.g. - A & P, E & S, PPD) for the proposal under consideration.
2. While it is recognized that each Division should maintain its autonomy in developing its particular R & D needs, it is recommended that a CMHC Research Coordinating Committee (RCC) be established. This group would be composed of the Directors of operating units having a continuing need for research (e.g. - A & P, E & S, Engineering & Construction, Social Development), the Senior Technical Advisor, plus representatives from PPD.
3. The Committee would meet periodically to:
  - (a) review research proposals being considered for funding;
  - (b) review the research reports arising from projects;
  - (c) consider how R & D findings might be applied to policy and programs;
  - (d) discuss and recommend areas of study for possible inclusion in an annual directed research plan.
4. While the Part V administration would still retain its responsibilities in determining which proposals to recommend for approval and which to reject, the work of such a committee

would tend to ensure that each operating division was aware of what was "in the works" so to speak.

5. Provision must be made for ongoing consultation with the Urban Ministry on R & D matters of mutual concern and it is recommended that the officers responsible for directed and responsive funding of research under Part V be charged with continuing consultation with the Ministry.



#### IV. - OBJECTIVES

If the preferred options recommended in Section III are adopted, then the objectives of CMHC's housing research and development program may be conceived as follows:

##### Long-Range

1. To acquire a better understanding of the quality of the housing environment;
2. To develop criteria for the continuing improvement of new and existing housing;
3. To promote the development, within and without the Corporation, of integrated R & D programs to test the social, economic, planning, design and technical aspects of housing; its production; and its relation to the total community;
4. To promote research and development information exchange between the three levels of government, the academic community, industry, and community groups;
5. To provide continuing assessment of the ideologies and value orientations of users, producers, regulators and funders of housing;
6. To encourage and support innovation in housing and housing environmental matters.

##### Near Term (1972)

1. To establish a coordinating mechanism within the Corporation to ensure that housing research and development will be mission-oriented as well as responsive to discrete external interests;

2. To test new approaches to institutional support, manpower development, and housing-related planning processes;
3. To develop a municipal research capability;
4. To develop a technological forecasting capability;
5. To establish "linkage" mechanisms with the external environment to improve exchange of information and ideas;
6. To test a programming-planning-budgetting process of preparing an annual research and development plan.

V. - R & D BUDGET IMPLICATIONS(excluding Part V costs other than  
research and development grants)

		(000's)					
Item		<u>1971</u>	<u>1972</u>	<u>1973</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>
<u>Current R &amp; D Activities</u>							
(1)	Fellowships/ Study Grants	1,200	1,200	1,000	500	250	150
(2)	Institutional Support	750	750	800	900	1,000	1,000
(3)	Directed Research	( )	2,000	2,250	2,500	3,000	3,000
(4)	Responsive/ Demonstration Grants	(3,080) ( ) ( )	800	1,000	1,000	1,000	1,000
	Contingencies	100	100	100	100	100	100
		<u>5,130</u>	<u>4,850</u>	<u>5,150</u>	<u>5,000</u>	<u>5,350</u>	<u>5,250</u>
<u>New R &amp; D Activities</u>							
(5)	Municipal Study Grants		75	300	750	1,125	1,500
(6)	Citizen Group Research		100	300	500	750	1,000
(7)	University Support		100	500	1,200	1,800	2,400
(8)	Regional Resource Centres		100	500	800	1,300	1,500
(9)	Technological Forecasting		10	20	20	20	20
(10)	Municipal Research		100	300	500	800	1,000
(11)	Industry Support		100	200	300	400	500
(12)	Developmental Projects		120	500	1,500	2,100	2,500
		<u>5,130</u>	<u>5,555</u>	<u>7,770</u>	<u>10,570</u>	<u>13,645</u>	<u>15,670</u>

Notes

(1) If the university support program (No. 7) is adopted as proposed, then it will absorb the fellowship program, except for out-of-Canada studies, which are provided for in the years 1974-76 inclusive. The gradual reduction in the fellowship/study grants budget over the 5 years represents its phasing out period. If the university support program is not approved, then the fellowship/study grants budget for 1973-76 will need to be reinstated to its figure of \$1,200,000 per annum.

(2) It is anticipated that there will be slow growth in the institutional support program over the 5-year period. This is a controllable item which can be allowed to expand as funds become available.

(3) The increase in the directed research program is offset to a considerable extent by the reduction in the responsive research item (4); and represents the shift in Corporation policy away from a responsive mode of funding R & D to a mission-oriented approach. A fixed amount has been left in the budget (\$1 million/annum) to provide for unsolicited submissions which may be of interest to the Corporation, as well as for funding high-risk, future payoff projects which may be generated outside of CMHC.

(5) The projected budget for municipal study grants envisages a controlled growth from 20 grants in 1973 to 100 grants in 1976, at an average figure of \$15,000 per grant.

The 1972 amount covers one or two pilot projects to test the feasibility of this concept.

(6) Similarly, the Citizen Group Research item projects a gradual growth from an anticipated 10 projects/year in 1973 to 40 projects/year in 1976. The average project cost is estimated to be in the order of \$20-30,000 and the budget provides for 2 to 4 undertakings each year in each of the major cities by 1976.

(7) The 1972 amount covers 2 or 3 university support pilot projects to test the feasibility of the program. In 1973, 3 or 4 more institutions would be invited to participate and it is hoped to add 6 or 7 more universities per year thereafter until the estimated maximum of 24 has been reached by 1976. This is a difficult program to predict and the universities would need to be consulted before final figures and conditions can be established.

(8) A pilot project covering 2 units is envisaged for the regional resource centres program for 1972. In 1973, 3 more centres would be added, with 3 additional ones in 1974, 5 in 1975 and 2 in 1976, for a total of 15 in all. They would be established in the main cities in each province - e.g. St. John's, Halifax, Moncton, Saint John, Quebec City, Montreal, Toronto, Hamilton, London, Winnipeg, Regina, Saskatoon, Calgary, Edmonton and Vancouver.

(9) The nominal amounts in the budget for the technological forecasting item represent subscriptions to certain forecasting service organizations such as Arthur D. Little, Inc., The Diebold Group, Inc., and Stanford Research Institute. These institutions provide periodic long-range forecasts and methodology papers in various areas for an annual fee.

(10) The municipal research budget anticipates a gradual extension of the program to the smaller municipalities across the country, with about 25% of the budget reserved for CMHC-initiated projects, and the balance each year for projects initiated by the CFMM, other appropriate agencies and the municipalities themselves. The average municipal project cost is assumed to be in the order of \$15-25,000 and about 10 projects are anticipated for 1973, rising to about 50 by 1976.

(11) While it is almost impossible to predict the budget required to fund innovative projects by industry, the amounts included have been predicated on the basis of about \$100-200,000 per year to support industry association research, with the balance available for individual firms. Should insufficient funds be available in any given year, then monies could be allotted from the directed and responsive research budgets to make up all or part of the difference required. In any event, it is assumed that this program should have a ceiling in order to control costs.

(12) The developmental projects budget includes provision for the anticipated non-recoverable development costs of the proposed St. Lambert-Longueuil project. This explains the substantial increase indicated for 1974 and 1975. The balance of the budget is aimed at supporting several smaller-scale efforts each year. The estimated costs for such undertakings have been equated with those of the St. Lambert-Longueuil proposal.

## VI. - LEGISLATIVE IMPLICATIONS

NOTE: References in this paper to various sections of the  
NHA relate to the 1968-69 version of the Act.

---

### Part V

1. Part V is the research and development mandate of the Corporation. It is broad enough to include most of the proposals outlined in the policy options described previously. A number of changes are required, however, to accomodate some of the new items.

- (a) Municipal Study Grants - The existing fellowship and study grants program is covered by Sub-section 33(e). This section provides for the promotion of training in the construction or designing of houses, in land planning or community planning, and in the management or operation of housing projects. It also specifies that such promotion can be made in cooperation with the government of any province, inter alia, but does not include "municipality" in the wording.

It may be necessary, therefore, to amend this subsection to include the word "municipality" in order to provide for municipal study grants. In addition, the sub-section limits the kinds of training it is possible to support, and it will be necessary to include provision for training in urban management skills other than land or community planning.



- (b) Municipal Research - Sub-section 33(h) now permits the Corporation to "make arrangements with a province or a municipality, with the approval of the government of the province, to conduct special studies relating to the condition of urban areas, to means of improving housing, to the need for additional housing or for urban redevelopment".

This sub-section would need to be amended to include provision for research into other matters of interest to municipalities (e.g.: codes, zoning, finance, etc.) in order to support the municipal research program envisaged. As it stands at present, moreover, the sub-section makes provincial approval mandatory for urban studies. It may be desirable to delete the term "with the approval of the government of the province" from the sub-section.

If this is not feasible because of the inclusion of the terms "studies of urban areas" and "for urban redevelopment" in the sub-section, then a new sub-section may be required to deal with municipal research.

- (c) Industry Support - While support for industry associations such as HUDAC is possible under Section 32, the developmental or pilot project portion of the industry support program probably is covered by sub-sections 33(1) (a), 33(1) (b) and 33(1) (f). Some amendments may be necessary, however, if

experimental projects involve questions such as codes, zoning, etc.

2. Another change that should be made in Part V is to broaden sub-section 33(2), to provide for underwriting or guaranteeing the sale of the equipment and component parts mentioned, in relation to urban homes as well as for farm or rural homes as the sub-section now reads.

3. Although the development costs of a "developmental projects" can be funded under Part V, as it is currently worded, it is not possible to make loans to builders or individuals for experimental purposes except under the normal loan provisions of other sections of the Act.

At present, these sections have particular percentages for loans locked into their wording and amendments would be required to provide for experimental approaches. This would mean amending a number of sections and, if the experimental provision were as flexible as is desirable, then there might be anomalies built into these sections because of the difference between the normal loan provisions and those for "developmental project" use.

4. If an experimental financing section is to be included in Part V, it will be necessary either to amend sub-section 35(2) (a) to provide for the new dimension or add a new sub-section.

## VII. - INTERGOVERNMENTAL CONSIDERATIONS

1. The new activities proposed in Section III have implications for intergovernmental and interdepartmental consultation.
2. Municipal study grants, regional resource centres, municipal research and citizen group research, for example, not only should be discussed with individual municipalities, but should be broached as well with the provinces.
3. The university support program on the other hand is, in effect, an extension of the existing fellowship and institutional support activities and could be implemented without prior consultation with other governments, although it would be desirable to do so before implementing the proposals.
4. In addition to intergovernmental considerations, several of the new activities are related to those of other federal departments. Citizen group research, for example, would be of interest to the Secretary of State Department as well as to National Health and Welfare. Regional resource centres would be of interest to a number of departments and the industry support activity is related to that of the Department of Industry, Trade and Commerce.
5. Although no discussion on these proposals has taken place as yet with other governments or departments or agencies,

it would be desirable to obtain their views before a memorandum to Cabinet was prepared, so that modifications might be made if it seems likely that certain aspects are unacceptable or would be resisted strongly.

6. Since intergovernmental consultation is essential to implement certain of the new proposals, it is important to have the Urban Ministry participate in the informal consultation with provincial and municipal governments.

7. If the R & D proposals are approved by Management and the Minister, then the following is suggested as a subsequent follow-up plan.

#### Recommendations

1. Informal consultation should be undertaken with PCO, Treasury Board and the Department of Finance to review the substance of the proposals and their budget implications. It may be desirable to place the new R & D activities in the context of the Urban Assistance policy.
2. The Minister may wish to consult with his Cabinet colleagues on an informal basis at this point, again with R & D in the framework of the Urban Assistance package.
3. Consultation should take place with the appropriate officials in various federal departments to ascertain their reactions to individual aspects of the proposals.

4. CMHC and Ministry representatives should consult informally with appropriate officials in the Departments of Municipal Affairs at the provincial level and with key officials in certain cities (e.g.: Montreal, Toronto, Winnipeg, Edmonton, Vancouver).

5. A memorandum to Cabinet then would be prepared taking into account the results of the various consultations. R & D could be part of one comprehensive memorandum or could stand on its own in a separate submission.

6. If Ministers approve the R & D program, then formal consultations could commence with provinces and municipalities.