CMHC File: 112-14-3-14

1978-07-24

R.A. Player,
Executive Director,
Professional Standards and
Technology Directorate

Re: Report on Residential Inspection Operation

Dear Sir:

In submitting the attached report on the Review of Residential Inspection Operation, I wish to express my appreciation for the cooperation of all staff in local offices visited and the invaluable assistance of W.C. Robbins throughout the field work.

I will not attempt here to give a synopsis of the report, which should speak for itself, however, I do wish to make one comment.

The report must, of necessity, be a critical review of the operation and as a result may appear negative as it finds problems with the operation. It does not report all of the positive aspects of the present operation.

In that light, I must say that I found the inspection staff well motivated and dedicated in their work in providing services to all clients. I could not help but sense a well developed esprit-de-corps amongst them and in their relationships with Regional and National Office Engineering and Inspections Staff.

G.L. Walt, P.Eng.,
Manager, Inspections and
Materials Acceptance
Engineering and Inspection Group

Attach.

GLW:ct

A

REPORT

ON A

REVIEW

OF THE RESIDENTIAL

INSPECTION OPERATION

G.L. Walt
PSTD
July 1978

A REPORT ON THE REVIEW OF THE RESIDENTIAL INSPECTION OPERATION

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1.0 EXECUTIVE SUMMARY

The Review of Inspection Operation has revealed three types of problems related to the performance of the inspection operation over the next three years.

- Problems related to accurately defining the workload and matching this workload to resources.
- Problems related to the effectiveness of the operation particularly in relation to municipal inspection operations.
- Problems related to the continuing maintenance and management of the operation in such areas as deployment, development and training.

Following the identification of problems and the discussion of alternative solutions, recommendations are made as to how the Corporation should approach the problems.

1.1 THE PROBLEMS

1.1.1 MATCHING WORKLOAD TO PERSONNEL RESOURCES

The existing workload is reported under at least three different systems that are not coordinated or completely analyzed. This means that the present workload is not clearly understood and analyses such as productivity calculations cannot be performed. Without this type of analysis and continued accurate reporting of workload, the effective matching of personnel to workload cannot be done.

1.1.2 THE EFFECTIVENESS OF THE INSPECTIONS OPERATION

The inspection operation performs its role in an environment of other market forces and agencies that also have an impact on the housing market. This obscures the effectiveness of the operation and makes the evaluation of its total impact on the residential construction field difficult.

1.1.3 THE IMPACT OF THE MUNICIPAL INSPECTION OPERATION

While the review has identified that there is some duplication of inspections between CMHC and others, the degree of variation in the quality of inspections by municipal inspectors was also found to be very great. As a result more reliance on a few municipalities may be warranted, however, in most cases this would not be justified. More information on the state of the municipal operation nationally must be obtained in order to fully measure the impact of the municipalities.

1.1.4 THE MAINTENANCE AND MANAGEMENT OF THE INSPECTION OPERATION

- Deployment - The main problem in the deployment of the inspection staff is the local office organization where programs staff are identified. When the inspectors are allocated to programs, the Chief Inspections Offices cannot maintain control and cannot provide the technical guidance required by the inspection staff. In addition the flexibility of the staff is reduced and less workload can be handled.

  The second major problem in deployment is the lack of man-years at National Office and Ontario Regional Office to monitor and maintain the operation.

  Another problem identified concerns the deployment of corporation engineering staff to assist in the plans examination and inspection of high-rise buildings.

- Training - The main problem identified in the training area is the need to strengthen local office training. 63% of the staff has less than five years of Corporation experience. In addition, changing codes and standards and the rapid introduction of energy conservation and rehabilitation technology have increased the needs for local office training to be of a high calibre both in content and effectiveness.

- Development - The need for a clearer development plan for inspection staff was identified as a problem particularly for junior staff.

  Related to this development plan is the access to opportunity for promotion through expanded job posting.

1.2 THE RECOMMENDATIONS

1.2.1 MATCHING WORKLOAD TO PERSONNEL RESOURCES

Recommendations aimed at providing solutions in this area are to;

- Establish a better reporting system to maintain and evaluate the existing and changing workloads.
- Reduce existing workload somewhat by eliminating unnecessary inspections
- Reduce the workload by taking into account the inspections performed by municipalities.

The analysis of a more comprehensive reporting system will permit a more effective matching of personnel resources to the workload.

1.2.2 THE EFFECTIVENESS OF THE INSPECTION OPERATION

To clarify the purposes of the various activities undertaken by Corporation inspection staff, a recommendation is made to prepare a document clearly outlining the purposes of all activities.

1.2.3 THE IMPACT OF THE MUNICIPAL INSPECTION OPERATION

Recommendations are made to complete the analysis of municipal capability and to introduce a trial procedure of reduced inspections in three municipalities where adequate inspections are performed by local municipal inspectors.

Based on the results of this experience and the national survey of municipalities, the opportunity for further reductions in workload should become apparent.

1.2.4 THE MAINTENANCE AND MANAGEMENT OF THE INSPECTION OPERATION

- Deployment - Recommendations under the deployment of staff are;
  - to reorganize inspection staff in local offices under the direct control of the Chief Inspections Officers.
  - to establish 2 full time positions at National Office to assist in the monitoring and training of engineering and inspection staff
  - to establish an assistant for the Regional Inspections Officer in Ontario
  - to consider the redeployment of engineers in local offices to assist with high-rise building construction

- Training - To improve local office training recommendations are made;
  - to introduce an inspectors handbook
  - to assist local office training through a National newsletter issued monthly

- Development - The main recommendation for development is to establish a clear development plan for all staff with emphasis on the junior levels.

2.0 SCOPE OF THIS REPORT

This report is the final report of a two phase review of the inspection operation. The first report, containing preliminary findings, was submitted in February 1978.

The methodology used in the review process is outlined in Appendix A. During the field portion of the work nineteen local offices were visited. A complete list of these offices and the other agencies visited in their areas is listed in Appendix C to this report.

The purpose of the review was to examine the present condition of the Corporation's inspection operation related to its own internal operation and to the operations of others, particularly the municipalities.

Having examined the condition of the operation, specific problems were identified, discussed and alternatives presented. As an output to these activities, recommendations are made to provide solutions to the problems identified.

In order to present the report in a logical manner, the following sections are organized under the headings of;

- The Condition of the Inspection Operation
- The Problems and Discussion
- The Alternatives
- The Recommendations

3.0 CONDITION OF THE INSPECTION OPERATION

3.1 OBJECTIVES

3.1.1 EXISTING POLICIES

To establish a framework for the purposes or objectives of the inspection operation; two sources of information were reviewed. These are the policies sections of the Guidelines and Procedures Manuals for each Program and the general statement of the Corporation's Objectives.

As the inspection staff spends more than half of its time in providing services to the Insured Lending Program, the most relevant set of policies is found in the related volumes. The relation of the inspection function to the Corporation's Objectives will be outlined in Section 4 of this report.

3.1.2 FIELD STAFF PERCEPTIONS

Branch inspection and program staff interviewed, generally felt that the four main purposes for inpections in order of priority are:

- to provide mortgage security
- to administer loan advances
- to protect the consumer
- to improve housing quality

3.1.3 EXISTING SERVICES

In reviewing the inspection operation, the question that appeared to be most important is "What services does the inspection operation provide, how much do they cost, and to whom are they provided". Related sub-questions are - "How does it protect the Mortgage Insurance Fund?", "How does it influence the quality of housing?", "Who are the clients of the inspection operation?", etc.

In order to answer these and similar questions, one must consider the scope of activities of the inspection staff, relate these activities to their clients and consider the other factors and agencies involved in these activities. As a result, the influence of inspections carried out by municipalities and the impact of New Home Warranty Programs should be considered.

In the following sections of this report, these questions are considered, the problems discussed, alternatives examined and recommendation made.

3.2 WORKLOAD

3.2.1 CURRENT INSPECTION ACTIVITIES

A list of services provided by the inspection staff is found on Table I. These services have been grouped under the headings of:

- Inspections related to loans processing
- Other inspections, and
- Other duties

The inspections related to loans processing have been further broken down under the heading of Single and Multiple Unit Construction and related to the stages of loans processing.

3.2.2 CURRENT VOLUME OF ACTIVITY

With the present reporting system, access to hard data to analyse the present workload proved difficult. To discover the present volume of activity and relate it to past and future volumes, two sources of information were used in addition to data gathered during the office visits.

For the four hundred field inspectors, a summary of activity was produced for the first five months of 1978 (the 1977 data was unavailable). This summary of activity by percent of total man-hours and salary cost is shown on Table 2.

The largest percentages of total man-hours are:

Activity	Percent Time
Loans processing including plans examination and inspections	59.3%
MIF and Property Management	2.6%
Public Housing	3.4%
Chargeable Services to Others	1.1%
Research and Other	1.2%
RRAP, CHIP and Home Insulation Program	8.7%
Office General (including Leave - 12.9%)	21.6%
All other duties	2.1%
Total	100.0%

Time required to answer general technical inquiries from the public accounts for up to ten percent of the loans processing time. A further two percent is needed to service consumer complaints.

To relate the present workload in units to past volume, the statistics on loans for units, both new and existing and the total housing starts were plotted on Figure 1. The total NHA units includes the housing assistance programs. Units under RRAP including designated NIP areas are shown separately. Total inspection staff times expressed in percentages of 1978 activity have been marked on each volume line.

The volume of activity shows a drop in new housing to a low of 101,000 units in 1974 followed by a rapid climb due mainly to AHOP to a 1977 figure of 201,000 units. Loans for existing housing have generally increased over the years to 67,000 units in 1977 with a slightly lower volume forecast for 1978.

3.2.3 PROJECTED VOLUME OF ACTIVITY

To assess future volumes of activity that impact on the inspection operation, a forecast of program activity was obtained from Program Marketing and Requirements Division. These figures have also been plotted as dotted line extensions on Figure 1 up to the year 1981.

As a guide to what might be beyond 1981 in the longer term, Figure 2 shows the total housing requirements by component in Canada 1977-2000 (1).

The future workload will be slightly affected by recently announced program changes including the modifications in the social housing program.

3.3 HUMAN RESOURCES

3.3.1 CURRENT STAFF

The Corporation had 400 inspectors in the field as of September 1977. This figure does not include the five Regional Inspections Officers and staff of the Montreal Real Estate Office.

A summary of the deployment of this staff on a branch and regional basis is given in Table 3. This table provides information on the classification level, years of CMHC experience, years to retirement at age 65, and education level of the inspection staff.

(1) From Housing requirements Model:
Projections to 2000

A graphical display of the data of Table 3 is provided in Figure 3.

The highlights revealed by this information are as follows;

- 26% of the staff are inspectors in training (Level 21)
- 25% have less than 2 years experience, another
- 25% have more than 10 years experience
- 8% must retire in less then 5 years
- 142 out of 400 or 36% have been educated to the community college level while another 4% have university degrees.

Comparing this data with a similar summary for the 216 inspectors on staff in 1966 reveals a less experienced work force;

Year	Years Experience with CMHC			
	0-2	2-5	5-10	more than 10
1966	15%	8%	13%	59%
1977	25%	38%	11%	25%

In 1966 23% of the staff had less than 5 years experience compared to 63% in 1977. This fact illustrates the training load that has had to be carried recently, mainly at the local office level.

The attrition rate of compliance inspectors compared to other Corporation staff is illustrated on Table 4. It shows a turnover of 8.9%, a figure below the rates for other technical classifications.

The number of inspection staff has significantly increased since 1971. To indicate the trend, the total staff figures have been plotted on Figure 1. The large increase from 261 in 1971 to 365 in 1973

apparently occurred as a result of demonstrated need for better inspections following the experience of the "200 Million Program" just prior to that period.

From 1973 to 1977 the staff level has followed the trend indicated by total NHA activity line on the same Figure. Resources have also been needed in this period for RRAP and the Home Insulation Grants, with CHIP being added to the workload in early 1978.

3.3.2 PROJECTED STAFF REQUIREMENTS

The number of staff required to effectively carry out the future workload under existing policies will depend on the volume of activity expected in various programs.

New construction has traditionally required by far the largest percentage of the man years available. If the projections to 1981 are correct, a lowering of NHA volume for new construction to about 110,000 units could save up to 20 man-years depending on where the drop in volume occurs.

The inspection and appraisal of existing housing is expected to remain at close to 1978 figures and the programs aimed at rehabilitation namely RRAP, HIG and CHIP should increase slightly.

Unless there are significant changes in policy and programs, it would appear that the inspection staff is entering a period of consolidation where some attrition can be permitted.

A better volume and time reporting system may reveal areas of future savings and changes in policies and procedures could have a significant impact on staff requirements.

3.4 COST OF INSPECTIONS

As reported earlier, the present time, volume and activity reporting did not facilitate the easy calculation of time and costs for inspections.

In order to measure productivity and costs the following methods were used.

For twelve offices visited, the 1977 Summary of Part I and Section 58 inspection activity for time and salary cost was assumed to be totally accummulated by the inspection staff.

The total number of inspections reported for new houses and apartments was calculated from the Monthly Reports of Inspection Activity. This activity combined with data collected from a survey of files in the offices, allowed the analysis of inspection activity shown in Tables 5, 6 and 7 to be carried out. The gross assumptions made and the limited sample of files used for multiple construction weakens the data presented for three storey and high rise construction, however, the trends are there.

For new houses, Table 5 shows the average number of inspections on a total sample of 141 files in ten offices as;

Site	1.0
Mandatory	3.0
Pre Application	0.2
Intermediate	0.8
Supplementary	0.3
RE-Inspection	1.1
Total per house	6.4

Table 5 also shows an average of 6.3 minor infractions called on each house inspected.

Table 6 indicates the average time; mileage travelled and salary cost for inspection visits to houses and apartments for twelve offices.

The averages of eleven of these offices are;

Type	Time per Inspection Visit	Mileage per Inspection Visit	Salary Cost per Inspection or Visit
Houses	0.9 hr.	7.0 mi.	$ 7.88
Apartments	2.6 hr.	13.7 mi.	$24.74

Combining this data with Table 5 the following data for the cost of inspections of the average new house is calculated as;

Salary cost	= 6.4 visits @ $7.88	=	$50.43
Mileage charge	6.4 visits @ 7.0 mi. @ $0.21	=	$ 9.41
	Total cost per house	=	$59.84

Similarly if the average data for each visit are combined with the number of visits per projects, the data shown in Table 7 can be prepared. Table 7 reveals the following average figures;

. For 3 Storey Construction

Average number of units - 37

Average construction period - 11 months

Average total visits - 18

Average inspection time per unit - 1.41 hr.

Average salary cost per unit $12.00

. For High Rise Construction

Average number of units - 177

Average construction period - 19 months

Average total visits - 30

Average inspection time per unit - 0.47 hr.

Average salary cost per unit- $4.40

In summary, if the Corporation's overhead factor for field operations is 161% (2), the following figures apply;

Type of Construction	Cost per unit (Basic Salary x 2.61 + Mileage charge)
New Houses	$141.03
Three Storey	$ 33.82
High Rise	$ 11.97

NOTE: The reader is reminded that the low sample for multiple construction reduces the accuracy of the figures presented. The costs shown do not include the cost of plans examination.

To compare the costs charged by Corporation to those charged by others, several municipalities and lenders were surveyed.

Small rural municipalities generally charge a minimal fee of 5 to 10 dollars for processing a building permit. For the following larger municipalities the cost of a building permit for $30,000 of construction is:

City	Cost
Vancouver	$138.50
Regina	$150.00
Edmonton	$ 72.50
Winnipeg	$ 92.25
Toronto	$150.00
Longueuil	$ 10.00 per unit
Halifax	$ 97.00

The figures generally do not include additional charges for permits for plumbing and other mechanical and electrical construction. Most large municipal building inspection departments try to operate on a cost recovery basis.

(2) From Administrative Division

Lenders, when questioned on the charges to the borrowers for loan processing services by private mortgage insurers, provided the following figures:

Loan application fee	$ 20.00
Appraisal fee	$75 - 100.00
Appraisal fee for advances	$10 - 25.00 per visit

Using average figures, the cost for the borrower for loan processing including four advances would be about $175.00.

3.5 ORGANIZATION AND MANAGEMENT OF THE INSPECTION OPERATION

3.5.1 DEPLOYMENT

The inspection staff is deployed as shown in Table 3. In addition there are five Regional Inspection Officers and a total Engineering and Inspection Staff of twelve in the Professional Standards and Technical Directorate at National Office.

The Quebec Regional Inspections Officer has an assistant.

Functionally the inspection staff within many larger offices is organized into programs with the majority reporting to the lending programs.

A recent check of local office organization charts showed the following breakdown of inspection staff by program.

Lending	-	90%
Social Housing	-	6.5%
Community Services	-	3.5%

In many cases, senior inspectors working in program areas have been assigned to these programs for some time without being rotated.

A factor related to inspector deployment is the involvement of Corporation engineering staff in inspection activities. In the last several years, many offices have cancelled their engineering position and transferred this responsibility to the inspection staff. In larger offices where a reasonable volume of complex multiple construction is handled, more involvement by engineering staff may be warranted.

3.5.1 TRAINING AND DEVELOPMENT

. Current training over the last four years has consisted of the following:

New Inspectors Workshops of one week duration are held approximately three times per year for twenty to twenty-five participants. Two courses per year are conducted at National Office for English Speaking participants and one course in for French speaking inspectors. New inspectors normally complete their probationary period before attending a workshop. Before and after this formal training workshop, their training is the responsibility of the parent office.

Regional Inspection Offices Meetings are held for three to five days normally twice per year. At these meetings technical information is exchanged and planning and evaluation of the inspection operation is carried out.

Chief Inspection Officers Meetings are held within Regional areas on roughly an annual basis. These meetings are similar to the Regional Officers meetings but deal with local issues.

A National Conference of Senior Engineering and Inspector Staff was held in 1976 for all local senior inspectors and Regional Inspections Officers and in 1978 a Senior Inspectors Training Workshop was conducted. Both these meetings were of one weeks' duration and held in Ottawa.

The training outlined above is supplemented by local office in-house training and information sessions and individual participation in workshops and seminars. These events are sponsored by provincial associations of building inspectors, the National Research Council, etc.

Local office training consists of a regular weekly, bi-weekly or monthly meeting. Scheduling for these meetings is subject to workload and its quality is directly related to local initiative, enthusiasm and ability.

Current development is not carried out in a structured manner. Access to career opportunities is through personnel evaluation and knowledge of vacant positions for advancement. Membership in provincial building officials associations is encouraged in many offices. Most inspectors responded favourably to the suggestion of a more formal career path that could involve certification as a result of both formal training sessions and self study.

3.5.3 FUNCTIONAL GUIDANCE

Supervision and guidance of local office inspection staff is provided by both Regional and National Office Staff.

Through regular supervisory visits, the Regional Inspections Officers reviews the entire inspection operation. This review includes the work environment, workload, a survey of procedures and documents and includes field visits to units under construction. Direct personal contact with inspection staff allows the Regional Inspections Officers to sense local concern and document problem areas in both technical and training matters.

National Office Engineering and Inspections staff provides senior technical guidance to field staff for matters related to materials and systems acceptance and interpretations of codes and standards. They also issue technical memoranda letters and prepare builders bulletins for the guidance of Corporation and non Corporation staff.

3.5.4 CLASSIFICATION AND EVALUATION

The distribution of staff by classification level is shown on Table 3 and graphically illustrated on Figure 3. In summary, the figures are:

Classification Level	Number of Positions	Normal Position Titles
21	114	Inspector-in-Training
22	181	Inspector
23	24	Senior or Resident Inspector
81 & 82	61	Senior or Program Inspector, or Chief Inspections Officer
83 & 84	20	Chief Inspections Officer
Total	400	

Levels 21 and 22 inspectors are working level, non supervisory inspectors, Level 23 inspectors may have some supervisory duties and levels 81 to 84 are mainly supervisory staff. Breaking out the number of supervisory man-years from the total man-years for all levels of the Corporation, the following split between functional and management staff is obtained:

Location	Functional Man-Years	Management Man-Years
Local Offices	345	55
Regional Offices		6
National Office		8
Totals	345	69

These figures illustrate that a relatively small number of management staff is responsible for a large field staff.

The existing model job descriptions for all levels of local office inspection staff were reviewed and found satisfactory for local office use. The model for Resident Inspectors should be reviewed in light of the remoteness of the location of the job.

Evaluation of inspection staff is being done by senior inspection and program staff. In some cases, program managers are preparing evaluations of technical staff without the assistance of senior technical staff.

3.6 PROCEDURES

3.6.1 TIME AND WORKLOAD REPORTING

Existing procedures for reporting of inspection related activity involves the use of three forms:

Form No.	Name	Distribution
CMHC 78	Daily Record - Inspections	Local Office
CMHC 1498	Record - Time	National Office
CMHC 1288	Summary - NHA Inspections	All levels

As mentioned earlier in this report, this system of reporting does not facilitate the calculation of local office productivity. Reports on productivity for the main inspection activities of plans examination and inspections were discontinued in 1974.

3.6.2 HIGH RISE CONSTRUCTION

In its procedures, the Corporation relies heavily on the inspection capabilities and integrity of professional building consultant and municipal inspectors. This reliance has been accentuated by the lack of involvement of Corporation engineering staff in high rise construction.

The methods of calculating loan advances on high rise construction varied across the country. The present guidelines may not be adequate for very complex projects.

3.6.3 TELEPHONE REQUESTS FOR INSPECTIONS

Contrary to existing procedures, several offices visited are forced to accept telephone requests for inspections. This is mainly due to sporadic and unreliable mail service. A few offices have produced telephone requests forms for local use in controlling inspection procedures.

3.6.4 PRE-APPLICATION INSPECTIONS

Slight variations in the application of the pre-application inspection procedures was noticed in various office. Concern was also raised about the waste of time involved in carrying out inspections on units that were ultimately not insured. A survey of all offices by region showed the following failure rate for pre-application ispections for 1977.

Region	Total Applications	Total Non-Loans	% Non-Loans
B.C.	237	15	6.3
Alta.	771	56	7.3
Prairie	1575	325	21.3
Ont.	1740	195	11.2
Que.	2869	287	10.0 (Est)
Atlantic	157	3	1.9
Total	7349	881	12.2

Allowing 0.9 hrs of time per inspection, the non productive time for the non loan inspections is 5 man-months or about one-half man year.

3.6.5 SUPPLEMENTARY AND SUPERVISORY INSPECTIONS

Supplementary inspections are intended to be used to monitor poor quality construction. Existing procedures call for a B/F system to be established for active inspection files and for an average of one inspection to be carried out per unit. Workload usually interferes with the distribution of supplementary inspections. A low level of one inspection in three units is being achieved and these inspections are concentrated in a few offices.

Supervisory inspections are not being conducted in most offices in accordance with published procedures. There is a strong feeling amongst inspectors about the fairness of the procedures when compared to other classifications groups.

3.6.6 PLANS EXAMINATION

Facilities for plans examination in some offices are not adequate. A poor work environment caused by excessive noise and interruptions weakens the inspectors ability to concentrate on the technical review of plans.

3.6.7 FORMS

Several forms including file covers have been reviewed lately and contain outdated and therefore unused portions. This lowers the usefulness of the form and confuces the novice inspector. The following forms should be revised.

CMHC 976

CMHC 976A

CMHC 977

CMHC 1222

CMHC 15

3.7 MUNICIPAL INSPECTION IMPACT

3.7.1 PURPOSES OF MUNICIPAL INSPECTIONS

Municipal inspections are carried out for three main reasons:

- To protect the public in matters of fire, safety and health
- To check for compliance with zoning regulations and other by-laws, and;
- To administer the local property tax regulations by assessment of new construction

These items are at least indirectly related to mortgage security.

3.7.2 QUALITY OF MUNICIPAL INSPECTIONS

As a result of interviewing municipal inspectors employed by the eighty odd municipalities listed in Appendix C to this report, the following observations were made.

All provincial codes are modelled on a recent edition of the National Building Code. Several municipalities referred to Residential Standards, particularly for insulation standards.

Larger municipalities carry out an examination of plans for compliance to zoning and building by-laws. Several provincial authorities also conduct a plans examination for multiple residential and commercial buildings.

Municipalities usually employ qualified tradesmen as building inspectors. Large municipal inspection operations may be controlled by an engineer and he may have engineers or technologists on staff as plans examiners.

Due mainly to the variations in workload expected throughout the year, most municipalities use a random rather than mandatory stage inspection procedure. This means that the construction is not seen at particular stages and the total number of visits is controlled by workload.

Although many municipalities have detailed inspection reports, most visited were surprisingly informal. Infractions noticed are described verbally to the contractor or sub-contractor. Enforcement is achieved through letters, registered letters, and finally a stop work order followed if necessary by legal action

to force compliance. Many municipal inspectors were envious of the enforcement procedures available to the Corporation.

Large municipalities require that larger buildings be designed by professional consultants however many did not require supervision of construction by consultants.

Plumbing (including septic tanks) and electrical installations are usually inspected by provincial authorities except where the responsibility has been delegated to a large urban municipality.

In summary, the municipal inspection capability is extremely variable from one province to another and form one municipality to another within one province. Generally large towns and cities must have some competence in order to cope with the volume and complexity of construction. Rural areas of the country have very limited capability and remote areas may have none. Although a municipality may be enforcing a provincial or national code, its policies and procedures are usually developed locally. They are therefore very subject to the experience, initiative, and capability of the inspection staff.

3.7.3 ABILITY TO MEET CMHC NEEDS

To examine the question of the overlap or duplication of inspection service between Municipal and Corporation inspections, Table 8 was prepared. This table gives a rating of inspection capability and enforcement level of each municipality based on the data gathered during office visits.

The rating of 0-10 applies to new house construction up to the ready-for-lath construction stage as many municipalities do not carry out a final inspection and issue an occupancy permit. The rating is subjective and considers such factors as the number and type of inspections, enforcement level and capability and experience of inspection staff.

The annual NHA volume in units for 1977 for each municipality is also shown in the Table.

3.8 WARRANTY PROGRAMS

The New Home Warranty Programs in effect in all provinces have had an apparent impact by reducing the time spent by Corporation staff in servicing complaints. Although the programs maintain a very modest inspection staff and do not carry out plans examinations and compliance inspections, they do screen the builders. In addition the warranty on many items including structural defects tends to slightly reduce the financial risk to the Corporation.

4.0 PROBLEMS AND DISCUSSION

4.1 OBJECTIVES

- Problem - The purposes of the services performed by the inspection operation are not clearly defined.
- Discussion - The inspection staff provides a wide range of services that are useful to a large group of clients. Other agencies such as municipal governments, warranty programs and other federal and provincial bodies also provide services in the same area to some of the same clients. This fact tends to obscure the need for Corporation inspection services and make the measurement of impact difficult. As an example, one area of service is to improve the quality of housing. It is almost impossible to quantify the feedback on whether this service is being achieved.

The following partial list of clients, services and purposes of services serves to illustrate the problem:

Clients	Services	Purposes
MIF	Plans Examination	. To accept risk by insuring minimum quality in materials and workmanship
NHA Programs	Compliant Inspections	
Borrowers	Technical Information	
Lenders	Training	
Builders	Appraisal	. To assess value in place for loans advances
Municipal Governments	Recoverable such as	
General Public	Stats and Completion	. To improve the quality of housing
Manufacturers	MIG	
	CCA	. To transfer information to others
	CHIP	
		. To obtain feedback for definition of problems

Table 9 demonstrates how the inspection operation relates to the Objectives of the Corporation. The impact of the inspection staff on the seventeen objectives has been assessed by a rating 0 to 3 asterisks, three indicating a major contribution to the corporation's activities.

4.2 WORKLOAD

- Problem - The present methods of reporting workload are not adequate in order to effectively monitor the operation.
- Discussion - Indicators such as yardsticks of average productivity are required in order to make recommendations for staffing levels. As long as these measuring tools are not available situations of over and understaffed offices could occur.

  In addition if workload is not adequately reported, the ongoing management and maintenance of the operation is made that much more difficult.

4.3 HUMAN RESOURCES

- Problem - The number of man-years available at National Office is inadequate to effectively manage the field staff.
- Discussion - Section 3.5.4 of this report shows a total of 69 man years allocated to maintenance and management of 345 functional man years. Only eight of these man years are at National Office and half of this number are almost completely occupied with Materials Acceptance. National Office staff must continue to provide technical guidance for procedures, technical information and training. It presently is not coping with the needs of the staff particularly in the area of local office training.

4.4 COST OF INSPECTIONS

. Problem - The cost of providing inspections services, particularly for single family housing, is very high.

. Discussion - The charges of $35.00 per unit by the Corporation for loan processing is inadequate compared to the costs of providing the service. Municipal offices and private insurers operating near a cost recovery basis charge several times more for the same service.

4.5 ORGANIZATION AND MANAGEMENT

4.5.1 DEPLOYMENT

Problem - The flexibility and control of the inspection operation has been reduced by the permanent assignment of staff to program teams and other special tasks.

Discussion - The organization of the inspection staff within the local offices visited varied with several factors including the size of the office, the number of identified program teams and the degree of use of the team concept for the inspection staff. The program team method of delivery has provided a better opportunity for the involvement of inspection staff in the total process. The allocation of inspection staff to programs, has however tended to lock inspectors into a program and reduce the flexibility of staff to meet changes in workload. Additionally the allocation of staff to program teams has isolated the Chief Inspections Officer. This had made it difficult for him to control the inspection function, particularly when program inspectors are located in different sections of the office.

4.5.2 TRAINING AND DEVELOPMENT

Problem - Inspection staff in local offices cannot cope with changing codes and standards and the introduction of new technology to meet building trends.

Discussion - 63% of the field inspection staff has less than five years experience, while 25% have less than two years. Present training methods emphasize locally conducted seminars for which 5% of the inspection time is allocated. To be effective, this local training should be structured according to an outline produced by National Office. This should ensure some uniformity in the training and remove part of the responsibility from the local senior inspector.

Problem - Training of new inspection staff relies too heavily on local office staff.

Discussion - Inspection staff in general have difficulty understanding the Corporation's organization, objectives, policies and programs. This is particularly true for any new employee. Although new inspectors are given a one week course after their probationary period of employment, continued training of new staff rests with local offices.

An inspectors handbook could provide more information on the Corporation and its activities to inspection staff. Such a handbook would be particularly useful for the orientation of new inspectors.

Problem - Designation and training of inspection-appraisal staff for existing house loans has not been started.

Discussion - Many local offices are employing inspector or appraisers to carry out inspection and appraisals of existing houses. Although these duties are not difficult for most existing houses concern has been raised about the lack of formal training to perform these functions.

Problem - Writing skills of many inspectors are not adequate to perform their duties.

Discussion - All lenders mentioned the lack of legibility and clarity of their copies of the Inspection Report - CMHC 15. Inspectors must be able to complete forms and prepare brief reports as part of their regular duties.

Problem - Changing trends in building technology caused by the energy conscious age are not well understood by inspectors.

Discussion - Solar heating technology and the rehabilitation of existing housing through programs such as CHIP and RRAP are two of the results of the present trend to save energy. Predictions indicate that this trend will continue and the rehabilitation of existing units will occupy more and more activity in the construction field. As a result the inspection staff should be updated on new technology as it applies to the Corporations operations.

4.5.3 FUNCTIONAL GUIDANCE

Problem - National Office Engineering and Inspection staff are not able to meet field office needs for technical guidance including local office training.

Discussion - A total of four man years of staff is directly responsible for technical guidance of field staff. For many years, the need for a better monitoring system and analysis of this data has existed. There has also been a clear need for inspection training aids, career development planning, and an inspectors handbook. Additional staff is required to accomplish these tasks.

Problem - One Regional Inspections Officer is inadequate to properly monitor the total staff and number of offices located in Ontario Region.

Discussion - Ontario Region has 114 inspectors locating in 16 Branch offices and several resident inspection offices. These figures represents more than 25% of the total staff. An Assistant Regional Inspections Officer should be appointed in order to adequately supervise the inspection operation.

4.5.4 EVALUATION AND CLASSIFICATION

Problem - Program staff are performing technical evaluation of inspection staff.

Discussion - Various program managers are evaluating inspection staff without consulting with or receiving advice and comments from the senior inspector on the staff members technical competence.

Problem - Most inspectors felt that access to promotion was not available because of lack of knowledge of vacant positions.

Discussion - Many inspectors indicated that vacancies for senior inspectors positions in neighbouring offices were filled without their knowledge of the vacancy. There also appeared to be no formal competition for these positions.

Problem - Classification level of Resident Inspectors is too low.

Discussion - Resident inspectors have many responsibilities beyond routine inspections. They, in fact, represent the Branch Manager and CMHC within their territory. They become involved in providing information on programs and answering many questions that a normal inspector in a Branch office would not be called upon to do. In addition, the Resident Inspector is away from an office and must act on his own initiative. These responsibilities are at least as onerous as a program inspector who is normally classified at level 82.

4.6 PROCEDURES

4.6.1 TIME REPORTING

Problem - The present time reporting system does not facilitate a proper monitoring or analysis of the inspection workload.

Discussion - The present time reporting on form 1498 separates inspection activity of plans examination and inspections for Part 1 and Section 58 loans only. A Daily Inspection Workload Form 78 is completed by the inspector and this data is summarized in

Form 1288 Monthly Inspection Activity. Several changes in basic activity have occurred since these forms were last revised. In addition the data from the form 1288 is not related to loan commitment in order to measure productivity. The present system should be revised.

4.6.2 HIGH RISE CONSTRUCTION

Problem - CMHC Inspectors are not confident of the quality of inspections conducted by professional consultants on high rise buildings.

Discussion - Almost all inspectors interviewed showed a low level of confidence in our procedures for inspections of high rise buildings. This fact may be compounded by the fact that inspectors are not at ease in dealing with the "graduate professional" engineers and architects. Information is being gathered by PSTD to substantiate the fear that many high rise buildings received as acquisitions of the Mortgage Insurance Fund are experiencing technical problems that could be related to poor inspections by consultants. One possibility to assist the inspection staff is to use Corporation Engineering staff in the plans examination and inspections of high rise buildings.

Problem - The existing procedures for calculating advances for complex multiple buildings are not adequate.

Discussion - The guideline in form 976Ais too simple for many mordern multiple unit complexes. Cases of a three storey underground garage supporting three multi-level towers and mixed low rise and high rise in a high desnsity setting do not fit the guidelines. Procedures based on component cost or subtrade costs provided by the borrower and accepted by the lending team may be more equitable to the builder and the Corporation.

4.6.3 TELEPHONE REQUESTS

Problem - Poor mail service is forcing local offices to accept telephone request for inspections.

Discussion - Existing procedures demand a written request for inspection for local construction. Unreliable mail service has forced several offices to allow telephone requests. Other offices are successfully enforcing the use of written request on green card Form 977. If telephone requests can be handled locally, consideration should be given to permitting this type of request in order to improve client service.

4.6.4 PRE-APPLICATION INSPECTIONS

Problem - Pre-application procedures are not consistently applied and many inspections are carried out on units that are ultimately not loans.

Discussion - The availability of pre-application inspections varies across the country from not being available to available throughout the calendar year. In addition the procedures themselves are not consistently applied. In 1977, approximately 880 units were inspected that were not ultimately insured under NHA. This lost time represents about one half man-year.

4.6.5 SUPPLEMENTARY AND SUPERVISOR INSPECTIONS

Problem - Supplementary and Supervisory inspections are not being carried out in accordance with manual procedures.

Discussion - Supplementary inspections, where they are being done, are being used to balance workload. This means that supplementary inspection are excessive in some office and non-existent in others. The average rate being achieved is one third of that called for but appears to meet the need

Supervisory inspections are not being carried out in accordance with manual procedures. Two reasons for this condition are high workload and the concern for the fairness of the procedure.

4.6.6 FORMS

Problem - Several forms used bythe inspection operation are out of date.

Discussion - Some forms completed daily by inspection staff contain portions that are no longer used due to policy changes. Other forms could be made more useful if the data was slightly rearranged.

4.7 MUNICIPAL INSPECTION IMPACT

Problem - Corporation inspection procedures do not consider the inspections performed by municipalities.

Discussion - Although most municipalities do not have an inspection capability that assures compliance to codes and good workmanship, some larger ones do. As indicated in Table 8, larger cities do conduct a reasonable inspection of buildings when compared to CMHC procedures. This indicates that part of the compliance requirements expected by the Corporation may be enforced by others.

A related problem is the fact that Corporation inspection staff are not always aware of inspection procedures of municipalities in their areas. This has accounted for minor field disputes and confusion of contractors. A high level of cooperation between CMHC and municipalities is important in order to avoid confusion.

Problem - We do not know the inspection capabilities and procedures of all municipalities.

Discussion - This report surveyed a portion of the municipalities in an office area. There are many other offices in the country where large volumes of NHA activity occur. In order to relate our inspection activities to those of others, more information on these municipalities is required.

4.8 WARRANTY PROGRAMS

Problem - We do not know the full impact of New Home Warranty Programs on the Corporations activities.

Discussion - Indications are that new home warranties have reduced our activity in complaint servicing. The programs should have an impact on quality of construction due to the screening of builders and the right of the consumer to obtain corrections to problems.

The programs do not carry out compliance inspections and plan examinations but normally made corrections after the fact. It is probably too early in the life of the programs to measure their impact on risk acceptance.

5.0 ALTERNATIVES

The problems identified and discussed can be separated into two categories:

- Those of an operational nature requiring adjustment through changes in forms, etc. These will not be discussed here as they can be considered as on going maintenance items.

- Those requiring management approval as they involve a major program or policy change or have a major impact on the inspection-resource. Alternatives are presented for these problems.

The problems of substance in this report are those that relate to the general effectiveness and efficiency of the inspection operation.

Effectiveness is most related to the services provided and dictates the workload of the resource. Efficiency is more directly related to the resources including staff and procedures to carry out the workload.

The financial viability of the operation relates services to resources by balancing the income from services to the cost of the resources.

A model of the operation could be;

SERVICES — COST / INCOME — RESOURCES

In order to improve the viability of the inspection operation, alternatives that reduce the workload while maintaining the overall effectivess of the service and those that can improve the efficiency of the resources are important.

Alternatives will be discussed under the headings of Workload, Resources and Financial Viability.

5.1 WORKLOAD

Two obvious alternatives are to maintain the status quo on one hand and to eliminate the workload on the other. The former

would not recognize the problems identified and the latter would be neither warranted nor practical.

What can be done to reduce the workload without increasing the risk? Alternatives that are possible including an estimate of man-year reductions and comments related to their advantages and disadvantages are;

	Alternatives	Possible Reduction in Man Years	Comments
1.	Eliminate unnecessary inspections such as excessive supplementary intermediate, and re-inspections for seasonal deficies.	Small and unknown due to reporting system	Should be done in any case to eliminate excessive inspections
2.	Eliminate the foundation inspection when it is adequately performed by the municipality	Could be 8 to 12 man years	Generally very small advance at this stage and risk is low
3.	Reduce the time spent on inspection that are not directly duplicated but are on units well inspected by municipalities	Unknown but could be significant	Reduced time but still maintain direct contact for loan advances and monitoring of municipalities
4.	Eliminate pre-application inspections	0.5 man years	Not significant Builders like pre-applications inspections

5.	Eliminate intermediate inspections by reducing the number of advances permitted to three instead of four	Could be 20 to 25 man years	Requires change in regulations. May not be popular with borrowers

The most important alternatives are numbers 2, 3 and 5. In order to fully estimate the possible reduction in man-years for alternatives 2 and 3 the impact of municipal inspection operation in areas of high NHA activity must be obtained. This data can be collected with present staff resources by the use of a mailed questionnaire.

Alternative 5 has a significant impact, however a change in the regulations could affect the borrowers who most need the right to at least four advances. A better approach to this alternative would be to charge an extra fee for those borrowers who require extra intermediate inspections. This is discussed further under Financial Viability.

The alternatives discussed so far have referred to methods of reducing workload while maintaining effectiveness in servicing the Mortgage Insurance Fund and meeting the objectives of the Corporation. Our effectiveness in protecting the Fund may require an increase in workload in the area of high rise buildings. Fortunately, as shown earlier in the report, the average cost per unit to inspect this type of building is very low compared to single family construction. This means that a slight extra cost in plans examination and inspection of multiple unit construction would not have an significant impact on the costs of our operations under our present fee structure. Feedback presently being

obtained from Real Estate Division will likely confirm the prudence of increasing the workload on high rise construction by involving professional engineering staff in this area.

5.2 RESOURCES

The alternatives that will increase the efficiency of resource utilization are related to organization and management of the staff and procedures.

5.2.1 WORKLOAD REPORTING

A more complete and therefore useful control and reporting system for workload that is effective at all levels from local to national office will allow more efficient adjustment of resources on both the short and long term.

5.2.2 ORGANIZATIONAL AND DEPLOYMENT

Grouping of the local office staff under the Chief Inspections Officers direct control will increase the efficiency of the staff by;

- Increased flexibility in assignment of total resources.
- All staff in one area for better communication, control and training.
- Rotation of assignment of staff which will improve their development opportunities and morale.

5.2.3 TRAINING

The inspection staff will be more efficient and productive if it has adequate training to perform its role.

Training areas requiring improvement are;

- Writing skills
- Knowledge of Corporation Objective, Organization Policies and Programs
- Better procedures for local office updating on changes in standards and new technology

Individual inspection training can be assisted by the production of a handbook and a periodic training newsletter issued by PSTD.

5.2.4 PRODUCTIVITY AND STAFFING LEVEL

When an adequate reporting system is in place and productivity benchmarks have been established, recommended staffing levels will be available for local offices.

A large factor in this staffing level is the seasonal and annual variation in workload. Depending on how the seasonal workload fluctuates, it may be cost effectove to staff at say 80% of peak load and adequately compensate staff for overtime during peak periods. This technique could reduce man-years of permanent staff.

5.2.5 EVALUATION CLASSIFICATION AND DEVELOPMENT

High morale amongst staff will increase efficiency through increased productivity and lower turnover rates.

Access to promotion by posting of positions for internal competition will provide incentives for development.

Evaluation of inspection staff must include technical evaluation by a more senior inspector if the evaluation is being done by a non technical manager.

A Career Development Plan that could involves self study as well a programmed courses will improve the Inspectors sense of direction within the Corporation.

All inspectors should be encouraged to join the Association of Building Inspectors in their respective provinces and the Corporation should pay the fees for this membership.

5.3 FINANCIAL VIABILITY

Section 3.4 outlines the costs of inspections for three types of construction. It is interesting to note that the highest cost of inspections is for single family construction which is also the highest cost form of housing. At a fixed fee of $35.00 per unit, the Corporation's subsidy of the cost of risk acceptance through compliance inspections is the highest on the form of housing afforded by the above average salary earner. This fact appears to be the reverse of normal social expectations.

In addition, the risks could be higher in multiple construction because the individual unit owner or renter is more dependent on the invisible central services and weather protecting shell of the whole building. As a result, the cost income equation appears backwards and the operation is not financially viable.

The alternatives available to improve viability and comments related to there advantages and disadvantages are;

	Alternative	Comments
1.	Raise fees to cover average costs of inspections and other charges.	Does not recognize the variation in costs for different forms of housing. Subsidizes high cost housing form. Easy to administer.
2.	Raise average fees slightly and transfer part of cost to the Mortgage Insurance Fund.	Requires change in Act. Easy to administer. May not correct subsidy problem.

3.	Charge fees on a unit basis for all services at a National average cost figure	Charges cost to those receiving services. May be awkward to administer No subsidy problem

The third alternative is favoured in that it charges the cost of a service to those who are receiving that service. As the Mortgage Insurance Fund is a client of the services provided it would be reasonable to charge a portion of the cost to the Fund.

As far as inspection related activity is concerned, fees could be charged as follows;

- For pre-application inspection; cost transferrable to loan application fee. This could eliminate costs for inspections on units that are ultimatively not insured.
- For plans examination and site inspection.
- For mandatory stage inspections on houses and average number of visits expected on multiple unit subjects.
- For extra inspections requested by the borrower such as intermediate inspections.
- For excessive inspections caused by borrower's negligence such as second re-inspections for the same infraction.

Administering this system of fees would not be that difficult and it would charge the costs to those who benefit from the services performed.

6.0 RECOMMENDATIONS

The followings recommendations are made as a result of the problems identified and the alternatives presented;

6.1 WORKLOAD

6.1.1 Through revisions to the present workload reporting forms, the Engineering and Inspections Group immediately install a revised workload reporting system.

6.1.2 A trial application of reduced inspections based on the elimination of foundation inspections be carried out in three designated municipalities.

6.1.3 The survey of municipal inspection procedures be completed by sending mailed questionnaires to every municipality where average annual NHA volume exceeds 25 units.

6.1.4 After six months experience with the revised reporting system, a productivity analysis be completed for all offices and regions and staffing guidelines produced.

6.1.5 To integrate municipal inspection procedures into Corporation operations, emphasis be placed on continued cooperation with municipal inspection officials.

6.1.6 In cooperation with the Program Divisions, PSTD prepare a document clearly outlining the purposes for all NHA inspection activity.

6.2 ORGANIZATION AND DEPLOYMENT

6.2.1 The inspection staff in local offices be regrouped under the direct functional control of the Chief Inspections Officer.

6.2.2 To adequately train, monitor, and control the inspection operation, two new positions be authorized for the Engineering and Inspections Group and one position of Assistant Regional Inspections Office be authorized for Ontario Region.

6.2.3 The deployment of Corporation engineering staff be reviewed to confirm the need for more engineering skill in plans examination and compliance inspections for high rise multiple construction.

6.3 TRAINING AND DEVELOPMENT

6.3.1 Work already started on the production of an Inspectors Handbook be completed.

6.3.2 A training plan be prepared and steps taken to conduct training of inspection staff in the areas indicated.

6.3.3 Engineering and Inspections Group establish and issue a monthly training newsletter to faciliate local office training.

6.3.4 Inspectors be encouraged to join and participate in activities of Provincial Associations of Building Inspectors and that the fees of such individual memberships be paid by the Corporation.

6.3.5 Engineering and Inspections Group and Personnel Division cooperate in producing a career development plan including guidelines for promotion through all levels of the inspection classification.

6.4 EVALUATION AND CLASSIFICATION

6.4.1 Evaluations of inspection staff by non technical program staff must include advice on technical competence form a senior inspector.

6.4.2 Classification level of Resident Inspector be reviewed in light of added responsibilities due to remoteness.

6.4.3 The practice of posting of vacant positions for inspectors be broadened to include all offices in a Region for level 82 and below and all offices above level 82.

6.5 PROCEDURES AND FORMS

6.5.1 Engineering and Inspections Group and Lending Division review the procedures for calculation of intermediate advances for complex multiple unit projects.

6.5.2 Engineering and Inspection Group review the following procedures in conjunction with Program Division as applicable

Telephone Requests for Inspections
Supplementary Inspection
Supervisory Inspection

6.5.3 Engineering and Inspection Group and Program Divisions, review the following forms and modify as necessary:

976
976A
15
977
1222

6.6 COSTS OF INSPECTIONS

6.6.1 Management in its objective of financial viability, consider the proposals outlined for cost recovery on a fee-for-service provided basis.

REVIEW OF RESIDENTIAL INSPECTION OPERATOR TABLE 1

SUMMARY OF

SERVICES PERFORMED BY INSPECTION

STAFF

INSPECTIONS

A. RELATED TO LOANS PROCESSING

Single Construction	Loan Processing Stage	Multiple Unit Construction
Preliminary Plans Examination		Preliminary Plans Examination
Preapplication Inspections	Application Stage	
Site Inspection Plans Examination		Site Inspection Plans Examination
	Commitment Stage	
Mandatory Stage Inspections ·Foundation ·Ready for lath ·Final		Inspection visits accordi to need usually once to twice per month.
Other inspections Excavation Intermediate Supplementary Re-Inspection		Liaison with consultants for inspection reports. Supplementary and Re-Inspection as require
Calculation of Advances		Calculation of Advances Final Inspection
	Completion Stage	
Seasonal Inspections Complaint Inspections		Seasonal Inspections Complaint Inspections

B. Other Types of Inspections

Existing house (including some appraisals)
Real Estate and MIF
Insurance related to Fire and Flood damage
Sub-divisions
Monitoring of AHOP, ARP , RRAP and CHIP
Capital Cost Allowance
Home Insulation Grants (N.S. and P.E.I. only)
Factory Inspections for materials and systems acceptance
Municipal Incentive Grants

C. Other Duties

Starts and completions surveys
Public information

REVIEW OF RESIDENTIAL INSPECTION OPERATION

SUMMARY OF ACTIVITY OF CORPORATION INSPECTION STAFF

TABLE 2

(from Time Reporting System, Jan-Jun 78)

Activity No.	Description of Activity	Percent Total Man Hrs.	Percent Total Salar
113	Appraisals - Existing Housing	2.4	2.6
121	Plans Examination - Apartments	4.4	5.2
122	- Houses	5.5	6.2
131	Inspections - Apartments	9.7	11.3
132	- Houses - New	23.8	26.6
133	- Houses - Existing	5.4	6.0
	Sub-Total - P + I and Section 58	51.2	57.9
171	Co-op AHOP Section 34.18	0.4	0.5
172	AHOP Section 34.15	1.6	1.6
173	AHOP Section 36.16	1.8	2.0
174	Co-op Section 34.18 and 34.19	0.3	0.4
	Sub-Total - Section 34	4.1	4.5
190	Non-Profit Section 15.1	2.7	3.2
194	Section 43, Public Housing	0.6	0.8
197	ARP Section 14.1 Private	0.7	0.8
	Sub-Total - other Loans Processing	4.0	4.8
	Mortgage Insurance Fund		
311	Aquisitions	1.5	1.7
321	Property Management	0.5	0.5
	Sub-Total	2.0	2.2
	Property Management - Branch		
411	Administration	0.6	0.6
	Public Housing		
511	Section 40 - Changeable	1.2	1.3
521	Section 40 - Non-Changeable	2.2	2.5
	Sub-Total	3.4	3.8
	Services to Others		
611	Changeable	1.1	1.1
	Research and Other		
711	Starts and Completion Surveys	1.5	1.6
726	Municipal Incentive Grants 56.2	0.7	0.7
	Sub-Total	1.2	1.3
	Miscellaneous		
794	RRAP Section 34.1	5.8	6.2
795-7	Home INsulation	1.3	1.0
799	CHIP	0.6	0.8
	Sub-Total	8.7	9.0
	Office General		
911	Administration	7.4	10.5
931	Staff Training	1.3	1.4
941	Paid Leave	12.5	---
942	Compensatory Leave	0.4	0.4
	Sub-Total	21.6	12.3
	Total	97.9	97.5
	All other activities	2.1	2.5
	Grand Total	100.0	100.0

REVIEW OF

RESIDENTIAL INSPECTION OPERATION

INSPECTION STAFF SUMMARY

TABLE 3

Office By Region	Classification Level							Years With CMHC						Years To Retirement			Education Level							Total Staff
	21	22	23	81	82	83	84	0-1	1-2	2-3	3-5	5-10	>10	<5	5-10	>10	G	J	S	C	B	E	U	
Atlantic Region																								
Halifax	5	8	2	2	0	1	0	5	0	1	6	1	5	2	2	14	4	5	3	1	2	0	3	18
Sydney	4	1			1			2	2				2	1	1	4	2	1	1	1			1	6
St. John's	6	4	1			1			1	4	2	2	3			12	2	3	2	3	1		1	12
Fredericton	1	1		1	1				1			2	1		2	2	3			1				4
St. John	2			1						1	2					3		1		2				3
Moncton	2			1						1	1	1				3		2		1				3
Charlottetown	4			1				2		1	2					5		1	1	3				5
Regional Total	24	14	3	6	2	2	0	9	4	8	13	6	11	3	5	43	11	13	8	12	3	0	5	52
Quebec Region																								
Montreal S. Shore	7	7	1	2			1	2	2	1	6	2	5		1	17	4	2	1	8	1	1	1	18
Sherbrooke	3	3			1					1	4	2				7			1	5			1	7
Laval																								
Laurentians	1	7	1	2			1		1	1	3	2	5	1	3	8	5	2		5				12
Montreal	7	7	1	2			1		5	4	3	1	5	1	2	15	3	4		8			3	18
Quebec	4	8	1	1		1		2		3	5	1	4	1	1	13	3	2		8		1	1	15
Chicoutimi	2	2		1						1	2	1	1		1	4		1	1	3				5
Trois Rivieres	2	1		1					1		2		1			4	1		1	2				4
Sept Iles	1		1		1					1		2				3	1			2				3
Rimouski	2	1		1				1	2		1					4				3	1			4
Hull	1	4	1		1				1		3		3			7	2		1	4				7
Val D'Or	3	1							2	1		1				4	2	1		1				4
Regional Total	33	41	6	10	3	1	3	5	14	13	29	12	24	3	8	86	21	12	5	49	2	2	6	97
Ontario Region																								
Toronto	2	20	3	1	1		1	2	3	4	10	3	6	2	3	23	5	4	4	8	2		5	28
Oshawa	1	4				1			1	1	2		2		2	4	3	1		2				6
Barrie	1	1	1	1							3		1	1		3		1		3				4
Timmins	1	1		1				1			1		1		1	2				2	1			3
Hamilton	3	8			1		1			3	3	1	6	2	2	9	3	1	1	6	1	1		13
St.Catharines	1	4				1				2	1	1	2			6	1	3		1	1			6
Kitchener	3	3				1		2	2		1	1	1	2		5	2			5				7
London	3	3				1				2	1		4	2	2	3	3	1		2			1	7
Windsor	1	1			1				1				2			3				1			2	3
Sudbury	3				1			1	1		1	1				4	1			2		1		4
North Bay		2		1							1		2		1	2	1			1			1	3
S.S. Marie		1		1								1	1		1	1	2							2
Peterboro		1		1									2		2		2							2
Ottawa	1	1			2		1	1	2		7	2	4	1	1	14	8	1	2	5				16
Kingston		3			1			1				1	2		1	3	1	2		1				4
Thunder Bay	1	4			1				2		2	2		1		5	1	2		2			1	6
Regional Total	21	68	4	6	8	4	3	8	12	12	33	13	36	11	16	87	33	16	7	41	5	2	10	114
Prairie Region																								
Winnipeg	7	3	4		5		1		3	3	10		4	2	1	17	6	5	2	7				20
Regina	3	5			3		1		3	1	5	1	2	1		11	1	1		6			4	12
Saskatoon		7	1		4			2	3		3	1	3		3	9	4	5		3				12
Calgary	1	8			2		1		4	2	1	2	3	3		9	2	5	1	2			2	12
Lethbridge		3	1	1				2				2	1	1		4	2		2	1				5
Edmonton	5	7	1		2		1	3	4	1		1	7	1	3	12	6	3	1	2	1	1	2	16
Red Deer		2	1						1		1		1			3	1		1	1				3
Yellowknife		1		1							2					2	1			1				2
Regional Total	16	36	8	2	16		4	7	18	7	22	7	21	8	7	67	23	19	7	23	1	1	8	82
B.C. Region																								
Vancouver	16	8			4		1	7	9	3	5	1	4	4	4	21	3	6	1	8	6		5	29
Prince George	2	3	1			1		1	1	2		2	1	2	1	4	1		2	4				7
Kelowna	1	2			1					1		3			1	3	2	1	1					4
Cranbrook	1	1	1	1					1		2		1	1		3		1	1	1			1	4
Kamloops		2		1				1			1	1				3		1	1	1				3
Victoria		6	1	1		1		2		2	2		3		4	5	1	4		3	1			9
Regional Total	20	22	3	3	5	2	1	11	11	8	10	7	9	7	10	39	7	13	6	17	7		6	56
All Regions	114	181	24	27	34	9	11	40	59	48	107	45	101	32	46	322	95	73	32	142	15	8	35	400

NOTES: 1. From personnel listing for September 77.

2. Does not include Regional Office, Montreal Real Estate Office and Natioal Office, Inspection Staff.

TURNOVER BY OCCUPATIONAL GROUPS

TABLE 4

	New Brunswick	New Scotia	Saskatchewan	National
Senior Admin. Staff and Professionals	6.7	0	2.4	8.8 %
Inspectors	13.4	18.2	4.9	8.9 %
Appraisers	0	9.1	4.9	23.0 %
Admin. Support Staff	79.9	72.7	85.4	25.6 %
Technical Service Group	0	0	2.4	20.9 %
TOTAL	100.0	100.0	100.0	100.0 %
12 months ending	Oct. 1977	May 1977	May 1977	May 1977

Turnover CMHC Compliance Inspectors*
(Levels 21 - 22 - 23)

Period - 12 months ending	Location	S.O.S. n =	Population p =	Per Cent % =
December 1975	National	29	375	7.7
December 1976	National	-	-	8.9
May 1977	National	35	392	8.9
	Regions			
May 1977	Nova Scotia	2	20	10.0
October 1977	Saskatchewan	2	29	6.9
October 1977	Ontario	17	112	15.2
October 1977	New Brunswick	2	9	22.2
	Branches			
March 1977	Vancouver	7	20	35.0
May 1977	Halifax	1	13	7.7
May 1977	Regina	1	12	8.3
May 1977	Saskatoon	2	12	16.7
May 1977	Calgary	0	12	0.0
October 1977	Fredericton	1	3	33.3
October 1977	Toronto	9	32	28.1
October 1977	Ottawa	0	13	0.0
October 1977	Hamilton	0	12	0.0
October 1977	Sudbury	0	3	0.0
October 1977	London	2	3	66.7
October 1977	Thunder Bay	0	6	0.0
October 1977	Kitchener	1	7	14.3
October 1977	Windsor	1	2	50.0
October 1977	St. Catharines	2	5	40.0
October 1977	Oshawa	0	6	0.0
October 1977	Kingston	1	4	25.0
October 1977	North Bay	1	3	33.3
October 1977	Barrie	0	3	0.0
October 1977	Timmins	1	3	33.3
October 1977	Peterborough	0	2	0.0
October 1977	Sault Ste. Marie	0	2	0.0
October 1977	Regina	0	-	0.0
October 1977	Saskatoon	2	14	14.3

ANALYSIS OF INSPECTION ACTIVITY FOR NEW SINGLE FAMILY, SEMI-DETACHED AND DUPLEX HOUSES

OFFICE LOCATION	NO. OF FILES REVIEWED	AVERAGE NUMBER OF INSPECTIONS PER UNIT INSPECTION TYPE								AVE. TOTAL INSPECTION		REMARKS
		TOTAL INSPECTIONS	PRE-APPLICATION	SITE	EXCAVATION	STAGE OR MANDATORY	INTERMEDIATE	SUPPLEMENTARY	RE-INSPECTION	MAJOR	MINOR	
CHARLOTTETOWN	15	7.2	0	1	0	3	2.3	0.3	0.7	0	8.5	
HALIFAX	15	7.6	0	1	0	3	1.8	0.13	1.7	0.1	8.5	1 MAJOR INFRACTION ON 1 FILE
VAL D'OR	9	6.5	0.1	0.5	0	3	0.4	0.3	1.1	0	5.2	
LONGUEIL	13	5.1	0.6	1	0	3	0.6	0.6	0.7	0	7.2	
TORONTO	16	7.5	0.3	0.9	0	3	0.7	0.4	1.7	0	7.0	
THUNDER BAY	15	5.8	0.2	1	0	3	0.7	0.3	0.9	0	4.6	
WINNIPEG	18	5.5	0	1	0	3	0.6	0.2	0.6	0	1.5	
SASKATOON	14	6.6	0.1	1	0	3	0.6	0.1	1.9	0	13.8	
EDMONTON	15	6.0	0.3	1	0	3	0.5	0.1	1.1	0.1	4.1	1 MAJOR INFRACTION ON 1 FILE
KELOWNA	50	8.7	FIGURES FROM SURVEY BY OFFICE STAFF									
VANCOUVER	11	5.0	0	1	0	3	0.1	0	0.7	0	2.9	
TOTAL	191											
AVERAGE		6.3	0.2	1	0	3	0.8	0.3	1.1	NIL	6.3	EXCLUDING KELOWNA

ANALYSIS OF TIME, MILEAGE AND SALARY COST FOR

1977 INSPECTION ACTIVITY (Part 1 and Section 58 Loans only)

TABLE 6

OFFICE LOCATION	TOTAL TIME AND SALARY COST IN 1977 PER OFFICE				TOTAL NUMBER OF INSPECTIONS AND MILEAGE IN 1977 PER OFFICE				AVERAGE NUMBER OF INSPECTIONS PER HOUSE	ANALYSIS OF TIME, MILEAGE AND SALARY PER VISIT					
	HOUSES		APARTMENTS		HOUSES		APARTMENTS			HOUSES			APARTMENTS		
	TIME (Man Hrs)	SALARY COST $	TIME (Months)	SALARY COST $	TOTAL INSP. VISITS	TOTAL MILEAGE	TOTAL INSP. VISITS	TOTAL MILEAGE		TIME (Month)	MILE-AGE	SALARY $	TIME (Month)	MILE-AGE	SAL $
CHARLOTTETOWN	200	1650	57	470	132	762	29	626	7.2	1.52	5.8	12.50	1.96	21.5	16
HALIFAX	5720	51380	1222	11529	6029	46134	474	5751	7.6	0.94	7.7	8.52	2.57	12.3	24
VAL D'OR	2605	18123	225	2150	2195	25238	119	2972	6.5	1.19	11.5	8.26	1.89	24.9	18
LONGUEIL	15158	132861	4611	43181	22102	86812	2465	32819	5.1	0.69	3.9	6.01	1.87	13.3	17
TORONTO	19134	179060	8808	86675	20652	52430	2869	15986	7.5	0.93	2.5	8.67	3.07	5.6	30
THUNDER BAY	4508	39844	539	4642	4267	35704	169	1233	5.8	1.06	8.4	9.34	3.18	7.3	27
WINNIPEG	10989	97903	2338	23940	13277	96208	1230	13727	5.5	0.83	7.2	7.37	1.90	11.2	19
SASKATOON	6034	60543	1254	13270	7666	60882	NIL	NIL	6.6	0.79	7.9	7.90	---	---	-
REGINA	8161	73485	2621	27050	10513	60132	554	11918	---	0.78	5.7	6.99	4.73	21.5	48
EDMONTON	17257	158728	4057	33409	16591	264162	1165	8572	6.0	1.04	15.9	9.57	3.47	7.4	28
VANCOUVER	8424	70491	10956	98971	11455	78770	5216	44660	5.0	0.73	6.9	6.17	2.10	8.6	18
KELOWNA	1158	11054	755	7317	4293	28104	326	5495	8.7	0.27	6.5	2.57	2.31	16.9	22
		AVERAGE OF ALL OFFICES(EXCEPT KELOWNA BECAUSE OF VARIATIONS IN DATA)							6.3	0.90	7.0	7.88	2.64	13.7	24

REVIEW OF RESIDENTIAL INSPECTION OPERATION

ANALYSIS OF INSPECTION

ACTIVITY FOR NEW MULTIPLE CONSTRUCTION

TABLE 7

OFFICE LOCATION	NO. OF FILES REVISED	AVERAGE DATA FOR FILES CHECKED (Revised)				TIME AND SALARY PER VISIT		SUMMARY AVERAGE NUMBER OF VISITS, TIME AND SALARY PER PROJECT AND UNIT						
		NO. OF UNITS	CONST. PERIOD (Month)	TOTAL VISITS	TOTAL INFRA.	TIME (Months)	SALARY $	VISITS PER MONTH	VISITS PER UNIT	INFRACTION PER VISIT	INSPECTIONS TIMES PER PROJECT MTH.	SALARY COST PER PROJECT $	TIME PER UNIT (Months)	COST PER UNIT $
	FOR THREE STOREY CONSTRUCTION													
VANCOUVER	10	35	8.5	20	40	2.1	18.97	2.4	0.57	1.9	42.2	381.30	1.21	10.89
HALIFAX	5	27	11.4	16	47	2.6	24.32	1.4	0.59	2.9	42.1	389.12	1.53	14.20
LONGUEIL	2	28	16.5	14	18	1.9	17.51	0.8	0.48	1.3	25.2	236.39	0.90	18.44
EDMONTON	2	55	14.5	22	42	3.5	28.67	1.5	0.39	1.9	74.6	616.40	1.36	11.20
THUNDER BAY	3	31	9.0	15	7	3.2	27.45	1.7	0.49	0.5	48.6	419.99	1.55	13.42
AVERAGES		37	11	18							39.9		1.41	12.42
	HIGH RISE CONSTRUCTION													
VANCOUVER	6	103	16.8	32	28	2.1	18.97	1.9	0.31	1.9	66.8	603.25	0.65	5.84
HALIFAX	3	154	17	20	45	2.6	24.32	1.1	0.12	2.2	51.4	486.40	0.33	3.16
EDMONTON	2	309	32	25	10	3.5	28.67	0.7	0.08	0.4	86.7	716.75	0.28	2.31
TORONTO	1	192	17	33	---	3.1	30.21	2.1	0.17	---	101.3	996.93	0.52	5.19
LONGUEIL	1	124	10	39	31	1.9	17.51	3.9	0.31	0.8	72.9	682.89	0.59	5.51
AVERAGES		177	19	30							75.8		0.47	4.40

TABLE 8

PROVINCIAL OVERVIEW OF DUPLICATION OF INSPECTIONS BETWEEN CMHC AND MUNICIPALITIES

Province	Local Office	Municipality	Annual NHA Volume Units	General Rating
B.C.	Vancouver	City of Vancouver	1418	6
		City of N. Vancouver	89	7
		Municipality of Surrey	853	6
		Municipality of Matsqui	170	7
		Municipality of Richmond	983	7
		District of Coquitlam	392	5
		District of Burnaby	975	6
	Kelowna	City of Kelowna	235	6
		City of Penticton	89	8
		City of Vernon	205	4
Alberta	Edmonton	City of Edmonton	3650	6
		County of Strathcona	part of above	5
		Town of Fort Saskatchewan	52	4
	Medicine Hat	City of Medicine Hat	219	4
		Town of Redcliffe	35	4
Sask.	Saskatoon	City of Saskatoon	2202	3
		R.M. of Corman Park	part of above	0
	Regina	City of Regina	2381	3
		Town of Indian Head		1
Manitoba	Winnipeg	City of Winnipeg	4508	3
		Selkirk and District Planning Board	small	2
		Town of Steinback	small	2
	Thompson	City of Thompson	66	4
Ontario	Toronto	City of Toronto	2980	3
		Borough of Etobicoke	1249	6
		Borough of Scarboro	3922	8
		Borough of North York	1464	5
	Hamilton	City of Hamilton	955	7
		City of Burlington	744	5
		City of Brantford	447	4
	Thunder Bay	City of Thunder Bay	698	3
Quebec	South Shore	City of Longueuil	1410	4
		City of Varennes	230	3
		City of Sorel	85	1
		Town of St. Hubert	737	5
	Val D'Or	Val D'Or	62	2
		Rouyn	42	2
Atlantic Provinces	St. John's	St. John's Metro	484	3
		City of St. John's	332	2
	Saint John	Saint John City	333	4
	Halifax	Halifax City	363	3
		Dartmouth City	113	4
		Halifax County	584	4
	Charlottetown	City of Charlottetown	68	1
		Municipality of Sherwood	3	0

TABLE 9

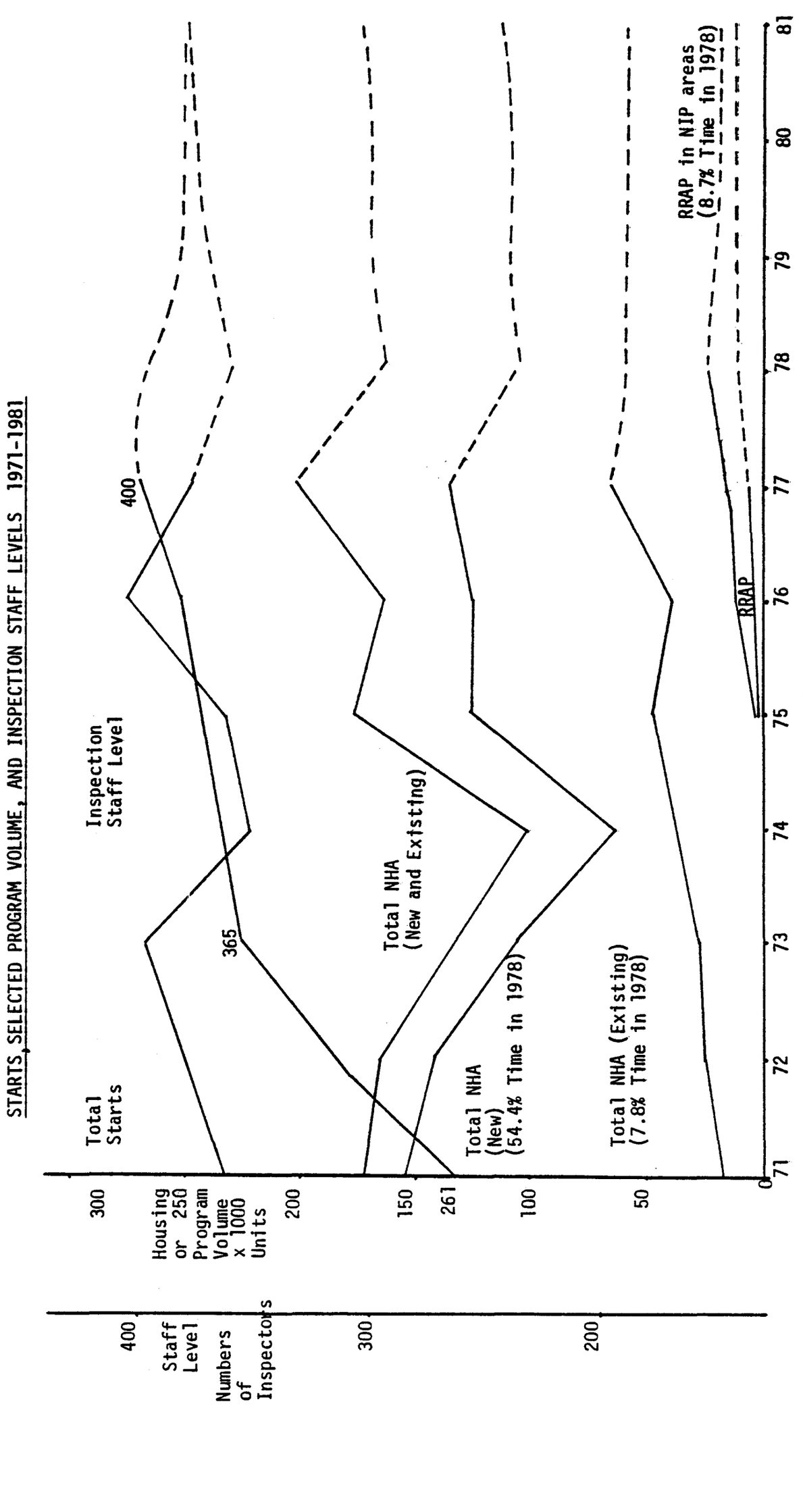
IMPACT OF INSPECTION ACTIVITIES ON CMHC OBJECTIVES

A. RELATING TO THE CORPORATE MISSION

IMPACT		
**	1.	Residential Environment
***	2.	Production of New Housing
**	3.	Rehabilitation
*	4.	Access
**	5.	Innovation
*	6.	Research and Development

B. RELATING TO CMHC's INTERNAL MANAGEMENT

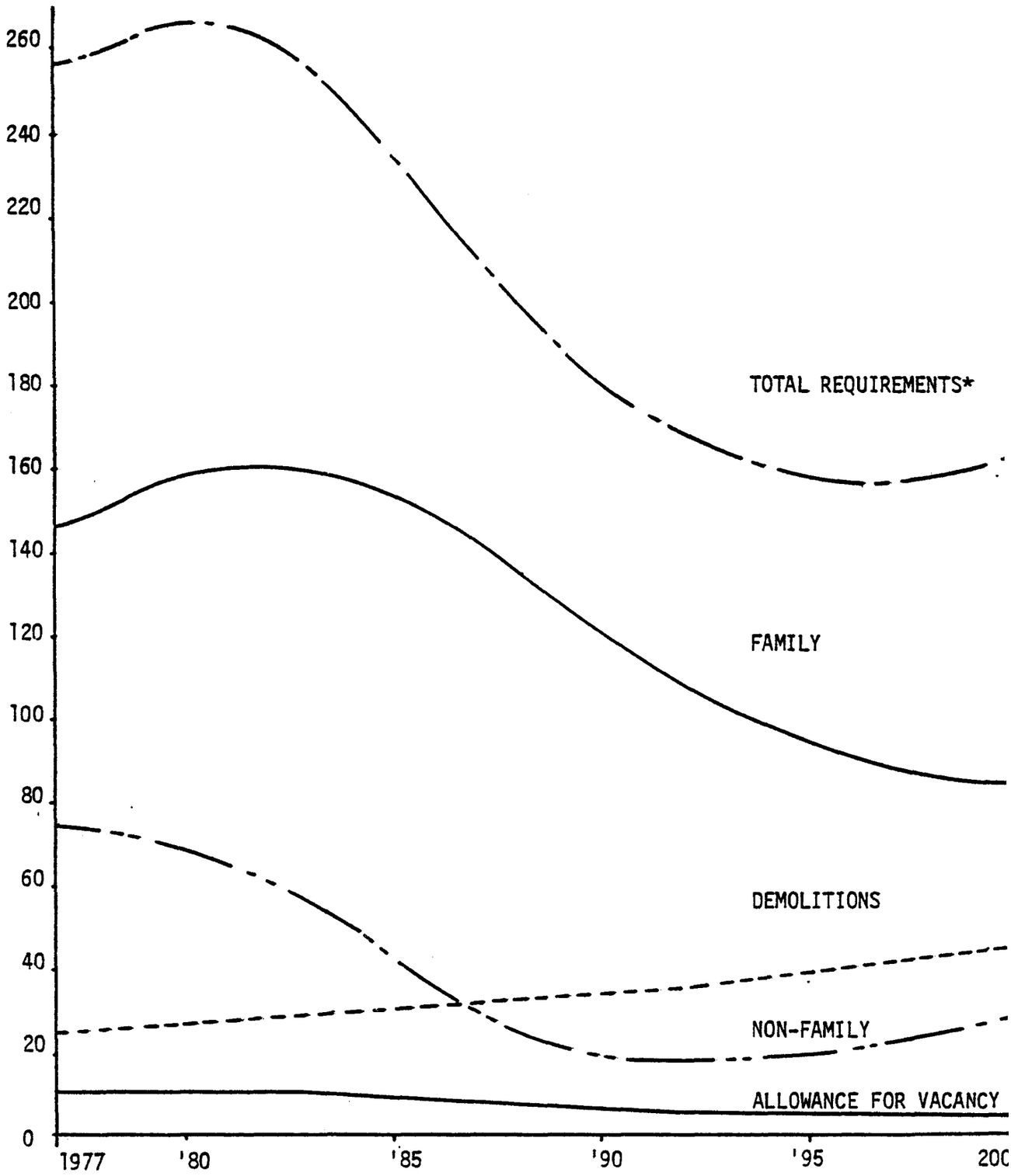
*	7.	Program Delivery
	8.	Financial Administration
	9.	Financial Viability
**	10.	Service
***	11.	Transfer of Knowledge
***	12.	Mortgage Management
*	13.	Real Estate Management
**	14.	Availability of Skills
*	15.	Employee Performance
***	16.	Public Awareness
**	17.	Program Improvement
***	18.	Productivity


STARTS, SELECTED PROGRAM VOLUME, AND INSPECTION STAFF LEVELS 1971-1981
Total Starts
Inspection Staff Level
400
365
Total NHA (New and Existing)
Total NHA (New) (54.4% Time in 1978)
Total NHA (Existing) (7.8% Time in 1978)
RRAP in NIP areas (8.7% Time in 1978)
RRAP
Housing or Program Volume x 1000 Units
300
250
200
150
261
100
50
0
Staff Level Numbers of Inspectors
400
300
200
71
72
73
74
75
76
77
78
79
80
81
YEAR

TOTAL HOUSING REQUIREMENTS BY COMPONENT

CANADA 1977 - 2000 (in thousands) **

FIGURE 2



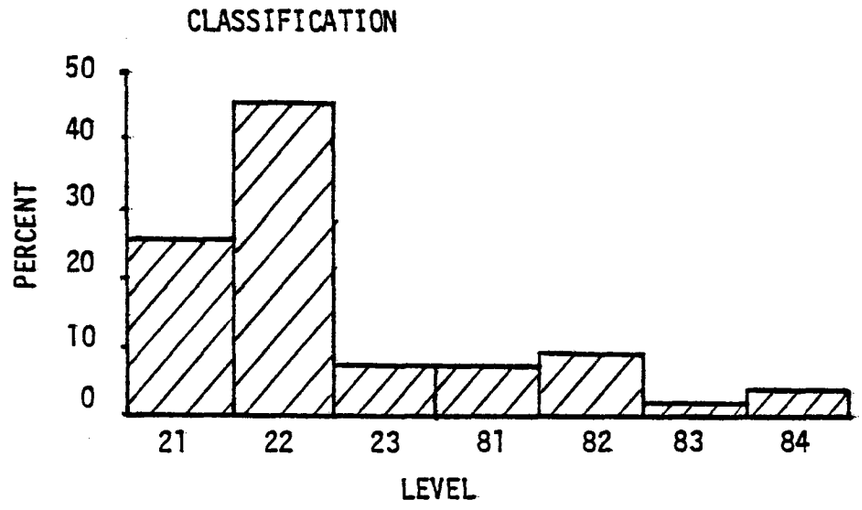
*includes "requirements" for mobile homes

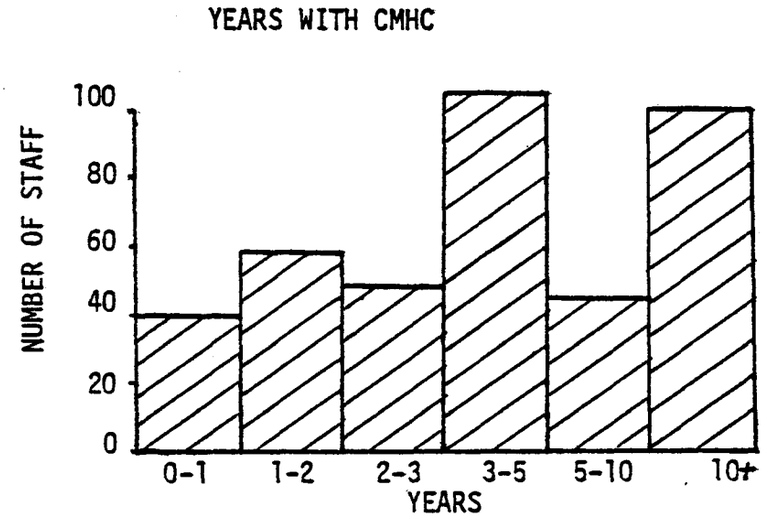
** source - Housing Requirements Model: Projections to 2000
Draft - March 1978
Program and Market Analysis Division

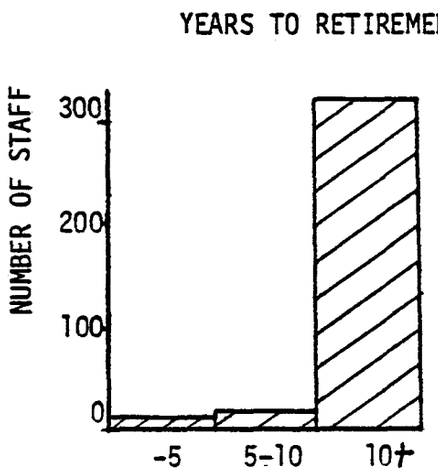
REVIEW OF RESIDENTIAL INSPECTION OPERATION

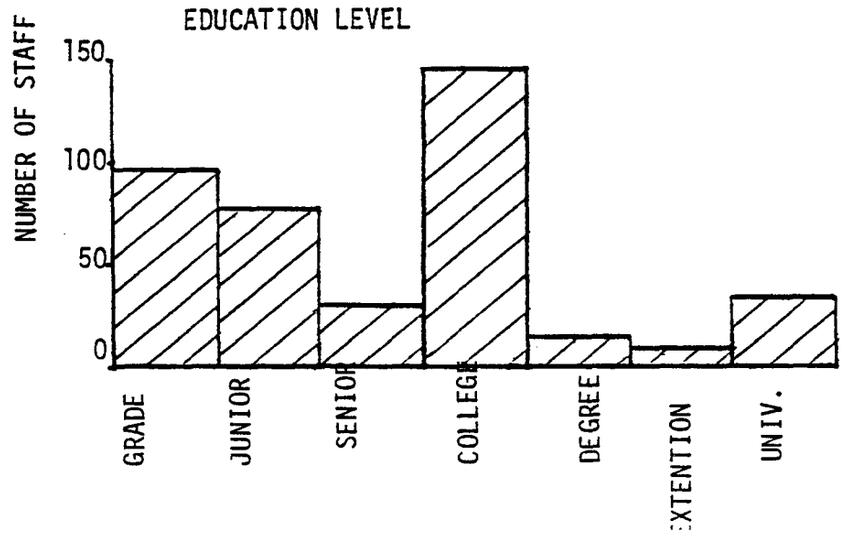
INSPECTION STAFF SUMMARY

FIGURE 3









REVIEW OF THE RESIDENTIAL INSPECTION OPERATION

REVIEW METHODOLOGY

The purposes of the review are outlined in the terms of reference at Appendix B. It was initially intended that the review be undertaken by a relatively new and "unbiased" senior professional in order to ensure objectivity. When it became apparent that his lack of direct experience with the Corporation's operations was impeding progress, assistance in the field work was provided by the Regional Inspections Officer, Alberta Region, Mr. W.C. Robbins. The assistance by Mr. Robbins and the cooperation by all staff in offices visited is sincerely appreciated.

The method chosen was to visit a total of nineteen CMHC offices chosen to give a representative picture of the regional variation of the country. It was later decided to split the work into two phases in order to test the process and to provide intermediate feedback to Management.

To collect data from both local offices and the municipalities in their area of operations, two detailed questionnaires were prepared. The questionnaires are reproduced in Appendices D and E.

In each local office, the Manager and Program Managers were interviewed. An open discussion of the inspection function and related problems was also conducted with the entire inspection staff.

Inspection files and loan files were randomly chosen and checked for quality, level of infractions, completeness of reports and loan advance calculations.

In each local office area, the largest and nearest municipalities were selected for interviewing, appointments made, and interviews carried out. Every attempt was made to obtain a sound assessment of their inspection capability. In addition, their comments on the CMHC inspection operation were solicited including their relationship with CMHC.

During the second phase of the review, contact was made with a few lenders in each local office area in order to understand their concerns about the CMHC inspection operation.

APPENDIX B

INSPECTION OPERATION REVIEW

DETAILED TERMS OF REFERENCE

1. PROBLEM

Examine policies and procedures for residential inspections by CMHC and other agencies.

and

Determine changes in CMHC field offices resulting from:

- municipal/provincial inspections
- new programs - RRAP, CHIP, etc.
- technological changes in last ten years such as manufactured homes
- warranty programs
- non-inspection activity
  - team concept meetings
  - administrative duties

following which

Make recommendations for changes required in policies and procedures to improve efficiency.

2. ITEMS TO BE STUDIED

a) Re-examine purposes for inspections by CMHC and others and assess effectiveness (related to risk acceptance) for each Corporation housing program.

- type and scope of inspections
- number of inspections
- quality of enforcement

b) Analyse inspection workload in detail for quantity and quality.

- organization and management
- plans examination
- monitoring
- supplementary and supervisory inspections
- training
- inspections of all types
- management direction and support

c) Determine variations in procedures and reasons for them.

d) Analyse and compare costs of inspections by CMHC and others.

e) Re-assess existing guidelines for staffing.

f) Examine career aspects of inspector classification.

- training
- formal recognition
- job descriptions
- career progression

g) Gather and compare local building by-laws and standards.

h) Analyse the effect of provincial warranty system on CMHC and other agencies.

i) Measure impact of material acceptance operation.

3. SOURCES OF INFORMATION

Study period
1 July 76 to 30 June 77

a) Published

i) National Office

Distribution of staff by age, experience, years to retirement.
Loan activity in each office.
Starts and completions survey.
Time reporting for each office and individual inspector.
Monthly summary - CMHC 1288.
Policies and procedures for each program.
Guidelines for R.I.O.

ii) Local Office

Map of area.
Inspection files.
Complaint Log.
Daily work register, CMHC 78.
Organization chart.

iii) Municipal/Provincial Office

Organization chart.
Standards and by-laws.
Permit procedures and fees.
Inspection procedures and report forms.
Map of municipal boundaries.
Enforcement policies and procedures.
Details of inspection staff - age, experience and training.

b) Unpublished - Subjective

i) Local Office

Size and quality of local builders.
Detailed time study data
- non-inspection activity
- training, supervision, etc.
Level of contact with local inspectors.
Complaint inspections and relation to warranty program.
Use of consultant certificates.
Comments on codes, standards and ABM.
Comments on job descriptions, training and career progression.
Builder or HUDAC liaison.

ii) Municipal Office

Use of enforcement procedure.
Reasons for inspections.
Contact with CMHC inspectors.
Comments on codes, standards and ABM.
Training of inspectors.
Activity in local building officials associations.
Other inspections - fire, health, electrical, plumbing.
Plans examination capability.

Use of consultant certificates.

Standards writing activity.

4. SUGGEST FORMAT FOR REPORTS

a) Background and authority.

b) Summary of methods, offices visited, and information surveyed.

c) Profile of inspection staff, distribution by office, age, experience, classification, and age to retirement.

d) Details of each office visited (up to 22)

i) Map of area.

ii) Corporation activity - loans, units under construction, starts and completions.

iii) CMHC office organization - profile of inspection staff.

iv) Analysis of workload and procedures.

v) Report on municipal/provincial operations.

e) Extension of office reviews to cover entire Corporation operation.

f) Recommendations:

i) Changes in policies, procedures and organization.

ii) Office workload - guideline for staffing.

iii) Changes in inspector classification.

- job description
- training
- formal recognition
- career progression

iv) Liaison with municipal/provincial building officials.

v) Relationship with National/Provincial Building Officials Associations.

SUMMARY OF [illegible] OFFICES AND OTHER AGENCIES VISITED HASE I

Office Name	Number of Inspectors	Date Visited	Municipalities and Agencies Contacted
Hamilton	12	Sept. 22-23	City of Hamilton City of Burlington City of Brantford
St. John's	8	Oct. 12-14	City of St. John's St. John's Metro Area Board Newfoundland Labrador Housing Commission
Yarmouth	1	Oct. 17-19	Town of Yarmouth County of Yarmouth
Saint John	3	Oct. 26-28	City of Saint John Parishes of Saint John and Charlotte Village of Gondola Point Town of Grand Bay Village of Hampton
Winnipeg	20	Nov. 16-18	City of Winnipeg Manitoba Department of Labour Selkirk and District Planning Board Town of Steinbach Rural Municipality of Hanover Rural Municipality of Ste-Anne
Regina	12	Nov. 21-23	City of Regina Saskatchewan Department of Health Saskatchewan Department of Labour Town of Indian Head Rural Municipality of Indian Head

Office Name	Number of Inspectors	Date Visited	Municipalities and Agencies Contacted
Medicine Hat	1	Nov. 29 - Dec. 1	Alberta Building Standards Branch City of Medicine Hat Town of Brooks Village of Tilley Town of Redcliffe Improvement District No. 1
Kelowna	4	Dec. 12 - 14	City of Kelowna City of Penticton City of Vernon District of Summerland Regional Districts of Central & Northern Okanogan and Okanogan-Similkameen

SUMMARY OF CMHC OFFICES AND OTHER AGENCIES VISITED - PHASE II

Office Name	No. of Inspectors	Date Visited	Municipalities and other Agencies Contacted	Lenders/Agencies
Montreal South Shore	17	Jan 4-6	City of Sorel Town of Tracy Municipality of Contucouer Municipality of Vercheres Municipality of Varennes Town of St. Hubert Town of Longueuil	
Val D'Or	4	Jan 11-13	Town of Val D'Or Town of Amos Town of Amos Est Township of La Sarre City of Rouyn	Toronto Dominion Bank Bank Provinciale
Edmonton	15	Jan 16-19	City of Edmonton County of Strathcona Town of Fort Saskatchewan Town of Lamont Town of Redwater	Morguard Trust Fort Garry Trust Coronado Mortgage
Whitehorse	1	Jan 24-25	City of Whitehorse Yukon Housing Authority Yukon Territorial Government	Imperial Bank Royal Bank Toronto Dominion Bank

SUMMARY OF CMHC OFFICES AND OTHER AGENCIES VISITED - PHASE II

Office Name	No. of Inspectors	Date Visited	Municipalities and other Agencies Contacted	Lenders/Agencies
Vancouver	22	Jan 26-31	City of Vancouver City of North Vancouver Municipality of Surrey Municipality of Matsqui Municipality of Richmond District of Coquitlam District of Burnaby	Bank of Montreal Morguard Trust Vancity Trust
Saskatoon	11	Feb 1-3	City of Saskatoon Rural Mun. of Corman Park Town of Rosthern Rural Mun. of Rosthern Town of Warman Town of Martensville	Royal Bank Bank of Nova Scotia Imperial Bank Credit Foncier
Thunder Bay	5	Feb 6-7	City of Thunder Bay Township of Oliver Township of Paipoonge Township of O'Connor Township of Shumiak	Royal Trust Royal Bank

... 3

SUMMARY OF CMHC OFFICES AND OTHER AGENCIES VISITED - PHASE II

Office Name	No. of Inspectors	Date Visited	Municipalities and other Agencies Contacted	Lenders/Agencies
Yellowknife	2	Feb 8-9	City of Yellowknife Government of N.W.T. Northwest Territories Housing Corporation	Imperial Bank Bank of Montreal
Halifax	12	Feb 13-15	County of Halifax City of Halifax City of Dartmouth	Kinross Mortgage Imperial Bank Fidelity Trust
Charlottetown	4	Feb 16-17	City of Charlottetown Municipality of Sherwood Town of Parkdale	Provincial Bank
Thompson	1	Mar 13-15	City of Thompson Manitoba Housing Corporation	Bank of Commerce
Toronto	12	Mar 21-23	City of Toronto Borough of North York Borough of Etobicoke Borough of East York Borough of Scarboro	Bank of Montreal Bank of Nova Scotia

Interview Form - CMHC Offices

1. Office Location -
2. Dates Visited -
3. Chief or Senior Inspector -
4. Number of Inspectors
5. Number of full and part time clerical assistants.
6. Description of area covered by office (obtain map) -

7. Workload (complete detailed questionnaire at Appendix A)

   (a) Organization of office (explain nominal and functional relationships to program staff).

   (b) Designation of program inspector.

   (c) Who prepares individual workload for inspectors and completes CMHC 78.

   (d) Check use of green card CMHC 977 and other procedures used for requesting inspections.

   (e) Check level of supervisory inspections and procedures for doing them.

   (f) Procedures for supplementary inspections (B/F system) and number being done.

   (g) Degree of rotation of inspectors between areas and rural inspection loops.

   (h) Who prepares monthly reports CMHC 1288 and Summary of 1498.

   (i) Are special plans examiners used or is this a shared duty.

   (j) Amount of overtime, procedures for authorization and reimbursement.

   (k) Apparent relationship with Branch and Program Management. (level of support and direction).

8. Analysis of Files (review inspection and loan files together if possible)

(a) Coordination of loan and inspection files.

(b) Number of inspection files checked

Singles and semis (15)	_____
Row units (5 blocks)	_____
Apartments (3 buildings)	_____

- average number of inspections
  - mandatory _____
  - intermediate _____
  - re-inspections _____
  - supplementary _____
- average no. of major infractions _____
- average no. of minor infractions _____

- general comments on file completeness, legibility, file procedures.

- use of consultant certificates for apartment buildings.

9. Other Information

(a) Branch Management (Manager and Program Manager).

- purpose of inspections

- general support and direction of inspection staff.

- effect or quality of housing if

  (a) policing inspections only

  (b) increasing existing inspections

  (c) reducing existing inspections

(b) Inspection Staff

- size and quality of local builders.

no. of houses per year	no. of builders	average quality
less than 10		
10 - 49		
50 - 200		
more than 200		

(quality - excellent, good, fair, poor).

9. Other Information (cont'd)

(b) Inspection Staff

- status of local section of provincial building officials association and membership and activity by inspectors.

- level of contact with municipal inspectors

  - in field -

  - by phone and other -

- effect of quality of

  (a) policing inspections only

  (b) increasing inspections

  (c) decreasing inspections

- Relationship with technical staff at Regional & National Offices

  - procedures for feedback on codes, standards, engineering and material acceptance.

  - suggestions for changes and improvement to codes, standards and ABM.

- Inspector classification

  - adequacy of job descriptions

  - benefits of more formal recognition

  - career progression

- Complaint inspections

  - effect of HUDAC warranty system on level of complaint inspections.

- Liaison with local builders or HUDAC section

Interviewer Name and Signature

Review of Residential Inspection Operation

Detailed Time Allocation Questionnaire

Time is a yearly average for period 1 July, 1976 to 30 June, 1977.

	Time Major Activity or Minor Activity Man/Months	Man Hours/Month	Remarks
A. Inspection-Related			
Plans examination - housing			
- apts			
- social			
- RNH			
Inspections - houses			
- apts			
- social			
- RNH			
- existing			
- pre-appl.			
- site			
Complaint inspections			
Factory (specify) and material acceptance			
Annual inspections - LD projects			
Monitoring inspections RRAP			
CHIP			
AHOP (P)			
ARP (P)			
MIF and property admin.			
Supervisory inspections			
In-house training			
B. Other			
Starts and completion survey			
Program and Lending Team Meetings			
Public enquiries - phone			
- counter			
Loans interview			
Capital Cost allowance			
Municipal Incentive Grant			
Clerical duties (1288, 1498's etc).			
Others (specify)			
Totals			

Interview Form - Municipal Offices

1. Date and time.
2. Name of municipality.
3. Name and title of person interviewed.

4. Organization of Building Department (obtain chart if possible)

5. By-Laws and Codes Adopted (Smoke Control Measures)
   (Obtain copy of by-laws).

6. Plans examination and permits procedure.
   (a) Type of submission required -

   (b) Plans examination and other screening done -

   (c) Control of grading -

   (d) Input by fire official -

   (e) Fee schedule -

   (f) Issue of occupancy permit -

7. Inspection procedures.
   (a) Purpose of inspections.

   (b) Methods of assigning inspection load.

   (c) Report form used.

   (d) Number and type of inspections for houses and apartments.

   (e) Method of recording infractions.

   (f) Enforcement procedures and how often used.

   (g) Use of consultant certificate.

(h) Unit cost of inspections (if available).

(i) Special inspections - fire, plumbing, electrical.

8. Inspector Profile.

(a) Age, experience and background.

(b) Classification and job descriptions.

(c) Salaries and allowances.

(d) Training - in-house and courses outside of office.

(e) Membership and activity in building officials associations.

9. Other Information.

(a) Materials Acceptance - knowledge of ABM and own procedures.

(b) Contact with CMHC inspectors in field or by phone and other.

(c) Are inspection procedures different for NHA housing.

Interviewer Name and Signature

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