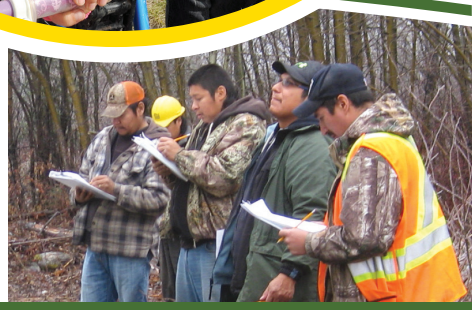
Identifying Housing Maintenance Needs



TRAINER MANUAL

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Contents

WORKSHOP PREPARATION

This manual is designed to guide you through the workshop delivery in the order of the workshop agenda.

Intent of this workshop

Many communities are performing housing maintenance and repairs on a reactive basis rather than on a proactive basis. They receive a work request from a tenant and proceed with the work if and when they have the time and the funds available. A proactive approach would be to evaluate the urgency of the requested work with other outstanding work on other houses in the community, and then to perform all repairs in a planned manner and in order of priority or urgency.

First Nation communities are being encouraged by CMHC to prepare five-year housing maintenance plans but are hindered in their ability to prepare such plans because of a lack of knowledge of the physical condition of ALL their houses (what needs to be done and how much it may cost). Many staff members feel unqualified to assess the maintenance and repair needs in a house. Others feel that an inspector must be hired to perform such an assessment but are hindered by a lack of funds to hire inspectors or by the unavailability of inspectors in their area. As a result of these obstacles, the Housing Manager often does not know the comparative condition of houses in the community and is not able to assess the relative importance of repairs requested. Hence, repair work is often carried out on a reactive basis.

The intent of this workshop is to introduce the Maintenance Condition Review form and to give workshop participants the knowledge and confidence to use that new form to carry out annual inspections in support of their five-year maintenance planning cycle.

Delivery options

The subject matter and delivery format of this workshop allows it to be delivered as follows:

One-on-one training: training for the housing staff members in a single First Nation community, specific to their existing budgets and housing conditions.

Tribal council workshop: targeted to tribal council staff members who carry out maintenance inspections or maintenance planning for a number of First Nation communities in their jurisdiction.

Multiple-community workshop: delivered in a central location to participants invited from a number of First Nation communities brought together within a general area.

Target audience

This two-day workshop should be targeted to all First Nation housing staff members who are involved in prioritizing repair work requests and in preparing housing budgets and maintenance plans. This may be administrative staff and/or maintenance staff. However, a technical background is not required.

The ideal number of participants at this workshop would be a minimum of 12, with a maximum of 20. The exception would be when the workshop is being provided as one-on-one training to a single community.

Advance local contact/coordination

For this workshop, either the CMHC Housing Consultant or the trainer must contact the local community coordinator to arrange for access to a house for conducting a maintenance condition review on day 2 between 10:30 a.m. and noon. It would be nice to offer a basic home maintenance tool kit as a gift to the tenant who opens his/her home for this site visit. This gift could be provided by CMHC or the trainer could purchase it and be reimbursed for this expense through his/her travel claim.

On the one hand, the house selected for inspection should not be new or newly renovated. On the other hand, it should not be in horrible condition either. Ideally, the house will be occupied and be in need of some maintenance, some repairs and some major replacements (for example, roof shingles, steps and landings, flooring, door or window repairs, etc.). Having the tenant/occupant present allows the participants to ask questions about certain items.

If a vacant house is selected for the on-site visit, the local coordinator should gather some background information on the unit, such as the year of construction and what major replacements have been made over the past five years.

The Trainer Manual

The material required for the delivery of this workshop has been prepared and presented in this manual in the order of the workshop agenda. Each module is introduced with the key messages and teaching points that are to be highlighted.

Since many photographs and illustrations are used in the slide presentation, presenter's notes have been prepared (below each slide) to guide you in focusing on the main points to be highlighted when discussing the slides.

There are prompts in the manual for going to the next PowerPoint slide and when certain exercises are to be used. The points on the slides are not intended to be read to the participants but instead serve as a guide to assist you in ensuring the required information is covered. You may wish to offer additional related information based on your knowledge, the needs of the audience and also concerns specific to the community in which you are delivering the workshop.

Help the participants to follow along during the presentation of workshop material by referring them to the appropriate pages in their Participant Manual.

Time frames

There are suggested time frames indicated on the workshop agenda. Depending on the number of participants, their level of experience and participation in discussions, adjustments to the timing of certain modules may be required.

However, you must ensure that all the key messages and teaching points are covered, if not as planned then as a brief lecture at the debriefing at the end of the day or as part of the review on the beginning of the following day.

The Participant Manual

Each participant is to be given a Participant Manual at the beginning of the workshop and its contents should be reviewed during the Welcome and Introductions part of the agenda.

The Participant Manual contains copies of the PowerPoint slides, handouts, workshop exercises, resource materials and workshop evaluation forms. **However, it does not contain the answer sheets to the exercises**. These must be handed out by the trainer at the conclusion of each exercise and the participants should be encouraged to insert them into their manual for future reference.

Ideal room set-up

While a good portion of the workshop is a PowerPoint presentation to the full audience, this workshop also involves some teamwork in pairs and then in groups of four. Setting up the room with tables in a large U-shape could work, but the ideal set-up would be individual tables with two participants per table, in a classroom style.

Preparing for the start of the workshop

When you arrive at the workshop location, verify the room set-up and rearrange if necessary to make the best use of the room and furnishings available. Confirm that the CMHC boxes of workshop materials have been delivered and are brought into the meeting room.

Set up your equipment (computer, LCD projector, Trainer Manual) and confirm that it and any equipment provided by the Band or hotel (power cord, screen, flip chart, etc.) are in place and that all equipment is working and ready to go.

Open the CMHC boxes and distribute the participant manuals, paper, pens and name tents/cards to each seat.

With the workshop title slide up on the screen, welcome participants as they arrive. Provide a large marker and ask the participants to write their name on the 'name tents' in front of their seating position.

If possible, start the workshop on time. If a number of participants are missing and expected shortly, you could ask the other participants if they are willing to wait a short while. However, do not delay the start beyond 9:00 a.m.

Use of door prizes

The use of door prizes at CMHC workshops may vary by Region. Check with your CMHC workshop coordinator prior to purchasing any door prizes. Your CMHC workshop coordinator will confirm if door prizes should be used, whether you should purchase them and, if so, what your budget limit will be. Alternatively, CMHC may provide some door prizes with the workshop materials.

Everyone likes door prizes or at least the chance to win a prize. It is suggested that door prizes be used primarily at the end of the workshop to encourage participants to stay to the end and to complete and turn in their workshop evaluation. In that setting, the first name drawn gets first choice of the prizes, then that winner draws the next number who gets second choice and so on. It is a nice way to wrap up the workshop and ensure you get your evaluations.

Some trainers may wish to give a door prize to an individual who, during the workshop, correctly answers a difficult question or identifies a particularly difficult repair defect and its cause.

If door prizes are provided for this workshop, it is recommended that they consist of renovation or inspection tools, such as clipboards, flashlights, screwdrivers, electrical testers, etc.

NOTE: It would be ideal if the CMHC office coordinating this workshop could send out a plain, simple clipboard and sharpened pencil for each participant as part of the workshop materials. Alternatively, the trainer could purchase and supply these and get reimbursed through his/her travel claim, if approved in advance by CMHC. These items will be used by the participants to complete the on-site maintenance condition review on day 2.

WORKSHOP OBJECTIVE

- To give participants the knowledge and confidence to perform maintenance condition reviews on existing houses in their community:
  - to identify housing maintenance and repair needs; and
  - to prioritize those repair needs.

Participants will be given the opportunity to carry out an on-site maintenance condition review on a house in the local community and to complete a Maintenance Condition Review form and a MCR Summary Sheet.

Identifying Housing Maintenance Needs

WORKSHOP AGENDA

Day 1

8:30 – 9:00 a.m. **Welcome and Introductions**
(Review Workshop Objectives, Agenda and Manual)

9:00 – 10:30 a.m. **The Basics of Wood-Frame House Construction**
- House Structure (foundation, framing, roofing)

10:30 – 10:45 a.m. **Refreshment Break**

10:45 – 12:00 p.m. **The Basics of Wood-Frame Construction (Continued)**
- Exterior finish, interior finish, building services
- "House as a System" (air quality; avoiding mould)

12:00 – 1:00 p.m. **L U N C H**

1:00 – 1:30 p.m. **Average Useful Life of Building Components and Compiling a Building Inventory**

1:30 – 2:30 p.m. **Introduction – Maintenance Condition Review Form**
- Maintenance Standard and Description
- Identifying and Rating Priority Repairs
- Customizing Form for Local Services/Amenities

2:30 – 2:45 p.m. **Refreshment Break**

2:45 – 3:45 p.m. **Defect Recognition – Exercise and Slide Review**

3:45 – 4:00 p.m. **Debriefing of Day 1 and Set-Up for Day 2**

Day 2

8:30 – 9:00 a.m. **Review of Key Messages from Day 1 and Defect Recognition Answer Sheet**

9:00 – 10:00 a.m. **Maintenance Condition Review Procedure**
Phase 1: Preparing for the Maintenance Condition Review
Phase 2: Carrying Out the Maintenance Condition Review
Phase 3: Following Up After the Maintenance Condition Review

10:00 – 10:15 a.m. **Set-Up For Site Visit**

10:15 – 10:30 a.m. **Refreshment Break and Travel to Site Visit**

10:30 – 12:00 p.m. **Supervised On-Site Maintenance Condition Review**

12:00 – 1:00 p.m. **L U N C H**

1:00 – 1:15 p.m. **Debrief on Maintenance Condition Review Experience**

1:15 – 2:15 p.m. **Group Work: Maintenance Condition Reviews and MCR Summary Sheet**
- Identify Maintenance/Repair Needs
- Determine Priority of Maintenance/Repair Needs
- Estimate Cost of Repairs
- Prepare Report for Presentation

2:15 – 2:30 p.m. **Refreshment Break**

2:30 – 3:30 p.m. **Presentations by Group: Maintenance Priorities/Costs**

3:30 – 3:45 p.m. **Incorporating Maintenance Condition Reviews into Maintenance Plans**

3:45 – 4:15 p.m. **Next Steps and Workshop Evaluation**

DAY 1

8:30 – 9:00 a.m. Welcome and Introductions

a) With **SLIDE 1** up on the screen, give your name and, on behalf of CMHC, welcome the participants to the workshop. Take a few minutes to position this workshop among others offered by CMHC:

Introduction to Indoor Air Quality — Leadership	After attending this workshop, you will have a basic understanding of the major causes and remedies for poor indoor air.
Introduction to Indoor Air Quality — Home Occupant	After this workshop, you will have a better understanding of how mould and other sources of pollutants affect indoor air quality.
Let's Clear the Air (LCTA)	This workshop provides you with a deeper knowledge of poor indoor air and air pollutants, as well as solutions.
Let's Clear the Air — Home Assessment	This is an optional addition to the Let's Clear the Air workshop, where you can visit a home experiencing indoor air quality and mould problems, and identify and prioritize solutions.
Mould Remediation	From this workshop you will learn the basics of mould, why it grows in the home, how it can be prevented and what do to when the home has become mouldy.
Introduction to Ventilation Systems	This workshop introduces the importance of ventilating our houses and the various ways that is accomplished.
HRV Installation and Maintenance	After this workshop, you will be able to properly install, balance and maintain a heat recovery ventilation system; and explain to home occupants the importance of proper use.
Basic Home Maintenance	At the end of this workshop you will have a better understanding of how to prevent mould and how to do basic home maintenance.
Builder Series	You will acquire sound building science principles that will help improve the new housing built in your community.
Identifying Housing Maintenance Needs	After this workshop you will be able to carry out on-site maintenance reviews and identify maintenance and repair work required, using a simplified inspection form.
Client Counseling	This workshop will help you to improve your counseling skills and strengthen the services of the housing department.
Property and Home Maintenance Management	This workshop will help you achieve your housing goals related to maintaining your community's housing stock.

b) Drawing attention to SLIDE 2, inform the audience that you would like to take a few minutes to go around the room for introductions. Ask the participants tostate:

- their name;
- their community;
- their role in housing; and
- one obstacle to identifying maintenance and repairs required to houses in your community (based on the participant's experience).

Begin with yourself and set a good example of an appropriate introduction. Keep in mind that if you provide a detailed resumé of yourself, everyone else will feel they have to as well and this will take a lot of time. So, a brief overview of your current role in Aboriginal Housing should be sufficient.

NOTE: As you go around the room, listen closely to each introduction; acknowledge certain key comments; and welcome each participant by name. Also listen for the obstacles they identify and record them on a flip chart or whiteboard if available. These can be used in a brief summary after the introductions in which you can acknowledge the common concerns raised and assure them of those that will be addressed during the workshop.

The most common obstacles mentioned are:
- it's hard to gain access to the houses (tenants don't want to let them in);
- they are too busy "putting out fires" and have no time to inspect all the units;
- they are not sure what to look for in determining what is ok or not;
- inspectors are hard to get to their communities; or they can't afford to bring them in.

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c) Review the contents of the Participant Manual. Highlight that they all have copies of the PowerPoint slides (which should reduce the notes they have to take) and show them the sections for exercises, handouts and other resource materials.

d) With **SLIDE 3** up on the screen, review the workshop objective and highlight that a site visit to a house will take place on day 2.

e) Using **SLIDES 4 and 5**, review the agenda for the next two days.

f) Housekeeping: Deal with any issues, such as location of the washrooms, breaks, lunches and any special needs in regard to leaving earlier on day 2.

Advise any that do need to leave before the end of the workshop that you would like them to complete their workshop evaluation before leaving.

NOTE: The time together during lunch hour provides an excellent opportunity to share success stories. Perhaps use the time to show the DVDs:
- "Stories of Our Houses" (Ontario Region);
- "Because It's My Home;" and "Home Maintenance – I Can Do It Myself"

Otherwise, prompt the participants to share personal success stories from their community. Make note of exceptional cases and include them in your workshop report to CMHC.

9:00 – 10:30 a.m. The Basics of Wood-Frame House Construction

KEY MESSAGE:
Taking the participants through the basics of wood-frame house construction has two main objectives: 1) to bring everyone up to a common level of knowledge about how a house is built and some of the building science behind the "house as a system; and 2) to help participants understand what the root cause may be when something goes wrong and causes a maintenance or repair need. For example, a water-stained ceiling needs more than repainting. You need to find out where the water came from and repair the problem before repairing the "collateral damage."

(SLIDES 6 to 51)
These slides run through the basics of wood-frame house construction, from the foundation to roofing. After the break, you will complete the presentation with slides 52 to 88.

During your preparation to deliver this workshop, read and think about the presenter notes provided below most slides. These notes highlight what you should focus on and provide the key information that you should transfer to the participants. To see these presenter notes as you are presenting the workshop, make sure that you select "Use Presenter View" from the drop-down menu under the "Slide Show" heading at the top of the PowerPoint screen.

10:30 – 10:45 a.m. Refreshment Break

10:45 – Noon The Basics of Wood-Frame House Construction (Continued)

(SLIDES 52 to 88)
These slides run through the basics of wood-frame house construction, from the exterior finish through to building services. Then you will complete the discussion with a consideration of building science issues in "house as a system" (slides 81 to 88).

Again, during your preparation to deliver this workshop, read and think about the presenter notes provided below most slides. These notes highlight what you should focus on and provide the key information that you should transfer to the participants.

HANDOUT NO. 1 – "House as a System"
Direct the participants to handout no. 1 for review.

12:00 – 1:00 p.m. LUNCH BREAK

1:00 – 1:30 p.m. Average Useful Life of Building Components and Compiling a Building Inventory

KEY MESSAGE:

There are some useful tools that can simplify housing maintenance inspections and planning. These are: 1) the Average Useful Life Chart and 2) the Building Inventory List.

(SLIDE 89)

There are some industry standards as to how long the major components of a building should last under normal wear and tear or normal usage. This is a useful resource because if you know the year the house was built or when that major component was last replaced, and you know how long that component should last, then you can determine how many years are remaining before you have to replace it again.

The following slide provides some guidance in determining the useful life of various building components.

(SLIDE 90)

Average Useful Life Chart

You will notice that this chart gives a high end and low end of how long a component should last under normal conditions.

HANDOUT NO. 2 – Average Useful Life of Building Components Chart

Inform the participants that there is a reference copy of this chart in handout no. 2.

How long a component will actually last depends on a number of factors. Before going to slide 91, ask the participants to identify what some of those factors that can reduce the average useful life a major building component might be. Prompt them to bring out the points coming on slide 91 and then use slide 91 to review those factors and help them see where they may be able to address them and extend the useful life of houses in their community.

(SLIDE 91)

This slide highlights the factors just discussed that can reduce the useful life of the major components of a house. What can you do to extend the useful life of housing in your community?

1. Build better. Ensure all construction conforms to applicable building codes.
2. Use good quality, durable building materials. Store materials well on site.
3. Perform maintenance.
4. When replacing building components, select more durable products suitable to your climatic conditions.
5. Limit overcrowding if you can, install durable products where you know overcrowding will be a problem.

(SLIDE 92)
Building Inventory List

Another useful tool to help simplify maintenance condition reviews and maintenance planning is having a building inventory for each housing unit. Each housing file in the office should have a "Building Inventory" sheet, which records the year of construction and when major components were last replaced. For major appliances, this inventory sheet should also record the make and model numbers to facilitate the ordering of replacement parts or repairs.

1:30 – 2:30 p.m. Introduction – Maintenance Condition Review Form

KEY MESSAGE:

This section is intended to provide some background to the development of the Maintenance Condition Review form and then to introduce it to the participants. Use slides 93 to 95 to help participants understand the purpose of the form, the need it is intended to fill and then use slides 96 and 97 to explain the form and review its various parts/columns so they understand how it is to be used. In particular, help them understand that they should use the maintenance item descriptors to determine if the building item or component is acceptable or not.

The "maintenance standard" is functionality. If it still serves the purpose for which it was designed, it is functional and acceptable. If the item is no longer functional, it is not acceptable, and a note should be made on what needs to be done to repair the item.

(SLIDE 93)
There are a number of opportunities that can be used to identify maintenance or repair needs. Review the opportunities on this slide and briefly discuss how each can be used to check out the condition of the house and record work that needs to be done and, in some cases, to provide some maintenance counseling to the occupant.

End the discussion on 'annual inspections.' Some housing departments do carry out annual inspections of their housing units and have a form they use for that inspection. However, many of those forms indicate the item but do not provide any description to help decide whether the item is in acceptable condition or not.

The Maintenance Condition Review form we are introducing at this workshop was developed to help carry out annual maintenance reviews and to provide some guidance in determining where repair work may be required. It is hoped that this more detailed, yet simple form, will enable even those without a technical background to perform maintenance condition reviews.

(SLIDE 94)
Use this slide to prompt discussion on how to determine if a house (or the various components of a house) is in acceptable condition or not.

Does an item have to be "new" to be acceptable?

Does maintenance work have to meet new building code standards?

Highlight that new building code standards apply only to new construction and major renovations. Maintaining a house costs much less than doing a major renovation. However, if maintenance is not carried out and the house is allowed to become run down to the point where a major renovation is required, it will now become much more costly because new building code standards will apply to the major renovation—assuming the participants' band has accepted Building Code standards.

Lead the discussion to the conclusion that a component does not have to be new, but it has to be functional—it has to function or serve the purpose for which it was designed.

Example: a kitchen, while 30 years old, can still be acceptable if the drawers and doors function and the countertop is free of serious cracks or burns that may become a health issue.

In addition, First Nations who have CMHC Section 95 housing have signed an operating agreement and accepted the responsibility to maintain those houses in a "state of good repair." It is hoped that the Maintenance Condition Review form will help them to better assess the condition of all their housing units.

(SLIDE 95)
Use this slide to drive home the benefits of good home maintenance and of having a "standard" or guide that helps determine whether a house is in acceptable condition or not.

The Maintenance Condition Review form was developed to provide such guidance.

HANDOUT NO. 3 – Maintenance Condition Review Form
Ask the participants to turn to the Maintenance Condition Review form in their binder so they can follow along as you review its features.

(SLIDE 96 and 97)
Use these slides as you review the features of the Maintenance Condition Review form: slide 96 for a general overview and then slide 97 for a more detailed explanation of how the form is to be used.

(Slide 96)
Overview features

1) The form follows a particular order: outside (top to bottom); then inside (top to bottom). There is a benefit in following the same order when performing any inspection. It builds a routine or pattern in your mind and helps you not to forget to check all items.
2) You will note that once inside the house, the form goes room by room, rather than all the ceilings, then all the walls, then all the floors, etc. This is to avoid having to go back into each room multiple times as you check its various components.

3) You will also note that there is only one box for bedrooms and one for bathrooms. So if there is more than one bedroom and one bathroom, you will use the "notes" feature to detail in which bedroom or in which bathroom there is a problem.
4) This form is available electronically. The benefits of having an electronic version is that you can insert a 'front elevation' picture of the house on the front cover, and you can customize the form for your community by replacing any 'not applicable' items with other items that are in your houses.

(Slide 97)
Instructions on how to use the form

1) If possible, follow the order of the form and read each maintenance item description to help determine whether the items are in acceptable condition or not.
2) If the condition meets the description indicate Yes in the Y/N column and move on to the next item.
3) If the condition does not meet the description, indicate No in the Y/N column and then put a sequential number in the NOTE NO. column and go to the corresponding number on page 5 (of 5) to record what needs to be done.

   The first note no. would be 1, the next 2, and so on, with the corresponding details written on page 5 (of 5).

   The RATING column is used to indicate the priority of the repair need. Direct the participants to the legend at the bottom of each page:

1 = Emergency	This is for health and safety items requiring immediate attention.
2 = Urgent	This is for items that could cause greater damage if not repaired within the next few days (for example, a water leak).
3 = Routine work	This is for regular maintenance/repair activity with no urgency.
TD =	This could be used to indicate tenant damage, if there is a policy on tenant damage.

   This Rating column can be filled out as you do the maintenance review or afterward when you review your notes and finalize the form.

   Emphasize that this form will be used for the on-site maintenance condition review on day 2 of the workshop.

2:30 – 2:45 p.m. Refreshment Break

2:45 – 3:45 p.m. Defect Recognition Exercise and Slide Review

KEY MESSAGE:

It is important to recognize when something is wrong, but it is often more important to understand what caused the problem. That is 'defect recognition'—the ability to see beyond the symptom of a problem to determine the underlying cause of the problem. Then, you can repair the real problem before correcting the collateral damage it caused.

(SLIDE 98)
Defect Recognition exercise

HANDOUT NO. 4 – Defect Recognition Exercise
Ask the participants to turn to the Handouts and Exercises tab in their binder and take out the defect recognition exercise.

Explain the exercise as a self-test to see how many of the 10 given defects shown in the pictures they can recognize, determine the real cause and prescribe a proper repair. Give the participants 20 to 30 minutes to complete the exercise.

When all have completed the exercise, ask them to put it back in their binders and tell them you will review the exercise with them to start day 2 and that you will hand out an answer sheet that they can keep as a reference afterward.

(SLIDE 99)
Defect Recognition slide review

Use this slide to remind the participants of what 'defect recognition' is: recognizing a problem exists, understanding what caused the problem and determining what should be done to fix it.

That is basically what we will be doing tomorrow during and after our on-site maintenance condition review. And when you see something that appears to be a problem—take a picture of it.

Ask the participants why it is a good idea to take pictures of problems or defects. Remind them that "*a picture is worth a thousand words.*" Reviewing their pictures after the maintenance condition review will remind them of what they saw—and often of what they forgot to write down in their notes.

(SLIDE 100)
This slide provides direction for the defect recognition slides. Tell the participants that you are going to show a number of pictures and you would like them to volunteer by show of hand to explain briefly:

1) What's wrong? (What is the defect?)
2) What caused the problem?
3) What should be done to correct the defect?

(SLIDES 101 TO 131)
As you show these defect recognition slides—in Presenter View format—use the notes at the bottom of each picture to lead the participants to the correct answers.

3:45 – 4:00 p.m. Debriefing of Day 1 and Set-Up for Day 2

KEY MESSAGE:

The participants have been exposed to a lot of new information today. Summarizing the main topics covered and asking them to pick out one or two points that was new to them personally will help them to recall that information and will show the other participants that all of us continue to learn.

(SLIDE 132)
Use this slide to review the main parts of the day's agenda and to ask the participants to share some comments of what they learned or enjoyed.

Remind the participants that tomorrow there will be an on-site visit where they will have to be outdoors for about 45 minutes, so they should dress accordingly.

A clipboard, pencil and camera would be very useful for the maintenance condition review. (Let them know if you have clipboards and pencils for them or whether they should try to bring some with them).

Remind the participants of the starting time for tomorrow (8:30 a.m.) and encourage them to be on time.

DAY 2

8:30 – 9:00 a.m. Review of Key Messages from Day 1 and Defect Recognition Answer Sheet

KEY MESSAGE:

Review is beneficial and helps us recall new learning.

Take a few minutes while participants are getting settled to review some of the previous day's key messages:

1) **The basics of wood-frame house construction**

   Understanding how a house goes together helps us to recognize maintenance and repair issues related to improper construction in the first place. It also helps us to see beyond the symptom of a problem and to determine the underlying cause of the problem.

2) **The Average Useful Life Chart**

   Being aware how long a certain component of a house should last helps us to know when we need to take a closer look at its current condition during the maintenance condition review, and when we need to plan for its replacement.

3) **The Maintenance Condition Review form**

   This new form provides guidance as to what to look at when carrying out a maintenance condition review and it helps us to know what to look for in determining if a certain component of the building is acceptable or not.

4) **The defect recognition exercise**

   Ask participants to get out their copy of the defect recognition exercise completed yesterday afternoon. Ask for volunteers to give the problem, cause and solution for each one. When the review is finished, hand out a copy of the answer sheet to each participant.

HANDOUT NO. 5 – Defect Recognition Exercise Answer Sheet

Ask them to put it into their binder with the exercise they did yesterday.

(SLIDE 133)

Briefly review the agenda for day 2.

9:00 – 10:00 p.m. Maintenance Condition Review Procedure

KEY MESSAGE:

All types of inspections benefit from following a certain routine or particular procedure. This ensures a level of professionalism and helps us avoid missing any important items. The following presents a three-phase procedure for carrying out maintenance condition reviews.

(SLIDE 134)
With the details of slide 135 in mind, ask the participants what they think would be included in phase 1 – steps to take BEFORE going out to the site for the maintenance condition review.

(SLIDE 135)
Use this slide to confirm some of the suggestions made and to review the steps necessary in phase 1.

(SLIDE 136)
This time, with the details of slide 137 in mind, ask the participants what steps they think would be included in phase 2 – steps to take DURING the maintenance condition review.

(SLIDE 137)
Use this slide to confirm some of the suggestions made and to review the steps necessary in phase 2.

(SLIDE 138)
Now, with the details of slide 139 in mind, ask the participants what they think would need to be done in phase 3 – steps to take FOLLOWING the maintenance condition review (back in the office…).

(SLIDE 139)
Use this slide to confirm some of the suggestions made and to review the steps necessary in phase 3.

HANDOUT NO. 6 – Three-Phase Maintenance Condition Review Procedure
Inform the participants that hand-ut no. 6 in their binder provides a review sheet for the steps in carrying out a maintenance condition review.

10:00 – 10:15 a.m. Set-Up for On-Site Visit

(SLIDE 140)
Just prior to the refreshment break, use this slide as you make the necessary arrangements for the site visit.

1) Ensure clipboards and pencils have been handed out.
2) Provide some basic information about the house being inspected, writing some details up on the flip chart: house address, phase/unit number, tenant's name, year the house was built, any major repairs or replacements done in the last five years, etc.
3) Divide the participants up into teams of two, ensuring that any administrative or clerical staff are paired with a technical person.
4) Instruct each team to select one person who will complete the MCR form as they carry out their review together; and the other to take pictures of the defects or problems they see.
5) If the class is larger than eight participants, designate which half of the class will start outside the house and which half will start inside the house. This will limit congestion with too many people in the house at the same time. Instruct them to switch positions at 11:15 a.m.

Break for coffee and reconvene at 10:30 at the house being inspected.

10:15 – 10:30 a.m. Refreshment Break and Travel to Site Visit

10:30 – 12:00 p.m. Site Visit – Maintenance Condition Review

KEY INSTRUCTIONS:

Immediately after arriving on site, go to the front door and introduce yourself to the occupants and thank them for allowing their house to be used for today's training.

During the on-site visit, encourage all the participants to carry out the maintenance condition review together with their team member, discussing their findings together and helping each other to understand what's wrong, what may have caused the problem and what needs to be done to correct it. This will help all of them get the most out of the site visit.

Prior to leaving, inform the occupant of any key findings/concerns. Thank them again and, if arranged, present them with a gift (maintenance tool kit).

Keep an eye on the time. At 11:15 ask those outside to move inside to complete their review and ask those inside to move outside. At noon, ask the participants to return to the classroom for lunch.

12:00 – 1:00 p.m. LUNCH BREAK

KEY INSTRUCTIONS:
Immediately after arriving back in the classroom, download your pictures onto your laptop and play them as a slide show for the participants to enjoy during lunch.

1:00 – 1:15 p.m. Debrief on Maintenance Condition Review Experience

Take a few minutes to ask participants for some feedback on how they felt doing the on-site maintenance condition review. Acknowledge their feelings and thank them for their comments. Recognize that those without a technical background may have felt a bit uncertain at first but that following the order of the form and the item descriptions in making a judgment of whether various components were acceptable or not helps to reduce the uncertainty.

1:15 – 2:15 p.m. Group Work on Maintenance Condition Form and MCR Summary Sheet

(SLIDE 141)
Instruct the original teams of two to get together again and finalize their "Notes" page (page 5 of 5) of their Maintenance Condition Review form after reviewing all their pictures. Then they should give consideration to which items are priority no. 1 items (emergency), priority no. 2 items (urgent), priority no. 3 items (routine work) and if any should be marked as tenant damage (TD).

After all teams of two are completed finalizing their Maintenance Condition Review form, combine all teams of two into groups of four.

HANDOUT NO. 7 – MCR Summary Sheet
Ask participants to turn to handout no. 7 and review the Maintenance Condition Review Summary Sheet with them.

Instruct the groups of four that they will now combine their priority repair items and complete one MCR Summary Sheet through the following steps:

1) Combine items from their "Notes" page by subtrade.
2) Determine, as a group, the order of priority for each of their repair items and then record them in that order of priority on the MCR Summary Sheet.
3) Determine a cost (materials and labour) for each line item on the MCR Summary Sheet and then determine a total repair cost for the house and write it down on the MCR Summary Sheet.
4) Ask each group to appoint a spokesperson to be prepared to present their list of items, in priority, and give the estimated cost for each item and the total project cost.

2:15 – 2:30 p.m. Refreshment Break

2:30 – 3:30 p.m. Group Presentations: Maintenance/Repair Priorities and Cost Estimates

(SLIDE 142)
Use this slide to remind the groups of their current task.

Once all groups are ready, ask them in turn to present how they would approach the repairs in this project: the order of priority, their cost estimates per item and their cost estimate for the total project. As they present their approach, record their total project estimate on the flip chart.

Commend each group after their presentation, recognizing that there may be some slight differences in approach and order of priority. After all groups have presented their findings, point out the similarities and where and why there may be some differences. (Estimates may vary because of costing experience in different types of communities— rural/remote—and whether the group members are used to costing labour for their projects or usually do the work through own labour force.

3:30 – 3:45 p.m. Incorporating Maintenance Condition Review into Five-Year Maintenance Plans

KEY MESSAGE:

It is important that the participants understand how the maintenance condition reviews fit into the overall housing maintenance planning process. Knowing the condition of ALL their housing units allows them to plan ahead, to work more efficiently and to benefit from bulk purchasing and contractor discounts by doing more than one item at a time (for example, five new roofs instead of one).

HANDOUT NO. 8 – Five-Year Housing Maintenance Plan
Ask the participants to turn to handout no. 8 and review this Excel planning worksheet with them.

(SLIDE 143)
Use this slide to summarize the role maintenance condition reviews play in the preparation of five-year housing maintenance plans.

To be able to prepare a five-year maintenance plan for a particular phase of Section 95 housing you need the following information:

1) Available budget for each year. This includes the annual maintenance and repair budget from the annual operating subsidy received from CMHC. It also includes the designated funds for this phase in the Section 95 replacement reserve. This is money that bands were required to set aside, as a condition of their Section 95 operating agreement, for the future replacement of capital items on their Section 95 projects.
2) Repair work required. This is the purpose of the maintenance condition reviews. You need to know what repairs are needed on your houses, the priority of those repairs and the estimated cost of those repairs.

   It is recommended that you carry out maintenance condition reviews on all the units in the same phase of houses. Then you will be in a position to prepare a five-year housing maintenance plan for that phase. Ideally, you would complete five-year maintenance plans on your oldest phases first. Then you could combine those plans into a pre-1997 housing maintenance plan. Follow that up with completing five-year maintenance plans on your more recent phases. Then you could combine those plans into a post-1996 housing maintenance plan.

   This is a good approach because there is a separation of your Section 95 replacement reserve into pre-1997 and post-1996. The pre-1997 ('Old Program') and the post-1996 ('New Program') are administered separately with differing rules or regulations.

3:45 – 4:15 p.m. Next Steps, Workshop Evaluations, Door Prizes

KEY MESSAGE:

Planning starts today. If you leave today without some thought as to how you can make use of this new information in your home community, there is a good chance that nothing will change when you get back home. You don't want to continue doing reactive maintenance—you want to move over to proactive maintenance. Getting to know the physical condition of all your houses, through maintenance condition reviews, will help you make that transition.

The purpose of this final session is to summarize some key lessons learned from the workshop and to ask the participants if there is something from this workshop that they would like to implement back in their home community.

(SLIDE 144)
Seek out comments from the participants. Encourage them to express themselves.

Try to keep the conversation positive. If some participants raise concerns or reasons something won't work in their community, ask how that obstacle could be overcome. Ask other participants if they faced a similar situation in their community and how they resolved it. Stress that while there may be resistance to change; change is possible with consistent and continuous effort.

Workshop evaluations and door prizes

Ensure that everyone completes and hands in an evaluation for the workshop (found in the back of the Participant Manual).

As they hand in their evaluation, give them a ticket for the draw and proceed with the draw once all the evaluations have been received. The first name drawn gets first choice of the prizes then that winner draws the next number who gets second choice and so on. It is a nice way to wrap up the workshop and ensure you get your evaluations.

After the draw, thank all the participants for their attendance and sharing their comments and experiences during the last two days. Wish them well in implementing positive change in their communities and a safe trip home!

APPENDIX A

Handouts/exercises

Handout no. 1: "House as a System" (2 pages)

Handout no. 2: Average Useful Life of Building Components (1 page)

Handout no. 3: Maintenance Condition Review Form (5 pages)

Handout no. 4: Defect Recognition Exercise (10 pages)

Handout no. 5: Defect Recognition Exercise Answer Sheets (10 pages)
(to be inserted by participant)

Handout no. 6: Three-Phase Maintenance Condition Review Procedure (2 pages)

Handout no. 7: MCR Summary Sheet (1 page)

Handout no. 8: Five-Year Housing Maintenance Planning Worksheet (1 page)

HANDOUT NO. 1 "HOUSE AS A SYSTEM"

Components

The "house as a system" is made up of four components:

- **Building envelope** – the foundation, floors, walls, windows, doors and roof. They enclose the house, separating it from the weather.
- **Mechanical systems** – heating, air-conditioning and ventilation systems. They control indoor air quality, temperature and relative humidity, which affect the comfort and health of the occupants of the house.
- **Occupants** – the people, pets and plants living in the house. They interact with the building envelope and mechanical systems.
- **External environment** – the local weather, climate and building site. They affect the building envelope, mechanical systems and occupants.

Interaction

Three physical mechanisms interact with the components of the "house as a system":

- **Moisture flow** – the flow of water and vapour across and within the building envelope.
- **Heat flow** – the conductive, convective and radiant flow of heat.
- **Air flow** – the air flow across and through the building envelope as a result of air leakage and ventilation.

In the 'house as a system", moisture flow, heat flow and air flow all takes place all the time. In the winter, heat and warm, moist air escape through leaks in the building envelope. To compensate, the furnace must supply the amount of heat being lost, and the indoor air may have to be humidified or dehumidified for occupant health and comfort.

The occupants of the house also influence the interior environment of the house through their activities. This explains why a house may be very fit when one or two people occupy it, but have problems when a large active family moves in. Problems occur when the balance of moisture, heat and air flow in the house is disturbed.

Balance

The key to the fitness of the house is the balance of the three physical mechanisms so that the durability, comfort, energy efficiency, indoor air quality, health and safety are not compromised.

Moisture Balance

In some houses the amount of moisture being generated indoors is greater than what is expelled to the outdoors. High indoor humidity comes from damp or leaky basements, storing damp firewood indoors and from activities such as washing, cooking or bathing. Excess humidity can be reduced by storing firewood outside, venting the clothes dryer to the exterior and using the kitchen fan when cooking on top of the stove. In order to maintain a proper moisture balance, the excess moisture in the house must be vented to the outside, or it may contribute to mould growth, comfort problems and excessive condensation on the windows. It can even lead to moisture damage of the building envelope. Many of the more serious problems in houses result from the entry of water from the outside, and improper moisture balance or relative humidity inside.

Heat Balance

Houses that are poorly insulated and leaky will not only lose a great deal of heat, which causes high energy bills, but also will cause occupants noticeable discomfort. Discomfort caused by an inadequate building envelope will especially affect young children and the elderly. In upgraded homes an older furnace may have too much heating capacity, causing it to rapidly cycle on and off for extended periods. The lack of continuous heat circulation may result in uneven heating of the house.

Air Pressure Balance

High air pressure differences in a house can lead to serious problems, such as the spillage of combustion gases from furnaces and water heaters into the dwelling.

For example, if an older, leaky house has been renovated, it will usually have been made more airtight. It is possible for large capacity air exhausting appliances, such as central vacuums, clothes dryers or countertop grills, to exhaust house air at such rate that outside air will be drawn in through chimneys and flue pipes. This can cause spillage of combustion gases from furnaces, hot water heaters and fireplaces that result in carbon monoxide (CO) poisoning. Soot deposits around flue pipes and fireplace openings, or the smoking of wood burning appliances are signs that the air pressure balance of the house is not being properly maintained.

The "house as a system" balance determines its overall fitness. Always keep this concept in mind when inspecting a house. It will make it easier to spot serious problems and to assure yourself that the house is healthy, safe and sound.

HANDOUT NO. 2 AVERAGE USEFUL LIFE OF BUILDING COMPONENTS

Average Useful Life of Building Components	
Component	Life Expectancy (years)
Windows	15 - 20
Ext. Doors	15 - 20
Shingled Roofs	15 - 20
Siding	20 - 30
Plumbing Fixtures	15 - 20
Plumbing Faucets	10 - 15
Light Fixtures	15 - 25
Furnaces (Gas/Propane)	15 - 25
Ventilation Fans	10 - 15
Countertops, Vanities	15 - 20
Carpeting	8 - 15
Vinyl Flooring	10 - 15
Ceramic Tiles	15 - 25
Hot Water Tanks	10 - 15
Eavestrough	10 - 15

HANDOUT NO. 3 MAINTENANCE CONDITION REVIEW FORM

Building Component	Note No.	Maintenance Items	Y/N	Rating*
PROPERTY EXTERIOR		Culvert not obstructed, driveway/walkways free of tripping hazards		
		Ground level around house slopes away with good drainage		
		Fences, gates and other structures on property in safe condition		
		Property free of hazardous storage (vehicles, appliances, materials)		
		Big trees and high weeds are a safe distance from the house (10 m [33 ft.])		
		General maintenance of property's exterior is good		
HOUSE EXTERIOR		Foundation exterior is free of major cracks or damaged parging		
		Edge of concrete slab is insulated and covered (cement board)		
		Siding is secure and water-resistant (no holes or major cracks)		
		Soffit and fascia are in good condition and weather-resistant (painted)		
		Eavestrough and downspouts are directing water away from the house		
		Landings, steps and railings are structurally sound		
		Exterior wood is either pressure-treated or sealed with stain or paint		
		All holes, penetrations through wall are caulked (silicone caulking)		
		All air intake and exhaust vents/flaps are functional and caulked		
		Caulking around exterior windows and doors is in good condition		
		Lights and electrical outlets are in good condition (ext. GFI plugs)		
		Exterior water tap is frost-free type and in good condition		
		Basement exit(s) is safe and operational		
		Window wells have good drainage and are working properly		
ROOF CHIMNEY(S) FLASHINGS VENTS		Roof surface is watertight and good for at least 5 more years		
		Metal flashings and roof vents are watertight and functional		
		Chimney, chimney flashing and cap are functional and watertight		
		Plumbing stacks and rubber flanges are functional and watertight		
		Kitchen/bathroom roof vents are functional and watertight		
BUILDING SERVICES		Water well (if applicable) is in a good location and condition		
		Septic system (if applicable) is in a good location and condition		
		Electrical mast and meter base is securely mounted		
		Oil/propane tank support is level and stable; tank free of leaks		
		Exterior gas lines are secure and free of any serious rust		

* Rating of maintenance need: 1 = Emergency 2 = Urgent 3 = Routine planned work TD = Tenant damage

Building Component	Note No.	Maintenance Items	Y/N	Rating*
ATTIC SPACE		Interior attic hatch is insulated and weatherstripped		
		Roof framing and underside of roof deck are solid and undamaged		
		Attic insulation is adequate for your area and is evenly installed		
		Attic ventilation is not blocked at eaves (soffit ventilation)		
		Exhaust fan hoses are insulated and vented to the exterior		
		Attic space is free of bats, birds, squirrels and other pests		
		There are NO water leaks around the chimney, vents or flanges		
BEDROOMS		Ceiling, walls, floor and inside of closets are MOULD-FREE		
		Wall finish is free of major holes (especially in exterior walls)		
		Bedroom door is installed and all hardware functions properly		
		Window/door trim and baseboards are in place and secure		
		Window(s) is in good condition and opens/closes easily		
		Flooring finish is free of tears and/or tripping hazards		
		Electrical lights, switches and outlets are secure and working		
BATHROOM		Ceiling, walls, floor and area behind toilet are MOULD-FREE		
		Plumbing pipes and faucets are secure and functioning properly		
		No water leaks evident around or under the bathroom sink		
		Toilet is secure, free of water leakage and flushing properly		
		Bathtub/tub surround is in good condition and caulked (silicone)		
		Bathroom door is installed and all hardware functions properly		
		Window(s) is in good condition and opens/closes easily		
		Flooring finish is free of tears and/or tripping hazards		
		Bathroom exhaust fan is installed and functions properly		
		Electrical lights, switches and outlets are secure and working		
		Electrical plug is a ground-fault interrupter (GFI) receptacle		
KITCHEN		Ceiling, walls, floor and area under the sink are MOULD-FREE		
		Plumbing pipes and faucets are secure and functioning properly		
		No water leaks evident around or under the kitchen sink		
		Countertops are free of major chips/cracks (health issue)		
		Electrical plugs within 1 m. (3 ft.) of sink are GFI plugs		
		Kitchen stove exhaust fan is installed and functions properly		
		Cabinet doors, hinges and handles are secure and functioning		
		Floor finish is free of tears and/or tripping hazards		
		Window(s) is in good condition and opens/closes easily		

* Rating of maintenance need: 1 = Emergency 2 = Urgent 3 = Routine planned work TD = Tenant damage

Building Component	Note No.	Maintenance Items	Y/N	Rating*
APPLIANCES		STOVE: All elements/oven working properly; oven door functions		
		STOVE: Replaced within the last 10 years		
		FRIDGE: Maintains proper temperature in fridge and freezer		
		FRIDGE: Replaced within the last 10 years		
		WASHER: Connections good; no leaks and operates properly		
		WASHER: Replaced within the last 10 years		
		DRYER: Vented (metal pipe) to the exterior and drying properly		
		DRYER: Replaced within the last 10 years		
COMMON LIVING AREAS - Living room - Dining room - Hallways - Stairwells		Ceiling, walls, floor and closets are MOULD-FREE		
		Wall finish is free of major holes (especially in exterior walls)		
		Windows are in good condition and open/close easily		
		Window/door trim and baseboards in place and secure		
		Paint is in reasonable condition (ceiling; walls and trim)		
		Flooring finishes are free of tears and/or tripping hazards		
		Electrical lights, switches and outlets are secure and working		
		Stairs and surface finish are secure and free of tripping hazards		
		Handrails, balusters/spindles in place and secure (safety issue)		
BASEMENT / CRAWL SPACE		Inside of concrete walls are free of cracks that leak water		
		Concrete floor is free of cracks leaking water and standing water		
		Finished walls are MOULD-FREE (no evidence of foundation leakage)		
		Floor drain and/or sump pump operates properly		
		Centre beam (not sagging; properly supported)		
		Crawl space (insulated, vented and dampproofed with 0.15-mm [6 mil] poly)		
		Crawl space access hatch and steps in safe condition		
		Basement/crawl space is mould-free		
		Basement/crawl space is free of clutter causing fire hazard		
		Wall finish is free of major holes (especially in exterior walls)		
		Window(s) in good condition and opens/closes easily		
		Electrical lights, switches and outlets are secure and working		
		Existing bedrooms have a proper means of egress in case of fire		
HEATING SYSTEM		Capable of maintaining a consistent temperature of 21°C (70°F)		
		Electrical and fuel connections to the furnace are secure and safe		
		Furnace has been replaced in the last 15 years		
		Furnace has been serviced within the last 2 years		
		The furnace filter is clean and is being replaced on a regular basis		
		The heat distribution ducts and floor vents are free of obstructions		

* Rating of maintenance need: 1 = Emergency 2 = Urgent 3 = Routine planned work TD = Tenant damage

Building Component	Note No.	Maintenance Items	Y/N	Rating*
WOOD STOVE		Wood stove is ULC and CSA approved		
		Wood stove is installed by manufacturer's instructions and clearances		
		Stovepipes and chimney are in good condition and are cleaned		
		Heat is being distributed throughout the house by fans		
PLUMBING SYSTEM		Water pump and pressure tank working properly (if applicable)		
		Quality of drinking water confirmed as "potable" in last 5 years		
		Main water shut-off located (tenant advised) and functioning easily		
		Water pipes are leak-free		
		Water pressure/flow at taps and fixtures is good		
		Water and sewage drain pipes are functioning and leak-free		
		Hot water tank is working properly		
		Hot water tank has been replaced in the last 10 years		
ELECTRICAL SYSTEM		Electrical panel is securely mounted on wall		
		Copper braided wire from elec. panel is grounded to steel pipe/rod		
		Stove plug-in receptacle is secure		
		Dryer plug-in receptacle is secure		
		Lights, switches and plugs are secure and have cover plates in place		
VENTILATION		Heat recovery ventilator (HRV) is installed and working properly		
		HRV is being cleaned, and filters changed regularly		
		Bathroom exhaust fan/vent is functioning properly		
		Kitchen exhaust fan/vent is functioning properly		
		Humidity level in the house is between 30 to 45% relative humidity		
FIRE PROTECTION		Smoke detectors installed and functioning properly		
		Carbon monoxide detector installed and functioning properly		
		Fire extinguishers installed and checked annually		

PRIORITIES	URGENCY (1, 2 or 3)
1.	
2.	
3.	
4.	
5.	
6.	
7.	
8.	
9.	
10.	

* Rating of maintenance need: 1 = Emergency 2 = Urgent 3 = Routine planned work TD = Tenant damage

Notes on maintenance needs: (number corresponds to Note No. on previous pages)

1.
2.
3.
4.
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16.
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18.
19.
20.
Other observations

Defect Recognition – slide 1

What's wrong?

What caused it?

What needs to be done?

Defect Recognition – slide 2

What's wrong?

What caused it?

What needs to be done?

Defect Recognition – slide 3

What's wrong?

What caused it?

What needs to be done?

Defect Recognition – slide 4

What's wrong?

What caused it?

What needs to be done?

Defect Recognition – slide 5

What's wrong?

What caused it?

What needs to be done?

Defect Recognition – slide 6

What's wrong?

What caused it?

What needs to be done?

Defect Recognition – slide 7

What's wrong?

What caused it?

What needs to be done?

Defect Recognition – slide 8

What's wrong?

What caused it?

What needs to be done?

Defect Recognition – slide 9

What's wrong?

What caused it?

What needs to be done?

Defect Recognition – slide 10

What's wrong?

What caused it?

What needs to be done?

HANDOUT NO. 5 DEFECT RECOGNITION EXERCISE – ANSWERS

Sufficient copies to be printed,
hole-punched and shipped to location
with workshop materials.

Defect Recognition – slide 1

What's wrong?
These roof shingles are deteriorated (curled edges, missing or broken shingles) and have reached the end of their useful life. The roof shingles should be replaced. If not replaced, the roof will start to leak.

What caused it?
The age of the roof, along with the sun, wind and snow, has damaged the shingles over time, making them brittle and curling them (normal wear and tear).

What needs to be done?
Remove and dispose of the existing shingles and replace any moisture-damaged roof decking material. Install a new roof, starting with ice and water shield at the eaves, building paper underlayment where required, a new drip edge and flashing, roof shingles, roofing vents, ventilation fan hoods, and plumbing flanges, all installed in accordance with manufacturer's instructions.

Defect Recognition – slide 2

What's wrong?
The caulking between the window frame and the masonry wall has become hard, brittle and cracked, which will allow rainwater to enter the building envelope and cause mould or rotting of the wood framing.

What caused it?
Age, weather exposure and sun damage (ultraviolet light) will deteriorate the caulking and cause it to become hard, brittle and crack.

What needs to be done?
Remove the old caulking, install new silicone-based caulking and touch up the paint.

Defect Recognition – slide 3

What's wrong?
The cement parging has broken off the foundation wall at the corner of the house and the wood trim on the adjacent framed wall (walkout basement) appears to have rotted. The lower part of the downspout is missing. If not repaired, the wood will continue to rot and water may enter the basement through the foundation wall.

What caused it?
The lower part of the downspout, which directs water away from the house, is missing and eavestrough water has be running down the foundation wall. The freeze-thaw cycle has caused the cement to break away and leave the foundation wall exposed at this area. Water, both from the downspout and from contact with the soil, has also soaked into the adjacent wood corner trim, which in turn has started to rot.

What needs to be done?
Remove any loose cement parging on the concrete foundation wall and repair the damaged area with new parging. Replace the rotted wood corner trim and paint it. Keep the wood trim at least 200 mm (8 in.) above grade. Install a new downspout to just above the ground and an extension pipe to take the water away from the foundation.

Defect Recognition – slide 4

What's wrong?
The protective paint has worn off the steps. Now the treads are rotting and breaking away causing a potential fall hazard to the occupants and visitors. (There also appears to be no railing.)

What caused it?
The protective paint has worn off allowing moisture from rain and/or snow to soak into the wooden treads, causing them to rot and break away.

What needs to be done?
Damaged and rotten treads are to be replaced and painted or stained to prevent moisture from soaking into the wood. In this case, it might be best to replace the whole stairs, install a proper railing and stain or paint all of it.

Defect Recognition – slide 5

What's wrong?
Vinyl siding is missing on the gable end of this house.

What caused it?
Likely the siding was loose at one location, and the wind worked at it and tore it off as above.

What needs to be done?
Take down the siding installed on the gable to below the damaged area and reinstall the vinyl siding (with new pieces as required) on the gable, ensuring the joints are properly hooked in.

Defect Recognition – slide 6

What's wrong?
The caulking around the lip of the tub has deteriorated and is getting mouldy.

What caused it?
This could be caused by normal wear and tear or improper installation of the caulking in the first place, allowing water to get behind and loosen the caulking.

What needs to be done?
Remove all caulking around the lip of the tub. Clean the surface with liquid dish detergent and dry all surfaces completely. Fill the tub to just below the overflow and then recaulk around the lip of the tub. Allow to set overnight before draining the tub.

Defect Recognition – slide 7

What's wrong?
Mould is growing in a lower corner of this room.

What caused it?
There must be water/moisture getting into this corner through the exterior finish. Or, there was high humidity in the house and a cardboard box was tight against the exterior wall at this location, contributing to the mould growth.

What needs to be done?
Check the humidity level in the house and ensure it does not exceed 45 per cent R.H.

Check the exterior finish outside this location and repair any area of potential water entry (missing siding corner; caulking of holes).

Clean up the mould area, dry completely, seal the area with a mould sealant and repaint with a mould-resistant paint.

Defect Recognition – slide 8

What's wrong?

1. Plastic-sheathed electrical wiring is not allowed to be exposed. It must be behind the drywall or be protected.
2. The smoke detector is not installed up against the ceiling.

What caused it?

This is caused by a temporary installation or simply poor workmanship. (Looks like a ceiling repair is underway.)

What needs to be done?

Call an electrician to feed the electrical wire behind the drywall, reconnect the smoke detector and mount it up against the ceiling.

Defect Recognition – slide 9

What's wrong?

1. The electrical GFI receptacle (plug) and cover installed here are not permitted for exterior use.
2. The siding should extend behind the electrical cover (poor workmanship) and now presents a possible water leak issue.

What caused it?

Both concerns are caused by poor workmanship.

What needs to be done?

1. The receptacle and cover must be replaced by an exterior-grade GFI receptacle and cover (cover has gasket and spring-loaded cover to keep water out).
2. Any remaining gap between the siding and the new cover must be caulked with exterior-grade caulking.

Defect Recognition – slide 10

What's wrong?
This electrical receptacle is within 1 m (36 in.) of a water source (kitchen sink) and is not a ground-fault interrupter (GFI) receptacle. Renovations are taking place.

What caused it?
This installation was acceptable under earlier versions of the electrical code. The new version of the code requires GFI plugs be installed IF renovations are taking place and the plug is within 1 metre of the kitchen sink.

What needs to be done?
Replace the electrical receptacle with a GFI plug.

HANDOUT NO. 6 THREE-PHASE INSPECTION PROCEDURE

Phase 1 – Preparing for the inspection

- Phone to make an appointment (tenant should be home at time of visit)
- Review maintenance file/building inventory
  - What's been done? How long ago?
  - Are there any recent complaints or outstanding work?
  - How old are the appliances, furnace, roof and other major components?
  - Are some building components, equipment or appliances due for replacement?
- Plan ahead for what you may need
  - Stepladder, extension ladder, flashlight, basic hand tools, outlet tester, mask
  - Inspection form, clipboard, pencil, camera, dog treats
  - Details on occupants (names, phone numbers)

Phase 2 – Performing the inspection

- Greet the occupant and review procedure with him/her
- Outside/inside – top to bottom
  - Begin with the exterior (roof, walls, stairs/landings, property condition)
  - Move tools and equipment inside and change footwear if appropriate
  - Top to bottom: attic, upstairs, downstairs, basement, equipment, appliances
  - Record important details and take pictures
- Remove tools and equipment and debrief the occupant
  - Restore house equipment to previous state (furnace, water, sump pump, etc.)
  - Don't forget your tools and equipment
  - Thank the occupant and explain next steps

  Note: Inform the occupant of any hazardous condition

Phase 3 – Completing the inspection report

- Analyse your findings
- Determine the priorities:
  - Health and safety items
  - Protecting the structural integrity of the unit
  - Avoiding more costly future repairs
- Estimate the possible cost of the repair

Give a report to the Housing Manager / File report

- Are there any emergency repairs needed right away?
- What should be done this year?
  - Show cost estimates
- What could be done in year 2
  - Identify any responsible postponement needs; and
  - Show cost estimates
- What could be done in year 3
  - Identify any responsible postponement needs
  - Show cost estimates

HANDOUT NO. 7 MAINTENANCE CONDITION REVIEW (MCR) SUMMARY SHEET

This summary sheet may be used for an individual house or for a number of houses within the same phase. For planning purposes, the estimated cost should include materials AND labour. Keep in mind that if you are repairing more than one house, you should be able to get a better 'per unit' cost of repair from contractors.

First Nation:				
Phase / unit no.:				
Tenant's name:				
Date of review:				
Reviewer's name:				
URGENCY LEVELS	1 = Emergency	2 = Urgent	3 = Within 2 years	4 = Within 5 years

Priority repairs	Urgency	Estimated cost	Comments
1.		$	
2.		$	
3.		$	
4.		$	
5.		$	
6.		$	
7.		$	
8.		$	
9.		$	
10.		$	
11.		$	
12.		$	
13.		$	
14.		$	
15.		$	

TOTAL ESTIMATED COST: $

HANDOUT NO. 8 FIVE-YEAR HOUSING MAINTENANCE PLAN WORKSHEET

Property and Home Maintenance Management Plan

Project ID: _____ Phase: _____

Year of Construction: _____ # of Units: _____ Program Type: _____

Year: _____ of Plan (Year 1, 2 or 3) Total Budget Available: $ _____

Details of Available Budget:

Base $	Carry-In $	Rent / Arrears $	Replacement Reserve

Type of Repair	No. of Units	Cost per Unit		Total Cost	Notes / Details and Deferrals to Next Year
Regular Maintenance and Emergency Repairs			=	0	
Foundations:					
Replacement			=	0	
Repairs _____			=	0	
Exterior repairs:					
* New ext. wall finish			=	0	
* New windows/doors			=	0	
Soffit/Facia/Eavestrough			=	0	
Repairs _____			=	0	
Roofing:					
* New roof			=	0	
Repairs _____			=	0	
Property Upgrades:					
Grading			=	0	
Driveway			=	0	
Other _____			=	0	
Interior Repairs					
New drywall			=	0	
Kitchen			=	0	
Flooring			=	0	
Doors/Trim			=	0	
Painting			=	0	
Mould remediation:			=	0	
Appliances:					
* New Stove			=	0	
* New Fridge			=	0	
* New Washer			=	0	
* New Dryer			=	0	
* New HRV			=	0	
Heating:					
* New Furnace			=	0	
* New Electric heaters			=	0	
Repairs _____			=	0	
Plumbing:					
* New well / septic system			=	0	
* New H/W tank			=	0	
* New fixtures			=	0	
Repairs _____			=	0	
Electrical:					
Wiring			=	0	
Fans			=	0	
Lights			=	0	
Repairs _____			=	0	
Other			=	0	
			Subtotal	0	* Minus eligible amount charged to RR $ _
Total Cost: *Note: Not to exceed total budget available (as above)*				0	**Carry-over to Next Year** $ _

APPENDIX B

Forms (Sign-in, Evaluation, CMHC in Your Future)

Visit our website at www.cmhc.ca

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