Indigenous Services Canada
Terms of Reference
Extended- Asset Condition Reporting System (E-ACRS) Inspections

Background

ISC's capital budget provides funds for new capital projects and for the operation, maintenance, repair, and recapitalization of department-funded assets as defined in ISC's Capital Facilities and Maintenance Program (CFMP), as well as, providing funding for the inspection of assets funded under the CFMP.

Methodology

The E-ACRS inspections shall be coordinated by the Regional Offices. It is intended that First Nations and/or Tribal Councils be responsible for the contracting of the E-ACRS inspections within their jurisdiction. Due to the technical nature of this exercise it is expected that only technically qualified inspectors, (i.e. engineering firms), will be engaged to conduct inspections.

Regional ISC staff will be available to manage the work on ISC's behalf and provide E-ACRS advice and assistance as required. First Nations Public Works Managers or Maintenance Supervisors shall accompany inspectors, or as a minimum provide background information, such as, the history of maintenance activities on assets being inspected.

Requirements

- The recipient shall use the National Request for Proposals template and other National documentation to engage consulting firms to submit proposals for inspections to be completed under the E-ACRS program.

- The Consultant shall be licensed to practice as a professional engineer and/or architect in the province where the inspections are to be completed.

- The Program Administrator, appointed by the recipient (First Nation or Tribal Council), will be responsible for ensuring that all work is carried out in accordance with quality, time, and budget requirements.

- The recipient shall prepare and submit for the Department's approval, a project proposal detailing the management regime, the approach, the budget, and schedule pertaining to the work covered under this arrangement

- The Consultant shall provide all information obtained from the inspection of assets on the forms outlined in the TOR and included in the E-ACRS manual. The documentation requirements include, but are not limited to, the ICMS Export/Import Excel Workbooks consisting of the Compact Inspection, Fire Protection Questionnaire and Asset Replacement Tool (ARV Tool) that generates the 35-year Chart and draft and final reports

    - Note: It is critical to **never add, delete, or modify any rows, columns, headers, or cell fields** in any way. Doing so can compromise the accuracy and functionality of the data.

- Unless otherwise specified, all meetings will be held at the location chosen by the First Nation or Tribal Council

- The Consultant shall apply his or her professional stamp or seal and signature, to the cover-page of the final report and to the Executive Summary, to identify his or her professional responsibility for the information contained in the inspection forms, excel workbooks and final reports.

- A list of assets, from ICMS, for each site to be inspected in the fiscal year will be provided with the request for proposals (RFP)

Objectives

The objectives of the E-ACRS Inspections are to:

- Assist First Nations' to understand the role of operations and maintenance as part of good asset management practices

- Obtain condition ratings of all on-reserve assets that receive ongoing funding from the department

- Identify maintenance needs required to protect the health and safety of the users of the assets and to prolong the service life of the assets.

- Improve financial forecasting of asset recapitalization costs.

- Review First Nations' Maintenance Management Plans (MMP) and practices as well as overall O&M performance.

- Provide information that will support the development of Asset Management Plans by providing a 35-year forecast (the ARV Tool generates the forecast) for each asset's component lifecycle needs, related to recapitalization, not O&M, needs.

- Collect relevant data to measure progress against key performance indicators under the department's Capital Facilities and Maintenance Program (CFMP) by completing all relevant data fields in the ICMS Export/Import Excel Workbooks.

Program Administrator

The contract to carry-out inspections for the E-ACRS will be between the Consultant and the First Nation (FN) or Tribal Council (TC). The Program Administrator is the individual assigned by the FN or TC to manage the E-ACRS project.

Scope of Work

The scope of work pertains to work to be conducted on all First Nation's departmentally funded assets as provided in the ICMS List of Funded Assets**.**

Deliverables

- An E-ACRS Final Report with an Executive Summary prepared/organized as outlined in appendix T of the E-ACRS Manual, to be provided to the First Nation and the department.
- On-site Inspection of all departmentally funded assets as provided in the ICMS Asset List with guidance provided in the Scope of Work and the E-ACRS Manual.
    - Note: see Appendix S for full list of departmentally funded assets
- Data to be captured for submission in the ICMS Export/Import Excel Workbooks and the Inspection Forms, one form to be completed for each asset, outlined in the table below. The forms can be completed from the Excel or the Word version of the templates.

Appendices	List of Forms	E-ACRS Manual
A	**General Inspection Form**	**Section 2**
B	**Building Inspection Form**	**Section 2**
C	**Public Access Building Inspection Form**	**Section 2 & 4**
D	**Roads Inspection Form**	**Section 2 & 5**
E	**Bridge Inspection Form**	**Section 2 & 6**
F	**Linear Asset Inspection Form**	**Section 2**
G	**Water & Wastewater Systems Protocol Inspection Form**	**Section 2 & 7**
H	**Fire Protection Questionnaire Inspection Form**	**Section 2 & 8**
I	**O&M Action Plan Inspection Form**	**Section 2**
J	**Asset Groups Description Inspection Form**	**Section 2**
K	**Maps Inspection Form**	**Section 2**
L	**Floor Plan Inspection Form**	**Section 2**
M	**Excel Version of Word Inspection Forms**	**Section 2, 4, 5, 6, 7 & 8**
N	**ICMS Database Asset Change Form** (include: change in use, new assets, decommissioned assets)	**Section 2**
V	**ICMS Import/Export Workbooks : Compact Inspection, Asset Replacement Valuation Tool (including generating the 35-year Chart from the ARV Tool) and Fire Protection.**	**To be exported from ICMS and provided to inspectors**

Upon Award of the Contract

- **Initiation Meeting and Data Collection**

  Upon award of contract, a project initiation meeting with the Program Administrator is required. Additional information will be provided at this meeting.

  This information, when available, will includes:

  - Record drawings
  - Previous ACRS and/or E-ACRS reports
  - First Nation contact information
  - E-ACRS inspection forms
  - Three Integrated Capital Management System (ICMS) upload spreadsheets, more specifically; the Compact Inspection, Fire Protection Questionnaire and the ARV Tool, that generates the 35-year Chart

  In the case of water and wastewater asset, the following additional information will also be provided, if available:

  - ISC Water and Wastewater system numbers
  - the most recent Water and Wastewater Assessments (API report)
  - Circuit Rider contact information – Water Operators

  Information supplied to the inspectors/consultants is confidential and is NOT to be used for purposes other than the E-ACRS Inspection Program.

- **Schedule Inspections**

  - Contact the First Nation to schedule an acceptable date of inspection (may need to work directly with the Program Administrator to coordinate scheduling). Request for the First Nation Administration, First Nation Public Works Manager, and/or Maintenance Supervisor to briefly meet with you to provide background information on the assets being inspected before commencing the inspection.

  - Follow up by faxing/emailing an "introduction letter" (template letters are provided in the Appendix U of the E-ACRS Manual). This letter provides the First Nation with additional information on the E-ACRS program, informs them of how to prepare for the meeting, and confirms your scheduled date of inspection. Whenever possible, site visits should be kept to a minimum time and be as non-disruptive as possible to the First Nation Community.

Inspection Preparation

The inspector should prepare for the inspection by performing the following tasks for each First Nation visit:

- Review the **ICMS List of Funded Assets** to be inspected, should include all assets funded under ISC's Capital Facilities & Maintenance Program and Health Facilities Program

- Review the **Deficiencies/Project List** for outstanding projects from prior inspections

- Review all applicable sections of the E-ACRS Manual for inspector's guidance on each asset group included in the ICMS Asset List and the related inspection forms to become familiar with the inspection requirements and the data requirements for completing the Final Report and ICMS workbook submissions to the department.

- Review the data requirements in the ICMS Export/Import Workbooks: *Compact Inspection, Fire Protection Questionnaire and the ARV Tool*, to ensure inspectors are aware of all the necessary information for completion of the spreadsheets before completing the field work. Components for each asset are identified in Appendix Q of the manual and require specific attention during the site visit.

- Become familiar with the facilities and/or systems to be inspected by reviewing available record drawings and previous ACRS or E-ACRS reports.

- For the inspection of water and wastewater assets, contact the Circuit Rider assigned to the First Nation (contact information will be provided if applicable).

- The Circuit Rider Training Program is a long-standing training program offered to First Nations' water and wastewater operators.

- Circuit Riders are experienced and certified operators that are contracted to provide hands-on training to water and wastewater operators. It is advisable to contact the Circuit Rider assigned to the First Nation prior to the site inspection. Circuit Riders are knowledgeable about the First Nation's water and wastewater systems and can often provide an overview of the O&M function in the community and specific problems pertinent to the water and/or wastewater systems.

Interview with First Nation

Meet with First Nation (FN) Administration, FN Public Works Manager and/or Maintenance Supervisor/Personnel to:

- Provide a general overview of the E-ACRS inspection process.

- Review ICMS Asset List and confirm with the FN that the list is correct/complete.

- Update Asset List to be inspected, if required, and confirm the addition or deletion of the assets with the regional contact officer.

- Identification of **Solid Waste (SW) and Health Facilities (HF)** assets not included on the Asset List provided for inspection by ISC. ISC updated asset codes in ICMS for **SW and HF** asset categories. To ensure all funded assets are included in ICMS, it will be important to work with the community to determine any assets not included on the Asset List provided and to add the assets in the form titled**: "ICMS Database Asset Change Form"** (Appendix N) so updated can be made in ICMS.

- Review the Existing Deficiencies/Project List with the First Nation representatives and determine the status of projects during the meeting (if known) and by visual inspection of the asset.

- Review existing Maintenance Management Plans and Emergency Response Plans.

- Discuss any concerns of the First Nation regarding O&M and their assets in general and make note of the concerns for further assessment during the inspection.

- Review the **Fire Protection Questionnaire** with the First Nation to collect responses to the questions outlined in the questionnaire- answering these questions will require input from a First Nation representative. When the First Nation has a fire-hall the inspector should meet with the Fire Chief/Fire Marshal to complete the questionnaire.

- At the end of the inspection, meet again, for a brief exiting interview to convey general information on the findings of the inspection and timing of providing a draft and/or final report. This will also inform the First Nation of the inspector(s) leaving the site

Inspection Process

Carry out an inspection/assessment of all funded assets listed in the ICMS export/import Workbooks and summarized in the ICMS Asset List. Inspection requirements and guidance are provided, by asset group and by components in the E-ACRS manual. Reference to the appropriate sections of the manual, the ICMS Workbooks including the ARV Tool and the inspection forms for each asset type should provide inspectors with a good overview of the requirements.

For new funded assets not included in the ICMS Asset List that are identified during the interview with the First Nation or on the ground inspection **only complete the ICMS Database Asset Change Form** (Appendix N) and provide technical drawings where available using Appendix L. Submit the ICMS Database Asset Change Form to the ISC regional office within two weeks of the inspection. The ISC regional office will confirm the approach for completing ICMS Excel Workbooks (Appendix V):

1. Only complete the ICMS Database Asset Change Form (Appendix N) and do not include assets in the ICMS Excel Workbooks (Appendix V)

2. New ICMS Excel Workbooks (Appendix V) will be provided including the new assets identified. Only mandatory fields in the compact inspection are required to be completed, the ARV Tool is not required to be completed.

Inspections of the School Facilities, when possible, **should** be performed while the schools are in session, preferably in April to mid-June (timing may vary by region – check with the Program Administrator).

Draft inspection reports must be completed and transmitted to each First Nation within two-weeks following the inspection (extension may be available in some circumstances, please confirm with the Program Administrator or the ISC Regional Contact Officer). Timelines may vary by region check with the Program Administrator.

ICMS Data Quality Verification

The ICMS Compact Inspection Workbook contains tombstone data about the assets. To ensure the asset information is accurate and current, four (4) ICMS data elements are to be verified by the inspector during the inspection:

- **Location/GPS & Description**
  The location of assets recorded in the ICMS Compact Inspection Workbook should be checked against a map, and/or visually confirmed while on-site.

- **Actual Usage of the Asset** (Asset Code)
  The asset code recorded in the ICMS Compact Inspection Workbook should be checked against the current actual usage of the asset, not the original purpose for which the asset was designed. If a change in use is identified, please refer to the instructions in the E-ACRS Manual for validating and recording a change in use. Complete the **"Asset Inventory Change Inspection Form"** for submission to ISC for manual updates to ICMS.

- **New or Decommissioned Assets**
  Complete the **"Asset Inventory Change Inspection Form"** for submission to ISC for manual updates to ICMS. Discuss the newly identified or decommissioned asset with the First Nation, if the First Nation agrees with the addition of the asset, add it to the form. Discuss the decommissioned asset with the First Nation to determine if plan is to replace or if asset is permanently closed, include this information in the form.

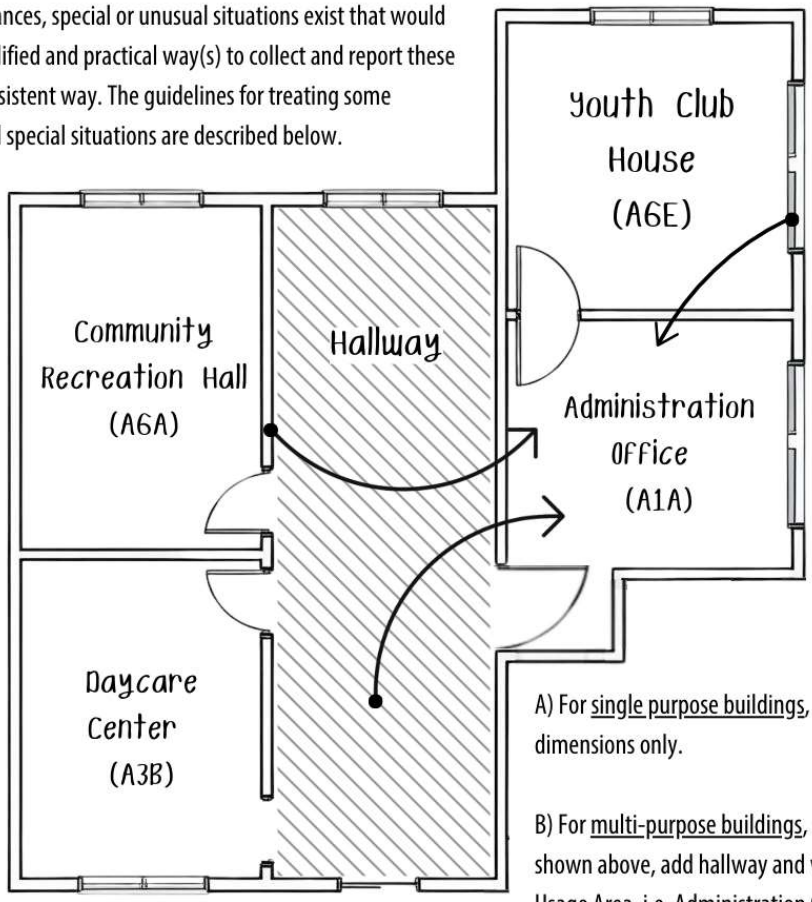
  Note: Do not attempt to update the asset codes in the ICMS Workbooks this will have to be completed by the department after the inspection data is imported, manual system updates are required.

- **Asset Quantity**
  In each E-ACRS inspection year and for each Site, the following assets are to be **physically measured or counted**, as a minimum:

  - ✓ **Buildings,** two (2) assets are to be measured preferably the school and the community centre. *If these two asset types are not in the ICMS Compact Inspection Workbook the inspector must selection two buildings for the ICMS Compact Inspection Workbook to be measured.*
    - ❖ If one building contains multiple asset codes, please refer to the drawing below for accurate space measurement guidance and complete the floor plan inspection form (Appendix L).

Simplified approach to special situations

In some instances, special or unusual situations exist that would require simplified and practical way(s) to collect and report these data in a consistent way. The guidelines for treating some common and special situations are described below.



A) For single purpose buildings, measure outside dimensions only.

B) For multi-purpose buildings, such as the one shown above, add hallway and wall areas to Prime Usage Area, i.e. Administration Office. Example arrows indicate areas to be included in Prime Usage Area.

- ✓ **Utilities,** one (1) asset from the Water Supply Mains or Wastewater Mains.
- ✓ **Transportation,** counted - All vehicles for each sub-class included in the ICMS Compact Inspection Workbook
- ✓ **Roads**, all roads are to be measured while driving during inspections.
    - ❖ Note: To ensure clarity during inspections, a checkbox has been added to the inspection forms for marking assets as "Re-Measured" or "Not Re-Measured." Inspectors should check "Re-Measured" if the asset's measurements were validated during the inspection and "Not Re-Measured" if the validation was not completed.

The selection of an asset for quantity verification shall be based on the inspector's observation and judgment on the likelihood of the asset quantity deviating from that recorded in the ICMS Compact Inspection Workbook. If the observed quantity, in the inspector's judgment, is not equal to the ICMS quantity, the asset is to be physically measured (i.e. schools) or counted (i.e. vehicles).

For assets buried underground, use as-built drawings for verification. Where no asset quantity is observed as potentially deviating from the quantity recorded in the ICMS Compact Inspection Workbook, the inspector will randomly select the assets to be verified from the three asset categories mentioned above: buildings; utilities and transportation.

Note that the quantity verification should not be repeated on the same asset(s) in subsequent years unless there have been additions or modifications to the asset since the last verification. Select alternative assets from the three categories noted above for validation.

- **Year of Construction** of the asset is accurate

Where the year of construction is unknown, estimate to the nearest five years

For all categories verified above, where discrepancies are identified, make a note of the discrepancy on the inspection form in the Needs Identification comment section.

Asset Identification

Using information contained in the ICMS Compact Inspection Workbook, populate all the relevant asset identification information in the header of the Inspection Form templates, one form is required for each asset. This includes the Band No., Band Name, Site No., Site Name, Asset Code, Asset No., Extension, and Asset Name.

A separate Inspection Form is required for each asset inspected. It is imperative that all header data be entered correctly to ensure the inspection information can be conveyed to the proper asset. See Inspection Template Forms in the appendices of the E-ACRS Manual.

Reminder: all data MUST match between the form and Compact Inspection/ARV tool. For example, changes to the GIS coordinates on the form must also be updated in the compact sheet.

Data Collection Requirements

Asset condition should be inspected with consideration to its performance, operability, and compliance with applicable standards and regulations. Assets must be inspected with reference to the main and major components as defined in Appendix Q of the E-ACRS Manual and in the Excel ARV Tool.

- **Location Description**

Specify the location of the asset (i.e.: street name, intersection, subdivision, proximity to a building). The location should be specific enough that it can be easily located by others. The location should also be clearly identified on the map that is required in the inspection reports.

- **GIS Latitude and GIS Longitude**

The specific location of the asset by GPS.

- **Estimated Remaining Life (ERL)**

Inspector's must estimate the remaining life of the asset to the nearest five (5) years, assuming continuation of the current state of O&M with maintenance projects completed. The estimated remaining life is based on knowledge of the year of construction, the average life span of the asset, records of any major maintenance work that extends the life of the facility, the First Nations O&M practices, and the overall condition of the asset.

Note: *Where the estimated remaining life is <10 years, a more accurate value should be provided (to the nearest year).*

The estimated remaining life of all existing assets must also be updated on the Asset Condition tab of the ICMS Compact Inspection Workbook and in the ARV Tool for each component.

- **Asset Description**

The Asset Description will include the original construction description plus any major updates (e.g., when a reservoir was cleaned up, when a pump was replaced, etc.). If the original description is very brief, inspector's can add more context in terms of construction characteristics.

- **General Condition Rating (GCR)**

The General Condition Rating for a facility or service is based on an overall assessment of all components of the facility. It is especially important that each component of an asset be accurately assessed before determining the overall GENERAL CONDITION RATING (GCR) of the asset.

Based on information gathered during the inspection and the assessment of all components of the facility, the general condition of the asset should be assessed on a scale of 0-10, where 0 would indicate that an asset is closed and 10 would equate to a new asset. The rating assigned should reflect the general integrity of the facility at the time of the inspection and the level of service being provided by that facility.

If the condition of an asset is identified as closed (0 score), please confirm and specify whether the closure is temporary due to health and safety regulations or if the asset has been permanently retired. **If permanently retired** the asset should be included in the "ICMS Database Asset Change Form" (Appendix N) as retired.

The general condition of an asset should first be rated as good, fair, or poor. When the asset falls within one of these ranges then a numerical rating in a range will be assigned. Within each of these ratings the actual scale would be determined in terms of the maintenance needs identified and their cost and timing. An asset having more projects, including greater costs, and planned for earlier starts, would rate a lower score than one having fewer projects involving relatively less cost and planned for later starts.

GCR	GCR DESCRIPTION	GCR EVALUATION CRITERIA
0	Replaced or Closed to the public	The infrastructure is unfit for sustained service. The infrastructure is in unacceptable condition with widespread signs of advanced deterioration. Many components of the infrastructure exhibit signs of imminent failure which is affecting service.

GCR	GCR DESCRIPTION	GCR EVALUATION CRITERIA
1 – 3	Poor Condition	The infrastructure is at risk and mostly below standard with many components approaching the end of their service life. A large portion of the infrastructure exhibits significant deterioration.
4 – 6	Fair Condition	The infrastructure requires attention and is showing general signs of deterioration. Some components of the infrastructure exhibit significant deficiencies.
7 – 9	Good Condition	The infrastructure is adequate for now. Some components of the infrastructure show general signs of deterioration that require attention. A few components of the infrastructure exhibit significant deficiencies.
10	New or Rebuilt	The infrastructure is fit for the future. The infrastructure is generally in very good condition, typically new or recently rehabilitated. A few components of the infrastructure show general signs of deterioration that require attention.

For example, as a rule, an asset with a GCR of 3 or less is providing a less than acceptable level of service and requires capital replacement/reconstruction in the near future and should have a project identified to do so.

The general condition of all existing assets must be updated on the Asset Condition tab of the ICMS Compact Inspection Workbook provided.

- **Inspector's Remarks**

Record any comments, details, or general information regarding the asset that is not captured in other areas of the report. The inspector should also note any items of an environmental concern or any conditions that pose a safety hazard but are not related to defective equipment. **The inspector must,**

- provide a rationale for any change in the General Condition Rating and/or Estimated Remaining Life and,
- update the status of previous maintenance projects.

This information should also be captured in the O&M Action Plan (Appendix I of the E-ACRS Manual) and in the Inspector's Remarks on the Asset Condition tab of the ICMS Compact Inspection Workbook provided.

Existing Project/Deficiency Status

Report on the status of all existing projects as listed in the Deficiencies/Project List ***(Deficiencies tab in the ICMS Compact Inspection Workbook provided upon award of contract*)** as either 0-incomplete (re-identified), 1-complete, or 2-cancelled. If an existing project is noted as incomplete do not duplicate the project with new deficiencies need (project). If an existing project title or description has been truncated to the point that the original meaning of the project cannot be understood, cancel the project (explain basis briefly in Inspector's Remarks area); or, if the original meaning is clear, elaborate and clarify the details.

Provide the deficiencies/project list complete with all status updates as part of the E-ACRS Final Report. On the inspection forms, in the Need Identification section, list the outstanding existing projects *(provided after award of the contract)* and indicate the status at the time of your inspection.

The status of all existing deficiencies/projects must also be updated on the Deficiencies tab of the ICMS Compact Inspection Workbook provided.

Needs Assessment – Deficiencies/Projects

In carrying out inspections, inspectors are to identify the asset's needs to restore the functional integrity and the original levels of service of the facility and/or service.

During the inspection process an assets needs will be assessed. The need assessments require organization by **group, category and type** for E-ACRS updates and decision making. The process to accurately record the needs identified is further explained below and in the E-ACRS Manual.

Estimates for repair or replacement of components, sub-components or facilities should be at the class "D" level. The inspection should identify problems which are visually apparent. If, during the inspection process, conditions indicate the need for a more comprehensive evaluation, a study and associated study costs would be recorded as a deficiency to be address.

Identify needs (projects/deficiencies) to be addressed to protect the health and safety of the asset users, prolong the life, satisfy current code requirements, and maintain or restore the functional integrity and the original levels of service of the facility or service. The inspection should identify problems that are visually apparent and relevant to the asset group being inspected. Maintenance personnel should accompany the inspector to provide background information on the operation and maintenance of the facilities being inspected.

A **Needs Identification** section is included in all inspection forms and shall be considered for all assets, the deficiencies/needs should also be updated in the ICMS Compact Inspection Workbook.

For each project/need/deficiency identified, provide the Component or Sub-component code, Project Description, Project Remarks, Group, Category, Type, Urgency, and Amount ***(cost estimate).***

Where an existing Group 1 or Group 2 project/deficiency is identified as being incomplete and still required, but the scope of work has likely expanded create a new project that incrementally defines that specific new need. Existing Group 2 and Group 3 projects should not be reclassified.

- Determine the appropriate **deficiency code *(Appendix Q)*** for each project/need/deficiency identified.

- The **"Project Description"** column in the Needs Identification section identified as **"Description"** field in the ICMS Deficiencies tab should be worded to assert an action and be very brief (limited to a maximum of 100 characters).

- The **"Project Remarks and Recommendations"** column in the Needs Identification section of the forms identified as **"Remarks and Recommendations"** field on the Deficiencies tab of the ICMS Compact Inspection Workbook are used to elaborate/better explain the project or provide more specific details *(maximum 4,000 characters).* Where more space is required, use the Inspector's Remarks field that should be identified with the Inspector's Remarks field *(4000 characters' maximum)* on the **Asset Condition tab of the ICMS Compact Inspection Workbook provided.**

- The wording in the **"Project Remarks and Recommendations**" field should address the following questions: **why** is the project necessary *(describe the current situation),* **what** are the advantages of implementing the project, **how** it should be completed, **how** often a task should be performed and, if applicable, **what** specific measures should be taken to complete the project *(up to 4000 characters).*

Specific coding is applied to organize deficiencies into **group, categories, type,** and **urgency.** The codes and their definitions are outlined in the tables, below.

E-ACRS deficiencies are classified into **three Groups:**

Group Code	Group Title	Funding Stream	Competence	Category Code	Category Title
1	O&M	**O&M Budget** O&M Subsidies + O&M Nation's Contributions	Public Works and Contractors	1	O&M **and** Minor Repairs
2	Major Repairs	**Minor Capital** Band Based Capital	Specialized Contractors and Public Works	2	Major Repairs
				3	Component Replacement/Reconstruction
3	Other	**Major Capital** Typically Capital Projects	Engineered solutions	4	Study
				5	Asset Replacement/Reconstruction
				6	Upgrade

The three groups are designated into six **Categories**:

Each Group can only be matched with their associated Categories (see table above). If, during the inspection process, conditions indicate the need for a more comprehensive evaluation, a study and associated study costs should be identified.

Cat. Code	Category	Category Description
1	O&M **and** Minor Repairs	Categorizes annual, regular activities compiled in a Maintenance Management Plan, and minor repairs such as cascading tasks (replacement of light bulbs, repairs/replacement of a tap or a toilet, repairs to fencing, repairs to building envelope, repairs/replacement of valves in pumphouses, controls, etc.).
2	Major Repairs	Categorizes **expected major repairs of a component** within the life span of an asset. This may include large roof patching, replacement of corroded piping in a Lift Station, etc.). The scope is to keep a certain component to the original design and function. No upgrades, no changes in type of materials used, no change in capacity or fuel, etc.

3	Component Replacement/ Reconstruction	Categorizes **expected component replacement** during the lifespan of an asset. This will include replacement of a furnace (once or twice per a building life span); replacement of main valves (most likely once during the life span on a watermain); replacement of major pumps; replacement of all or several windows due to condensation; roads' re-graveling (every 10 to 12 years); repaving (every 30 years); etc. The scope is to keep a certain component to the original design and function. No upgrades, no changes in type of materials used, no change in capacity or fuel, etc.
4	Study	Defines the need for an in-depth review to generate a technical solution to a problem that cannot be readily assessed in the E-ACRS inspection. The review may require destructive assessment, I&I, or to assess if a larger asset is required to better serve the community.
5	Asset Replacement/ Reconstruction	Categorizes assets with a General Condition Rating of 3 or less and an Estimated Remaining Life of 5 years or less shall be identified for asset replacement/reconstruction to their original design or capacity. In estimating the cost (Class D Estimate) of replacement, no other factors such as growth* and increased levels of service are to be considered.
6	Upgrade	Defines the need for improving the effectiveness and/or efficiency of the existing **asset** including operation. This does not include growth*. It could include upgrading/redesigning the building envelope if original failed; replacing roof covering material; abandoning/replacing a large portion of a watermain; etc.
* Growth is defined as any additional or increased demand on the facility or service beyond the original intended design of the asset.		

E-ACRS needs are also classified into **five types**.

The intent of identifying the **Type** is to provide justification for the needs.

Type Code	Type Title	Type Description
1	Health and Safety	Classifies activities required to eliminate “imminent” risk to patrons, to operations personnel. This includes punctual changes for code conformance (handrails/guardrails for a stair; handicap accessibility; etc.). Health and Safety needs should be rectified as soon as possible and can be associated only to Urgency of “0” (immediate).
2	Restoration of Utility	Classifies activities required to put the facility or service back into operation to meet the normal service demands.
3	Arrest Deterioration	Classifies activities that currently do not visibly affect the ongoing use of the service or facility but that, if not attended to, will result in continued deterioration, and could lead to a complete breakdown of the facility. For example, staining exterior siding; periodic physical testing of moisture in walls; fixing pannels/boards pulling off the building envelope as they occur; fixing holes in vinyl siding as they occur; greasing moving parts; etc.

4	Operational	Classifies activities required to maintain both the appearance and the utility of the service or facility within the scope of the Maintenance Management Plan.
5	Conform to Code	Classifies activities required to ensure that an **asset** needs to be brought up to conforms to current codes.

All E-ACRS needs should be scheduled depending on **Urgency** using the following codes:

Urgency Code	Urgency Title/Description
0	Immediate; work scheduled for completion during the current fiscal year
1	Current Fiscal Year + 1 Year
2	Current Fiscal Year + 2 Years
3	Current Fiscal Year + 3 Years
4	Current Fiscal Year + 4 Years

Projects associated with Water, Wastewater, Schools or Fire Equipment should only have urgencies codes of 2 or less.

- **Amount** - Provide a Class "D" estimated cost for each project identified. The amount should be identified in current dollars *(i.e. dollars tied to the fiscal year in which the inspection is completed).* This overall cost estimate may be derived from lump sum or unit costs for a similar project.

- **Existing Project No.** - Reference the existing ISC project number in the Existing Project No. column for all outstanding *(status 0)* projects identified in previous inspections. **Do not enter any project number** in this column when assigning new projects; numbers will be assigned by ISC in the proper sequence.

E-ACRS Definitions

The following definitions are provided to give the inspector a clear understanding of the terminology used in carrying out E-ACRS inspections. These definitions shall apply to the inspection of all assets.

- **E-ACRS Needs Identification – Deficiencies**
  Any deficiencies related to: O&M/Minor Repairs Major Repairs Component Replacement/Reconstruction Study Asset Replacement/Reconstruction Upgrade. These deficiency projects are intended to protect the health and safety of the asset users, and prolong the life, or maintain the operation of the assets. They are not formal project proposals at this stage.

- **Asset Replacement/Reconstruction**:
  This deficiency/project is defined as the replacement/reconstruction of an asset to the original design or capacity and respect the requirement to meet new or updated codes. In estimating the cost (Class "D") for asset replacement/reconstruction, no other factors such as "growth", increased levels of service or other additional uses are to be considered.

- **A class "D" estimate**
  Defined as a preliminary estimate, which due to little site information indicates the approximate magnitude of the cost of the proposed project. This overall cost estimate may be derived from lump sum or unit costs for a similar project. Needs costs are to be identified in current ($) dollars, i.e. dollars tied to the fiscal year in which the inspection is complete.

- **Conform to Code**
  Any need required to ensure an asset conforms to current codes.

- **Growth**
  Growth is defined as any additional or increased demand on the facility or service beyond the original intended design of the asset. Not to be considered in estimates provided in the inspection process.

- **Maintenance Project**
  An approved proposal intended to restore the functional integrity and established levels of service of the asset in respect of the requirement to meet new or updated codes, which includes major repairs and component replacement/reconstruction. No other factors such as "growth", increased levels of service or other additional uses are to be included. This approved proposal will be carried out as a formal maintenance project.

- **Operation and Maintenance (O&M)**
  To provide for operating expenses, labour costs, equipment, material, routine and preventative maintenance, and minor repairs required to operate an asset at its original level of service.

- **Study**
  A detailed review of a problem or problems to generate a technical solution with a "Class D" cost estimate. These studies are to be carried out on problems that cannot be readily assessed by on-site visual inspection.

  Some examples where studies may be required are:

  - ✓ ***Building****: water leaking into interior space during rainstorms.*
  - ✓ ***Electrical****: the electrical circuit is experiencing a power surge during electrical storms.*
  - ✓ ***Bridges:*** *A structural problem may require an in-depth review of drawings, load calculations, etc.*
  - ✓ ***Roads:*** *A road section in poor condition requires a soil analysis.*
  - ✓ ***Municipal:*** *A video inspection of a sewer line upgrade*
  - ✓ *A need which will improve the effectiveness and/or efficiency of the existing asset and its operation. This need may be associated with "Conform to Code" but does not include growth.*

Data Requirements for the Asset Replacement & Valuation (ARV) Tool

Data is captured in the "Asset Replacement and Valuation" section of the inspection forms, and is populated in the ARV Tool to generate the 35-year Chart for each First Nation Community.

The 35-year Chart (CHART) generated from the data in the ARV Tool will describe the expected time-frame and cost to retrofit and replace assets and their components over a 35-year horizon starting in the year of the inspection.

Inspectors will need the following additional data, for each asset, to complete the ARV Tool and to populate the Inspection Forms:

- **List of Components for each asset**
  A list of components, by asset, is provided in **Appendix Q** of the E-ACRS Manual and included as a dropdown menu selection in ARV Tool for ease of reference. Only components included in the drop-down list can be included be sure to select all that apply for each asset.

  Note:
  The ARV Tool requires that all assets include the component titled: **Decommissioning,** to allow the ARV Tool to calculate the asset's replacement cost at end of life, this component will be automatically included in the ARV Tool when assets are added.

- **Component Description**
  Provide additional details when necessary and indicate technical characteristics of the component, for example, 200mm PVC pipe or type of filter media in a Filtration process that could be sand, ion filters, etc.

- **The General Life Expectancy** (GLE) **of <u>each component</u>**
  A range of General Life Expectancy (GLE) for each component is provided in Appendix R of the E-ACRS Manual and represents the GLE when the component is new and is provided for reference only.

- **Assessment of the Estimated Remaining Life (ERL) <u>of each component</u>**
  ERL is determined by qualified inspectors using their professional judgement. When establishing the **"Estimated Remaining Life"** (ERL) for each Component, take into consideration all the major repairs undergone to date for each component and regular maintenance practices.

- **Cost**
  The cost to preplace each component should be included in current dollar values by unit of measure (example: cost to replace mains would be in dollars per meter). Inspectors may rely on a combination of professional experience in the local area and tools, such as RS Means.

- **Unit of Measure for <u>each component</u>**
  The unit of measure is pre-established for components, see Appendix P in the E-ACRS Manual, and includes; square meters, each, etc.

- **Quantity**
  The quantity relates to the unit of measure, for example; a structure that is 5,000 SQM would be recorded with a: Quantity of 5,000**.**

Note: *Estimated costs for <u>Components</u> or <u>Deficiencies</u> should not include growth projections, possible upgrades or changes in demand as a consideration for the purposes of the E-ACRS Inspection. Costs will be updated during the tri-annual inspection process and, where applicable, actual costs will be determined by contractors when a project proposal is submitted for approval.*

Lifecycle Investment Milestones - periodic replacement of major components

The milestones are based on "Estimated Remaining Life" for each component and should not consider growth, updates or change in demand. All costs are in current year dollars. Once completed, the subtotals sorted by asset show a quick summary of capital investment milestones (lifecycle needs) for each asset inspected. The completed CHART is generated from the ARV Tool and is integrated in the digital section of the First Nation's E-ACRS final report, a required deliverable, from each E-ACRS Inspection.

Other Relationships (Linkages)

Component replacements that are generate from the completion of the ARV Tool and that will occur within 4 years of the inspection should be added to the ICMS Compact Inspection Workbook deficiencies tab and the Inspection form under: Needs Identification.

The CHART when generated from the ARV Tool is designed to have Excel functionalities to enable adjustments to support the community's capital works planning activities including providing information to support the development of a Community's Asset Management Plan.

Assets Not Located or Not Available for Inspection

If an asset cannot be located, include a comment/note in the Inspection Form and ICMS Compact Inspection Workbook that the asset cannot be located and identify a Group 1 project to locate the asset. The estimated remaining life and GCR can be left blank in this case as it was not inspected.

When an asset cannot be located **or it is not available for inspection**, in the "Inspector's Remarks" section of the **"Needs Identification"** section of the form, and in the equivalent field "Inspector's Remarks" in the ICMS Compact Inspection Workbook indicate the reason for not inspecting the asset.

Assets No Longer in Use/Operation

If an asset is no longer in use or operation, provide details, in the Inspector's Remarks section of the form, as to why the asset is not in use. Clearly state if the asset has been demolished or removed. The Estimated Remaining Life and GCR will be "0". These assets should also be included in form titled: **"Asset Inventory Change Inspection Form" to** facilitate ISC's manual updating of the ICMS database.

Water and Wastewater Assets – Protocol Form

In addition to completing the General Inspection Forms for Water & Wastewater Assets the Water and Wastewater Systems Protocol Form must be completed, one for **each** applicable **asset group,** if assets from that particular asset group are present in the inventory of the First Nation.

Information needed to complete the Protocol Form:

- DOES THIS SERVICE COVER MORE THAN ONE RESERVE?
  If the answer is yes, provide a list of the communities that are serviced, including Reserve Number and Reserve Name.
- The level of O&M Performance is best rated as:

1-NON-EXISTENT, 2- SUB-STANDARD, 3-ACCEPTABLE, 4-EXEMPLARY

- Is there a developed Maintenance Management Plan?
- Are maintenance activities planned and scheduled?
- Is there a dedicated person to do maintenance for this asset group?
- Is the Maintenance Management Plan successfully implemented?
- Does the First Nation have an up-to-date Emergency Response Plan with a current emergency contact list available in a central location that can be referred to in the event of an emergency?

Public-Access Buildings (PAB)

The overall GCR, O&M Performance and Maintenance Management Plans ratings for Public-Access building assets are established by evaluating each component using the Public-Access Building Inspection Form and should be updated in the ICMS Compact Inspection Workbook and ARV Tool. There are 16 building assets that require the use of the specialized PAB Inspection form:

CLASSIFIED AS PUBLIC ACCESS BUILDINGS	
ASSET CODES	**Building Description**
A1A	Offices
A3A	Schools
A3B	Day Care Centers
A3H	Fire Stations
A4I	Student Residences
A4L	Teachrages
A6A	Community/ Recreation /Hall / Cultural Centers
A6B	Arena
A6C	Gymnasium
A6D	Indoor Swimming Pool
A6E	Youth/Senior Citizen Centers and Drop In
A3L	FNIHB - Health facility
A3M	FNIHB - Aboriginal Head Start On-Reserve (AHSOR)
A3N	FNIHB – Health Professional Residence / Accommodation
A3O	FNIHB - Substance use / Addictions Treatment Centre
A3P	FNIHB - Dental Office
A3Q	FNIHB - Other Health Infrastructure
A3R	FNIHB – Support Infrastructure

- Each Public-Access Building to be inspected, as per the **Asset List,** is identified on a dedicated tab in the ICMS Compact Inspection Workbook. The general information tab, in the ICMS Compact Inspection Workbook, contains the questions to be answered as does the E-ACRS Manual. There is also a unique PAB inspection form, to be completed, titled: Public Access Building Inspection Form.

- The Public-Access Building Inspection Form requires the evaluation of the GCR and O&M Performance of the Life Safety and Fire Protection features as well as questions related to the main building. Components are described as; grounds, building exterior, roof, building interior,

mechanical – heating and ventilation, mechanical – air conditioning, mechanical – plumbing, electrical systems, structure, substructure, vertical movement, and specialty rooms

- The aspects to consider when conducting a Public-Access Building inspection are specified for each component as well as for the Life Safety and Fire Protection as outlined in the Public Access Building Inspection Form and the dedicated tab in the ICMS Compact Inspection Workbook.

- An inspector hired to perform the inspection of Public-Access Building assets should have knowledge of the appropriate national/provincial/territorial Building Code and Fire Code, and that his/her qualifications enable him/her to develop:

  - Recommendations and plans to address physical deficiencies related to the integrity of the asset; and

  - Recommendations and plans to address a combination of management, operational, and performance deficiencies related to the operation of the facility or system.

The Inspection Forms, as well as the digital documentation, will include a brief summary (see Appendix C of E-ACRS Manual) of the GCR, O&M Performance and MMP ratings for each Public-Access Building included in the **ICMS Compact Inspection Workbook/Asset List.**

Community Fire Protection Questionnaire

This questionnaire should be completed for all First Nations, regardless of the whether the community as fire-related assets to be inspected.

The **"Fire Protection Questionnaire**" form requires information about:

- Section A: "Fire Losses in the Last Three Fiscal Years (a fiscal year is Apr 1 to Mar 31);
- Section B: "Community Fire Prevention Practices";
- Section C: "Community Fire Suppression Services"; and,
- Section D: "Comments".

IMPORTANT NOTE:

Sections A, B and question 1, 2 & 3 of Section C
Apply to all First Nations, with or without a fire-hall or fire related assets.

Section C, questions 4 to 9,
Apply only for First Nations with Fire Departments (those communities that own Fire Apparatus and Fire Halls) or a combination of own Fire Department and Municipal Type Service Agreement (MTSA).

Section A: Fire Losses
This section provides information on community fires over a three-year period. Provide a short description of each fire incident that has occurred over the past three years, as well as any comments on the associated fire losses (e.g., number of deaths, injuries, what caught fire, what caused the fire, etc.). If investigations were conducted for any of these incidents/fire losses, please append the fire loss report if it is available. If the report cannot be attached, please indicate where the report can be reviewed.

Section B: Community Fire Prevention Practices
Collect the necessary data to populate this section of the form and add any additional comments that are relevant to the community's fire protection practices.

Section C: Community Fire Suppression Services
Collect the requested data and complete the section related to fire protection services.

Section D – Comments
Please provide any comments or observations that were not captured elsewhere in this form.

Disclaimer:
Recognizing that E-ACRS Inspectors are not fire professionals, Indigenous Services Canada will not treat the completed "Fire Protection Questionnaire" form as constituting a professional opinion. Indigenous Services Canada only asks that E-ACRS Inspectors provide an informed assessment on the questions asked within the "Fire Protection Questionnaire". Please note that this informed assessment should always include observations and input from the community undergoing the E-ACRS assessment.

The "Fire Protection Questionnaire" form should be completed while the inspector is assessing the community's fire-related assets. All fire-related asset assessments and the completion of the "Fire Protection Questionnaire" form must be carried out with the First Nation's Fire Chief or responsible officer, to find out the details of current and past problems.

For communities that do not have fire-related assets the inspector should review the questions that are applicable (see explanation above) with the First Nation representatives during the initial meeting. Data gathered under the "Fire Protection Questionnaire" form will be used solely to assess the quality of a reserve's funded structural fire assets, and to understand the structural fire protection gaps that First Nations are currently facing.

O&M Action Plan Template

Complete an O&M Action Plan form, **provided in Appendix I**, for the asset categories of water, wastewater, schools and fire protection (one for each applicable asset group, if assets from that particular group are present in the inventory for that First Nation), and for which the O&M Performance score is less than Fair.

Review the community's O&M function for overall effectiveness, provide comments and corrective steps to improve maintenance performance where appropriate, addressing the need for a formal MMP. In assessing O&M performance, inspectors should give weight to health and safety related items.

Asset Group Descriptions Template

Include a description of each asset group present per site/reserve you are inspecting on the Asset Group Description form in Appendix J. The asset codes to be included in each asset category can be found in Appendix P. The asset group description, provides space for more technical context that is beyond the Executive Summary, giving a general overview of operation, maintenance, and renovations for the Public Works Manager.

Maps and Photographs (see Inspection Forms)

For all asset a **map** (sketch plan) must accompany the inspection form for the specific asset to clearly relate the geographic locations and extent of assets belonging to the community. When possible, asset locations should be overlaid onto a community roads map. Use available information from previous reports, record drawings, and/or maps from the First Nation to ensure consistency between the sketch maps and locations described on the inspection forms. Maps shall be included in the draft and final reports and supplied separately in digital format in *.jpg format*.

Updated maps are to be provided only for sites that have new assets listed for inspection. GIS files together with technical drawings in .pdf format will be provided for these sites on request after award of work.

Sites that are expected to require map updates will be provided to the inspector. Maps in .jpg format will be provided for all the other sites after award of contract.

- The **MAP** should contain the following information**:**
  - Locations of the assets collected with corresponding annotation that shows the ICMS asset ID and, in the case of roads, the road name
    - Each streetlight should be represented as an individual point on the map for precise identification, but they should all share a single, unified asset code for categorization.
  - Reserve Boundaries
  - Topographic map data that serves to enhance the sketch map by providing context such as water features, roads, contours
  - Cadastral boundaries (i.e. District Lots)
  - North Arrow
  - Scale Bar and/or Scale Ratio
  - Key Map indicating the extents of the current sketch map within the context of the overall site if using multiple sketch maps within the overall site
- The **PHOTOS**

PHOTO IDENTIFICATION REQUIREMENTS **Example: 99908047B1B60200003-BC-REG22-05**		
999	Band Number	A one, two or three digit number that identifies the First Nation
08047	Site Number	Five-digit site/community identifier
B1B	Asset Code	Alpha-numeric 3 digit - sequence – letter, number, letter

602000	Asset Number	Six-digit asset identifier that is specific to the asset in the photo
03	Asset Number Extension	Two-digit sequential identifier that is specific to the asset in the photo
BC	Region	Region in Canada
REG22	Client ID	Five-digit alpha numeric identifier that is unique to each of the proponents (3 letters that identify the consultant) and two numbers that identify the year (2022 = 22)
01	Photo ID	Two-digit sequential number given to each photo -01,02.03 etc.

Include digital **photographs** of each asset (at least one general view), and close-ups as required to better describe the repairs or to illustrate instances where O&M performance has not achieved a **"**Fair**"** rating. Pictures are to be provided in landscape format that matches the layout in the inspection forms

Each photograph shall be identified using the following information:

- The combination of Band Number, Site Number, Asset Code, Asset Number and Asset Number Extension is known as the Asset Identifier (this combination of numbers is specific to each asset). Followed by two-digit region code, five-digit client ID and two-digit photo ID.
- Digital photos shall be included in the draft and final reports and supplied separately on a USB drive. **The photos should be no larger than approximately 500 kilobytes each**, preferably in landscape format.
- The most relevant two photographs of each asset will be included in the hard copy version of the E-ACRS report. All photos will be included in the digital version of the report using the
- photo section of the Inspection Forms and saved as a .pdf.

Reporting Format Requirements

- The E-ACRS final report shall be organized in a manner that facilitates easy reading. Please refer to **Appendix T of the E-ACRS Manual for the Table of Content requirements.**
- All reports should have a Table of Contents and page numbering as outlined in Appendix T. Reports may include additional information/pages that may be warranted to add value to the report.
- To reduce the size of the reports and to provide the information in a more interactive format each E-ACRS report will have a hard copy and a digital section.
- The Executive Summary has a new format that provides an asset management perspective to First Nations leadership. The information in the report is graphically synthesized and provides perspective on how to better use the data captured in the E-ACRS report.
- **A template of the Executive Summary is presented in Appendix O** together with instructions for consistent results and an example of what a complete Executive Summary. Please use the template

formatting to provide a consistent summary of findings to all First Nations. A word version of template is included in the folder with other all the inspection form templates. Titled: “E-ACRS Inspection Forms”.

- The template **transmittal letters for the DRAFT and FINAL reports are included in Appendix U.**

Site Visits

All site visits shall be arranged by contacting the Program Administrator so that the First Nation can be given adequate prior notice and confirm dates as acceptable. Notice will be required for site visits including for proposal preparation purposes, if needed, and to carry-out the inspection after being awarded a contract. On-site inspection of assets is required to fulfill the requirements of an E-ACRS inspection.