

Ministry of the Environment, Conservation and Parks

DWQMS Element 5

Pre-Authorized Alterations & Record Keeping

2024 DWQMS Workshops

April 2024

Overview



DWQMS Element 5

Document and Records Control



Permission Conditions

Drinking Water / Sanitary Sewage / Stormwater



Record Keeping Requirements

Pre-authorized Alterations and Forms



Examples

Discussion

- What is your role in projects / “alterations”?
- What is your role in record keeping or compliance reporting?
- How do you document changes?

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PLAN

The operational plan shall document a procedure for document and records control that describes how:

- Documents required by the quality management system are:
 - kept current, legible and readily identifiable
 - retrievable
 - stored, protected, retained and disposed of
- Records required by the quality management system are:
 - kept legible, and readily identifiable
 - retrievable
 - stored, protected, retained and disposed of

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DO

The operating authority shall implement and conform to the procedure for document and records control and shall ensure that the quality management system documentation for the subject system includes:

- the operational plan and its associated policies and procedures
- documents and records determined by the operating authority as being needed to ensure the effective planning, operation and control of its operations
- the results of internal and external Audits and management reviews

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When developing or updating your procedure for document and records control, you may want to consider:

- the difference between controlling hard copy and electronic documents
- the role that staff orientation and training play in ensuring consistent application of the procedure
- mechanisms for protection that include both physical protection (for example, secured access, where required) and protection of the contents (for example, protection from alteration, where required)
- linkages to existing corporate policies/procedures relating to records management, and how these linkages will be maintained or considered during any update to the corporate policies/procedures
- how and when disposal may occur (at what frequency and by what method will documents or records be disposed)

Pre-Authorized Alterations

- Records of alterations made to a system.
- Is a repeatable process.
- Must be current, legible, readily identifiable, retrievable, stored, protected and retained.



Is the information needed to ensure the effective planning, operation and control of operations?

What Form Should I Use?

Conditions specify which form to use

4.6 The verifications and documentation required in condition 4.5 shall be:

4.6.1 Recorded on “Form 2 – Record of Minor Modifications or Replacements to the Drinking Water System” published by the Ministry, prior to the modified or replaced components being placed into service; and

4.6.2 Retained for a period of ten (10) years by the owner.

6.9 The consents, verifications and documentation required in conditions 6.7 and 6.8 shall be:

6.9.1 Recorded on Form SS2 prior to undertaking the Alteration; and

6.9.2 Retained for a period of at least ten (10) years by the Owner.

What Information Should I Include?

- The form prompts you for required information
- Consider how the information will be accessed and used in the future
- Are things consistent? Are they clear? Are they repeatable?
- What questions could be asked during an audit or inspection?



Small Coffee Problem

- What, How, Who, Where

Retain Completed Form - Do Not Send to the Ministry

Part 1 - Drinking Water Works Permit Number

(Insert the Drinking Water Works Permit number authorizing minor modifications or replacements to the Drinking Water System)

Part 2 - Description of Minor Modifications or Replacements (Use attachments if required)

The description shall include:

- 1) An identification of the system component being modified or replaced;
- 2) The location of the works being modified or replaced; and
- 3) A brief description of the modification or replacement

Part 3 - Verification by Owner

I hereby verify that

- 1) The minor modifications or replacements described in Part 2 of this form meets the requirements of the conditions of the Drinking Water Works Permit identified in Part 1 of this form which authorizes the minor modifications or replacements; and
- 2) I am authorized by the owner to complete this verification.

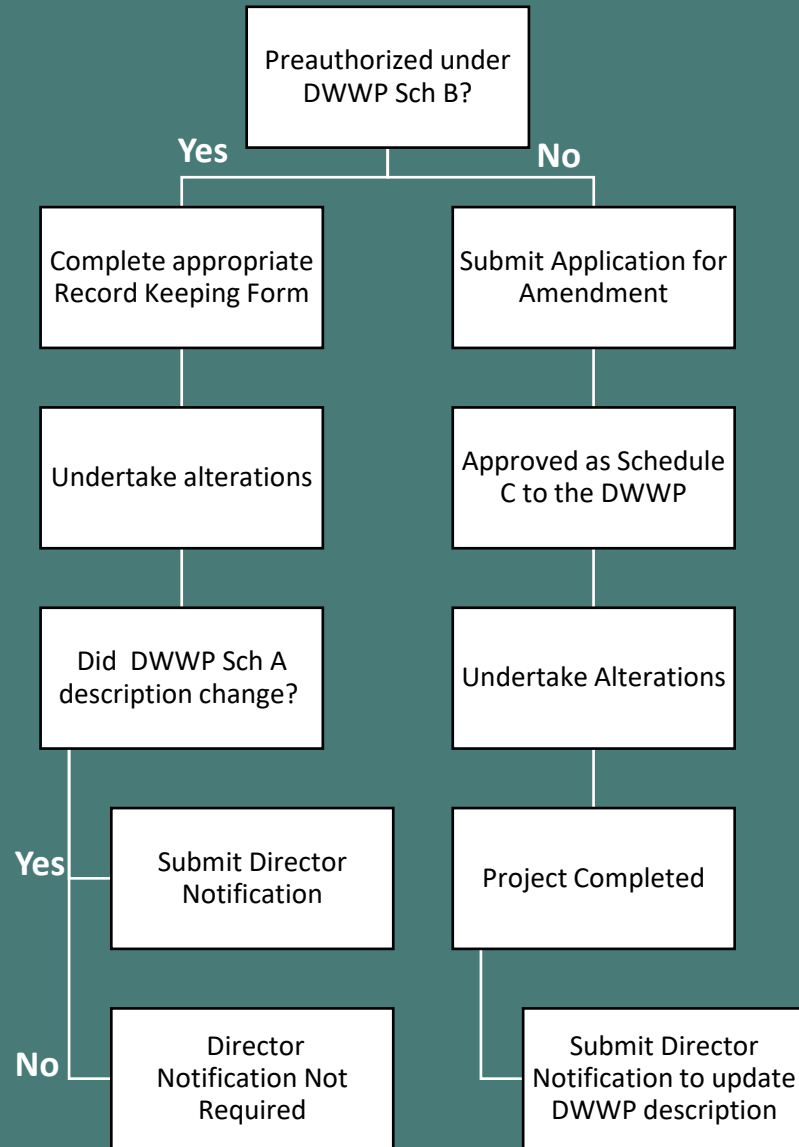
Name of Owner	Name of Owner Representative
Signature	Date (yyyy/mm/dd)

Identify the System

Describe the modification:

- What changed?
- How was it pre-authorized?
- Who needs the information?
- Where can additional details be found?

Sign-off



Preauthorized Alterations

Documentation Requirements Decision Process
 for projects completed under a DWWP
***Repair/maintenance exempt*

Key Forms

Municipal Sewage Collection System

1. Form A1
2. Form CS1
3. Form SS1
4. Form SS2

5. Director Notification

Municipal Stormwater Management System

1. Form SW1
2. Form SW2
3. Form SW3

4. Director Notification

Municipal Drinking Water System

1. Form 1
2. Form 2
3. Form 3

4. Director Notification

Pre-Authorized Alterations: Drinking Water

3.0 Watermain Additions, Modifications, Replacements and Extensions

3.1 The owner may alter the drinking water system, or permit it to be altered by a person acting on the owner's behalf, by adding, modifying, replacing or extending a watermain within the distribution system subject to the following conditions:

3.1.1 The design of the watermain addition, modification, replacement or extension:

- a) Has been prepared by a licensed engineering practitioner;
- b) Has been designed only to transmit water and has not been designed to treat water;
- c) Satisfies the design criteria set out in the Ministry publication "Watermain Design Criteria for Future Alterations Authorized under a Drinking Water Works Permit – June 2012", as amended from time to time; and
- d) Is consistent with or otherwise addresses the design objectives contained within the Ministry publication "Design Guidelines for Drinking Water Systems, 2008", as amended from time to time.

3.1.2 The maximum demand for water exerted by consumers who are serviced by the addition, modification, replacement or extension of the watermain will not result in an exceedance of the rated capacity of a treatment subsystem or the maximum flow rate for a treatment subsystem component as specified in the licence, or the creation of adverse conditions within the drinking water system.

FORM 1

Pre-Authorized Alterations: Drinking Water

4.0 Minor Modifications to the Drinking Water System

4.1 The drinking water system may be altered by adding, modifying or replacing the following components in the drinking water system:

4.1.1 Coagulant feed systems in the treatment system, including the location and number of dosing points:

- a) Prior to making any alteration to the drinking water system under condition 4.1.1, the owner shall undertake a review of the impacts that the alteration might have on corrosion control or other treatment processes; and
- b) The owner shall notify the Director in writing within thirty (30) days of any alteration made under condition 4.1.1 and shall provide the Director with a copy of the review.
- c) The notification required in condition 4.1.1 b) shall be submitted using the "Director Notification Form" published by the Ministry

4.1.2 Instrumentation and controls, including new SCADA systems and upgrades to SCADA system hardware;

4.1.3 SCADA system software or programming that:

- a) Measures, monitors or reports on a regulated parameter;
- b) Measures, monitor or reports on a parameter that is used to calculate CT; or,

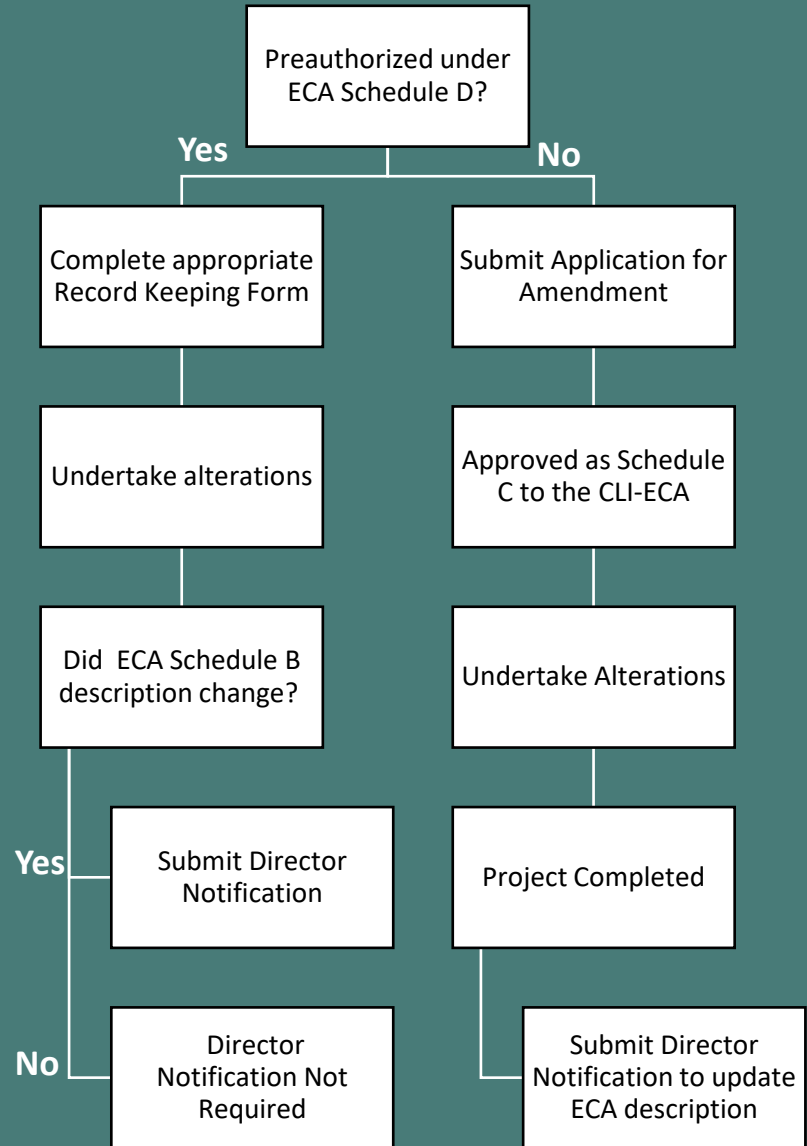
FORM 2

Pre-Authorized Alterations: Drinking Water

5.0 Equipment with Emissions to the Air

- 5.1 The drinking water system may be altered by adding, modifying or replacing any of the following drinking water system components that may discharge or alter the rate or manner of a discharge of a compound of concern to the air:
- 5.1.1 Any equipment, apparatus, mechanism or thing that is used for the transfer of outdoor air into a building or structure that is not a cooling tower;
 - 5.1.2 Any equipment, apparatus, mechanism or thing that is used for the transfer of indoor air out of a space used for the production, processing, repair, maintenance or storage of goods or materials, including chemical storage;
 - 5.1.3 Laboratory fume hoods used for drinking water testing, quality control and quality assurance purposes;
 - 5.1.4 Low temperature handling of compounds with a vapor pressure of less than 1 kilopascal;
 - 5.1.5 Maintenance welding stations;
 - 5.1.6 Minor painting operations used for maintenance purposes;
 - 5.1.7 Parts washers for maintenance shops;

FORM 3



Preauthorized Alterations

Documentation Requirements Decision Process
 for projects completed under a CLI-ECA
***Repair/maintenance exempt*

Key Forms

Municipal Sewage Collection System

1. Form A1
2. Form CS1
3. Form SS1
4. Form SS2

5. Director Notification

Municipal Stormwater Management System

1. Form SW1
2. Form SW2
3. Form SW3

4. Director Notification

Municipal Drinking Water System

1. Form 1
2. Form 2
3. Form 3

4. Director Notification

Pre-Authorized Alterations: Sanitary Sewage

4.0 Authorizations of Future Alterations for Separate Sewers, Nominally Separate Sewers and Forcemains - Additions, Modifications, Replacements and Extensions

4.1 The Owner or a Prescribed Person may alter the Authorized System by adding, modifying, replacing, or extending a Separate Sewer, Nominally Separate Sewer or forcemain within the Authorized System subject to the following conditions and condition 4.2 below:

4.1.1 The design of the addition, modification, replacement, or extension:

- a) Has been prepared by a Licensed Engineering Practitioner;
- b) Has been designed only to collect and transmit Sewage and has not been designed to treat Sewage;
- c) Satisfies the Design Criteria or any municipal criteria that have been established that exceed the minimum requirements set out in the Design Criteria;
- d) Is consistent with or otherwise addresses the design objectives contained within the Design Guidelines for Sewage Works; and

FORM SS1

Pre-Authorized Alterations: Sanitary Sewage

5.0 Authorizations of Future Alterations for Combined Sewers, Partially Separated Sewers and Combined Sewage Storage Tanks and Storage Structures

5.1 Subject to conditions 5.2 and 5.3, the Owner or a Prescribed Person may alter the Combined Sewers, Partially Separated Sewers and combined Sewage storage tanks and storage structures in the Authorized System by:

5.1.1 Modifying or replacing Combined Sewers, Partially Separated Sewers, overflow Regulators and/or outfalls if the purpose of the project is to restore the Sewage Works to good condition.

5.1.2 Replacing Combined Sewers with Separate Sewers for Stormwater and sanitary Sewage.

5.1.3 Modifying or replacing Combined Sewers, Partially Separated Sewers, overflow regulators, outfalls, or combined Sewage storage tanks, provided that:

- a) The Alteration is designed in such a manner that will contribute to the ultimate attainment of the capture and treatment for an Average Year of all the Dry Weather Flow plus a minimum of 90% of the volume resulting from Wet Weather Flow that is above Dry Weather Flow;

FORM CS1

Pre-Authorized Alterations: Sanitary Sewage

6.0 Authorizations of Future Alterations to Components of the Municipal Sewage Collection System

6.1 The Owner or a Prescribed Person may make the following Alterations to the Authorized System subject to conditions 6.4 through 6.7:

6.1.1 Adding, modifying, or replacing the following components of Sewage pumping stations, Separate Sewers, or Nominally Separate Sewers:

- a) In-line and/or off-line storage to manage peak flow / inflow and infiltration that does not require pumping;
- b) Off-line storage to manage peak flow / inflow and infiltration that only requires electricity to empty the structure;
- c) Any associated Equipment for cleaning; and
- d) All Appurtenances associated with in-line or off-line storage facilities, including odour, and corrosion control.

6.1.2 Modifying existing Sewage pumping stations and odour control units / Facilities, including adding, replacing, or modifying the following components:

FORM SS2

Pre-Authorized Alterations: Sanitary Sewage

7.0 Authorizations of Future Alterations to Equipment with Emissions to the Air

7.1 The Owner and a Prescribed Person may alter the Authorized System by adding, modifying, or replacing the following Equipment in the Municipal Sewage Collection System:

7.1.1 Venting for odour control using solid scavenging or carbon adsorption units;

7.1.2 Venting for odour control by replacing existing biofiltration or wet air scrubbing systems, including any components, with Equipment of the same or better performance characteristics; and

7.1.3 Emergency generators that fire No. 2 fuel oil (diesel fuel) with a sulphur content of 0.5 per cent or less measured by weight, natural gas, propane, gasoline, or biofuel, and that are used for emergency duty only with periodic testing.

7.2 Any Alteration of the Municipal Sewage Collection System made under condition 7.1 that may discharge or alter the rate or manner of a discharge of a Compound of Concern to the atmosphere is subject to the following conditions:

FORM A1

Key Forms

Municipal Sewage Collection System

1. Form A1
2. Form CS1
3. Form SS1
4. Form SS2

5. Director Notification

Municipal Stormwater Management System

1. Form SW1
2. Form SW2
3. Form SW3

4. Director Notification

Municipal Drinking Water System

1. Form 1
2. Form 2
3. Form 3

4. Director Notification

Pre-Authorized Alterations: Stormwater

4.0 Authorizations of Future Alterations to Storm Sewers, Ditches, or Culverts - Additions, Modifications, Replacements and Extensions

4.1 The Owner or a Prescribed Person may alter the Authorized System by adding, modifying, replacing, or extending a Storm Sewer, ditch, or culvert within the Authorized System subject to the following conditions and conditions 4.2 and 4.3 below:

4.1.1 The design of the addition, modification, replacement, or extension:

- a) Has been prepared by a Licensed Engineering Practitioner;
- b) Has been designed only to collect and transmit Stormwater;
- c) Has not been designed to collect or treat any sanitary Sewage;
- d) Has not been designed to collect, store, treat, control, or manage groundwater, unless for the purpose of foundation drains, road subdrains, or LIDs;

FORM SW1

Pre-Authorized Alterations: Stormwater

5.0 Authorizations of Future Alterations to Stormwater Management Facilities - Additions, Modifications, Replacement, and Extensions

5.1 Subject to conditions 5.2 and 5.3, the Owner or a Prescribed Person may alter the Stormwater Management Facilities in the Authorized System by adding, modifying, replacing, or extending the following components:

- 5.1.1 Rooftop storage
- 5.1.2 Parking lot storage
- 5.1.3 Superpipe storage
- 5.1.4 Reduced lot grading
- 5.1.5 Roof leader to ponding area
- 5.1.6 Roof leader to soakaway pit
- 5.1.7 Infiltration trench
- 5.1.8 Engineered grassed swales / bioswale

- 5.1.9 Pervious pipes

FORM SW2

Pre-Authorized Alterations: Stormwater

6.0 Authorizations of Future Alterations for Third Pipe Collection System Additions, Modifications, Replacements and Extensions

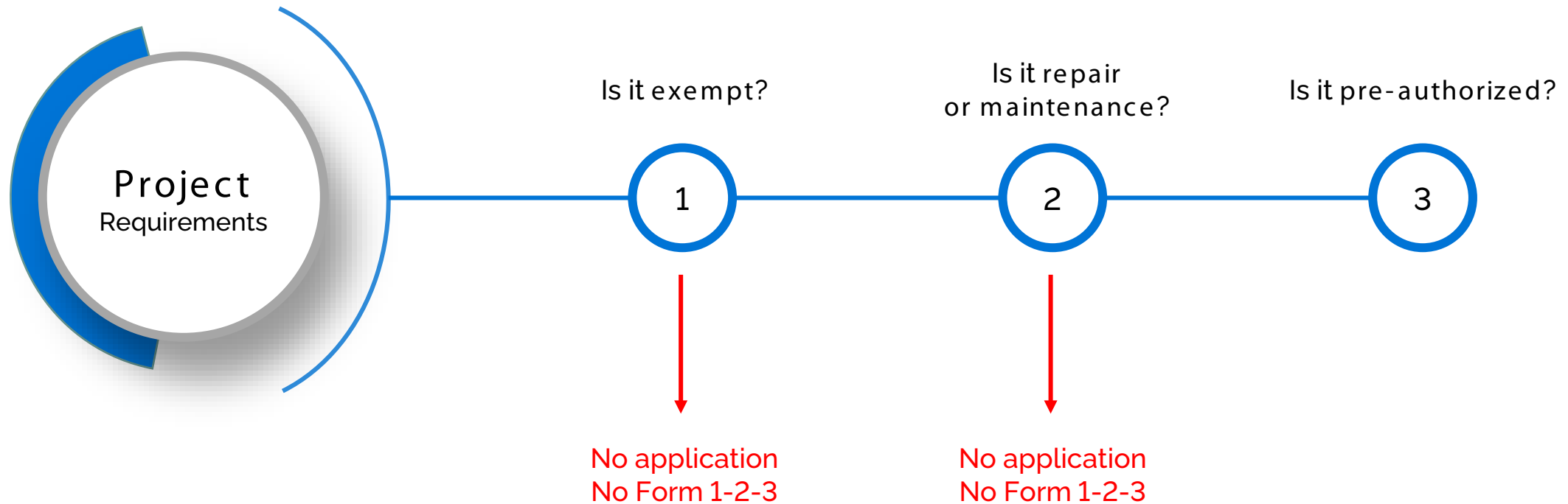
6.1 The Owner or a Prescribed Person may alter the Authorized System by adding, modifying, replacing, or extending, and operating works comprising a municipal Third Pipe Collection System to collect foundation drainage and groundwater where:

6.1.1 The design of the Alteration:

- a) Has been prepared by a Licensed Engineering Practitioner;
- b) Is limited to collection, transmission, reuse and/or treatment of only foundation drainage and groundwater, and is not designed to collect or treat sanitary Sewage;
- c) Satisfies the Design Criteria or any municipal criteria that have been established that exceed the minimum requirements set out in the Design Criteria; and
- d) Is scoped so that the resulting Sewage Works are intended to:
 - i Primarily function for the non-potable reuse, as deemed acceptable by the Owner and the local health unit, of foundation drainage and/or groundwater, and no

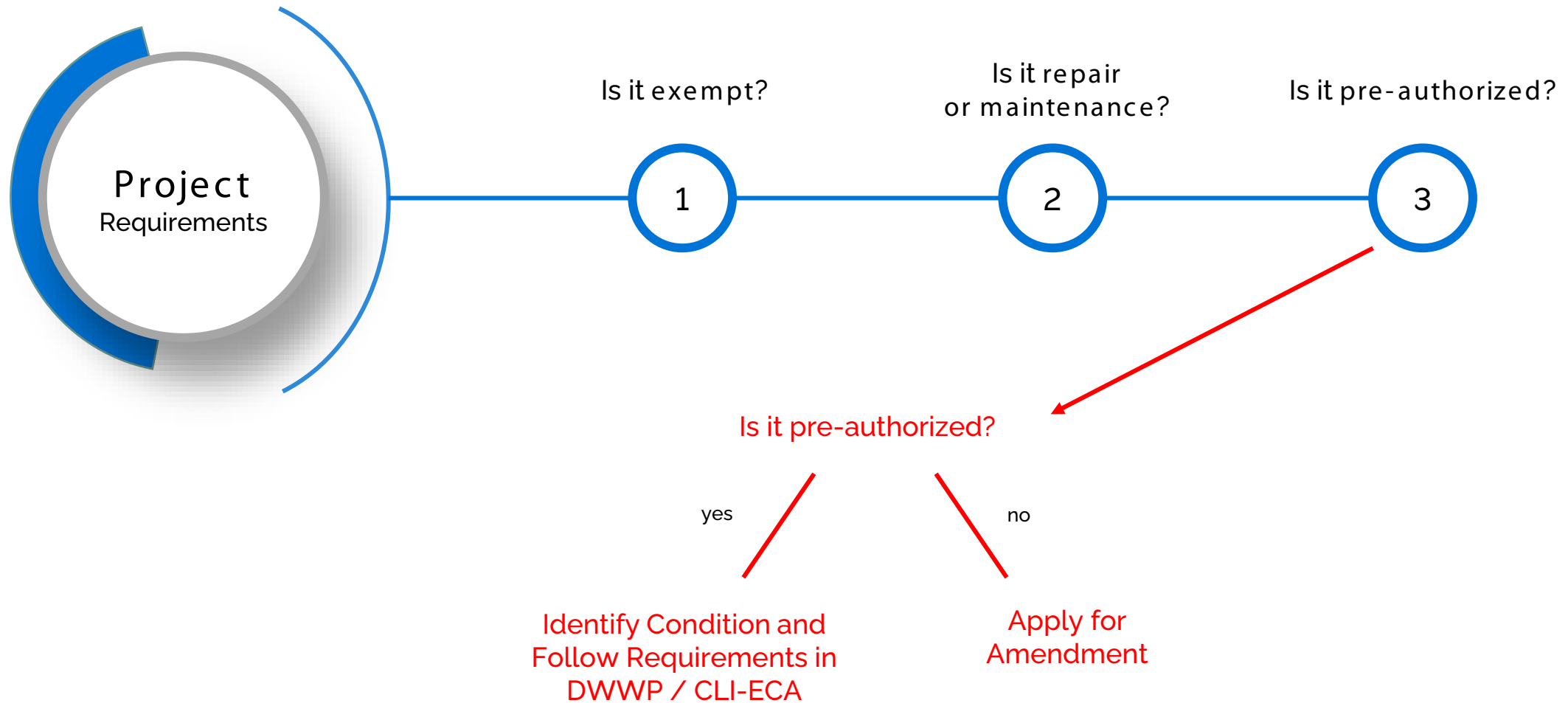
FORM SW3

General Process



How do you document?
What do you document?

General Process



How-How Diagram

Helps to identify ways to achieve a goal or solve a problem.

Step 1: Define

Ensure that your problem is clearly stated and defined as a need. What is it that you are looking to achieve?

Step 2: How

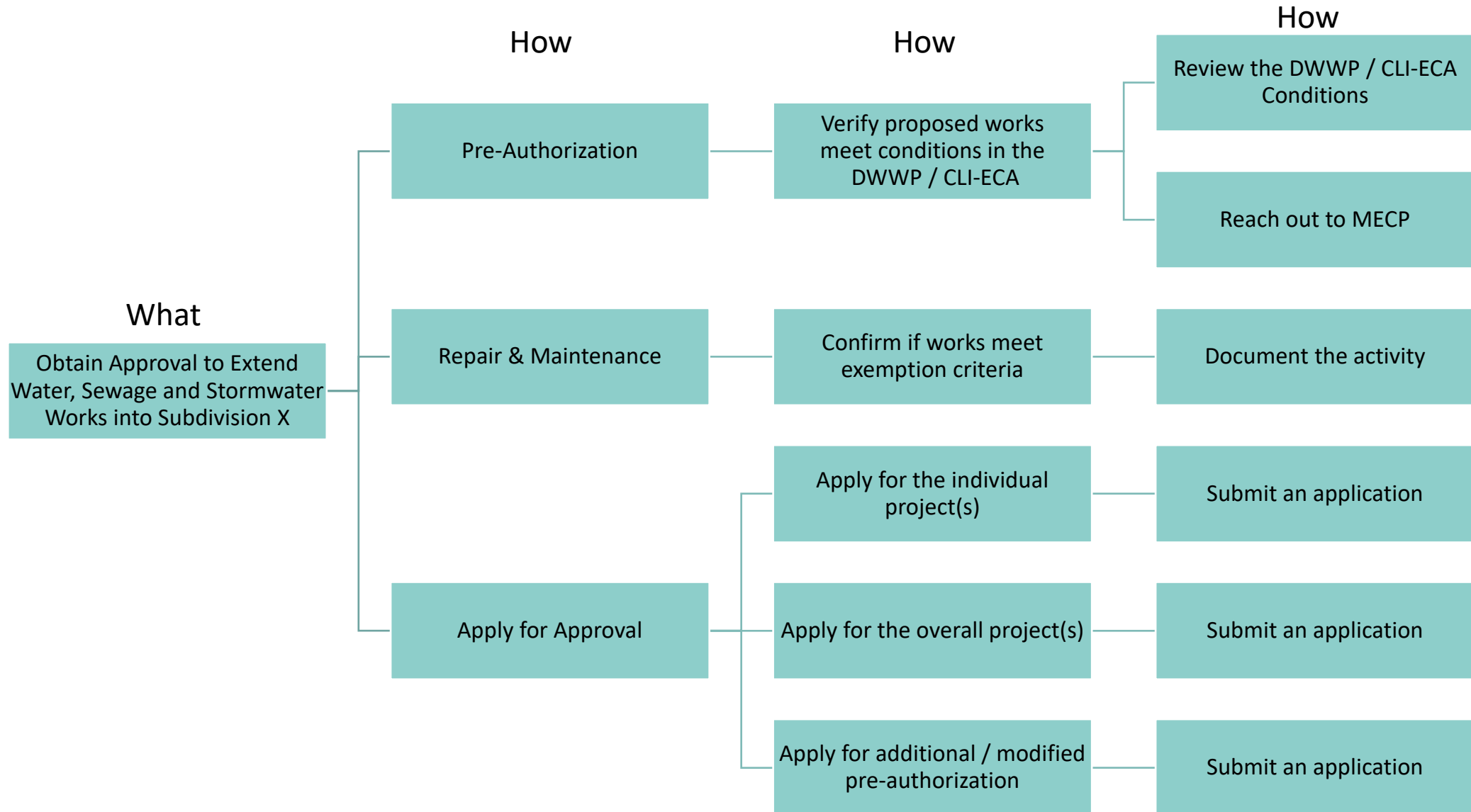
Ask how it can be done and generate answers.

Step 3: How

Repeat until satisfied that answer are specific enough to carry out.

Step 4: Select to Implement

Example: Extension of Works to a New Subdivision



Exercise 1: Drinking Water Project

Group 1: New water tower

Group 2: Rehabilitation of a water tower

Group 3: Replacement equipment at a water tower

Exercise 2: Stormwater Project

Group 1: New Stormwater pond

Group 2: Expand an existing stormwater pond for additional catchment area

Group 3: Stormwater pond clean-out

Exercise 3: New System

Group 1: New subdivision with new treatment system and distribution system

Group 2: New subdivision with water supplied from a neighboring municipality

Group 3: New subdivision with water supplied from existing treatment system
(same municipality)

Exercise 5: Large Scale Project

Group 1: Replacing / upgrading all hydrants

Group 2: Upgrading multiple pumping stations to add capacity based on future planning

Group 3: Major water and sewer main replacement

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*Thank
You!*