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I. Introduction

The Operations Manual of Engineering and Operations Department contains the general information about the Department, its underlying function, operating procedures and organization.

The purpose of this manual is to provide its readers knowledge about the department's responsibilities and structure and enriched with further additions and changes appropriate to innovations, new technologies and methods.

The manual is divided into several parts as follows:

General Information. This section contains mandates and functions, its mission and vision, services, and areas of operation.

Organization and Responsibilities. In this part of the manual, the organizational structure was shown using a diagram as of year 2015, as well as the duties and responsibilities of each division.

Operational Control and Supervision. The powers of authority are described in this part as well as the supervisory and operational controls.

Operating Procedures. Contains the step-by-step procedures and work instructions of Engineering and Operation Department. Activity flow charts are used to illustrate the different processes involved in daily operations.

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II. General Information

The primary core of the Engineering and Operations Department (EOD) is the Camarines Norte Water District's (CNWD's) mission "A mandate for water adequacy, pledge to concessionaire's satisfaction" through its enhanced activities and enhanced work strategies and its following primary goal as follows:

- 24-hour water availability within the service service that is potable in accordance within the Philippine National Standard for Drinking Water
- Expansion of CNWD service areas (increase in number of service connections and provide safe water in far flung baranggay that are not covered by CNWD service area),
- Increased water pressure along distribution lines within its service areas,
- Develop programs for environmental initiative,
- More reliable water operations and
- Increased organizational efficiency.

III. Operational Control and Supervision

Engineering and Operations Department

The department believes that the impact of sufficient potable water on all aspects of development is undeniable, thus, helps change the lives of the people within the service areas including the water district itself. Thus, various waterworks undertakings are carried out through proper organization of employees (as shown in the Organizational Chart) and identification of duties and responsibilities as follows:

1. DEPARTMENT MANAGER B

- Plans, designs, programs and assigns the activities of the Engineering and Operations Department
- Responsible for water production operations: quality and quantity and in the implementation of production processes and procedures and for improving and sustaining adequate water supply
- Ensures that Program of Works (POWs) and jobs are carried out effectively and efficiently and on time in accordance with the required standards and specifications

2. DIVISION MANAGER B

- Assists the Department Manager in planning programs and procedures in construction and maintenance of distribution mains and in the implementation of extension lines and rehabilitation projects
- Responsible in water distribution and reduction of non-revenue water (NRW); implements program of works (POWs) on construction, including maintenance activities downstream
- Distributes workloads to construction/maintenance teams and closely supervises tasks' completion of the Division per CNWD approved standards

A. Construction and Maintenance Division

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1. PRINCIPAL ENGINEER D (Construction Section)

- Analyzes water supply system for construction and developmental projects
- Responsible in the preparation of plans and designs for expansion projects
- Oversees installation of new structures and water distribution system

2. PRINCIPAL ENGINEER D (Maintenance Section)

- Analyzes existing water distribution system for maintenance activities
- Oversees the implementation of rehabilitation programs to reduce non-revenue water (NRW)
- Updates index maps of CNWD facilities downstream

3. WATER UTILITIES MANAGEMENT/DEVELOPMENT OFFICER A (Areas 1 & 2)

- Implements and supervises construction and development projects per approved program of works (POWs) and technical specifications
- Conducts data gathering, surveys and field investigations for expansion programs
- Verifies accuracy of actual water pipeline/appurtenances data as registered in the water system network model

4. PRECISION INSTRUMENT REPAIR & MAINTENANCE SERVICES CHIEF

- Responsible in calibrating water meters and checks service lines; conducts flushing
- Causes the sealing and maintaining efficiency/reliability of installed water meters
- Accountable to water meters on hand and updates Water Meter History Cards

5. WATER/SEWERAGE MAINTENANCE HEAD (Areas 1, 2 & 3)

- Implements and supervises rehabilitation projects per approved program of works (POWs) and technical specifications
- Detects leakages and ensures efficiency/reliability of distribution and service mains
- Sees to it that service connection assemblies are in accordance with CNWD approved standards

6. SENIOR WATER/SEWERAGE MAINTENANCE MAN A (Construction Section – Areas 1, 2 & 3)

- Installs new pipelines and other appurtenances within the water distribution system
- Taps new service connections
- Conducts flushing of fire hydrants and blow-offs

7. SENIOR WATER/SEWERAGE MAINTENANCE MAN A (Maintenance Section – Areas 1, 2 & 3)

- Replaces dilapidated distribution and service mains

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- Repairs leakages, standardizes service connections and other appurtenances within the distribution system
- Conducts flushing of fire hydrants and blow-offs

B. Water Resources Division

1. Principal Engineer D

- Prepares, recommends and provide technical and engineering support for project/programs pertaining to construction, maintenance, repair, rehabilitation and water development activities
- Implements, coordinates and monitors all approved project/program, maintenance, rehabilitation and repair activities of water resources division

2. Water Utilities Management/Development Officer A

- Oversees, monitors, and submits progress reports of surface and groundwater sources and other existing programs; regularly inspect to ensure compliance with CNWD technical quality standards
- Assists in overall planning and organization of implementing program/projects and provide technical support in construction, installation, repair and maintenance activities
- Prepares plans and specification, budget and material procurements on technical aspects of water resources division

3. Water Utilities Management/Development Officer B (Upstream)

- Assists in the implementation, coordination and monitoring of approved project/program, maintenance, rehabilitation and repair activities in upstream area (spring sources and transmission lines and reservoir)
- Regularly inspects and submits reports of water resources facilities and equipments condition in upstream area in accordance to CNWD-WSP
- Conducts calibration and maintenance of water resources equipment in upstream area such as air release valves, flow meters, pressure gauges, valves, etc.

4. Water Utilities Management/Development Officer B (Downstream)

- Assists in implementation, coordination and monitoring of approved project/program, maintenance, rehabilitation and repair activities in downstream area (transmission lines including pipes crossing bridges)
- Regularly inspects and submits reports of water resources facilities and equipments condition in downstream area in accordance to CNWD-WSP
- Conducts calibration and maintenance of water resources equipment in downstream area such as air release valves, flow meters, pressure gauges, valves, etc.)

5. SENIOR WATER/SEWERAGE MAINTENANCE MAN A (Filtration Facility)

- Monitors, records and reports water level, water pressure and water production of Filtration Facility; act accordingly in case data are not in permissible limits
- Conducts repairs and maintenance of filtration equipment including transmission lines
- Conducts chlorination activities and monitoring dosage

6. SENIOR WATER/SEWERAGE MAINTENANCE MAN A (Upstream & Downstream)

- Monitors, records and reports water level, water pressure and water production of storage tanks; act accordingly in case data are not in permissible limits

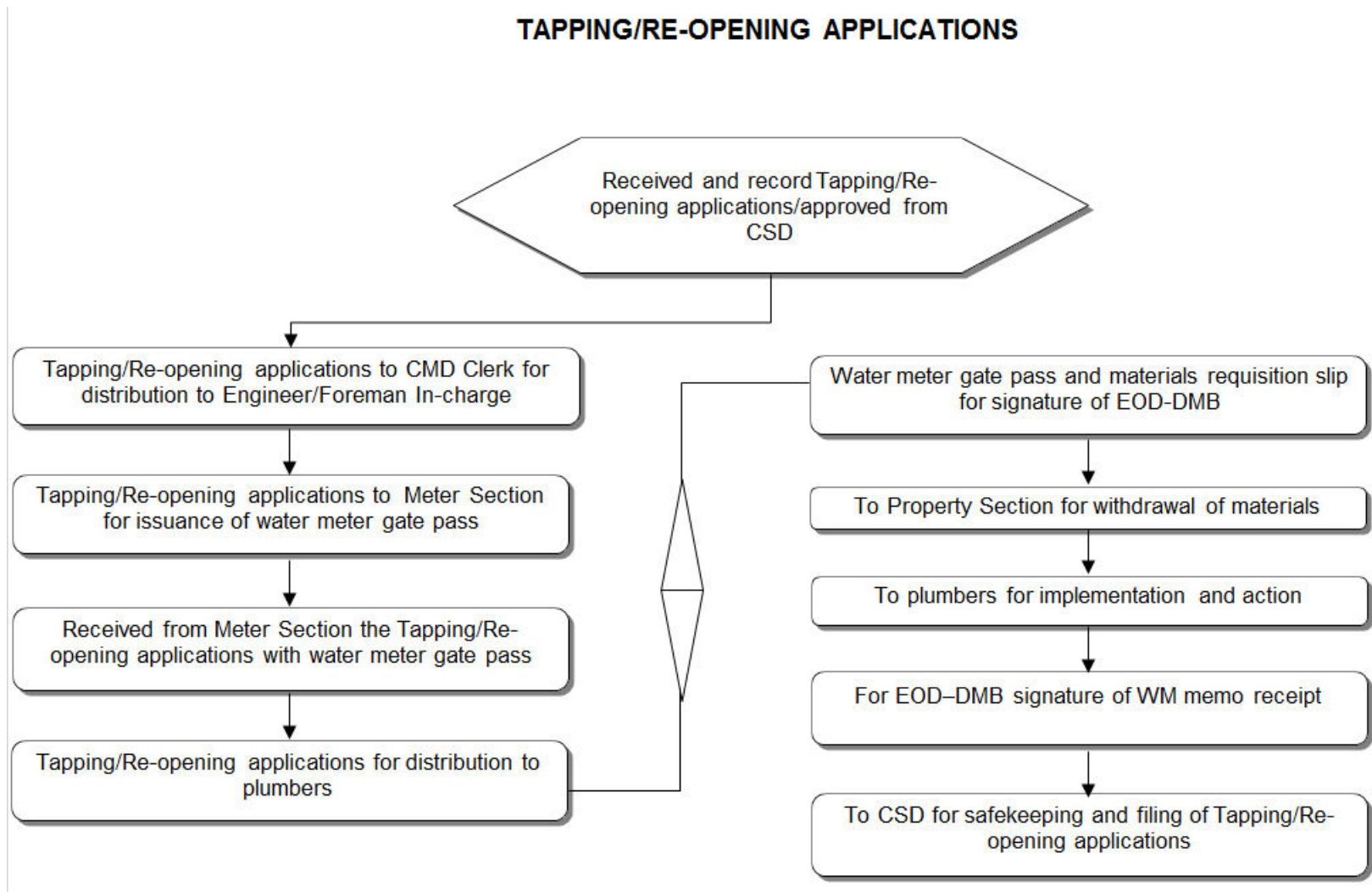
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- Conducts repairs and maintenance of storage tank and equipment
 - Conducts chlorination activities and monitoring dosage
- 7. SENIOR WATER/SEWERAGE MAINTENANCE MAN A (Pump station)**
- Monitors, records and reports water level, water pressure and water production in pumping stations; act accordingly in case data are not in permissible limits
 - Conducts repairs and maintenance of pumping equipment and other appurtenances (valves and fittings)
- 8. SUPERVISING CHEMIST**
- Conducts Physical and Chemical analyses of water samples and certify results in accordance with PNSDW and ISO 17025
 - Conducts quality control/assurance testing (phy/chem) including calibration and maintenance of equipment used for physical and chemical analysis
 - Assists in the implementation of WSP by gathering data, coordination with stakeholders and updating the quality manual of CNWD-WSP
- 9. MEDICAL TECHNOLOGIST**
- Conducts water Microbiological analyses of water samples and certify results in accordance with PNSDW and ISO 17025
 - Collects water samples and on site water quality monitoring
 - Conducts quality control/assurance testing (microbiological) including maintenance and calibration of equipment used in microbiological analysis
- 10. WATERSHED MANAGEMENT SPECIALIST**
- Prepare, plan, analyze, schedule and recommend projects/ program pertaining to watershed management
 - Implement, review and assign task regarding the watershed activities and project/program

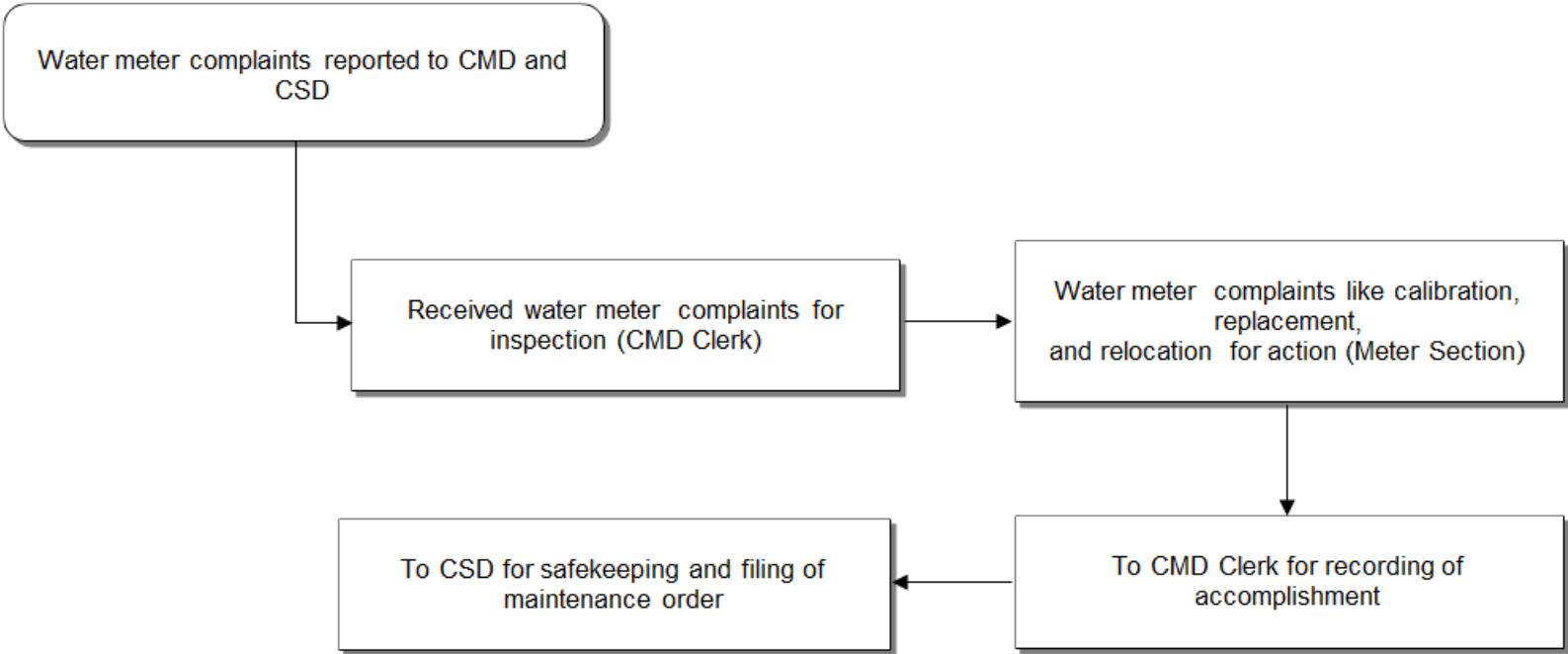
IV. Operating Procedures

A. Construction and Maintenance Division

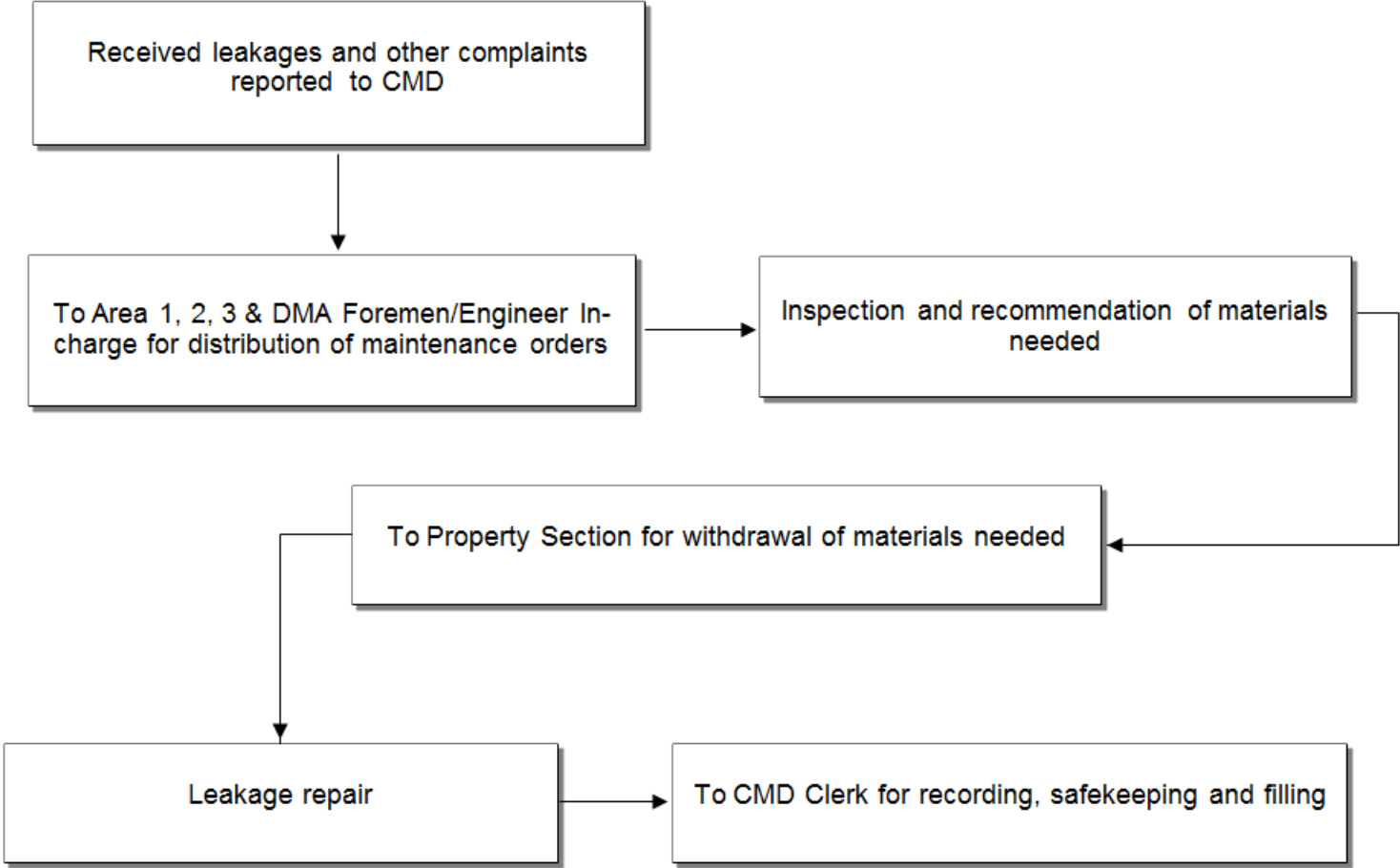
TAPPING/RE-OPENING APPLICATIONS



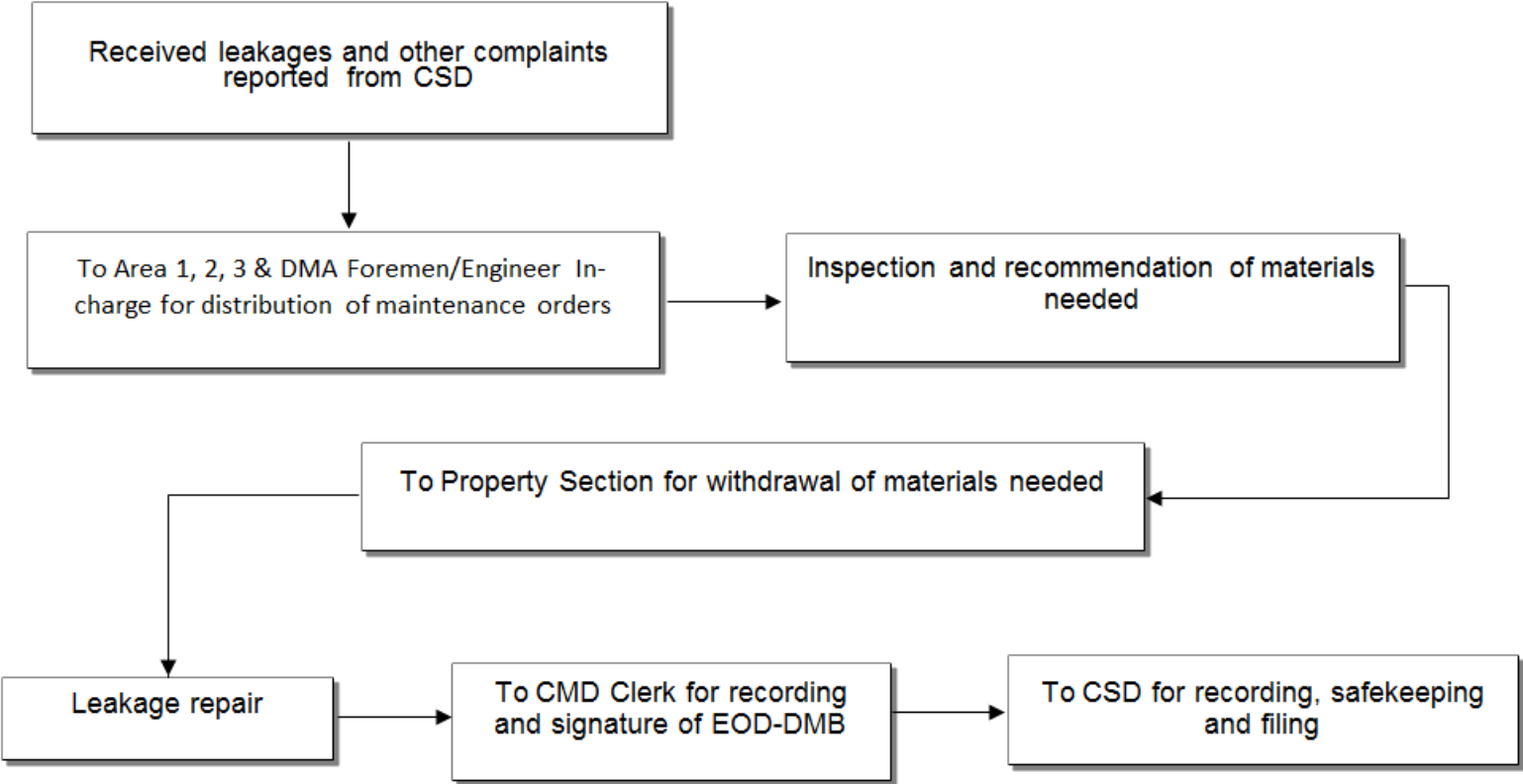
WATER METER COMPLAINTS



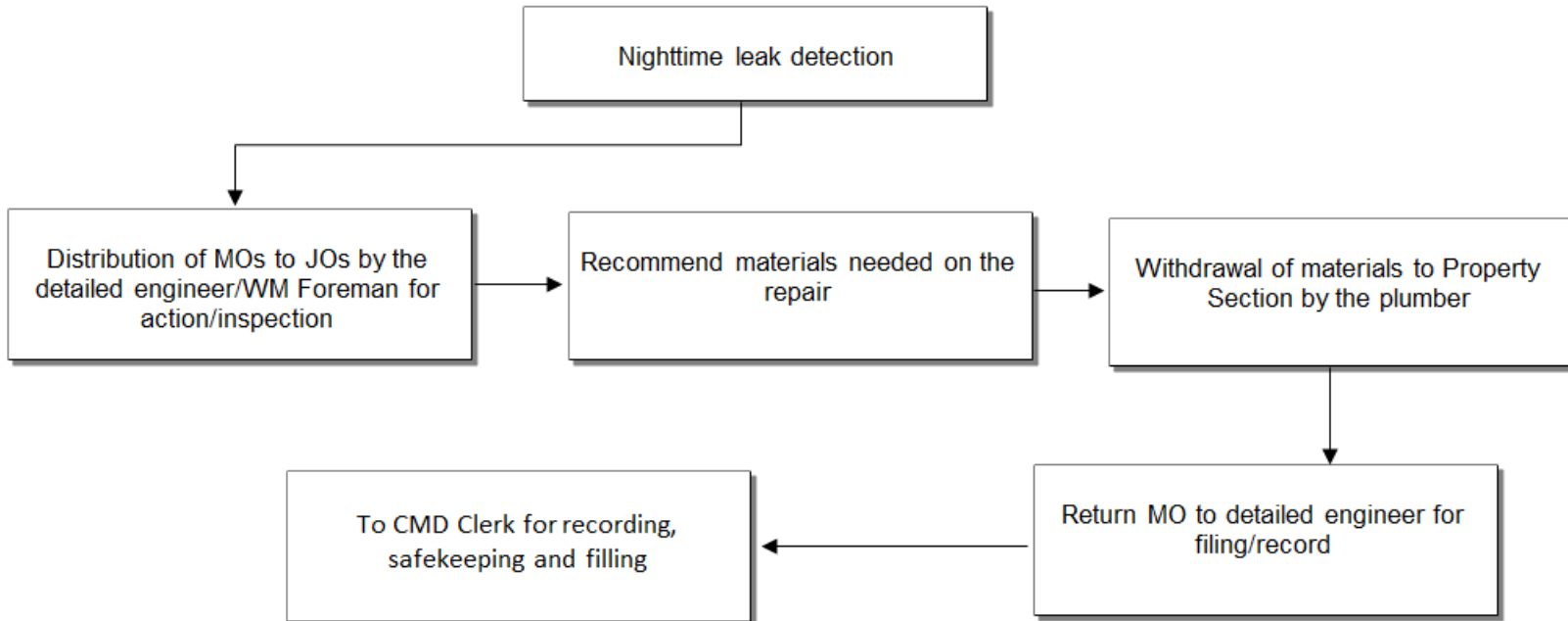
COMPLAINTS DIRECTLY REPORTED TO CONSTRUCTION AND MAINTENANCE DIVISON



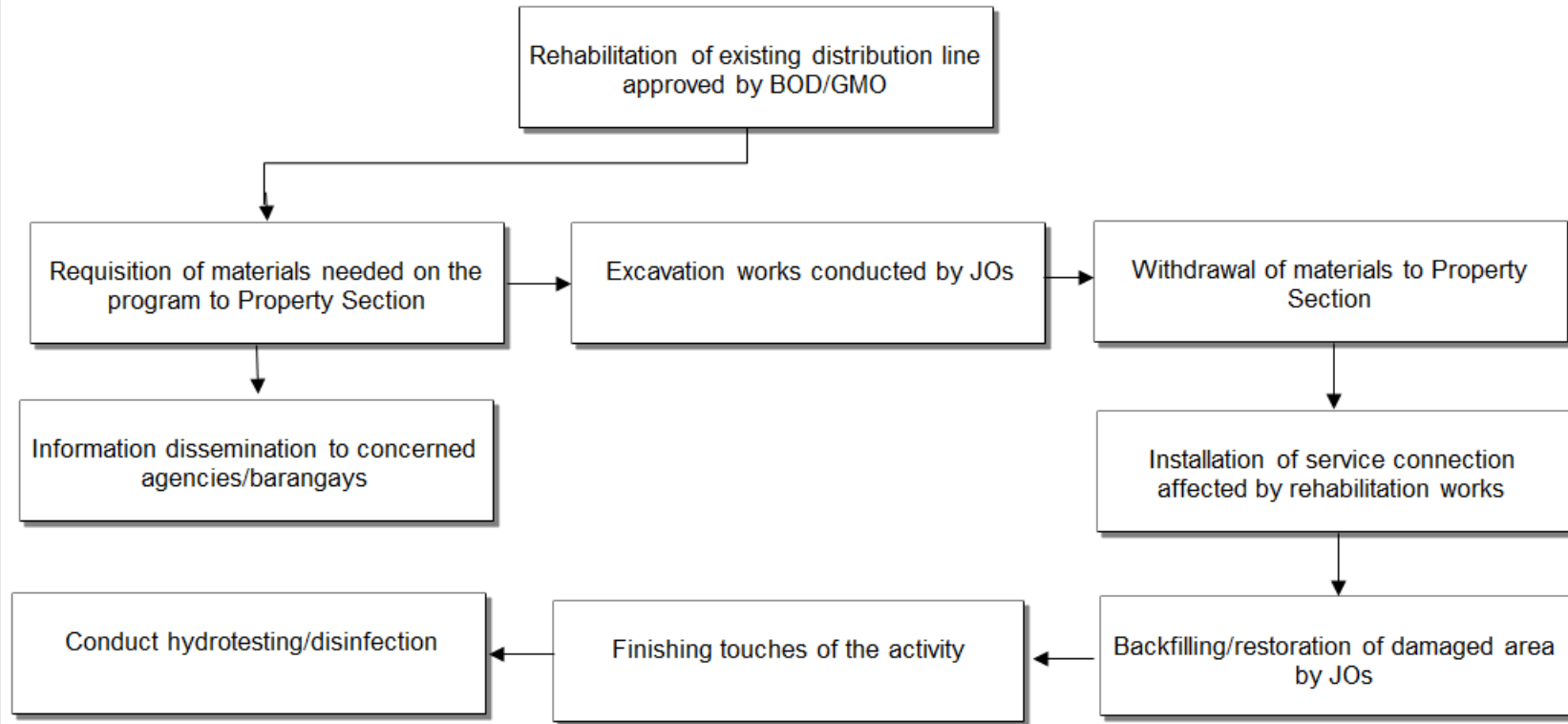
COMPLAINTS REPORTED TO COMMERCIAL SERVICES DIVISON



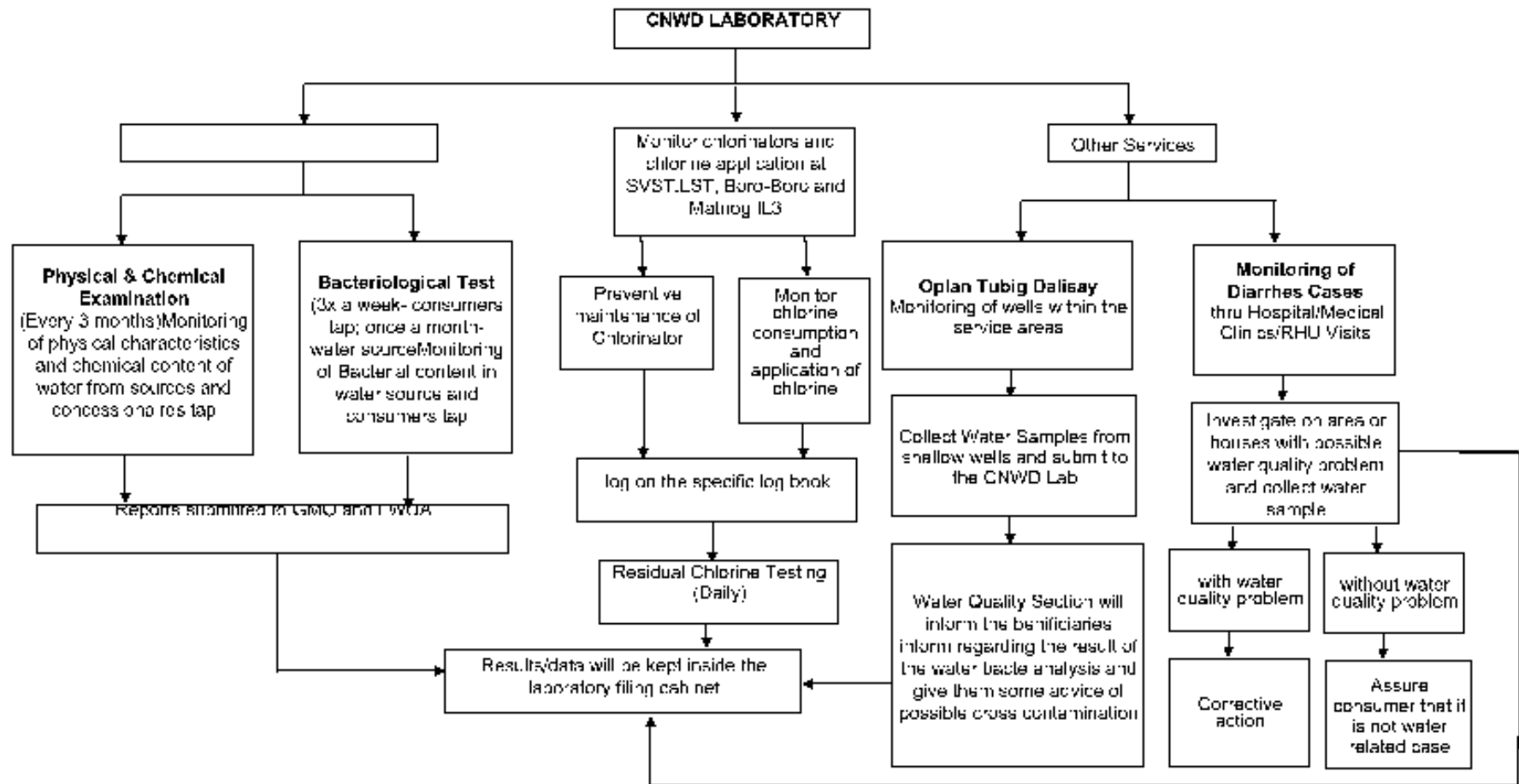
MAINTENANCE OF SERVICE/DISTRIBUTION LINES



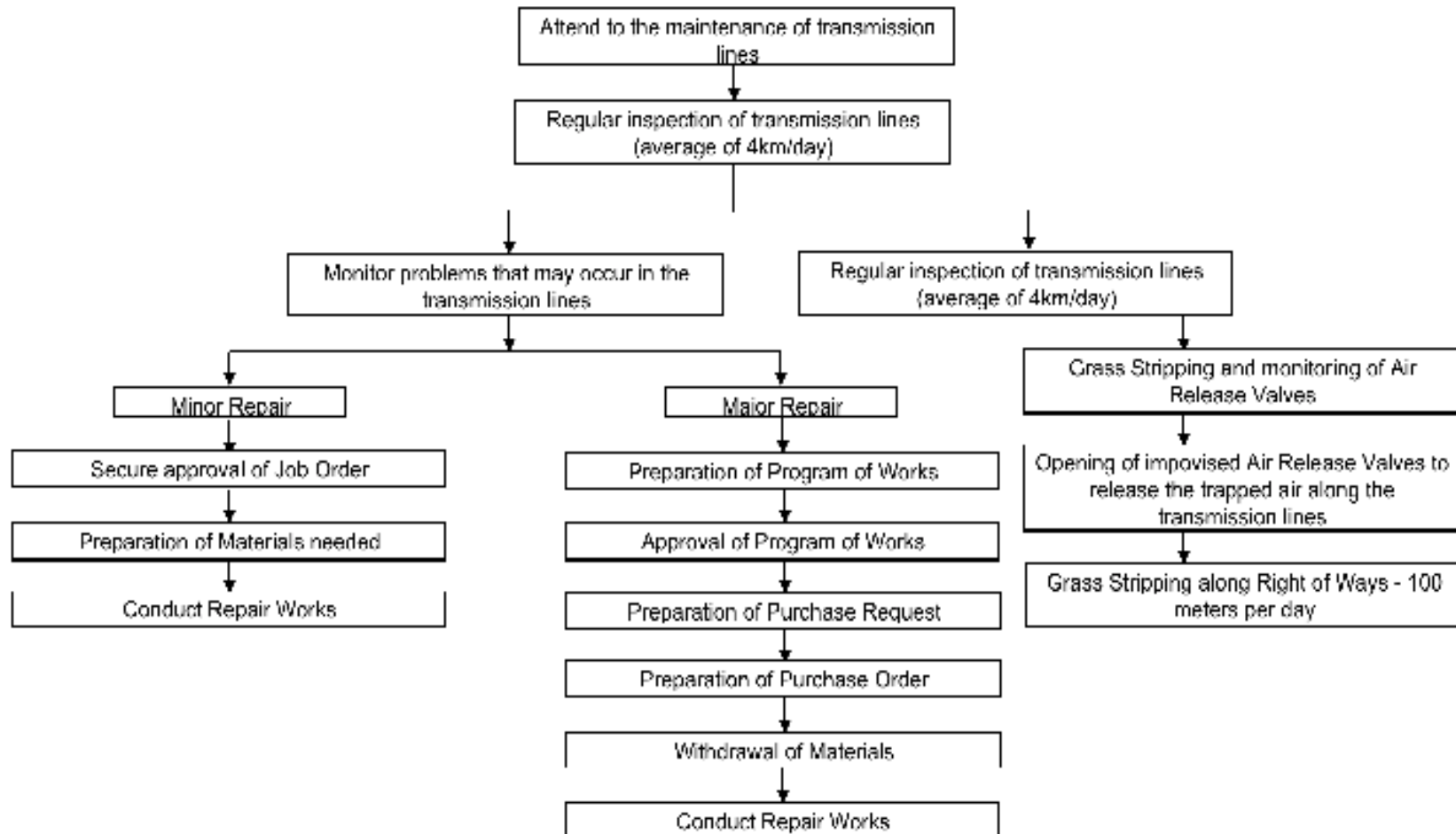
REHABILITATION OF EXISTING DISTRIBUTION LINE



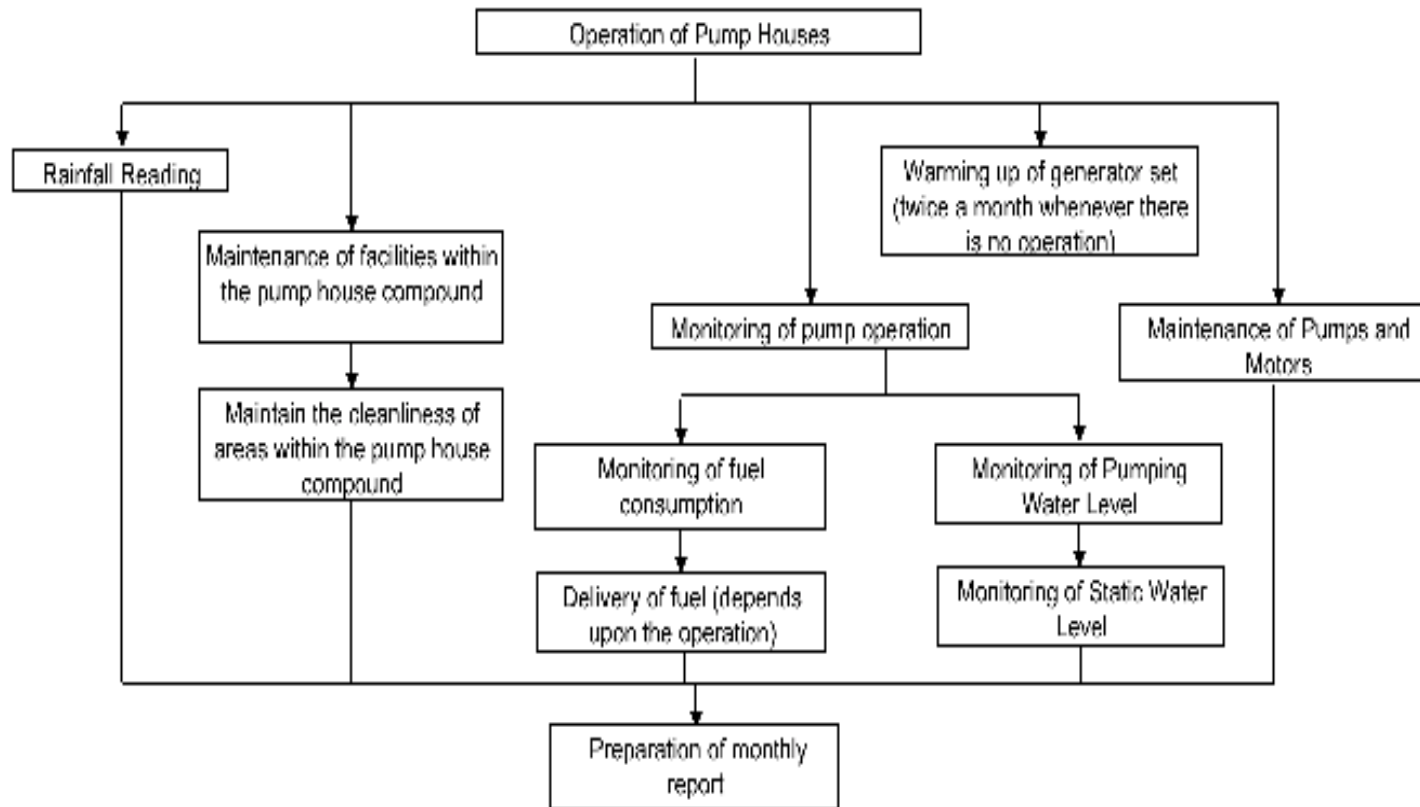
B. Water Resources Division



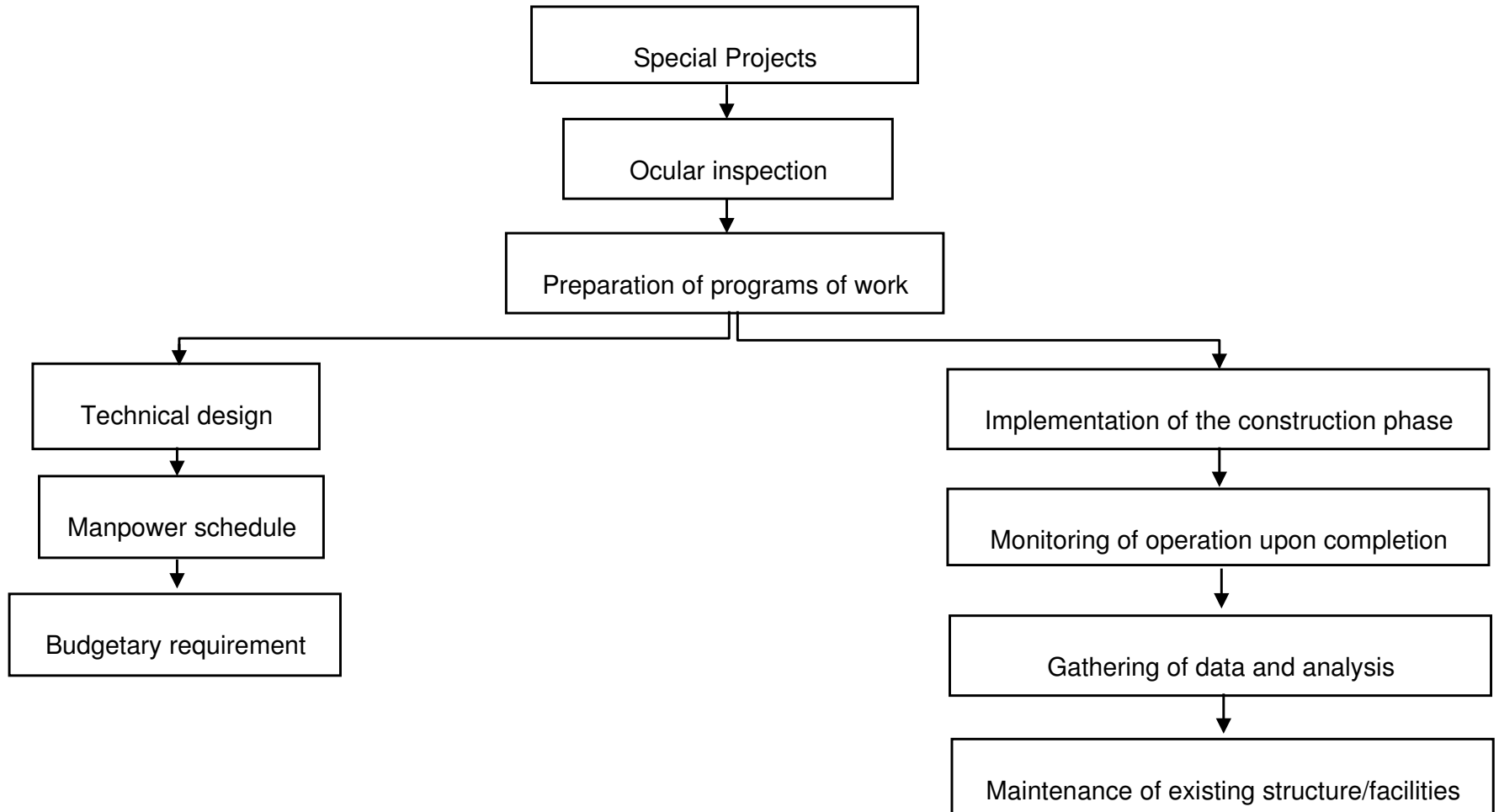
Maintenance of Transmission Lines



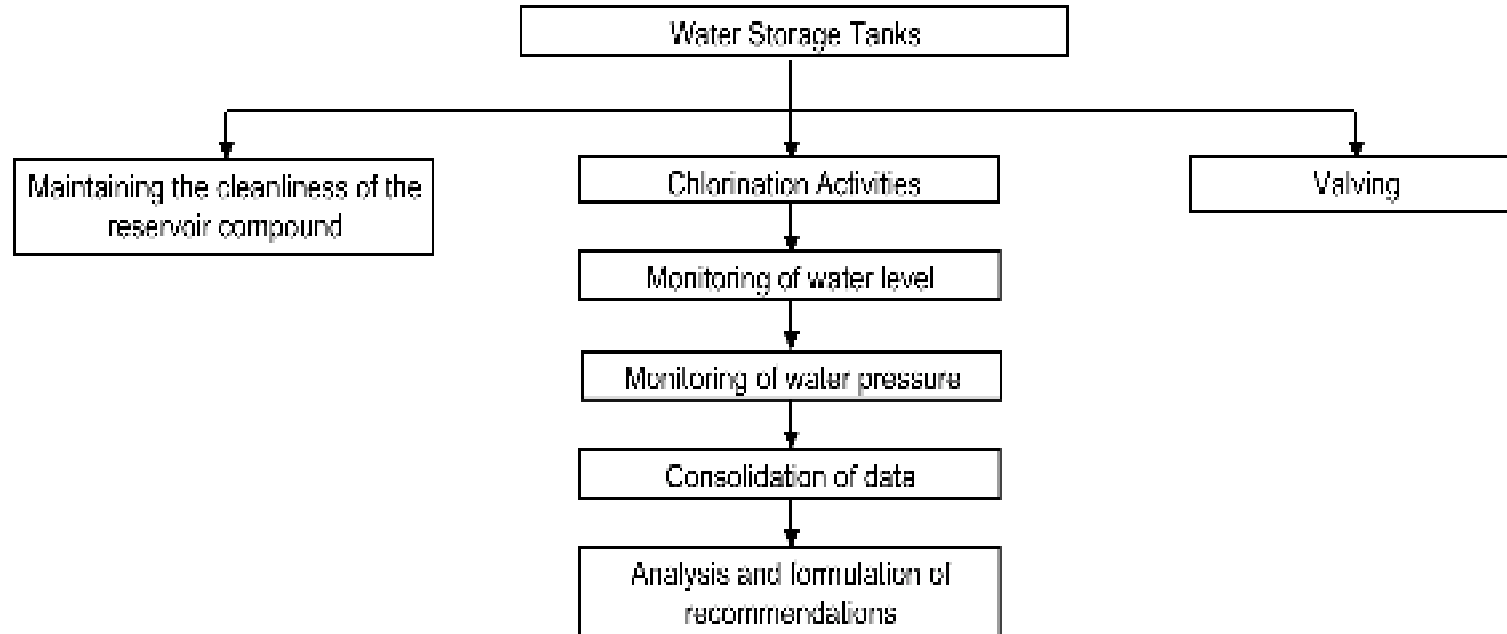
Pump Houses



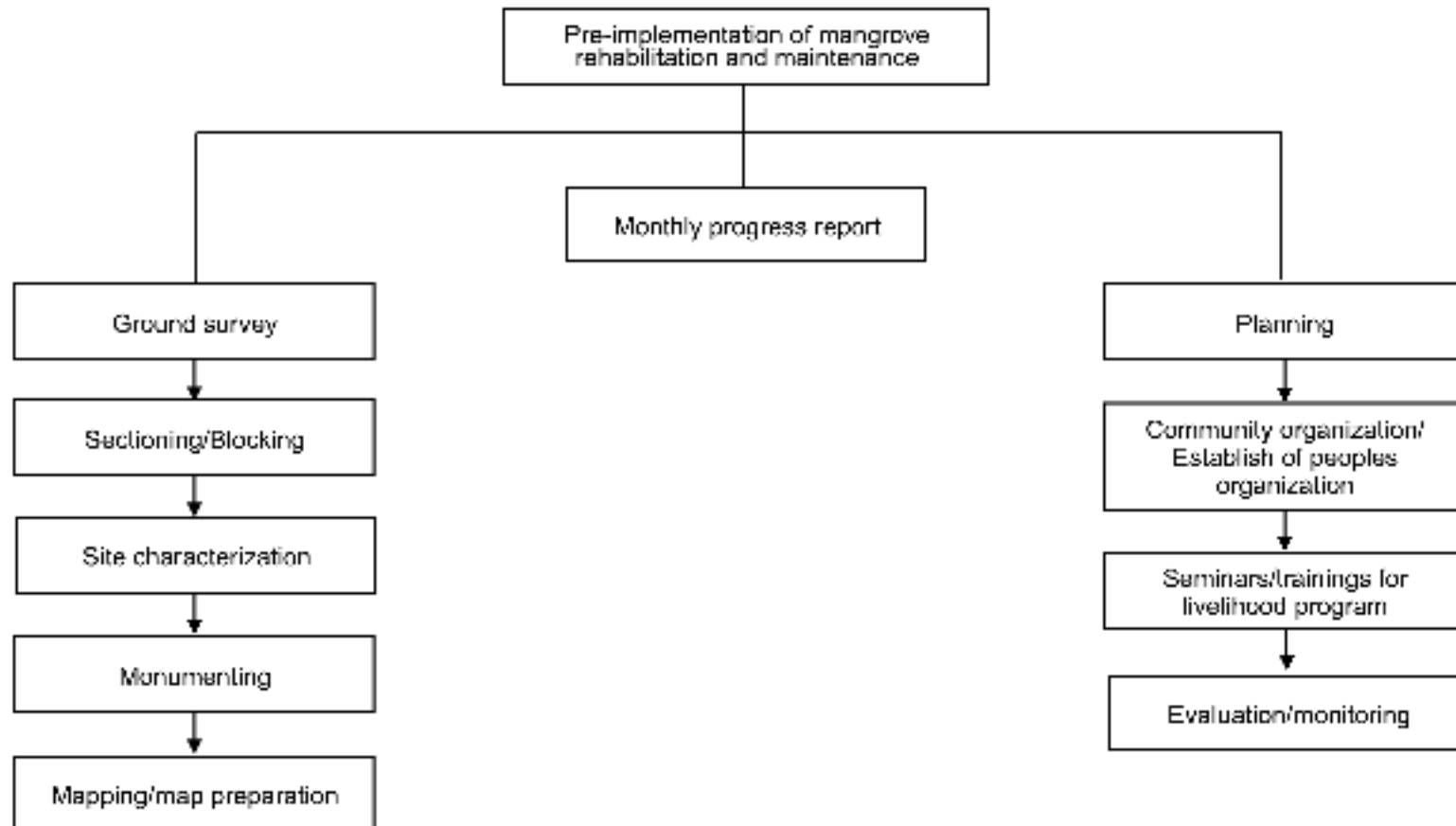
IMPLEMENTATION OF SPECIAL PROJECTS



Water Storage Tanks



MANGROVE REHABILITATION AND MAINTENANCE



Hatid Tubig sa Barangay

