

## ***Survey of Water Services Vulnerabilities***

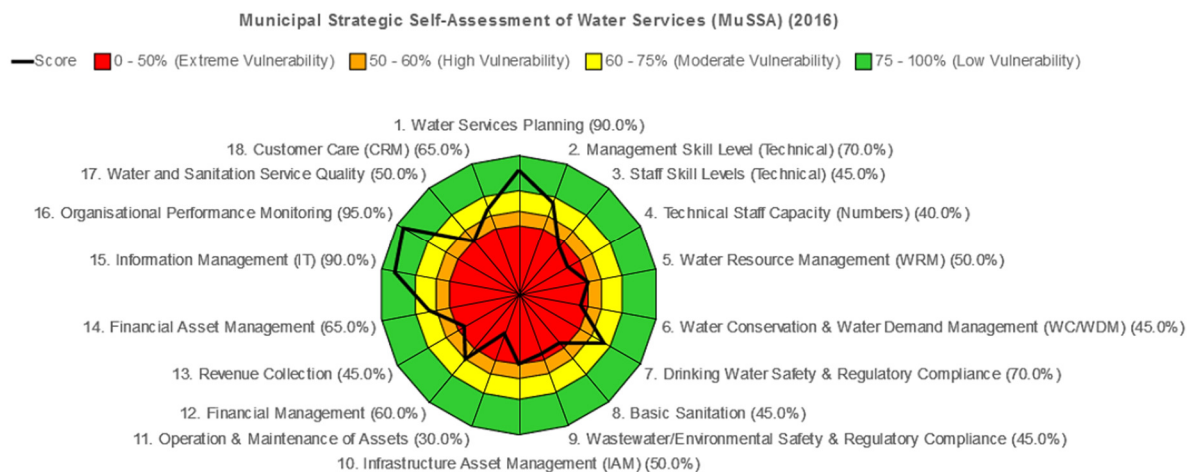
### ***Municipal Strategic Self-Assessment (MuSSA): City of Polokwane Municipality***

#### **Prioritising What Has to be done to Enable Effective Water Services Delivery**

Dear Mayor, Municipal Manager, Chief Financial Officer and Technical Manager

Thank you for participating in the 2016 Municipal Strategic Self-Assessment (MuSSA) survey!

The Department of Water and Sanitation has overseen the annual use of the MuSSA to survey and assess the overall “business health” of a Municipality when fulfilling its water services function. The MuSSA asks senior municipal financial and technical managers 5 clear and relatively simple “essence” questions that cover 18 key business health attributes, and thereby generates key strategic flags (as opposed to deep technical detail, which is captured elsewhere). Responses to the questions are reflected in your MuSSA Spider Diagram below which illustrates the vulnerability levels across key service areas/business attributes. (Your responses to the questions are provided in Appendix A):



Your top areas of vulnerability of concern to the Department are:

- Staff Skill Levels (Technical) (45.0%)
- Technical Staff Capacity (Numbers) (40.0%)
- Water Conservation & Water Demand Management (WC/WDM) (45.0%)
- Basic Sanitation (45.0%)
- Wastewater/Environmental Safety & Regulatory Compliance (45.0%)
- Operation & Maintenance of Assets (30.0%)
- Revenue Collection (45.0%)

The Department of Water and Sanitation trusts that you will find the information useful for identifying and prioritizing the key remedial actions that you need to undertake to ensure effective water services delivery in your municipality. This information will also be forwarded to National Treasury, the Presidency, and the Department of Cooperative Governance for their consideration and possible follow up with you.

To address MuSSA vulnerability findings, both the Department of Water and Sanitation (DWS) and the South African Local Government Association (SALGA) recommends the adoption of “a start-to-finish management approach” (i.e. a “Plan-Do-Check-Act” framework), and has developed a structured Municipal Priority Action Planning (MPAP) process to support such. The MPAP comprises the following four parts:

- Step I – Analyse the current situation via the MuSSA, whereby both the WSA and Regional DWS jointly prioritise where the WSA needs to improve and set associated targets.
- Step II – Determine the approaches on how to achieve the desired improvements.
- Step III – Set Actions to achieve these improvements and targets.
- Step IV – Monitor, Evaluate and Communicate progress (including updating the MuSSA), by both the WSA and DWS regional office.

The MuSSA and MPAP are planning tools and form integral components of support for the Water Services Development Plan (WSDP) process at a strategic level. In so doing the MuSSA and MPAP will also guide the DWS Master Planning process and subsequent Feasibility Studies to be undertaken.

Inclusion of the MuSSA and MPAP within the WSDP processes ensures that the WSDP (which informs the IDP) will include an appropriate and supported allocation of resources to systematically address the prioritized vulnerabilities. This will in turn lead to an improvement to the overall water services business health of your WSA.

Should you have any queries regarding your MuSSA output, or would like assistance to implement the MPAP approach, please do not hesitate to contact any of the following DWS/SALGA MuSSA / MPAP representatives:

- Grant Mackintosh (E-mail: [grantm@emanti.co.za](mailto:grantm@emanti.co.za); Tel: 021-880-2932)
- Allestair Wensley (E-mail: [wensleya@dws.gov.za](mailto:wensleya@dws.gov.za); Tel: 012-336-8767)
- William Moraka (Email: [wmoraka@salga.org.za](mailto:wmoraka@salga.org.za); Tel: 012-369-8056)

Best regards  
DWS Water Services Planning and Information Team

## **Appendix A: MuSSA 2016 Responses**

### **City of Polokwane Municipality**

#### **SECTION: Context Information**

C1 - Municipality name

City of Polokwane

C2 - Date of completion

13 January 2017

C3 - Municipality type

B1 - LM

C4 - Water service provider type

Combination of internal and external

C5 - Wastewater service provider type

Internal (i.e. municipality)

C6 - Water system maintenance

Internal (i.e. municipality)

C7 - Wastewater system maintenance

Internal (i.e. municipality)

C8 - You are able to respond within necessary timeframes to emergencies, via internal staff and resources, or through other procurement processes (e.g. 'as and when' required contracts)

Partially in place, but not ideal

C9 - The key staff (i.e. managerial) turnover in your WSA

Low: < 10% (i.e. not an issue, good staff retention)

C10 - Your WSA has developed and implemented a scarce skills policy

In development

C11 - Your WSA is preparing for the impacts of pending and/or new regulations (e.g. Regulation 813 (previously Regulation 17) (WTW and WWTW process controllers), municipal Standard Chart of Accounts (mSCOA))

Yes, strongly agree

C12 - Your WSA actively provides required drinking water related data to the Regulator (e.g. Blue Drop participation)

Yes, strongly agree

C13 - Regular drinking-water quality monitoring and management (including boreholes) is performed for ALL communities/towns in the WSA

Most (i.e. >75% of WSA population)

C14 - WTWs operational capacity as a function of total design capacity (NOTE: Combine for ALL WTWs within your WSA)

>100% - 105%

C15 - Your WSA actively provides required wastewater related data to the Regulator (e.g. Green Drop participation)

Yes, strongly agree

C16 - Regular wastewater quality monitoring and management is performed for ALL wastewater systems in the WSA

Yes, all (i.e. 100%)

C17 - WWTWs operational flow capacity as a function of total design capacity (NOTE: Combine for ALL WWTWs within your WSA)

>105%

C18 - WWTWs operational COD load as a function of total design load (NOTE: Combine for ALL WWTWs within your WSA)

>105%

C19 - Your WSA actively provides required water conservation and water demand management related data to the Regulator (e.g. No Drop participation)

Yes, strongly agree

C20 - Your WSA actively promotes improved hygiene practices through campaigns in communities (e.g. hand washing education, safe and improved sanitation)

Partially in place, but not ideal

C21 - Billing & accounts - With regards to water and sanitation bills, please indicate the frequency of billing and posting of accounts.

Actual billing and posting of accounts on a monthly basis

C22 - Development contributions - With regard to new developments, by-laws in your municipality require developers to adequately contribute towards construction of new bulk infrastructure (i.e. developers charges).

In process

C23 - Please indicate what proportion of your budget (CAPEX and OPEX) is actually funded?

>90% - 100%

C24 - Council is stable with functional Council meetings.

Yes, strongly agree (i.e. Council meetings are held at least quarterly)

C25 - Council has functional Oversight and Ward Committees

Partially in place, but not ideal

C26 - Council has effective systems of internal control and functional governance structures (internal audit unit, audit committee, risk committee, IT governance)

Yes strongly agree (i.e. internal audit unit established and posts filled, governance structures in place, frequent meetings held and risk assessments conducted, audit plan developed and quarterly reports submitted to council)

C27 - Regular forensic investigations are undertaken to ensure adherence to governance requirements (i.e. either internally initiated by the municipality or externally initiated by, for example, Public Protector, Auditor General)

Partially in place, but not ideal

C28 - Your municipality actively implements actions against identified instances of fraud and corruption, maladministration and failure to fulfil statutory obligations

Yes strongly agree

C29 - Your municipality has ongoing and appropriate public participation, is transparent in its decision making, and is accountable to its constituency (fiscal and social).

Yes, strongly agree

C30 - Your MuSSA was completed with appropriate inputs from senior officials within Technical Services, Finance and Human Resources (as a minimum these 3 departments should participate).

Yes, strongly agree (i.e. Technical Services HOD, Finance AND HR all participated)

C31 - Names, designation and contact details (phone, email) of all MuSSA participants (e.g. Mr Thabo Smit; Technical Director; 0215436789; thabos@muni.gov.za)

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Mr M.J. Makgata, DCFO, 015 290 2050, joelm@polokwane.gov.za

Mr R.K. Maenetsha, Assistant Manager Systems. 081 598 9603,  
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## **SECTION: 1. Water Services Planning**

1. Your Water Services Development Plan (WSDP) and associated master planning processes include and are aligned with appropriate Water and Sewage Master Plans, Spatial Development Framework (SDF), Water Safety Plans and Wastewater Risk Abatement Plans (W2RAPs), and is aligned to the IDP and associated SDBIP targets.

Yes, WSDP developed and contains most of the required plans and alignment (i.e. >75%)

2. You are implementing an up-to-date and adopted WSDP.

WSDP up-to-date, adopted and implemented

3. Your current project list addresses existing needs/shortcomings identified through the WSDP and associated master planning process.

Yes, all projects (i.e. 100%)

4. Project progress is monitored, tracked and reported to municipal top management/council and the Regulator (through the annual water and sanitation services report)

Yes, strongly agree (both to municipal top management/council and Regulator)

5. Projects identified through your various planning processes have been implemented in the last 3 years.

Most implemented (i.e. >75%)

## **SECTION: 2. Management Skill Level (Technical)**

1. Your council approved technical management organisational organogram meets your business requirements, and key posts are filled (e.g. Technical Director, Water Services Manager, Sanitation Services Manager).

Yes, and most posts filled (i.e. >75%)

2. You have sufficient technical management staff (appropriate number of staff - e.g. at least 5 posts per 100,000 persons served).

Mostly agree (i.e. >75% as per approved organogram)

3. Technical management staff have the correct skills/qualifications and experience as per Job Description requirements (e.g. if Job Description requires PrEng, PrTech or CPM, the staff have these qualifications).

Most (i.e. >75%)

4. Managers regularly attend appropriate water and sanitation services skills development/training.

Less frequent skills development/ training (i.e. >1 year)

5. Key technical managers (e.g. Section 56 and other Senior Management) have signed and monitored Performance Agreements.

Yes, all (i.e. 100%)

### **SECTION: 3. Staff Skill Levels (Technical)**

1. WTWs are operated by staff with the required skills/qualifications and experience (as per Regulation 2834).

Some (i.e. >50%)

2. WWTWs are operated by staff with the required skills/qualifications and experience (as per Regulation 2834).

Some (i.e. >50%)

3. Water system plumbers, millwrights, mechanics and electricians have the required skills/qualifications and experience.

Some (i.e. >50%)

4. Sewage system plumbers, millwrights, mechanics and electricians have the required skills/qualifications and experience.

Some (i.e. >50%)

5. Staff regularly attend appropriate water and sanitation services skills development/training (including safety) (e.g. ESETA courses).

Less frequent skills development / training (i.e. >1 year)

### **SECTION: 4. Technical Staff Capacity (Numbers)**

1. Your council approved technical staff organisational organogram meets your business requirements, and posts are filled (i.e. Superintendent of WTWs/WWTWs and below).

No, does not meet requirements

2. WTWs are operated by the appropriate number of staff (as per Regulation 2834).

Agree somewhat (i.e. >50% as per requirements)

3. WWTWs are operated by the appropriate number of staff (as per Regulation 2834).

Agree somewhat (i.e. >50% as per requirements)

4. You have sufficient water and sewerage/sanitation network operations and repair staff/plumbers (i.e. you have the appropriate number of staff).

Agree somewhat (i.e. >50% as per the approved organogram)

5. An active mentoring/shadowing programme is in place where experienced staff train younger, inexperienced staff.

In place, but not ideal

## **SECTION: 5. Water Resource Management (WRM)**

1. The recommendations and actions from the Reconciliation Strategies (Large Systems/All Towns) have been incorporated into your WSDP, master planning and IDP processes.

Yes, strongly agree

2. The metered quantity of water available from the resources is sufficient for your current WSA needs (at the stipulated level of abstraction and assurance of supply).

1-50% shortage

3. The metered quantity of water available from the resources is sufficient for your future WSA needs (at the stipulated level of abstraction and assurance of supply, and considering possible climate change impacts) (i.e. no shortage in 10 years).

41-50% shortage

4. The source water quality is currently acceptable for its purpose.

Mostly agree (i.e. >75% of sources acceptable)

5. The trend indicates a deteriorating source water quality.

< 25% of sources deteriorating

## **SECTION: 6. Water Conservation & Water Demand Management (WC/WDM)**

1. Your WSA has developed a council approved Water Conservation and Water Demand Strategy which includes a standard water balance (e.g. modified IWA).

Only water balance developed

2. Please indicate your percentage Non-Revenue Water (NRW) as per the modified IWA water balance.

50% or more



3. System input volumes (bulk) to the WSA are accurately monitored using calibrated bulk meters (e.g. check metering).

Yes, All (i.e. 100%)

4. Please indicate what percentage of all connections are metered and billed (residential and non-residential (commercial, industrial, etc.)) on a monthly basis.

50% - 75%

5. Your WSA is implementing appropriate intervention programmes to reduce NRW (e.g. minimisation of night flows through pressure management, removal of unlawful connections, leak detection and repairs, consumer education/awareness).

<50% implementation

## **SECTION: 7. Drinking Water Safety & Regulatory Compliance**

1. Please indicate your microbiological drinking-water quality compliance for E.coli (or faecal coliforms) for the communities you are monitoring for the last 12 months.

97% - <99%

2. ALL your supply schemes, WTWs, process controllers, monitoring programmes, sample points, laboratories, results, procedures, protocols, etc. are registered/frequently updated with the Regulator (e.g. via the BDS).

Yes, strongly agree (i.e. 100% registered/updated)

3. Council have been made aware of all water safety plan related issues (including those identified via the Blue Drop Certification programme) that requires budget and actioning, and these issues have been actioned (where applicable).

Mostly agree (i.e. >75% tabled)

4. Sufficient funds have been made available to address all these identified water safety related issues.

Agree somewhat (i.e. >50% of required funds)

5. Required corrective actions/remedial measures to address all these identified water safety related issues have been successfully implemented.

Agree somewhat (i.e. >50% implementation)

## SECTION: 8. Basic Sanitation

1. You have formal housing areas that are not fully serviced with sanitation infrastructure

Yes, still trying to meet formal backlog with <60% serviced (e.g. occurrence of bucket systems, existence of open defecation)

2. You have informal housing or rural areas that are not fully serviced with sanitation infrastructure

Yes, still trying to meet informal or rural backlog with <60% serviced (e.g. occurrence of bucket systems, existence of open defecation)

3. You have a detailed plan and programme to provide safe sanitation to all households (including health and hygiene education and user awareness including Water, Sanitation and Health (WASH) aspects)

Mostly agree (i.e. >75% implementation)

4. Your sanitation budget is appropriate for required sanitation programmes (implementation and O&M)

Serious underfunding (<50% of required funds)

5. You are servicing your pit latrines and maintaining your sewers and wastewater treatment facilities as per safe sanitation requirements (healthy, environmentally safe, structurally sound, regularly maintained, following faecal sludge management best practices).

Mostly agree (i.e. >75% as per requirements)

## SECTION: 9. Wastewater/Environmental Safety & Regulatory Compliance

1. Please indicate your treated wastewater effluent compliance for COD for your (or your service provider's) WWTWs for the last 12 months.

<80%

2. ALL your WWTWs, process controllers, monitoring programmes, sample points, laboratories, results, procedures, protocols, etc. are registered/frequently updated with the Regulator (e.g. via the GDS).

Yes, strongly agree (i.e. 100% registered/updated)

3. Council have been aware of all W2RAP related issues (e.g. pollution incidents, Green Drop deficiencies) that requires budget and actioning, and these issues have been actioned (where applicable).

Mostly agree (i.e. >75% tabled)

4. Sufficient funds have been made available to address all identified wastewater and environmental safety related issues.

< 50% of required funds

5. Required corrective actions/remedial measures to address all identified wastewater and environmental safety related issues have been successfully implemented.

50% implementation

## **SECTION: 10. Infrastructure Asset Management (IAM)**

1. You have an appropriate and up-to-date water and sanitation services technical Asset Register (includes asset name, location, condition, extent, remaining useful life, performance and risk). NOTE: This does only not refer to GRAP17 asset register requirements.

Yes, strongly agree (e.g. advanced asset register)

2. You have developed an appropriate Infrastructure Asset Management (IAM) Plan for your WSA.

Partially in place, but not ideal

3. You are implementing the IAM outcomes

Agree somewhat (i.e. >50% implementation)

4. Budget allocated to implement IAM outcomes is sufficient and is being effectively spent.

Agree somewhat (i.e. >50%)

5. You conduct annual technical assessments of your water and wastewater related systems (including sources, WTWs, WWTWs, pump stations, network, etc.) and implement required follow-up actions.

No systems (i.e. 0%)

## **SECTION: 11. Operation & Maintenance of Assets**

1. An appropriate maintenance facility that is secure and stocked with essential equipment (e.g. spare parts), plant and tools is available.

Yes, strongly agree

2. Appropriate water and sanitation services infrastructure/equipment planned/preventative maintenance schedules are developed.

No, disagree

3. Appropriate planned/preventative maintenance is performed at all WTWs and associated reservoirs, pump stations, distribution network.

<50%

4. Appropriate planned/preventative maintenance is performed at all WWTWs and associated collection system, pump stations.

< 50%

5. Please indicate your infrastructure repairs and maintenance costs as a function of total operating expenditure (%).

<5%

## **SECTION: 12. Financial Management**

1. Financial controls - With regard to your last audit report on the financial statements, please state the audit opinion.

Financially unqualified audit opinion (with findings)

2. Cash flow status - Please state your Cash/Cost Coverage Ratio (excluding Unspent Conditional Grants)

> 90 days

3. Your actual operating expenditure closely reflects your budgeted operating expenditure (i.e. Operating Expenditure Budget Implementation Indicator)

<80%

4. Your actual revenue closely reflects your budgeted operating revenue (i.e. Operating Revenue Budget Implementation Indicator)

80% - <85%

5. Liabilities (Creditors) - Money is owed by your municipality to major/critical service providers (e.g. ESKOM, Water Board, largest contractors, etc.) for more than 30 days from receipt of invoice (NOTE: Ignore disputed invoices)

Never

## **SECTION: 13. Revenue Collection**

1. Please indicate the frequency of actual meter readings.

Actual meter reading on a monthly basis

2. Net Surplus/Deficit - Please state your net surplus/deficit from water services activities for the last 12 months (NOTE: This question tests whether your WSA currently has fully cost reflective Water and Sanitation tariffs (which take into account cost of maintenance and renewal of purification plants and networks, and the cost of new infrastructure).

Net deficit (i.e. <0%)

3. Revenue collection - Please state the revenue collection rate in respect to Water & Sanitation Services (%)

80% - <95%

4. Revenue Growth - Please state your Water and Sanitation Services revenue growth for the last 12 months (%).

<CPI, but >0%

5. Grant dependency - Actual operating revenue less operational grants/subsidies (e.g. equitable share) sufficiently covers actual operating expenditure.

< 50%

## **SECTION: 14. Financial Asset Management**

1. Capital Expenditure (Municipal) - Please state your municipal Capital Expenditure as a percentage of Total Expenditure (i.e. Total Operating Expenditure + Capital Expenditure)

20% or more

2. Capital Expenditure (Water Services) - Please state your Capital Expenditure on Water and Sanitation Services as a percentage of Total Capital Expenditure (Capital Expenditure (Municipal))

50% - <75%

3. Asset Renewal - Please state your Asset Renewal investment as percentage of Depreciation costs

<50%

4. Repairs and Maintenance - Please state your Repairs and Maintenance expenditure as a percentage of Property, Plant and Equipment, Investment Property (Carrying Value)

<5%

5. Grant funding of capital expenditure - Please state your reliance on grant funding

<50%

## **SECTION: 15. Information Management (IT)**

1. You have a developed, approved and implemented IT Master Systems Plan (e.g. covering 3 - 5 years) that addresses your IT business requirements.

Yes, developed, approved and being implemented

2. You have a developed, approved and implemented ICT Technology Master Plan that addresses your current and future IT infrastructure requirements.

Yes, developed, approved and being implemented

3. You have IT systems that support your full range of water and sanitation services business requirements (e.g. billing, GIS, customer care, O&M, asset management).

Mostly agree (i.e. >75% of required systems)

4. ICT service continuity - Adequate IT security exists with off-site back-ups/archiving of operation critical applications, databases, data, etc. routinely performed in terms of an IT Disaster Recovery Plan.

Yes, strongly agree (i.e. All (100%) in place)

5. You have sufficient budget (e.g. target 2.5% of OPEX budget) and staff to keep key IT systems stable and up-to-date as per IT policies and procedures.

Mostly agree (i.e. >75%)

## **SECTION: 16. Organisational Performance Monitoring**

1. Appropriate plans, policies and procedures to address Disaster Management/emergencies and other issues (safety, public participation, communication, etc.) are developed and implemented. NOTE: Although Disaster Management is a district function, LMs need to ensure they are aware of their associated roles and responsibilities and have developed a Disaster Management Framework.

Yes, developed and implemented

2. An organisational performance management system is developed and implemented (i.e. effectively measure, monitor and track water and sanitation services performance indicators).

Yes, developed and implemented

3. A municipal risk management framework is developed and implemented and includes monitoring and tracking of water and sanitation related risks.

Yes, developed and implemented and includes water and sanitation related risks

4. Effective administration support is available to technical staff to assist with processing work orders, providing order numbers, handling correspondence, etc.

Mostly agree (i.e. >75% effective)

5. "Access to Basic Water and Sanitation Services" progress reports are frequently produced and presented to council for discussion, action and follow-up.

At least quarterly

## **SECTION: 17. Water and Sanitation Service Quality**

1. Critical business databases and documents (e.g. as-built drawings, records, manuals, agreements, billing/revenue collection, project and scheme management data, etc.) are current, maintained and stored in secure locations (on-site and off-site, both paper and electronic).

Yes, strongly agree (i.e. 100% in place)

2. Customers have a functional, reliable and safe water supply system with sufficient quantity and flow, good quality, and minimal interruptions.

Some have a functional, reliable and safe service (i.e. > 50%)

3. All consumers served experience interruptions of less than 48 hours (at any given time) and a cumulative interruption time during the year of less than 15 days.

<50% of households

4. Households in your WSA experience water pressure problems (no flow/partial flow less than 10 litres/minute) (not to be confused with interruption to supply).

< 50% of households

5. Customers have a functional, reliable, dignified and safe sanitation system with no blockages, minimal overflows and impact on environment, including effective collection and treatment of faecal sludge.

Some have a functional, reliable, dignified and safe service (i.e. > 50%)

## **SECTION: 18. Customer Care (CRM)**

1. A functional customer service system manned by appropriate customer services representatives and using a complaints register, is in place to address complaints and appropriately inform customers of service interruptions, contamination of water, boil water alert, etc.

Partially in place, but not ideal

2. Regular customer satisfaction surveys are conducted to determine customer satisfaction levels and inform the Customer Care Management Plan

Less frequent customer satisfaction surveys (i.e. > 2 years)

3. Please indicate what percentage of the reported water related complaints/callouts are responded to within 24 hours.

Most (i.e. >75%)

4. Please indicate what percentage of the reported wastewater/sanitation related complaints/callouts are responded to within 24 hours.

Most (i.e. >75%)

5. A comprehensive customer awareness programme (informing customers of water and wastewater system O&M activities, water quality, resource protection/pollution, reporting incidents/security concerns, etc.) is in place and implemented.

Yes, strongly agree