MINNESOTA POLLUTION CONTROL AGENCY

Minnesota Pollution Control Agency
Quality Management Plan

2018

December 2017

Minnesota Pollution Control Agency
520 Lafayette Road North
St. Paul, MN 55155-4194

Minnesota PCA Concurrences

John Linc Stine, MPCA Commissioner — Date

3/12/18

Michelle Beeman, MPCA Deputy Commissioner — Date

3/12/18

Shannon Lotthammer — Date
Environmental Analysis and Outcomes Division Director

12 March, 2018

Todd Biewen — Date
Environmental Analysis and Outcomes Division Asst. Director

March 6, 2018

Luke Charpentier — Date
Quality Assurance Coordinator Supervisor

6 Mar 2018

Bill Scruton — Date
Quality Assurance Coordinator, Remediation

March 6, 2018

EPA Region 5 Concurrences

Cathy Stepp, Regional Administrator — Date: 4-3-18

Ed Chu, Acting Deputy Regional Administrator — Date: 3/26/18

Jackie Adams — Digitally signed by Jackie Adams Date: 2018.03.26 10:12:43 -05'00'

Jackie Adams, Regional Quality Assurance Manager — Date

EILEEN FUREY — Digitally signed by EILEEN FUREY Date: 2018.03.23 16:32:11 -05'00'

Edward Nam, Director Air and Radiation Division — Date

Harris, Michael — Digitally signed by Harris, Michael Date: 2018.03.21 12:49:36 -05'00'

Mike Harris, Acting Director, Land & Chemicals Division — Date

Digitally signed by DOUGLAS BALLOTTI Date: 2018.03.23 15:25:50 -05'00'

Robert Kaplan, Acting Director, Superfund Division — Date

LINDA HOLST — Digitally signed by LINDA HOLST Date: 2018.03.22 15:39:33 -05'00'

Chris Korleski, Director, Water Division — Date

TINKA HYDE — Digitally signed by TINKA HYDE Date: 2018.03.22 08:33:14 -05'00'

Tinka Hyde, Director, Great Lakes National Program Office — Date

CHERYL NEWTON — Digitally signed by CHERYL NEWTON Date: 2018.03.26 10:03:59 -05'00'

Cheryl Newton, Director, Resources Management Division — Date

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1.0 Introduction

The Minnesota Pollution Control Agency's (MPCA) Quality Management Plan (QMP) describes the quality management structure and processes used to maintain a Quality Management System consistent with U.S. Environmental Protection Agency (EPA) requirements. The MPCA updates the QMP through a yearly letter to EPA and produces a full rewrite of the QMP for EPA review every five years. MPCA's QMP is based on:

- *EPA Quality Manual for Environmental Programs (CIO 2105-P-01-),*
- *EPA Requirements for Quality Management Plans, EPA QA/R-2, March 2001 (EPA/240/B-01/002),*
- *Specifications and Guidelines for Quality Systems for Environmental Data Collection and Environmental Technology Programs ANSI/ASQC E4-2014,* and
- *Guidance on Systematic Planning Using the Data Quality Objectives Process, EPA QA/G-4, February 2006 (EPA/240/B-06/001).*

Key Definitions

Quality Assurance

It is an integrated system of management activities involving planning, implementation, assessment, reporting, and quality improvement to ensure that a process, item, or service is of the type and quality needed, and expected, by the customer.

Figure 1 QMP Umbrella

Quality Control

Quality Control (QC) is the overall system of technical activities that measures the attributes and performance of a process, item, or service against defined standards to verify that they meet the stated requirements established by the customer, operational techniques and activities that are used to fulfill requirements for quality.

Quality Assurance Program Plan

Quality Assurance Program Plan (QAPrP) are documents that describe Quality Assurance details that are specific to a Program or a Division. The QAPrPs are used when the QMP is too general to encompass the unique circumstances for all Programs. The appropriate level of planning will be determined within the Program. Some Programs, may use a QAPrP in lieu of a Quality Assurance Project Plans (QAPPs).

Quality Assurance Project Plans

Quality Assurance Project Plans (QAPPs) document the planning, implementation, and assessment procedures for a particular project, as well as any specific Quality Assurance (QA) and QC activities. It integrates all the technical and quality aspects of the project in order to provide a "blueprint" for obtaining the type and quality of environmental data and information needed for a specific decision or use. All work performed or funded by EPA that involves the acquisition of environmental data must have an approved Quality Assurance Project Plan.

Data Quality Objectives

Environmental data collected should be of adequate quality and quantity to support intended assessment or regulatory decisions, and when necessary be legally defensible. The Agency staff use the Data Quality Objectives (DQOs) process in the planning phase of agency data generating activities. This process helps staff define objectives for the project before any sampling starts. The Guidance for the Data Quality Objectives Process (2006) and EPA's QA/G-4 is used as appropriate for the development of DQOs by the agency. In many situations, regulatory criteria and standards limits are the basis for environmental decisions. In these situations, the appropriate planning document (i.e. QAPrP, QAPP), or standard operating procedures (SOP) should state regulatory limits are the driving force for the Data Quality Objectives.

Agency Level Quality Management

The mission of the Minnesota Pollution Control Agency (MPCA) is to "protect and improve the environment and human health". The MPCA strives for environmental and public health protection and for Minnesota citizens through a variety of products and services. Our core products and services include:

- monitoring environmental quality and providing access to that data and information;
- setting standards, rules and policies that protect the environment and public health;
- providing assistance and education to prevent pollution;
- issuing permits or licenses and enforcing environmental regulations;
- finding and cleaning up contamination or pollution that affects our health and environment; and
- responding to emergencies.

MPCA products and services are delivered directly to a wide spectrum of individuals, companies, governmental entities and non-profit organizations. This Quality Management Plan applies to all work performed by and for the MPCA through contracts, interagency agreements, grants, and regulatory actions and consent agreements.

The MPCA manages through a matrix organization, where the divisions maintain the vast majority of programmatic authority and decision-making related to implementing environmental programs and meeting customer needs. A lateral structure has been created to share control over (1) operational functions (fiscal, human resources, environmental results management, etc.) through operational management teams, and (2) media decisions (air, water, land, etc.) through media forums. These teams/forums, which include all managers and selected supervisors, direct operational issues and share decision-making for higher-level policy and budget issues that affect multiple divisions. The senior managers appoint the team members and members rotate to gain broad experience, where possible. The management teams ensure operations are efficient and effective. The teams are led by managers and championed by Division Directors.
These teams include:

- Information Systems Management Team
- Human Resources Management Team (HRMT)
- Fiscal Management Team
- Continuous Improvement Management Team (CIMT)
- Environmental Results Management Team
- Administrative Business Systems Management Team
- Emergency Operations Plan Management Team
- Sustainability Management Team

These teams develop policy and build agency-wide acceptance for solutions that ensure consistency in conducting agency business.

Media forums were created to ensure programs and activities are consistent, coordinated, and aligned with the agency's strategic plan. Team members are appointed by senior managers and led by Assistant Commissioners.

The media forums include:

- Air
- Land
- Water
- Excellence

The MPCA periodically reviews the environmental work we do to show progress on the agency's strategic plan goals and objectives, and on the operational work that supports the agency's plan. In this way, the MPCA uses the plan, do, check, and adapt cycle. Every 6 months, each media forum (air, water, land, and excellence) report on their progress.

Operational performance review

Annual review of division dashboard measures—organized by media and focusing on off-target metrics. The operational review answers the questions "how much are we doing and how well are we doing it?" The MPCA's operational performance review vision is to demonstrate excellence in operations. To evaluate our progress, three goals have been established. Does the MPCA continuously strive to improve and regularly evaluates performance? Does the MPCA recruit and retain an engaged, motivated, and creative workforce? Does the MPCA deliver data and services in a timely, transparent, and reliable manner? Divisions provide dashboards to forums with recommended changes based on the data. Forums then review dashboards and perform adaptive management. Finally, forum champions present dashboards and changes to senior managers.

Strategic performance review

An annual review is conducted to determine progress toward meeting strategic plan objectives. The MPCA's strategic performance review vision is to evaluate if Minnesotans and the MPCA take action to protect the State's land, water, and air. Management defines the goals for the review. The MPCA is currently updating our strategic plan goals for the next five-year period, 2018-2022. Forums establish accountability for tracking. The reviews generally follow the same process as operational review. Past performance reviews are available for inspection by staff on our Intranet web page.

The Quality Assurance Policy of the MPCA:

The Policy of the Minnesota Pollution Control Agency (MPCA) is to perform its mission, meet the goals stated within the Agency Strategic Plan (https://www.pca.state.mn.us/about-mpca/mpca-strategic-plan), and ensure all MPCA programs and leaders use quality data to make decisions. The MPCA achieves these quality goals by using a system of quality assurance practices, consistent with the guidance and requirements of the U.S. Environmental Protection Agency (U.S. EPA). The MPCA strives to meet the U.S. EPA quality requirements for all work funded by U.S. EPA and State, including, but not limited to:

- the acquisition and/or use of environmental data generated by Agency staff,
- collected by our partners and other State agencies. and
- compiled from computerized databases and information systems.

To meet its mission and goals, the MPCA Commissioner (and the senior managers) ensure that adequate resources are allocated to achieve the quality policy.

The QMP applies to all programs, grants, contracts, and interagency agreements that collect and/or evaluate environmental data used to make decisions.

The QMP is distributed to all staff responsible for implementing the QA policies and procedures detailed in the document. The QMP (along with all policies, procedures, and guidance documents) is posted on the MPCA Quality System internet webpage (https://www.pca.state.mn.us/about-mpca/mpca-quality-system).

The MPCA uses approved quality assurance project plans (QAPP) and program plans (QAPrP) [like the PCB inspection program] that meets U.S. EPA standards in all projects that generates data. In addition, MPCA requires an approved QAPP or other quality documentation for any project undertaken by any entity that generates data on behalf of the Agency or as a grantee of the Agency.

The objective of the MPCA's quality assurance policy is to ensure that the data used by MPCA are of known quality and are appropriate for the environmental decisions made using the data.
The MPCA's quality organization structure is such that the QA staff are independent and do not report to Program managers (Figure A)

Minnesota Pollution Control Agency Activities and Programs

The MPCA has numerous programs targeting specific environmental areas. These programs vary in size and scope and have QA/QC policies to insure that they meet quality objectives. Managing the QA/QC policies is the responsibility of Program staff, MPCA management, Quality Assurance Coordinators (QACs), and other MPCA staff. All have the responsibility to ensures that adequate QA/QC is adhered to in all MPCA programs. The type of quality documentation is indicated in the Division and Section descriptions that follow.

Staff Roles, Responsibilities and Authorities are described as follows:

Quality Assurance Director

The Environmental Analysis and Outcomes Division Director has the ultimate responsibility for quality activities at the MPCA. The quality function is housed within the Environmental Analysis and Outcomes (EAO) Division through the Environmental Data Quality Unit, and through this unit, throughout the MPCA. The EAO Division Director gives final approval on any issues dealing with other state and federal Agencies, major issues requiring an approval, and major policy documents. The EAO Division Director is the final arbitrator for any large-scale quality assurance issues.

Environmental Data Quality Manager

The Environmental Data Quality (EDQ) Manager is responsible for all QA work for MPCA programs and sites. The EDQ Manager is the QA Manager for the MPCA and therefore, reviews issues raised by the QA Supervisor, QA staff, or other managers and staff throughout MPCA making decisions on resources and Agency wide policy decisions. If there are any quality assurance disputes, the affected parties will try to resolve them through discussion and negotiation. However, if agreement cannot be reached, the QA Manager has the responsibility to make the final decision for any contested QA-related issue. The QA Manager works with the EAO Division Director to resolve highly contentious issues, possible legal issues

involving quality assurance decisions, or policy. The QA Manager is not involved in day-to-day operations at the staff level or with normal laboratory oversight, but is available to meet with any laboratory or consultant with a concern. The QA Manager receives daily check-ins and directly supervises the QA Supervisor.

Quality Assurance Supervisor

The MPCA QA supervisor is located in the St. Paul office. The QA Supervisor oversees the day-to-day QA efforts of the Quality Assurance Coordinators (QACs) and the oversight of the QMP, the EQuIS data system staff within the group and Geographical Information System (GIS) support of for the division. The QA Supervisor works with the QACs, Sections, and Units across the MPCA to ensure a balance of QA support for Agency programs. The QA Supervisor works with management for data quality issues and works with the MPCA Data Quality Manager for issues surrounding data quality. The QA Supervisor takes direction from the Data Quality Manager on issues that arise in Senior Management meetings. Additionally, this position hires and counsels the unit staff for performance management and unit issues. The QA Supervisor meets with external agencies and parties as needed to assist with QA programmatic or policy issues.

Quality Assurance Coordinators

The QAC's are responsible for day-to-day quality operations across MPCA programs including Superfund, RCRA, TSCA, Solid and Hazardous Waste, Petroleum Remediation and Underground Storage Tanks, Air Quality, Water Quality, Wastewater Laboratory Certification, and our Environmental Quality Information System (EQuIS). This includes the review and approval of QAPPs, correction of deficient QAPPs with the Project Manager and the responsible management, training of staff, interactions with EPA and other agencies involved in different aspects of programmatic and site work, and technical assistance to staff and consultants on environmental chemistries. As part of this, the QAC's are responsible for the effectiveness of the MPCA's Quality System. The QAC's will also ensure the development and implementation of corrective actions in conformance with external and/or internal assessments. For example, the MPCA QACs are currently working on an internal audit of a number of sections throughout the Agency to ensure that QAPPs exist, are up to date, and are being followed. Upon completion of the internal audit, the results will be given to each section manager and the QA Manager for MPCA for follow up. The QACs will work with project staff on any deficiencies found to ensure MPCA meets the goals found within the Agency QMP. A further example is the TSA audits performed on a regular basis (every three years) by EPA Region V QA Staff. These audits are done on the air monitoring section and supporting QA ensuring 40 CFR Part 50 is followed. These audits are followed up upon by SOP and QAPP updates where needed, review and updating of any deficient data to including flagging of data if required in AQS (the EPA Air Database). All of this work is documented and saved within the Agency Archival databases.

QACs work directly with the QA Supervisor when contested issues or new and emerging questions arise. This helps to ensure consensus is gained and efforts are unified in the QA approach within the MPCA. QACs also serve as Agency Contract Managers for environmental laboratory services contracts. QACs will review data generated for their programs to ensure technical defensibility and provide a document describing their findings and an assessment of the impact of any QC failures on the usability of the data. QACs will also audit laboratories to verify that their operation can produce data that will meet the requirements of the program and complies with any applicable contract.

All QACs are located in the St. Paul office of the MPCA and report to the QA supervisor. This group meets regularly on a variety of issues including:

- Quality Documentation

- Field QA
- Lab QA
- Quality Audits

They support the QA needs across the agency as well as assist outside groups. The QACs are the initial contact for all staff with questions dealing with chemistry and often work on a wide variety of projects.

Table 1: MPCA Quality Assurance Unit

Staff Member	Staffing FTE	Programs	Responsibilities
Luke Charpentier	1.0	Supervisor	All program QC oversight, EQuIS Database oversight, work with external agencies for laboratory work/QA, reporting.
Sandy McDonald/ Bill Scruton	2.0	RCRA, Superfund Solid & Haz Waste, TSCA, Tanks	QAPP Review, Policy Writing, QA Training, Public Contact for QA, Laboratory Contracting/Auditing, Data review/validation
Dennis Fenlon	1.0	Air Quality	Air Monitoring Project Plan Review, QAPP Writing, Air Laboratory Quality Assurance Management, Coordinate Quality Assurance Field Operations, Data Validation
Robert Derfus/ Holly Rymer	2.0	Air Quality	State and Industrial Site Audits, Data Validation
Sarah Yost	1.0	Water Quality	QAPP Writing and Review, Policy Writing, QA Training, oversee DMRQA program for the State, GLRI
David Vaaler	1.0	EQuIS	Project Manage EQuIS database, work on updates, quality assurance data loading, laboratory format for database, oversee adding of programs to the database
Jean Garvin/ Nancy Flandrick	1.75	EQuIS	conduct quarterly and annual data reviews of surface water data migrated into EQuIS changes to the tables in EQuIS and run reports to check for outliers, load data into database, work with laboratories for troubled data sets
Jennifer Thoreson	1.0	Lab Cert. Coordinator	Coordinates Laboratory Certification Program for small wastewater laboratories submitting data to the MPCA

Great Lakes Restoration Quality Assurance Coordinator

The Minnesota GLRI QAC is a position funded by the EPA GLRI. This position independently acts as the Office of the Great Lakes (OGL) liaison between MPCA, EPA, and other States, Tribes, Canada and other Federal Agencies on matters of quality. This position is responsible for developing and maintaining MN GLRI Funded Quality Management Plans, and coordination of quality management efforts. This position was recently combined with the Water QA Coordinator position.

Roles and Responsibilities of the GLRI QAC are specific to GLRI funded projects and include:

* Acts as a liaison between the organization and GLNPO's Quality Staff on matters of quality policy.
* Assists in developing the QMP and revises as necessary.
* Reviews QAPPs for all projects, work assignments, grants, cooperative agreements, and inter-agency agreements involving data acquisition, data generation, and/or measurement activities that are performed on behalf of EPA.
* Approves all QAPPs for implementation in all applicable projects, work assignments, grants, cooperative agreements, and inter-agency agreements performed on behalf of EPA, and, where specific approval of QAPPs has been delegated to a responsible EPA official, QAPPs for concurrence.
* Coordinates the correction of deficient QAPPs with the PO and his/her management, and assures through appropriate procedures (e.g., contract, financial assistance) that no data generation operations commence before a QAPP is approved.
* Reviews, at the specific technical direction of the GLRI Quality Manager, QAPPs and other QA related planning documents, such as sampling and analysis plans, DQO specifications, etc., to determine if the proposed QA approach documented is adequate for the work planned, based on explicit evaluation criteria provided by the EPA. The reviews should identify specific technical deficiencies in the QAPP to the attention of EPA.
* Ensures that all laboratory, field, or office personnel involved in environmental information collection have access to any training or QA information needed to be knowledgeable in QA requirements and protocols.
* Ensures that audits/reviews are accomplished to assure adherence to approved quality system documentation and to identify deficiencies in QA/QC systems.
* Identifies problems and advises on required management-level corrective actions to Director and Management Team.
* Implements peer review component of quality system.
* Provision of technical support.
* Ensures that all GLRI environmental information collection activities are covered by appropriate quality system documentation (e.g., QAPPs).
* Ensures that sampling and analytical methods for GLRI project operations are well documented through Standard Operating Procedures (SOPs).
* Build an inventory tracking system for all GLRI QA documentation.
* Monthly status of QA activities report sent to Regional and GLNPO QA managers by the first Thursday of each month.
* Participate in a monthly call with all responsible parties to provide updates on State GLRI projects.

When other state agencies receive GLRI grants, the GLRI QA Coordinator is available to assist with QAPP review or writing as appropriate, work with SOPs or laboratory documentation, data reviews and

help with DIVER data transformation and loading. The QA Coordinators work across the MPCA to meet the needs of all agencies involved in GLRI projects.

Develops a QA Annual Report and Work-plan for the GLNPO Director that documents the total number of projects that require quality documentation and the status of the approval and implementation of the required quality documents. Additionally, the report should provide a work plan and budget for QA activities the following year and discussions on the status of Quality in their organizations using the Stages of Quality Metric, and assessments of how to improve the program. The report should be provided by December 15 of each year.

The Agency structure that supports and promotes Quality at MPCA

Besides the EDQ Unit and its leaders, others at the MPCA are responsible for ensuring that work products of the Agency are of high quality and meet the Agency mission.

Management

Division directors and section managers are responsible for setting the QA policies for their programs. Each section has multiple units, each with a supervisor who is responsible for the quality of work planned and performed by the unit. The supervisor ensures daily work completed according to program QAPrPs or individual project QAPPs.

MPCA management supports the QACs in their work and the program staff through mediating issues that arise on site and being supportive of the QA program at the MPCA. The program managers are responsible for sending their staff to QA training, and forwarding staff questions to the QACs. Management participates in the construction of the QMP for the Agency and supports the program through staffing and money available for laboratory and/or site visits when needed. Further, management is available to work across agencies and with EPA when questions arise needing clarification or approval of QAC answers.

Project managers and technical staff

Project managers and technical staff work directly with the QACs to develop program QAPrPs or individual project QAPPs. The QACs build close working relationships with project managers and technical staff so that they feel comfortable approaching the QACs when they have QA or data questions or when something goes wrong. The project managers and technical staff participate in classes and seminars given by the QACs to sharpen their QA and analytical chemistry skills used in data interpretation and understanding laboratory QC reports. The PMs and staff are key to the QA system as they are often the ones who discover a problem as it emerges and bring the laboratory or site issue to the attention of the QA staff for follow up. Further, the PMs and staff make site decisions based on the data and are keenly interested in ensuring the data is of acceptable quality for the decisions being made. This gives them a stake in the QA system at the MPCA. The MPCA staff frequently work in teams and QACs are integral part of these project teams. A given team may include technical experts such as a hydrogeologist, human and/or ecological toxicologist and field staff who obtain samples or inspects the work performed by others.

Minnesota Pollution Control Agency Organizational Structure

The Commissioner is the leader of the MPCA and reports to the Governor. The Deputy Commissioner is the chief administrator of the MPCA and reports to the Commissioner (Figure A). The MPCA has seven divisions as indicated by Figure A, and directors lead each division. The Agency QA team is in the

Environmental Analysis and Outcomes division and managed by Assistant Division director (Figure B). This structure gives the QA Team autonomy.

The MPCA is organized both geographically and programmatically (Figures A and C). In addition to the main office in St. Paul, MN, the MPCA has five regional offices throughout the State: Detroit Lakes (Northwest Region), Brainerd (North Central Region), Duluth (Northeast Region), Marshall/Wilmar (Southwest Region), and Rochester/Mankato (Southeast Region). The geographic structure is designed to focus on local problems, provide program services, and support at the local level. This allows the MPCA to work closely with local communities and public entities such as municipalities, counties and Soil and Water Conservation Districts (SWCD). Appropriate staff and managers make normal, routine program decisions and resource allocation within each division as delegated by the Commissioner, with ultimate operational accountability to the Deputy Commissioner. Strategic issues that involve new or changing directions fall under the guidance of Assistant Commissioners who have media (air, water, and land) responsibilities.

Each division has sections with managers overseeing the development of work products specific to their areas of responsibility. Each section has multiple units, each with a supervisor who is responsible for the quality of work planned and performed by the unit. The unit supervisor oversees staff activities to ensure daily work is being accomplished. Divisions can have more stringent QA requirements than those presented in the QMP but not less stringent. These QA requirements are documented in Program-specific QAPrPs.

All programs that collect or analyze environmental data have minimal QA requirements as defined by the program. The majority use a form of the MPCA Data Review Guidelines for review of analytical data as found on the MPCA Quality Systems Site: https://www.pca.state.mn.us/about-mpca/mpca-quality-system. Some programs such as Underground Storage, TSCA and Superfund have program QAPrPs which define minimal QA for work. Others programs have specific site QAPPs or other QA documentation.

Complete program organization chart with units can be found at https://www.pca.state.mn.us/sites/default/files/i-admin3-02.pdf (or Figure A).

Working Philosophy of MPCA

At MPCA, staff frequently work in teams, many of which have leaders who are liaisons with the regulated community and who coordinate team activities. Other members of the team may include technical and field staff. For example, in site remediation programs, a project leader coordinates the team activities and may have a hydrologist and subject matter expert such as ecotoxicologist as technical experts and an Environmental Specialist 1 or 2 who serves as a field expert and on-site inspector.

Environmental Analysis and Outcomes Division

Staff in the Environmental Analysis and Outcomes (EAO) Division monitor and evaluate the physical, chemical and biological conditions of Minnesota's environment. These activities provide the scientific rationale to support the agency's overall mission to protect the environment and enhance human health. The agency staff need reliable information about the status of resources, on-going and potential environmental threats, options for addressing the threats, and data on how effective management actions have been, to address problems successfully. The EAO division focuses its monitoring efforts on

providing this information to the Agency staff & management, regulated industries and the citizens of the State.

MPCA's Environmental Analysis and Outcomes Division's organization chart is located here: https://www.pca.state.mn.us/sites/default/files/i-admin3-06.pdf (or Figure D).

The EAO consist of four sections, each with its own manager:

Air Assessment Section

The activities of the Section include:

* Operate statewide monitoring networks to collect ambient air data for criteria pollutants, air toxics, and feedlot emissions,
* Establish statewide ambient air quality standards and criteria development and application,
* Provide risk assessment expertise and risk management recommendations for facilities:
    - air toxic reviews and
    - facility multi-pathway risk assessments,
* Model for environmental fate and effect (e.g., air dispersion modeling of criteria pollutants and air toxics),
* Manage data on air and surface water quality and makes it readily available to internal staff and external stakeholders.

Water Assessment Section

The activities of the Section include:

* Development and application of water quality standards to protect human health and aquatic life and ensure water bodies are suitable for fishing, swimming, drinking and other important uses,
* Set water quality based effluent limits for permitted discharges,
* Evaluate groundwater conditions, best management practices for protecting groundwater, and interactions between groundwater and surface water,
* Conduct monitoring and studies about contaminant in Minnesota's water, including contaminants of emerging concern, such as pharmaceuticals and endocrine active compounds,
* Provide information and coordination regarding emerging issues and "toxics in products" policy and regulation,
* Coordinate listing and reporting of which Minnesota waters support their beneficial uses,
* Transform environmental data into holistic information and reports (e.g. State of the Environment Report, environmental indicator reports) to support management decisions.

Surface Water Monitoring Section

The activities of this Section include:

* Monitor the physical, chemical and biological condition of Minnesota's surface and ground water,
* Coordinate water-monitoring activities within MPCA, with EPA, and with external partners,
* Conduct watershed and statewide assessments to identify waters for protection and restoration,
* Support and promote volunteer monitoring,
* Turn monitoring data into useful information to help identify sources of pollution, and track changes over time; provide that information to the Agency, stakeholders and the public,
* Effectively communicate with stakeholders and the public on water quality issues and results.

Environmental Data Quality Section

The activities of this Section include:

* Coordinate the Agency's Quality Management System,
* Disseminate QA information to Agency staff,
* Provide QA training to Agency staff,
* Provide Agency-wide data quality advice and support,
* Review/prepare/advise on QAPPs, SOPs, and the Agency QMP,
* Manage Agency's environmental sampling database: Environmental Quality Information System (EQuIS),
* Contract laboratory services for the State,
* Provide administrative support to the Division

Laboratory Services that are contracted for the State through the Minnesota Department of Administration follow strict requirements as defined within the contracts. These requirements ensure proper documentation, ensure a pre-qualification audit is performed on each laboratory ensuring procedures are followed, and documentation of procedures (SOPs) and the laboratory QA Manual is followed. Further, upon a complaint or issue being raised with a laboratory, the contact lead (Senior QAC for MPCA) will follow-up with the laboratory on corrective actions, documentation of these actions, and an assurance the issue will not arise again. The MPCA is the primary user of these contracts and the QACs are the agency contract managers and act as the technical liaison for the contracts.

Industrial Division

The Industrial Division operates the agency's core regulatory programs with a focus on industrial facilities in Minnesota to ensure they comply with air quality, water quality and hazardous waste regulations.

The organization chart for the MPCA's Industrial Division is located here: http://www.pca.state.mn.us/index.php/view-document.html?gid=5667 (or Figure E).

The Industrial Division consist of four sections, each with a Section Manager:

Air Quality Permits Section

Core functions of this section includes:

- Issue air quality permits to industrial facilities that emit air pollutants as part of their operations,
- Provide multimedia permitting leadership for key industry sectors such as power plants, incinerator, refiners, etc.
- Process air applications for both construction and operating permits.

Air and Land Compliance Section

Core functions of this section includes:

- Provide leadership and coordination for industrial compliance and enforcement activities,
- Manage compliance at industrial air emission facilities and water discharge facilities,
- Manage compliance at tank facilities and RCRA compliance at hazardous waste generators.

Metallic Mining Sector

Core functions of this section includes:

- Provide strategic direction and management to Agency teams working on metallic mining construction and other assigned projects,
- To analyze existing policies, procedures, and practices. To recommend revisions as appropriate to ensure efficient, effective, and economical delivery of services for assigned projects.

Water Section

Core functions of this section includes:

- Perform water quality, hazardous waste (HW), aboveground storage tanks (AST), and industrial solid waste (SW) permitting and registration activities for industrial facilities,
- Provide regulatory data management and analysis support to the agency and multi-media permitting leadership for key sectors,
- To conduct technical review and permitting activities to issue National Pollutant Discharge Elimination System (NPDES) and State Disposal System (SDS) Permits for industrial facilities,
- To manage HW generator licensing and fee administration progress, and assist in HW program training and coordination.

Municipal Division

Municipal Division regulates municipal wastewater, municipal storm water, construction storm water, and subsurface sewage treatment system (SSTS) activities. This division also provides technical and financial assistance to municipalities and counties responsible for wastewater and storm water facilities and SSTS regulation. NPDES wastewater program lead, storm water program lead, and SSTS program lead reside in this Division as well as management of the Rochester and Detroit Lakes Regional offices.

The organization chart for the MPCA's Municipal Division is located here:
http://www.pca.state.mn.us/index.php/view-document.html?gid=5668 (or Figure F).

Municipal Division consists for three Sections:

Municipal Wastewater Section

Section manager provides statewide wastewater program leadership for the NPDES permits.
Core functions of this section includes:

* Set overall water quality and wastewater management vision and work plans for municipal and industrial facilities,
* Conduct municipal wastewater permitting, compliance and enforcement,
* Works with Public Facilities Authority (PFA) to manage municipal financial assistance programs including State Revolving Fund (SRF), Wastewater Infrastructure Fund (WIF) and Point Source Implementation (PSI) grants,
* Implement pretreatment and sludge programs.

Storm water Section

Section manager is the NPDES storm water program lead.
Core functions of this section includes:

* Sets the overall water quality storm water vision,
* Establishes work plans for municipal, construction, and industrial facilities and activities,
* Conduct Municipal Separate Stormwater Sewage System (MS4) and construction storm water permitting, compliance, and enforcement activities.

Subsurface Sewage Treatment Systems (SSTS) Section

Core functions of this section includes:

* Set overall SSTS vision and work plan for the program,
* Provide technical assistance to SSTS professionals and local programs,
* Conduct compliance and enforcement activities in support of SSTS Rules,
* Provide financial assistance to counties.

Operations Division

The Operations Division manages Agency people, finances and knowledge resources to ensure that the Agency can fulfill its mission to protect and improve the environment and enhance human health, and meet its strategic and program objectives. This Division helps initiate organizational change through continuous improvement and Baldrige, and is instrumental in the success of other Division's program and processes.

The organization chart for the MPCA's Operations Division can be found here: https://www.pca.state.mn.us/sites/default/files/i-admin3-09.pdf (or Figure G)

The Operations Division consists of several sections and units as follows:

Human Resources (HR) Section

The Agency HR Director leads this section, which manages collective bargaining agreements and plans; state and federal labor laws; rules, policies and procedures governing human resources and related topics, and agency policies and procedures related to human resources for the agency's 915 employees.
The responsibilities of this section include:

* Strategic human resources management support and training,
* Policy developing and maintenance- Management consulting,
* Employment - recruiting, examining, and selection,
* Employee safety and workplace ergonomics,
* Diversity/Equal Employment Opportunities: compliance with Affirmative Action and Americans with Disabilities Act,
* Labor Relations including position classification and compensation,
* Human Resource Information Systems and Employee Performance Management System administration,
* Benefits administration (insurance, FMLA leaves, etc.),
* Human resources administration, compliance monitoring and reporting.

Financial Assistance and Budgeting Section

The Financial Assistance and Budgeting section, led by the CFO, serves as the Agency's financial management experts. They are responsible, along with the Senior Management Team, for development of biennial and capital budget requests, annual spending plans, procurement and contracting and financial management. This section's duties include:

* Spending controls,
* Accounts receivable and payable,
* Loan management,

* Internal controls (data and information security),
* Internal audits,
* Grants and contract development.

Communications and Outreach Section

State and Federal law establish specific methods, such as public notices and meetings, by which our customers can seek information and support. The Communications section goes beyond these requirements to obtain feedback and provides Agency-wide support in:

* Communications planning,
* Publications including the Agency website, legislative reports, factsheets, etc.,
* Crisis communications,
* News media relations,
* Speech-writing,
* Design and graphics,
* Community relations and civic engagement.

Data Services Section

Data Services Section is responsible for the maintenance, operation and analysis of the Agency data systems, which manage millions of pieces of information each year. Some of the responsibilities include:

* Responding to data and information requests from stakeholders and the general public,
* Provide high level statistical analysis,
* Provide complex data visualization and data management services to the staff and leadership,
* Collaborating with agency programs to develop data quality standards, data entry practices and minimum data requirements,
* Providing web access to agency data through Tableau reports or What's in my Neighborhood,
* Identifying how to improve data to create a valuable resource for the decision-making process, and to create an Agency-wide integrated data network.

Facilities Management Section

The agency leases offices through the state with the majority of the staff located in St. Paul and about a quarter of the staff located in offices in Duluth, Brainerd, Detroit Lakes, Rochester, Mankato, Marshall and Willmar. This section provides agency-wide support of

* Building business management,
* Lease administration,
* Copier and Fleet management services,
* Space planning, and
* Security.

In addition, provides the following additional services for the agency's main office in St. Paul:

* Field Operations Center where all the field supplies and equipment are stored and maintained, and sample delivery services,
* Building reception area staffing,
* Agency-wide business support, such as incoming calls and guest management,
* Mail and print services, and
* Central supplies management and receiving.

Legal Services Unit

The Legal Services Unit (LSU) provides non-litigation legal support to the agency. The purpose of the unit is to ensure that the agency's actions and decisions have the appropriate legal basis. Goals of the LSU are to:

* Provide high quality, objective legal advice and counsel,
* Assist leadership and staff with making informed decisions with awareness of associated legal risks,
* Ensure that all requests for legal services are timely satisfied, subject to MPCA priorities,
* Ensure that LSU has redundancy in its expertise so that the inability of any given attorney to provide advice in a subject area does not leave the MPCA without assistance from an attorney with adequate experience,
* Ensure that the MPCA has the ability to satisfy its day-to-day legal needs from its own resources.

Organizational Improvement Unit

Leads activities to support the goal of achieving excellence in leadership, staff and processes at all levels of the Agency. Duties include:

* Developing and providing training, such as the year-long Leadership Academy course, and several Continuous Improvement courses (Process Mapping, Measurement, Results-Based Accountability, Lean 101, Continuous Improvement Problem Solving and the five-month Leading Continuous Improvement class),
* Providing coaching and facilitation for the Agency's continuous improvement projects, and tracking improvement results, and
* Managing the Baldrige Performance Excellence application and follow-up on Opportunities for Improvement.

Tempo Transition Unit

This unit is leading agency programs to fully integrate the use of the Tempo system, which is the agency's web-based application software that includes information from the agency permitting, compliance, enforcement, inspection and assistance programs, and e-services for permits, monitoring and license renewal. Duties include:

* Working with Senior Managers to determine Business IT strategy and support for all applications
* Working with business function teams to ensure Tempo functionality is maximized and business functions are standardized where appropriate
* Provide ongoing Tempo training to staff
* Development, analysis, testing and implementation of Tempo templates and forms
* Quality assurance of the Tempo database – reviewing data and working with programs on options to correct or improve data
* Lead development of online services to meet the business needs of the agency and its regulated parties
* Maintenance of reference tables and the requirements library across the agency
* Reviewing change requests for functionality and completeness

Remediation Division

The Remediation Division conducts remediation and management of previously polluted properties to reduce the risks to human health and the environment. The State's Environmental Emergency Response Team and Closed Landfill programs are housed in the Remediation Division.

The organizational chart for the MPCA's Remediation Division is located here: https://www.pca.state.mn.us/sites/default/files/i-admin3-05.pdf (or Figure H).

The Remediation Division consist of three Sections:

Petroleum Remediation Section

The petroleum remediation program has a QAPrP and all projects in this program use approved sampling and analytical plans (SAP). The redevelopment program uses SAPs to ensure the quality of its projects.

* Assists and oversees responsible parties to perform remediation activities associated with petroleum cleanups at underground, aboveground, and large aboveground storage tank sites.
* Operate the Petroleum Brownfields Program (PBP) to provide effective and timely technical review, investigations, cleanup oversight, liability assurance letters and redevelopment options to developers.

Site Remediation and Redevelopment Section

Both federal and State Superfund programs have a QAPrP for their work and approved SAPs are used for individual projects.

* Identify and assess environmental releases of hazardous substances to determine the extent and magnitude of contamination, as well as risks to human health and the environment.
* Conducts investigation contaminated to determine risks to human health and/or the environment.
* Oversee remediation of contaminated sites through Federal and State Superfund programs.
* Manage the Brownfield Redevelopment (Voluntary Investigation & Cleanup) Program that works with voluntary parties to provide appropriate assurances regarding environmental liability as well as review of efforts to document and cleanup contamination so properties can be returned to productive use.
* Manage contaminated sites in the Resource Conservation and Recovery Act (RCRA) program, which provides technical support for the Hazardous Waste Enforcement, Permitting and Corrective Action efforts.

Closed Landfill and Emergency Management Section

* Operates the Closed Landfill Program in order to effectively complete cleanups and manage long-term care at 112 closed landfills.
* Works with local units of government on land use at and near closed landfills.
* Responds to spills, emergencies, and disasters to protect the public's safety and health and the environment.
* Maintains MPCA's readiness for response and proactively work with others through planning, training and practice exercises.

Resources Management and Assistance Division

The Resource Management and Assistance Division (RMAD) emphasizes the use of voluntary, innovative environmental approaches, including pollution prevention, technical and financial assistance, and environmental education, to develop comprehensive system-based approaches to environmental problems and supports the agency's information and knowledge management systems. The RMAD manages environmental education program for the Agency and maintains the environmental education resource website SEEK (Sharing Environmental Education and Knowledge): https://www.seek.state.mn.us/. This a valuable resource for schoolteachers, naturalists and non-formal environmental educators in Minnesota.

MPCA's Resource Management and Assistance Division's organizational chart: https://www.pca.state.mn.us/sites/default/files/i-admin3-08.pdf (or Figure I).

The Resource Management and Assistance Division consists of three sections and one unit:

Solid Waste Section

The MPCA works with industry, government and citizens to reduce and manage waste. Solid waste consists of mixed municipal waste (garbage), construction and demolition debris, and industrial solid waste. The Solid Waste Section regulates and manages this solid waste in Minnesota's open landfills. Wastes are regulated through a permitting process. The MPCA works with Minnesota businesses, the Minnesota Legislature, and federal officials to ensure that the permitting process helps to protect Minnesota's environment.

Sustainability & Environmental Assistance Section

The Sustainability and Environmental Assistance Section works to create stronger and healthier communities by:

* working with community decision makers, educators, and other leaders to educate and inform on environmental issues,
* promoting eco-industrial development, green buildings, and policy initiatives and financial incentives to promote partnerships that advance the agency's environmental goals and objectives,
* Answering questions from regulated parties and citizens about air quality, water quality, solid and hazardous waste and storage tank regulations, and help them identify opportunities to prevent pollution,
* Supporting the sustainable communities' network, the Living Green Expo, and major conferences and events.

Certification, Environmental Review and Rules Section

Certification and Training Unit: Provides statutorily required training for employees and supervisors in the following industries:

* Solid waste landfill operators
* Wastewater facility operators
* Septic system professional certification and licensing

Environmental Review Unit:
Environmental review is a formal process for thoroughly investigating the environmental impacts of a proposed project's impacts on air, water, land, and human health — before a project is started. The purpose of the State of Minnesota's environmental review is twofold:

* to inform the decision makers so we can write better permits and better protect the environment before the project is built,
* to give the public access to decision makers, to help ensure public awareness and meaningful input into public and private decision-making.

Agency Rules Unit:
Under Minnesota law, State agencies promulgate Rules under various State statutes that explicitly give the MPCA that authority. Agency rules staff are responsible for working directly with program staff to write the draft rules, the justification for the rules, issue public comment notices, and revise existing rules when needed.

Business Assistance Unit works to create stronger and healthier communities by:

* working with community decision makers, educators, and other leaders to educate and inform on environmental issues,
* promotes eco-industrial development, green buildings, and relies upon policy initiatives and financial incentives to promote partnerships that advance the agency's environmental goals and objectives. This section includes the staff in the Business Assistance Unit that answers questions from regulated parties and citizens about air quality, water quality, solid and hazardous waste and storage tank regulations, and help them identify opportunities to prevent pollution. The Section supports the sustainable communities' network, the Living Green Expo, and major conferences and events.

Watershed Division

The MPCA Watershed Division delivers environmental problem solving support at the local level. Focus is on building local capacity to restore and improve the environment. Most of Watershed division staff are located in the Regional offices and therefore are able to deliver programs and services more effectively and efficiently.

The organization chart for the MPCA's Watershed Division is located here:
http://www.pca.state.mn.us/index.php/view-document.html?gid=5669 (or Figure J).

The Watershed Division consists of five sections:

* North Watershed Section,
* Northeast Watershed Section,
* South Watershed Section,
* East Central Watershed Section,
* Feedlot Section (Brainerd, Detroit Lakes, Mankato, Marshall, Rochester, St. Paul and Willmar offices).

All sections with the exception of the Feedlot Section engage in the following activities for major watersheds in their respective areas:

* Watershed Restoration and Protection (WRAPS) and Total Maximum Daily Load (TMDL) development and project management,
* Clean Water Partnership (CWP) loans and Federal 319 grant project,
* Technical support to local watershed partners including local water planning, and "one watershed one plan" program,
* Watershed monitoring and modeling,

* Watershed GIS,
* Public Engagement.

Table 2: Activities of Individual Sections of Watershed Division

Section	Regional Office(s)	Major Watersheds	Other Projects/Programs
North Watershed	Brainerd and Detroit Lakes	Upper Mississippi and Red River of the North	Red river flood damage reduction
Northeast Watershed	Duluth	Great Lakes/St. Louis River Area of Concern, Lake of the Woods/Rainy	water quality portion of International Joint Commission (IJC) in partnership with Canada
South Watershed	Mankato, Marshall, Rochester and Willmar	Cedar, Des Moines, Lower Mississippi, Missouri and Minnesota	Basin Alliance for the Lower Mississippi in Minnesota (BALMM)
East Central	St. Paul	St. Paul/Minneapolis metro portions of the Mississippi and Minnesota and St. Croix	division-wide contracts & grants administration, stressor ID reports and Hydrologic Simulation Program FORTRAN (HSPF) model building for watersheds

Feedlot Section

Responsibilities of the Feedlot Section include:

* Issue permits to feedlot owners,
* Educate and assist feedlot owners to understand and comply with feedlot rules and regulations,
* Conduct inspections to determine compliance with feedlot rules and regulations,
* Support and provide oversight of county feedlot programs.

Minnesota Information Technology (MNIT) Services

In 2012, Minnesota Legislature established Minnesota Information Technology (MNIT) Services to integrate all of information technology services and provide uniform standards and security. MNIT Services provides enterprise and local IT services to over 70 agencies, boards and commissions in the State of Minnesota's executive branch by building, maintaining, and securing the State's IT infrastructure, applications, projects and services. Additionally, MNIT protects the state's information systems and the private data of Minnesotans by setting IT strategy, direction, policies and standards for enterprise IT.

The MNIT staff and leaders assigned to MPCA (MNIT@MPCA) work in St. Paul and regional offices. The Chief Business Technology Officer (CBTO) leads MNIT@MPCA and works directly with the MPCA Commissioner and Deputy Commissioner ensure that MPCA has the information technology necessary to carry out its mission. The MNIT@MPCA consists of over 70 staff and leadership who work on special projects such as the Agency-wide compliance and permitting system, Tempo. MNIT@MPCA staff work as integral part the MPCA project teams that has major IT components. In addition, MNIT manages the Help Desk, software and hardware requests, GIS services, technical aspects of MPCA websites and nearly 200 other applications and systems.

The Minnesota Pollution Control Agency Advisory Committee

MPCA Citizens' Board was the governing body for the Agency from the inception in 1967. The Citizens' Board consisted of nine members. In 2015, the Minnesota legislature abolished the MPCA Citizens' Board and gave the commissioner the authority to make all Agency decisions. The same year, the Governor of Minnesota established the MPCA Advisory Committee to ensure citizen engagement in State's environmental regulatory decisions. The MPCA commissioner is the chair and the Governor appoints eight members. The role of the Advisory Committee is to provide recommendations and advise the MPCA commissioner in four main areas:

- Reviewing scoping and adequacy of environmental review documents including environmental assessment worksheets and environmental impact statements,
- Issuance, reissuance, modification, or revocation of certain permits,
- Adoption or revision of agency rules,
- Requests for a variance from an agency rule.

Legislative Issues

The MPCA has a fulltime Legislative Director who coordinates all legislative activities at the Agency. Legislative director is part of the senior management team, which consist of the commissioner, deputy and assistant commissioners, general counsel and division directors. Each year the MPCA works with the Governor's Office, the State Legislature, and other partners to ensure that legislation affecting Minnesota's environment achieves improvements in the state's land, air, and water quality.

During each session, agency staff routinely provide reports, testimony, suggestions, cost estimates and other information to the legislators and their staff. The agency often works with specific legislators on key initiatives and provides factsheets and reports on legislative issues to legislators and other stakeholders on specific issues, which are available through the MPCA webpage. Each factsheet contains contact information for more detailed information and references.

During the legislative session, many issues and initiatives involve the MPCA. The Agency leaders identify key staff members as primary contacts on specific topics. The legislative contact at MPCA works directly with management and technical staff as needed at the MPCA to answer questions posed by the legislature, follows up on bills moving through the houses, and track issues of interest to the Agency during the session.

2.0 Quality System Components

MPCA's Mission and Quality System Description

Our mission is to protect and improve the environment and human health (Fig. P1-1). Senior Leaders have developed strong, consistent communication internally and externally about our environmental vision and goals in our 5-year strategic plan that underlie the work of our agency and regularly seeks feedback on the results. MPCA's mission is implemented through hiring and training for a set of two core competencies, environmental service expertise and knowledge and environmental data analysis.

Figure P1-1

Fig. P1-1: MPCA Vision, Mission and Values
Vision
Clean Water, Air and Land support healthy communities and ecosystems, and a strong economy in Minnesota.
Mission
Protect and improve the environment and enhance human health
Values
People—We value and support a motivated, talented and diverse workforce.
Leadership -- We set a vision of environmental and human health protection in an open, ethical, and accountable manner.
Collaboration - We seek out and promote alliances because we value other's knowledge, opinions and abilities.
Outcomes – We measure our success by the environmental and public health outcomes achieved.
Data Driven – Our decisions and policies are supported by data and analysis.
Learning Organization – We promote innovation, learn from our mistakes, and strive to continuously improve our processes and outcomes.

Figure 2. MPCA Quality System Components

These visions are detailed in the MPCA Strategic Plan at https://www.pca.state.mn.us/sites/default/files/strategic-plan-2013.pdf.

The MPCA's Quality System helps staff and leaders achieve its mission by ensuring that staff and leadership have the resources they need to conduct the daily activities and ensure that data used for decision-making are of known quality and are suitable for the decision being made. The MPCA's quality systems include planning, implementing, and assessing the QA and QA operations as they apply to the MPCA's environmental data and programs.

The MPCA is part of the Performance Excellence Network (PEN), which is part of Baldrige Foundation, http://baldrigefoundation.org/. The Baldrige Program is the nation's public-private partnership dedicated to performance excellence.

The Baldrige Program

- Raises awareness about the importance of performance excellence in driving the U.S. and global economy
- Provides organizational assessment tools and criteria
- Educates leaders in businesses, schools, health care organizations, and government and nonprofit agencies about the practices of best-in-class organizations
- Recognizes national role models and honors them with the only Presidential Award for performance excellence

In 2016, MPCA prepared an application and received a Baldrige assessment to determine how MPCA is doing with respect to performance. Such an assessment invariably includes the Quality System for an organization that depends heavily on data. The MPCA achieved an "Advancement" award level for this assessment.

The MPCA Quality System Components

Data: At the MPCA, data quality affects every aspect of our work:

- In regulatory programs, it is critical that the data used for corrective and enforcement actions are legally defensible.
- Using data of known and appropriate quality makes it defensible in a public arena, either in situations where we are establishing new, legally binding standards such as TMDLs and Water Quality standards, or Sediment Quality Targets (SQT) that are not legally binding but need to be scientifically valid.
- High quality data (which meet the needs of a program or strategic goal) are needed for strategic planning and program needs. This data is normally reviewed and approved by program staff. When needed, QA staff will review the data to ensure that the project requirements are met.

Staff: The MPCA strives to hire highly skilled and knowledgeable staff. Highly trained and motivated staff are critical to maintaining a high level of quality in the Agency's work product. Section 3.0 describes staff qualifications, hiring and training.

Oversight:
The MPCA staff and leaders have several layers of oversight. Unit Supervisors and Section managers oversee staff. The Division directors supervise managers and the Commissioner's office leads the division directors. The Agency Commissioner reports to the Governor. The State Legislature allocates funds for State Agency operations and oversees the Agency activities. The citizens have the right to request any government data that is not classified as private. Therefore, the Agency is ultimately responsible for the citizens and their representatives, the Legislature. This ensures that the MPCA conducts its work as desired by the citizens of MN.

Policies:
The MPCA has many policies that pertain to quality as well as staff conduct, fiscal, training required, etc. Together, these policies govern the Agency and its actions. Violations of key policies can be grounds for immediate dismissal, although most staff have Union representation to ensure staff get fair treatment.

Systems:
MPCA organizes and correlates its data through the development of guidance documents, reports, process maps, permit applications, inspection data, monitoring information, investigations, and data collection. The various methods of storage for the agency's organizational knowledge include Tempo, Tableau and OnBase. Tempo is the agency's web-based application software that includes a complex collection of information from agency permitting, compliance, enforcement, inspection, and assistance programs. Tempo provides e-Services for permits, monitoring, and license renewal. Tableau is business intelligence software that helps the agency understand its data for agency goals and performance measures. Environmental data are housed in customized data systems (such as EQIS, Hydstra, and Air Vision) or Access databases developed by MPCA.

To create the agency dashboard and other materials, staff use multiple approaches to collect and share data, through data collection, and with data visualization tools such as Tableau, Excel, and InDesign. Beyond Tempo and Tableau, agency knowledge is stored within the expertise of staff as well as OnBase (the agency's electronic document management system), and agency documents on its shared drives and databases. An Agency Dashboard is a list of measures from across the MPCA that are used to follow progress towards goals established within the Strategic Plan. These measures are used for high level reporting to the Agency Senior Management Team, the Governor's Office and the Legislature.

The process or system for sharing organizational knowledge involves program communication plans that share information on the internal and external agency websites. Other methods of knowledge transfer include email, GovDelivery (electronic newsletters), and social media (Facebook, Twitter, YouTube, Pinterest, Instagram). The agency does proactive media placement on agency topics with print, television, radio, and online news media for agency reports, legislative initiatives, and rulemaking and policy changes for air, water, and land programs.

The agency transfers knowledge internally for best practice and innovative ideas through the use of agency teams that include agency management teams, media (air, water, land) forums, permit teams, compliance teams, and continuous improvement efforts. These efforts are performed weekly, monthly, and annually depending upon the method and tool required to share information. Participation on media forums and management teams ensures knowledge is developed and shared among leadership. MPCA also emphasizes process mapping and storing the maps in centralized location as a means of capturing and transferring organization knowledge. SOPs for the SP measures are annually updated to ensure accurate information is being shared.

Another aspect of knowledge transfer involves mentoring efforts including the Leadership Academy. The Leadership Academy is designed to develop leadership skills for employees from all levels and areas of the agency. It is a succession planning effort and a building block to develop and support high-quality staff. The agency develops a list of Leadership mentors each year that are willing to provide guidance to staff in the Academy. Workforce knowledge is transferred through the agency's internal web. Finally, Human Resources provides new employee training and provides policies, hiring information, and information for staff on the agency's internal website.

The agency uses and teaches the "Plan, Do, Check, Adapt/Act (PDCA)," when evaluating and updating program plans based on agency measures and goals. As part of the Operational Review and Strategic Reviews by Senior Leaders (SLs), there are conversations about how to improve the programs and measures and provide results-based accountability. These SLs' conversations during these reviews require program managers and staff to talk about innovation and how to improve the programs to meet goals or

adjust strategies. Forum leads both listen and present at the Operational Review and Strategic Reviews conducted every year.

Agency management requires those programs involved in out-of-state travel to provide a plan and carry out training for staff based on program needs. Agency culture also promotes and expects staff to share their training experiences with other staff through scheduled training for other staff in their program area and brown bag seminars. Training needs are discussed during the annual performance review and work plan process.

Senior Leaders at MPCA use the gov-delivery email system to communicate to external parties who are interested in specific topics. An example is the Quality Assurance email list that is used to communicate to laboratories and consultants. The Agency employs numerous lists to communicate on a range of issues from water to cleanups to fines. Additionally, the Agency uses webpages specific to various media and programs to provide FAQs, points of contact, and policy/rules documents for the public. Further, the senior Leaders (SLs) support agency efforts to employ social media as an effective communication tool, both to share messages out and to gain feedback and insight. For example, SLs support the Twitter pilot the agency has been conducting, and key SLs are agency Twitter "ambassadors." SLs spend time and resources on training events to enhance communication skills and to learn about and employ new communication tools.

The MPCA's Quality System functions to ensure the acquisition of accurate, reliable and defensible environmental data. The system gives us the highest confidence in data used for environmental assessments and decisions to preserve and enhance the quality of Minnesota's environment and the quality of life for all its citizens.

Reporting:
The MPCA is required to meet all state and federal laws and meet appropriate administrative requirements (Fig. P1-2). Processes are in place to keep current with, comply with and exceed the required laws, regulations and standards established by key regulatory organizations and Governor's Executive Orders. Additionally, the MPCA implements federal environmental laws and regulations under EPA program delegations, funding and workplan agreements. MPCA may also implement state environmental laws that are more stringent than federal laws and regulations. MPCA is required under state law to implement environmental laws, to regulate the many organizations and individuals covered by the law and rules/regulations, and to offer support for actions that helps prevent pollution.

Figure P1-2

Figure P1-2. Regulatory Oversight		
Regulatory Oversight by Function		
Function	**Regulation**	**Measure used to track Compliance (AOS)**
State Laws	229 state laws (not including appropriations) apply to the MPCA and direct program operations.	21 standing reports are required by the Legislature to measure progress.
Environmental Protection Agency delegations	⍰ Air Programs: Ambient Monitoring, Permit, Air Toxics, Compliance & Enforcement, Regional Haze, Rules, Etc. ⍰ Water Programs: Monitoring, Permit, TMDL, C&E, Stormwater, Feedlot, etc.	Environmental Performance Partnership Agreement (EnPPA) and funding (Performance Partnership Grant –PPG)

	⍰ Land Programs: Solid Waste, HW Monitoring & Enforcement, RCRA, etc.	
Employment	Minnesota Management and Budget (FLSA, FML, ADA, Affirmative Action, EEO) and Compensation Classification	⍰ Affirmative Action Plan ⍰ MMB Compensation/ Classification Audits ⍰ Veteran Hires
Emergency Management	Continuity of Operations Plan, Duty Officer	DPS review of 10 required elements of COOP.
Financial	Government Accounting Standards	Scheduled Financial and Program Audits (Legislative Auditor), GAAP
Governor's Executive Orders	14 Executive Orders (to date)	Inter-Agency Pollution Prevention reporting and MPCA Sustainability Dashboard Reporting as required by Governor's Office
Public Data and Information	Records retention, public records and information access for effective document knowledge transfer	⍰ Staff trained ⍰ Information request timeliness
Safety	MN SAFE (ADM) and OSHA	Workers Compensation
Risk	Internal Control Plan and Risk Assessments	Annual certification to MMB
Procurement	Chapter 16C	Audits by MMB
Rulemaking	Chapter 14	Needed and Reasonable Office of Admin. Hearings

Planning: The MPCA has teams of managers that help with Agency-wide as well as program level planning. Having multiple and diverse ideas and ensures the final product is of better quality and more in line with MPCA's mission and its values.

Quality is an integral part of each of the components design and management. The QMP describes the policies, procedures, and systems governing Agency data collection activities. Quality Management at the MPCA is a continuous effort to document review and manage quality. Quality management is the responsibility of everyone at the MPCA. Staff are responsible for planning, executing, documenting, and reviewing all work performed to ensure that it conforms to the DQOs that were established for the program, project, and services. The program staff, with the help of QACs document the DQOs in the applicable QAPrP or QAPP; this ensures all personnel associated with the project has a clear understanding of the objectives of the project. Management and QA staff ensure all facets of quality in the QMP are adhered agency work. The QACs are responsible for writing and or insuring quality-related policies, which are then incorporated by staff into their project Work Plans and QAPPs. Management and staff receive regular training and assistance from QACs within the MPCA. Quality System and QA training is further detailed in Section 3.0.

Documentation is critical to ensure work is done correctly and available for review, as needed. Proper documentation saves resources by enabling staff to review proposed work, minimize errors and omissions, and enables future work to build smoothly upon already completed work. As experienced staff move to other positions or retire, documentation becomes particularly important to the new staff. New staff must be able to review past work to ensure ongoing project consistency and quality. Examples of QA documents include:

- QMP
- QAPrPs and QAPPs
- Sampling and Analysis Plans (SAPs)
- Work Plans (WPs)
- Request for Response Action (RFRA)
- Standard Operating Procedures (SOPs)
- Field Notes
- Data Quality Objectives (DQOs)
- Technical Assessments (TAs)
- Data Quality Assessments (DQAs)

These processes and documents help ensure the work planned and performed yield data or results that are of sufficient quality to support the intended use of the data collected or the decision to be made based on the analysis of those data. The various documents provide all parties involved written documentation of work they will be performing, their responsibilities and requirements, and information as to how quality will be ensured. For specific site work, the documents are legally binding. The MPCA QACs have uploaded the federal QAPPs and QAPrPs completed since 2016 into EPA's QA Track under the MPCA tab. The MPCA or EPA project officer file all GLNPO funded project QAPPs under the GLNPO tab.

MPCA quality system tools

The MPCA has a variety of tools available to ensure quality. These tools include guidance documents such as QMPs, QAPPs, DQOs, and SOPs, training and auditing. Guidance documents that deal with sample collection, specific analyses, reviewing QAPPs, and QA and data policy are posted on the MPCA external web pages (https://ww.pca.state.mn.us/about-mpca/mpca-quality-system). The MPCA staff use the project DQOs to evaluate if the project as proposed, would meet the program needs. Accordingly, the PMs and technical members of project team review all data obtained and, if necessary, referred to a QAC for additional scrutiny.

A crucial component of MPCA's quality system is up-front systematic planning. The MPCA management expects the PMs to determine first the level of quality required and include this information in Requests for Proposals or Bids. The MPCA uses a graded approach to determine the level of quality required and to evaluate the importance of the activity, available resources, the unique needs of the organization, and the consequences of potential decision errors. These elements explicitly require clear DQOs for each planned data generation activity, and to conduct data assessments to evaluate the validity of the results. In addition to the QMP elements, specific areas that drive MPCA's Quality Program are as follows:

- QA Goals and Policy (identified in MPCA's QMP)
- consistency with EPA and other requirements
- management support for quality assurance in all our work
- the MPCA's QA organizational structure
- the MPCA Programs and activities covered by the QA requirements
- the roles and responsibilities of those involved with MPCA QA Functions
- the QA tools and procedures
- the MPCA communications process (internal and external)
- afforded QA training opportunities,
- documentation and record keeping requirements, and
- review and evaluation procedures to ensure continuous improvement.

Quality Management Plan Approval Authority

The EPA Region 5 QA Managers have the authority to sign the QMPs. MPCA staff and leadership review and approve the QMP with the Commissioner of the MPCA being the final authority on what resides within the QMP for the Agency. The MPCA also has the assistance of subject matter experts who review the QMP to ensure it adequately addresses all elements of the MPCA Quality Systems. The EPA requires that States update their QMPs every five years or sooner if they made significant changes to the QA program elements. We uploaded all QA policies referenced in the QMP on the MPCA website at the QA homepage:
http://www.pca.state.mn.us/index.php/about-mpca/mpca-overview/agency-strategy/mpca-quality-system.html?menuid=&redirect=1.

Dispute Resolution

Implementation of quality management activities may sometimes result in disagreements among involved parties. When these disputes occur, the individuals involved must document the situation and present it to management. The MPCA QA leadership strives to find a resolution at the lowest management level and encourages the staff to resolve the dispute through discussion and negotiation.

If a QA related issue cannot be resolved at QA Supervisor level, the QA Manager convenes a committee, consisting of staff with relevant experience and expertise to address specific quality issues. The committee will identify the problem, gather information, examine the courses of action available, define the criteria for evaluation of possible solutions to the problem, evaluate the possible solutions, and decide on the best course of action. A memorandum is prepared outlining the group's decisions and proposed solution and submit it to management for review and consideration. If management adopts the proposal, they discharge the committee. If not, the committee reconvenes to investigate possible alternate solutions.

Quality Documents at MPCA

The MPCA uses variety of documents to record how it ensures the quality of its work products. The following are the most frequently used.

Quality Assurance Project Plans

The QAPP's are the key documentation step for assuring quality across the agency and with our outside partners. The MPCA requires QAPPs for numerous programs. The QAPPs are an important tool for project managers and planners to document the type and quality of data needed for environmental decisions and to use as the blueprint for collecting and assessing those data from environmental programs. The development, review, approval, and implementation of the QAPPs are part of the mandatory agency-wide Quality System that requires all organizations performing work for EPA to develop and operate management processes and structures for ensuring that data or information collected are of the needed and expected quality for their desired use. The QAPP is an integral part of the fundamental principles of quality management that form the foundation of the agency's Quality System. The EPA document QA/R5 outlines QAPP EPA requirements. The MPCA QAPP guidance is located in our website at:
http://www.pca.state.mn.us/index.php/view-document.html?gid=5477.

Quality Assurance Project Plan Approval Authority

The MPCA has designated individuals either through formal or informal delegation, to review and approve QMPs, QAPPs and other documents. When a question of signatory authority arises, the QA Manager will determine who has the signatory authority, to sign QAPPs or other quality documentation. Normally the project manager and a QAC would sign the QAPPs. Federal sites may require further

programmatic and EPA approval, and therefore, appropriate lines of approval are added to the signature page. The MPCA Management and QA staff ensure appropriate level of authority reviews QAPPs. The EPA Region 5 QA staff approve the QAPPs when federal programs such as GLNPO, Air Monitoring and Superfund are involved. The project managers are responsible for distributing the signed QAPPs to individuals working on the project, and then file them at MPCA for use during site reviews, audits, or investigations. The MPCA also uploads all our QAPPs into QA Track that EPA Region 5 maintains. The MPCA considers QAPPs as the ultimate document governing the work and analytical data produced by the site.

MPCA QAPrP examples

The MPCA has a number of Program QAPPs used by staff for work within the program area. These QAPPs set the basic quality standards. Examples of program wide QAPPs are:

- Minnesota's Lake Superior Beach Monitoring and Notification Program
- MPCA Water Quality Assurance Program Plan
- Underground Storage Tank and Petroleum Remediation Quality Assurance Program Plan
- The Minnesota Area of Concern located in Duluth Minnesota
- Also, MPCA PCB Inspections program
- MPCA QAPrP is posted on the Quality Systems webpage.

Standard Operating Procedures

All MPCA Programs document sampling and analytical procedures in the SOPs and the other sampling guidance documents. The MPCA create SOPs for critical tasks and procedures that merit standardization. The program staff and QAC typically write SOPs based on a project or set of tasks. The SOP documents processes that are consistently effective and regularly performed, including sampling and analytical procedures, and helps ensure work standardization.

The MPCA uses EPA document *Guidance for Preparing Standard Operating Procedures (SOPs),* EPA QA/G-6. April 2007, as a guide. The QAC assigned to the program provides the final review and approval for all the SOPs within their programs. The program staff and the QAC assigned typically review and update the SOPs every two to three years or based on project needs. A MPCA-prepared or approved QAPPs typically include SOPs for field sampling and measurement procedures and enables MPCA to ensure work is of known quality that meets data quality objectives. MPCA project manager is responsible for ensuring project staff comply with applicable SOPs.

The MPCA updates their SOP's with a new revision numbers to identify the actual reviewing process and changes made to any SOP. Each SOP contains a revision table that tracks the document's revision date, old version number, sections changed, new version number and author. SOP revisions based from new reference material, forms, manufacturer's updated manuals, CFR, and any changes of the procedure. SOP's are stored on MPCA's computer data system on the x-drive. Retired and archived SOP's are stored on the x-drive indefinitely.

Standard operating procedures requirements

The SOP documents all monitoring activities and data generation procedures, and typically includes: scope and application

- methods summary
- QA requirements
- equipment preparation

- calibration procedures
- necessary apparatus and materials
- safety procedures and precautions
- equipment list
- standards and reagents
- procedures
- calculations
- references

Examples Minnesota Pollution Control Agency SOPs

- Lake Water Quality Sampling (link)
- Feedlot Global Positioning
- Construction Stormwater Standard Guidance
- Closed Landfill Program (link)
- Emergency Response Standard Operating Guidelines, Part 12: Annex (https://lorax.pca.state.mn.us/programs/emergency-response)
- Hazardous Waste Programs (https://www.pca.state.mn.us/waste/operational-resources)

Data Verification and Validation

Data verification concerns the examining of a result to determine conformance to the stated requirements. Data validation concerns the examining of a result to determine if it meets the needs of the data user. The project team consisting of PM, technical experts and project QAC are responsible for data verification and validation for their respective projects. The PMs and technical experts perform much of the verification of project data as they are aware if the data as reported is normal for the type and nature of the project. For example, 1,000 mg/L cadmium in a monitoring well may not be unusual in a brownfields site but the same would be very unusual in near pristine forests of northeast MN.

The QACs perform all data validation at MPCA. The QACs have the technical knowledge necessary to perform validations that EPA requires, such as data that involves Superfund site. In some situations when a large quantity of data is been collected, the MPCA may contract with a qualified third party to perform data validation. QACs will review reports and verify data when questions arise. At times, this has led to further investigation of laboratory issues.

Minnesota Pollution Control Agency Contract Laboratory Standard Operating Procedures

Contracted labs must operate under a quality system accredited by a qualified third party, such as the Minnesota Department of Health, the National Environmental Laboratory Accreditation Conference (NELAC), or a similar accreditation body. By using contract laboratories who have been thoroughly vetted, the Agency is ensured that the data produced by the lab is of the highest quality and is defensible for its intended usage. Part of that vetting is a review of the lab's Standard Operating Procedures (SOPs), their Quality Assurance Manual (QAM), and their results of Proficiency-Testing Samples (PTs). The QAM documents the lab's quality system while their SOPs document the steps to be completed in a sequential fashion to complete a process that yields a result. The review of the lab's PT results documents the lab's performance at a certain point of time.

The MPCA maintains a file of MPCA contract laboratory SOPs, QAMs, and PT results. The laboratories submit their SOPs with the QAPPs for site work. The QAC assigned to the project maintains the SOPs

and QAMs. The QACs can perform an audit to verify contract compliance. To date, the MPCA QACs have audited at a minimum of every five years all laboratories under contract with the State. The audit is a thorough, systematic, on-site, qualitative audit of facilities, equipment, personnel, training, procedures, record keeping, data validation, data management, and reporting aspects of the contract lab.

The MPCA's Publication Support Team

The MPCA has a Publication Support Team (PST) made up of support staff from different divisions who assist with the formatting of fact sheets, reports, and brochures and the preparation of PDF documents for the web. A support staff supervisor is the lead of the PST. The PST members ensure the documents follow agency formatting and design standards, web standards, and the Office Procedures Manual style guidelines. The PST uses a smart numbering system to track authors, versions, and publication dates of the documents.

Operational and Strategic Review

The MPCA Executive Team or its designee conducts an internal Operational and Strategic review on a yearly basis. The internal Operational and Strategic review consists of evaluating the MPCA's internal management structure to determine whether the agency is implementing policies and achieving goals outlined in the Agency Strategic Plan, and thereby measuring whether its quality system is effectively facilitating the implementation and achievement of such policies and goals. The Operational and Strategic review identifies any deficiencies in programs on an annual basis. The MPCA leaders conduct the Strategic review in the spring and the Operational review Fall of each year. Various division directors and section managers who are responsible for specific objectives within the strategic plan brief the Executive Leaders. The directors and managers give each objective within the Strategic Plan a red, yellow or green designation, depending on the status of the objective, along with notes on correcting deficiency found. The section managers share the findings with supervisors and staff of programs in need of quality improvements, discussing and planning potential corrective action. The unit supervisors are responsible for implementing necessary follow-up actions at their level of authority.

The MPCA division directors present the findings and suggested responses to the Commissioner. The reports track progress toward meeting the goals and objectives of the strategic plan. Other programs are reviewed in accordance with statutory requirements or deadlines, most of which are related to funding cycles as required by the EPA or the Legislature. The State Legislature or Commissioner's Office identify or suspect significant problems, they may initiate an audit. The QA unit may conduct a data quality review upon request or specific needs of a project of program. The Agency leaders post the results of the yearly reviews on the intranet for staff review.

Performance Management and Quality

The MPCA promotes an integrated system of management activities involving planning, implementation, assessment, reporting, and quality improvement to ensure that all processes, items, and services are of the type and quality needed and expected by the stakeholder.

The Environmental Data Quality Unit, on the authority of the Environmental Assessments and Outcomes Division Director, performs annual assessments to determine if Agency programs are meeting quality objectives for documentation. The EAO Division director communicates with other Agency senior management when the assessments are scheduled to begin.

The review consists of verifying that QAPPs, SAPs, and work plans are in place and up to date for required projects. The assessment includes auditing programs for QAPPs, interviewing project staff, and reviewing environmental data to verify that it meets the QAPP requirements.

The EDQ staff use a checklist to ensure the assessments are performed and documented consistently. The assessments take place over an approximately three-month period. The results are presented to the Manager of each section. The EDQ Manager communicates trends and major findings to the Senior Management for evaluation. If deficiencies are identified, the EDQ Unit works directly with the effected units and/or programs to build QAPPs, update documentation, and work with consultants to write these documents for sites, when appropriate. When all of the audit findings have been addressed, a final copy of the audit checklist containing the completed action items is provided to both Section Managers for tracking purposes and staff participants as a teaching tool.

On a routine basis, the MPCA manages its project or site work quality by thoroughly reviewing the work plans, SAPs or QAPP. As the work proceeds, the MPCA Project Manager reviews the work performed to ensure the project staff follow the DQOs, QAPP, and Work Plan. The QAPP also specifies appropriate laboratory analytical procedures. As noted earlier in this QMP, the MPCA only accepts data from the MDH or NELAC certified TNI accredited laboratories. If the project team wants to use a non- certified accredited laboratory, the project team must provide justification for its use and submit all necessary quality documentation to show the data would be of known quality and acceptable for its intended use. The project team may also use a laboratory that is certified accredited by an authority acceptable to the MPCA. If the project team needs to use a mobile laboratory, it must meet specific requirements as explained in the MPCA's QA webpage. However, the data from mobile laboratories may only be used for on-site analytical screening purposes.

Major corrective actions to for on-going projects require the MPCA Project Manager's approval. Federal Superfund sites also require EPA Remedial Project Manager approval. When the project is completed, the project team or its contractor must write a final report and document any deviations from the QAPP, reasons for the deviation and if the team took any corrective action. The MPCA Project Manager must verify that the work, as performed, met the site DQOs, the site work is complete, and approve the final report. The QAC assigned to the project usually reviews the QA section of the final report.

3.0 Personnel Qualifications and Training

Hiring and maintaining quality staff is a high priority for the MPCA. With over 900 staff working across the state (in a wide range of areas), maintaining staff proficiency can be challenging. The MPCA has several general staffing standards as well as training and review requirements.

The MPCA had been fortunate to attract many highly qualified and dedicated staff. However, nearly quarter of the current staff would be eligible to retire in the next 3-5 years. In 2015, the Agency HRMT drafted a Workforce Plan to help the Leaders respond to the changing demographics of the agency as well as the changing skills, knowledge and abilities necessary to perform Agency's mission: https://lorax.pca.state.mn.us/sites/default/files/2015%20Workforce%20Plan.pdf.

Qualifications

The MPCA employees must meet the minimum qualifications based on the duties of the position and the classification. Each classification has minimum skills, knowledge and abilities, including academic qualifications, certification, licensures, experience, or a combination of these. The MPCA's Human

Resources Section is responsible for identifying the minimum qualifications and preferred qualifications and conducts position audits to ensure staff is appropriately classified.
Supervisors identify the staffing needs in their programs, develop appropriate position descriptions (PD) and work with Human Resources staff to ensure the position qualifications meet the classification and the compensation of the position. The MPCA Human Resources Management Team (HRMT) is described at https://lorax.pca.state.mn.us/operations/human-resources-management-team LORAX

As an alternative, the MPCA may retain a consultant or contractor to provide the required services, particularly if the need is highly specialized or of limited duration. The Minnesota Department of Administration manages the contracting process for the State (http://www.mmd.admin.state.mn.us/mn05000.htm). The MPCA Contracts unit staff help project staff prepare RFPs and choose qualified contractors to perform the necessary work.

Training

The employee training and development is very important to MPCA and its leaders because employees with necessary and up-to-date skills help the agency fulfill its mission. MPCA strives to provide its staff opportunities to participate in local, regional, and national professional conferences and workshops relevant to their job duties and responsibilities. The EDQ Unit Supervisor attends all New Employee Orientation to introduce QA and EQuIS related topics to the new staff ensuring they are introduced to the EPA and MPCA quality requirements.

Annually, each division receives a set amount of funding which the Agency managers determine the type of training their staff need and will receive. Supervisors encourage staff to identify training and development opportunities during their annual review. Both the self and supervisor identified training requests become employee's development plan for the upcoming year.

In addition to discretionary professional development training, the Agency HRMT identify the mandatory training all employees must have. Currently the following training are mandatory for all employees:

- Job specific safety training
- Office Emergency Plan and Fire Evacuation Plan
- Harassment Prevention and Respectful Workplace
- Ethics
- Essential administrative procedures: Data Practices, Security and File Management.
- New employee orientation

In addition, the State of Minnesota has mandatory weeklong training for section managers and unit supervisors.

The State of Minnesota's Enterprise Learning Management (ELM) system tracks mandatory training requirements for each employee and is capable of tracking discretionary training of employees as well. The supervisors can track employee training and ensure they participate in all assigned training.

Program Specific Training

Most of the QA related training is program or job specific. The MPCA QACs provide program-specific QA training to staff as needed. New employees and staff that directly collect/use or supervise the collection/use of environmental data regularly receive program training. The QAPPs and QAPrP describe specific staff training requirements, such as the PCB inspector requirements specified in the Toxic

Substances Control Act Polychlorinated Biphenyl Inspection Program Quality Assurance Program Plan (Link).

The MPCA lists necessary program or project specific training requirements for grantees and contractors respectively, when we publish grant proposal requests and RFPs for contract work. All successful bidders must provide documentation that all its personnel who would be involved in the program or project have completed the necessary training prior to awarding the contract.

The Agency QACs attend EPA sponsored QA training such as Region 6 Annual Managing Environmental Data Conference or attend web-based training provided by GLNPO for the GLRI QACs. The MPCA QACs provide quality training to Agency staff. The training is customized to the specific needs of a group of staff, such as Superfund PMs or surface-water field crews. Specific QA training topics include:

- Laboratory Control and data policies and guidance
- DQO requirements
- new or emerging analytical techniques and associated quality assurance
- field QC
- flagging of data
- Electronic Data Transfer

Water quality field work training

To help ensure MPCA water programs achieve their strategic plan goals and objectives, staff within the program must meet all position classification requirements. Position classifications are reviewed periodically and redefined as needed to help ensure staff have or receive the necessary skills as program and project objectives change, expand, or are otherwise redefined. Program managers evaluate staff skills and training needs during periodic performance reviews. Project managers evaluate project staff performance and training needs on an ongoing basis. The QAC assigned to the Water Program evaluate staff proficiency through training and working directly with staff on water projects.
All new MPCA water programs field staff receive training and professional development relevant to their responsibilities, and work assignments. The managers, supervisors and senior staff identify the training needs using project audits, management reviews, and information received from project managers.
An experienced field staff accompany all new water programs staff in the field until the new staff can demonstrate thorough competence in all activities, duties, and responsibilities of the field monitoring position. This includes but is not limited to field sampling, sample handling, sample preservation, sample delivery, sample shipping, field instrument use, instrument standardization, instrument maintenance, instrument repair, recordkeeping, and safety.

Biological monitoring training

The MPCA biologists often conduct monitoring in environments that are physically challenging and that may be difficult to access. As a result, the biologists are required to take a number of training courses to ensure their own personal safety and the safety of other crewmembers. Training for MPCA biologists includes employee right to know training, defensive driving, boat and water safety, CPR/First Aid/AED training and back injury prevention. The MPCA biological monitoring also has an annual training workshop. The workshop is a refresher for the experienced biologists and an introduction for the seasonal staff on fish sampling procedures and aquatic invertebrate collection methods. Giving the high amount of visual assessment used during biological field assessments, this training is critical for consistency among staff and to assure the quality of data collected is adequate for the decisions made using that data.

Other program technical training

RCRA, Superfund, and Underground and Aboveground Storage Tank Inspectors at the MPCA get specialized training (classroom and web-based) as well as QC training. Topics may include vapor intrusion, chain of custody procedures, sampling techniques, field documentation, laboratory reports and analytical methods, and program-specific methodologies such as understanding and interpreting chromatograms. The QACs offer training for program-wide or for a limited number of staff, depending on the program need. Occasionally, EPA provides training seminars for MPCA staff on topics such as QMPs, QAPPs, or DQOs.

Recurring problems identified by the QACs through audits often result in program-specific training. The QAC may also provide periodic refresher training on QA procedures to reinforce already-learned QA principles. Upon completion of formal training, the Agency Training Coordinator enters the information into the ELM, so that the staff member gets credits for completing the training.

Employee Performance Evaluations

Employee performance evaluations are part of the Employee Performance Management Process. This process is composed of four elements:

1. work planning process,
2. ongoing communication during progress reports,
3. annual performance appraisal, and
4. employee development planning.

Work planning tools include the review of the position description and the individual's work plan. Together they form the basis for describing expected performance. The position description defines the overall purpose of the employee's work and the role the employee plays in the organization. The employee and his/her supervisor together annually update the individual employee work plan, translates the information in the position description into specific objectives and work activities, deliverable work products, and/or outcomes for a defined period, usually one year. The employee work plan is based on the strategic plan that lists the agency goals, objectives and strategies.

The employee performance assessment starts with routine everyday management. As such, performance management involves frequent, informal, on-the-job contacts between supervisor and staff. The supervisor and employee meet periodically to review progress, and produce informal, but written, progress reports when needed and fully written performance reviews on a yearly basis.

The employee's supervisor conducts formal performance appraisals once a year, though they may be conducted more frequently, as needed. In 2016, the MPCA revised the Agency Performance Appraisal Worksheet (Appendix A) which consists of five sections:

- **Section 1** addresses performance dimensions for which staff are accountable. Dimensions for which all staff are accountable include Commitment to MPCA Goals and Priorities, Customer/Interpersonal Relationships, Responsiveness, Job Knowledge, Communication, Initiative and Decision-Making. Additional dimensions for which managers and supervisors are accountable are Leading, Developing, and Supervising Others, Managing Resources, Integrating, Coordinating, Measuring, and Evaluating.
- **Section 2** assesses results of performance objectives specific to the employee's work plan. A rating scale is used to rate the employee's performance results for each objective in the individual's work plan.
- **Section 3** gives an overall performance rating.

- **Section 4** identifies the employee's development needs. An Employee Development Plan is used to describe development needs in more detail.
- **Section 5** is for employee comments.

The performance appraisals also include written Employee Self-Assessment and the development planning flows out of the performance appraisal meeting. The employee self-assessments identify specific goals for growth and improvement that the employees think they need/would like to have. It includes development needs and/or goals for expanding responsibilities and individual career planning.

The Employee Performance Appraisal and Employee Development Plan templates are on the intranet site and available to all MPCA staff. The HR maintain all employee annual performance appraisals and other work related documents under lock and available for employee review.

4.0 Procurement of Items and Services

Procurement at MPCA

MPCA's Procurement Unit handles general purchasing, including commodities, equipment, services and construction. The agency's Contracts Unit handles Professional/Technical contract and grant requests. At the beginning of the fiscal year, each division gets a budget for supplies and expenses (S&E). The S&E budget is used for miscellaneous office supplies, travel, memberships, and training. The Section Managers and Office Administrators are responsible for tracking the purchasing budget and reporting to the Division Director the status of the funding.

The MPCA contracts out many services that it lacks the staff and the equipment to complete. Adherence to contract provisions in all areas, including QA, is generally the responsibility of the Project Manager (PM) in charge of a specific site, facility, or program. The project PM is responsible for obtaining all required documentation and starting the contracting process in the Agency-wide Tempo system, the agency's web-based application software. Once the PM provides all the necessary documents electronically, a contracts specialist and/or purchasing specialist execute the work order.

Procurement Rules

The Minnesota Department of Administration has purchasing requirements that the MPCA must follow. These guidelines ensure that state agencies procure goods and deliver services efficiently and in accordance with state law. The Department of Administration delegates The Department of Administration also establishes various commodity contracts with supplying vendors, which permit all agencies to buy goods in a legal, efficient, cost-effective manner without concern for local purchase authority. If an item (or service) is not available through a contract, then the Agency follows an open competitive bid process. The MPCA awards contracts to the lowest responsible bidder meeting specifications and other conditions specified in the call for bids.

Sampling and analytical services are considered non-professional technical in nature and fall under the Acquisitions side of procurement. The MPCA contracts with numerous vendors and laboratories for a variety of products and services, such as data analysis, sampling and laboratory analysis services. As noted earlier, the MPCA requires that all the laboratories performing analysis in support of its programs to be MDH certified, registered with the MPCA or another program as approved by the State, as appropriate. The Minnesota Department of Administration has conditions that all contract laboratories and professional service providers must meet and this ensures that the State gets the services it needs while following all applicable laws.

For routine services such as laboratory analysis, the Department of Administration posts a Request for Proposal (RFP) in the State Register and hire several master contractors. The PMs can then select from the list of master contractors certified by the MPCA. The contracting process for laboratory analysis service starts with organizing a team of staff members representing programs that use the contract services. The QAC staff assists in RFP development by ensuring the QA/QC requirements are included in RFP's.

Once the team determines the necessary components of the contract, the task of developing a RFP begins. This process sets forth the MPCA requirements and the minimum technical qualifications the proposer must have to be considered for the contract. The Minnesota Department of Administration reviews the draft RFP to ensure state requirements are met and attaches the State's special terms and conditions. Upon approval, the RFP is sent to known interested parties and is published in the State Register. Usually, the MPCA staff hold question-and-answer period or pre-proposal meeting for the prospective proposers and other interested parties to clarify the RFP requirements. Following the question-and-answer period, the MPCA staff provide all answers and clarifications in writing to all interested parties. The Department of Administration then sets a deadline for proposal submittal. The RFP team reviews the proposals, scores them in accordance with preset criteria, and selects the winning proposal(s). The Department of Administration then notifies the successful contractor(s) and the contracts negotiate and execute the contracts.

Contracts and Grants/Cooperative Agreements

In addition to the statewide sampling and laboratory analysis master contracts created by the Department of Administration and delegated purchasing handled by the MPCA's Procurement Unit, the MPCA also enters into Professional/Technical services contracts and grant agreements that include sampling and laboratory analysis as incidental or subcontracted work. The MPCA Contracts Unit oversees Grants, Professional or Technical Contracts and Master Contracts and the below are the definitions:

1. **Grant/Cooperative Agreement Contracts** are financial assistance paid or services furnished by a State agency via a third party to an eligible recipient instead of acquiring by Professional or Technical Contract, purchase, lease or barter property or services for the direct benefit or use of the Granting agency. Grants always involve three parties: 1. The State agency with authority to make the grant, 2. The outside entity that will administer the grant or deliver the service, and 3. The final recipient of the service as per the Department of Administration, Office of Grants Management https://mn.gov/admin/government/grants/ .
2. **Professional or Technical Contract Services** are services that are intellectual in character, including consultation, analysis, evaluation, predication, planning, or programming or recommendation and result in the production of a report or the completion of a task. Professional or Technical contracts do not include the provision of supplies or material except by the approval of the commissioner (of Administration) or except as incidental to the provision of Professional or Technical services as per the Minnesota Department of Administration, Office of State Procurement http://www.mmd.admin.state.mn.us/mn05000.htm

3. **Master P/T Contracts** are an umbrella document that provide the general framework for using the services of multiple contractors. The contract identifies the terms and conditions, rates and products for the service being provided. The Contract also provides information about how to use the services and types of documents that need to be completed. MPCA has six master P/T contracts that are available to staff and a few of these contracts are available agency-wide, while others are limited to certain divisions or programs as well as a wide variety of State Contracts and process guidance with the Department of Administration, Office of State Procurement http://www.mmd.admin.state.mn.us/mn05000.htm.

Project Management

Once the contract, grant/cooperative agreement, or purchase order has been completed and site work commences, the PMs ensure work progresses as stated in the QAPP or SAP. The site PMs assemble all necessary documentation for the reviews and technical staff, including the site QAC review these findings to ensure that the work is complete as stated in the QAPP or SAP. A PM can request an audit if he/she is not sure about the quality of the data provided by the contractor. For an example, a PM can request an audit of a site contracted for sampling, and a sampling expert and possibly a QAC would meet with the contractor and monitor the contractor's procedures. The sampling expert and/or QAC would prepare an audit summary for the PM with recommendations for corrective actions, if needed. The PM maintains the documentation from the audit and corrective action. Repeated failure to adhere to the terms and conditions of the contract may result in the MPCA withholding payment and, if necessary, terminating the contract.

Although MPCA staff are primarily responsible for the day-to-day evaluation of contractor performance, supervisors also monitor performance by tracking work progress at sites and facilities assigned to their staff.

The MPCA project managers continuously monitor contractor performance through work plans, project schedules, and task tracking. Oversight of work plans ensure quality and completion. Each MPCA work plan includes the following elements:

- Project Summary
- Statement of Problems and Existing Conditions
- Project Goal, Objectives, Tasks and Sub-tasks
- Measures and Outcomes
- Gantt Chart (schedule)
- Project Budget

MPCA QA staff review quality assurance documentation from laboratories before contracts are issued, perform audits upon the laboratories within the first year of the contract and continue to monitor the labs through meetings, data reviews and follow up on any issues that arise from project management staff. Before a laboratory is hired, they submit their SOPs for relevant methods, Quality Assurance Manual, and costs for analysis. These are all reviewed and scored against a points system ensuring the best-qualified laboratories are hired for work. Whenever a changes is made to an SOP or a new method added (for example 1,4 Dioxane, PFCs, etc.) the appropriate SOP is sent to the MPCA for review and addition to the laboratory electronic file of methodologies. Laboratories that are used within a grant or project issued by the PCA to another organization must be included within the QAPP written for the project and be a certified laboratory. Any laboratory outside of a contract who submits work to the PCA must at a minimum, be certified by MDH or other recognized certification body.

Laboratory contract audits

For contracted laboratory services, the QACs may conduct an audit either before execution of the contract or at any time during the term of the contract to determine if the laboratory meets the QA requirements for the contracted work. Currently all laboratories directly contracted with the MPCA are audited by the QACs. Prior to the audit, the QAC conducting the audit provide the criteria to the laboratories. If the laboratory fails the audit, it is given a specified period to remedy the identified deficiencies and is then re-audited. A second failed audit may result in the laboratory either being disqualified from further contractual consideration or, if the contract has already been awarded to the laboratory, termination of the contract.

QACs may monitor compliance with the terms and conditions of laboratory contracts regarding data quality. MPCA staff review data reports and invoices while the QAC may submit double-blind analytical check standards and conduct data audits. All contractors are required to submit analytical results from Proficiency Testing samples to the State. All contractors are required to follow policy and guidance documents that are posted on the agency Quality Systems webpage.

5.0 Document Control and Records

Record Storage

Records management at the MPCA is a complex operation. Records reside in numerous places for a variety of reasons. Some records reside in network drives for collaborative purposes, resource repositories, and for linking to external websites. Other records are paper and reside in formal file systems. Records may also reside in databases and e-mail. However, all records generated or received in the course of business, regardless of format, origin or storage location are considered State of Minnesota assets and are governed by the Minnesota Government Data Practices Act (Minn. Stat. § 13), the Official Records Act (Minn. Stat. § 15.17), and the Records Management Act (Minn. Stat. 138.17). Specifically, the MPCA uses an electronic document management application to manage electronic documents called OnBase. OnBase is integrated with the MPCA's legacy databases and with several key state databases. This integration forces consistent metadata values be applied to records and supports data. The same security standards and backup practices mentioned below also apply to OnBase. In order to be compliant with the MGDPA, OnBase is able to apply security at the document level. The OnBase system is located on the MPCA network server. The MPCA's Network servers are protected using a variety security tools including firewalls, anti-malware and antivirus applications. The security of the MPCA's computer system meets or exceeds the State of Minnesota's security requirements set by the MNIT Services and the Minnesota Department of Administration. The MNIT backs up MPCA's computer system according to a schedule. Active paper records are stored on-site at the MPCA in centrally located file areas. However, majority of MPCA's paper records are now scanned and in OnBase electronic file system. Inactive paper records are stored off-site in a secured state contracted storage facility.

Record Chain of Custody

Records, if paper, are scanned into the agency's electronic document management system (OnBase). That document becomes the agency's "official record." Each record is considered "created" when they are written or received at the agency. Records are to be added to the agency's filing system immediately or upon final approvals. The file name is the chief identifier for a record. Each agency program file has a

standard operating procedure that determines how its files will be organized. The documents to be contained in a file, as well as the organization and naming of folders are specified in the programmatic standard operating procedures. The Taxonomy is a hierarchical document and record classification scheme based on agency functions, rather than organizational structures. This is due to frequent reorganizations within the agency. This taxonomy is a three-tiered classification structure; the first tier is the function, the second tier is the activity, and the third is tier is the document type.

All incoming paper records should be marked with the Official File stamp. This is done by the support staff, as the incoming mail is processed or by the technical staff as soon as the documents have been distributed to them. Technical staff members are required to fill in all applicable information requested on the stamp:

- Site name, the site number (if applicable), the page number on which the document should be filed in a multi-part folder (if applicable), the name of the staff member submitting the document and the filing category to which the document belongs (if applicable).
- Staff members must mark all other records not received through the incoming mail with the Official File stamp as well and fill in all the applicable information requested on the stamp.
- When multiple copies are received, only one copy should be marked with the Official File stamp and filed. Any other copies received can be used as working copies and kept at staff members' desks or recycled.
- Once Official File stamped the item is submitted for labeling (if it is a document) or filed in its appropriate folder (if loose-leaf)

Labeling and Filing is to be done as soon as possible. For physical records, there are specific programmatic procedures for labeling and filing. Staff members are not to write on agency records. All comments made during the process of reviewing a record should be made on 8.5 x 11 sheets of paper and filed within the correspondence folder belonging to the file. The date and year are placed on all records before filed.

Confidentiality of Records

The main objective is to ensure that all the agency's data and records are protected (in all forms and media) during all phases of their lifecycle from unauthorized or inappropriate access, use modification, disclosure or destruction wherever they are stored. Staff members have a responsibility to ensure that agency records are maintained in a good order and are available upon request by the public. Staff members must check out files from their storage location by using a sign-out card. This is to ensure that all documents can be located at all times. All relevant documents and folders must be kept together. Staff members must also comply with the MPCA's security precautions to protect and maintain the integrity of agency data. Decisions regarding the proper use and handling of not public data are delegated to individual supervisors. Off-site access to not public data may be permitted provided that agency certify the adequacy of the security for such access. However, not public data may not be removed to non-secured off-site locations.

Record Control

Files are preserved pursuant to the terms prescribed in the MPCA record retention schedule. The number of years that files are kept at the agency and then archived varies with each retention schedule. When archiving documents, the file managers:

- Advise division staff as to which documents should be designated for off-site storage.
- Prepare documents according to established requirements.
- Create an index of documents within each box being sent to archival storage.
- Verify the accuracy of each index contained in the boxes being sent to archival storage.
- Complete the required paperwork and secure the necessary approval for transferring boxes to archival storage.
- Create new district retention schedules and revise existing ones as the need arises.
- Monitor the retrieval of documents from archival storage.

The majority of agency files sent to archival storage are in paper form. Some documents are reproduced onto microfiche, which is kept on-site at the agency as well as in archival storage. The retention period for electronic documents is the same as paper documents. When an electronic record reaches the end of its lifecycle, it will be purged from the system.
File management staff when needed can easily retrieve files. Records are maintained as to which files are recalled.

Records Management Officer

Under the agency's Operation Section in the Records Management Unit is the MPCA's Record Management officer. The position is located in the St. Paul office and has oversight of the agencies filing systems and all of the file manager staff in the MPCA. This position reports to the Assistant Chief Financial Officer of the MPCA. The Records Management Officer is also responsible for identification and management of vital records.

File Managers

The agency employs staff to maintain these filing systems. These staff are assigned to manage specific record collections. Their working title is "file manager". The names and contact numbers of the file management staff are listed on the Records Management Webpage on the MPCA intranet. This information is also in the MPCA's "Who to Contact/IRI" directory. The file managers are charged with:

- Establishing and complying with filing policies and procedures for the agency.
- Developing file and taxonomy structures as needed for programs.
- Filing all paper documents according to policy.
- Reorganizing out-of-order files according to policy
- Shifting documents to redistribute space within the filing system as the need arises.
- Assisting staff members and external customers with locating documents within the file systems.
- Providing training to division staff members specific to the filing needs of their respective programs.
- Adhering to the MPCA Retention Schedule.

The agency's Records Management Policy and the Retention Schedule can be found on the MPCA Intranet.

The agency file managers meet on a regular basis to:

- Ensure that file management policies, procedures and practices are consistent throughout the agency.
- Share information and discussing file management issues that affect the agency.
- Ensure agency compliance with Minnesota rules and statues regarding data practices issues.
- Develop ways to provide excellent service to internal and external customers.
- Make recommendations to management regarding file management issues such as daily operations and future improvements.
- Review the strategy for the agency-wide document management policy.

Administrative Records are also created and maintained, as needed. The file managers:

- Compile administrative records files for new and existing Superfund remediation sites in compliance with the Superfund Memorandum of Agreement (SMOA).
- Train staff in the administrative record requirements described in the SMOA.
- Arrange for the copying and distribution of administrative record documents to appropriate information repositories throughout the state, when needed.
- Create an index of documents included in each administrative record.
- Respond to requests from external customers seeking information in administrative records.

Staff Responsibility

As specified in Minnesota Statute, Ch. 15.17, staff are required to make and preserve all records necessary to a full and accurate knowledge of their activities. All staff attend training on record generation, preservation and data practices requirements. On-line training modules are also available for refresher training.

Staff members are also responsible for importing electronic files into OnBase, filing the documents in their work areas or submitting filing to the file management staff according to their program's practice. Staff members determine metadata information as to how various documents should be filed within the recordkeeping system. Staff members refer all requests for information, including Freedom of Information Act letters, Minnesota Data Practices Act letters, and file review requests to the appropriate file manager.

External File Review

External customers may review files. The file staff members:

- Ensure that external customers are scheduled for file reviews according to agency policy.
- Locate all division files that the external customers request to review.
- Prior to file review ensure that requested files are reviewed by division staff for confidential, security, and whistleblower-type information when appropriate and in accordance with Minnesota statutes.
- Greet external customers, explain the agency's file review and photocopy policies, and answer questions about division programs.
- Serve as liaisons between external customers and division staff assigned to remediation sites that are being reviewed, by consulting with appropriate division staff when questions are raised during the file review.
- Maintain a record of appropriate signatures and billing information from external customers as required by agency policy.
- Comply with document photocopy requests in accordance with agency policy.

- Verify the authenticity of agency-owned files by authorizing a notarized affidavit when records are subpoenaed by a state or federal court.

File managers respond to written and oral requests for information through the Freedom of Information Act and the Minnesota Data Practices Act using the appropriate division files. They:

- Contact external customers to answer questions concerning the site file, explain agency file review and photocopy policies, and act as liaisons between appropriate staff and external customers to answer complex questions raised in the request.
- Conduct research on additional file information as needed based on conversations with the external customers.

Files that require documentation for litigation purposes are number-stamped by the file managers. These file managers:

- Gather all site documents from the central file, archival storage, and staff work areas.
- Consult with Office of the Attorney General staff to assign categories and numbers to the documents within the site file.
- Reorganize the file in accordance with the categories established in consultation with the Office of the Attorney General Staff stamp the documents with the assigned numbers.
- Compile a list of all documents in the file with their corresponding numbers and distribute this list to the Office of the Attorney General, the staff members assigned to the site, and external customers requesting a copy of the list number-stamp any new documents added to the site file, update the list, and distribute it accordingly.

When appropriate, number stamping may be done by a vendor outside the agency.

Technical Guidance Documents and Factsheets

Anyone associated with a given program can identify the need for a technical document. If the program leaders, typically unit supervisors and section manager agrees, he or she will assemble a team of staff from the relevant program. This team defines the project, completes subject research, and creates a draft version. The team then routes draft for review and comment to other staff, management, and QACs who are knowledgeable about the subject matter. If applicable, consultants, laboratory representatives, and EPA staff may review and comment on the document. The author team reviews the comments and typically revises the draft based upon comments received. A final draft is submitted to agency management and EPA staff, if necessary, for approval.

The MPCA staff develop many technical guidance documents and factsheets to assist consultants, the public, and other interested parties. The MPCA seeks to disseminate this information as broadly as possible. Technical guidance documents and factsheets for all the environmental programs is located at the MPCA Publications web site: https://www.pca.state.mn.us/about-mpca/mpca-publications . This site include all MPCA publications by media (Air, Water, Waste, etc.) and Program (Emergency Response, Legislative documents, reports, etc.). The MPCA's Publication Support Team is available to help Staff with style guidelines, formatting and other publication support. In addition, the PST's intranet site has factsheets and request forms for various services provided by the PST.

The MPCA regularly update Technical guidance documents and factsheets to provide end users with the most current information. Older versions of these documents and those concerning obsolete topics are taken out of circulation. To simplify the document development and updating procedure, the MPCA has a streamlined, systematic process.

6.0 Information Management

Data management serves a critical function in both preserving information and making that information available. Data management necessarily encompasses a variety of activities related to planning environmental monitoring, collecting samples from different media, laboratory and in-situ analysis of samples, organizing and storing resulting data, analyzing and interpreting data, disseminating data, and communicating the monitoring results and knowledge gained. The way MPCA manages data has evolved substantially in the past decade primarily due to Internet availability (e.g., opportunities in electronic government), increased emphasis on enterprise architecture, and the need for better security of environmental data. In addition, MPCA strives to comply with all EPA standards and regulations, as appropriate, pertaining to hardware, software, database system development, and data reporting. This section summarizes the department's information management practices and related information technology topics. Additional aspects of project management, such as planning, data gathering, and evaluation by MPCA Programs, are addressed in the QAPrPs or other project planning documents as appropriate.

Minnesota Information Technology (MN.IT) manages and maintains the hardware and software required for MPCA information management. MPCA staff must comply with MN.IT established hardware and software use protocols that are available on an internal, nonpublic web page. Mn.IT staff informs agency staff when protocols are revised or updated.

Information System Integration

Computer hardware and software standards

Minnesota Information Technology (MN.IT) directs the MPCA Information Technology requirements. MN.IT encompasses all IT professionals within the State systems as of 2012. The MN.IT office publishes standards and policies that affect all state agencies. These are located at https://mn.gov/mnit/about-mnit/policies Data Quality and Data Integrity.

The MPCA uses numerous work-information management systems for efficiency and quality management. Data integrity and data quality are related in the fact that both are needed to ensure that the data are sufficient for their intended use. For the purpose of this document, data quality relates to the process used to collect, analyze, verify, and validate environmental results. Data integrity relates to the input, storage, maintenance, and retrieval of those results.

Data quality

Before environmental data are entered into any database, and released for production, producers of the data shall use a standard QA review/validation/verification procedure to verify that they meet the requirements of their intended use. QAPrPs describe the level of QA/QC necessary for their programs and should include references to how data quality is determined. This includes descriptions on how to measure precision, accuracy, representativeness, comparability, completeness and sensitivity. Regardless of the data entry method, manual entry or electronic file transfer, project managers verify that the data meet the above criteria prior to input into the database in a final format for use by staff. Questionable data may be entered and maintained in a database if they are appropriately documented, qualified, or separated out from use by the public.

Data Integrity

The data integrity process begins once the data are ready for input into the databases. Data Integrity addresses the vulnerability of the system to unauthorized access, data manipulation, theft, and environmental damage. Security of the data systems at the MPCA through password protection and limited rights given to users of databases is used to ensure data integrity. Further, data is screened for outliers or anomalies within the database to verify integrity remains accurate across the databases at MPCA.

Data Quality Audits

The MPCA technical staff perform quality audits on all data generated for use in regulatory and monitoring programs. The program project manager has ultimate responsibility for data review. Data submitted to the QACs for review are scrutinized for completeness to ensure that QA data meet DQO requirements, and to ensure that all data technical requirements are met. This process will vary depending upon the DQO requirements. The MPCA audits its data against established criteria, accepted methods, the National Functional Guidelines (NFG), or predetermined specifications. The MPCA QACs also audit Minnesota certified laboratories and compile a report that discusses the audit results. If the QACs find serious quality concerns or violations, they will flag data associated with that lab for several previous years and inform the data owners of any limitations or sequester the data. Normally, MPCA uses flags assigned by the Contract Lab program. However, a new list of flags has been developed for use with EQuIS that supersedes the old flagging system. If the QACs find major problems, a meeting between the lab personnel and the QAC may hold meetings to discuss corrective actions and come to resolution on issues before the lab can perform any further analytical work for the State of Minnesota.

Databases

The MPCA uses a number of databases for its data. Three databases are primary to the PCA; Tempo, SWIFT, OnBase, and EQuIS with other smaller databases used in support of program work.

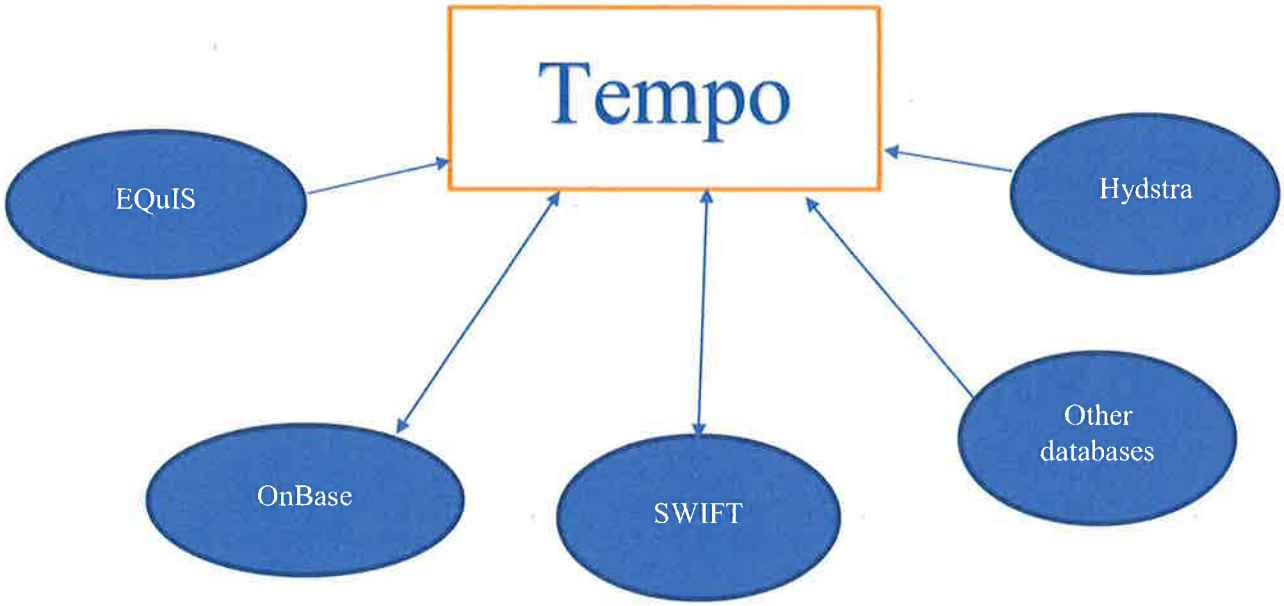
Tempo

Since 2016, MPCA has migrated all its program information into one system: Tempo. The Tempo currently contains the following Agency program data

- Permitting
- Enforcement
- Invoicing
- Watershed level information (not water quality data)
- Grants and work orders
- Remediation (Petroleum, Superfund, Brownfields, Closed Landfills)
- Emergency Response

Tempo is able to access data from other stand-alone databases used by MPCA staff. Tempo allows MPCA staff to use Tempo as their workflow station. For example: a work order documentation may start with the Project Manager in Watershed Division, and the designated contract specialist must approve the work order and then, the funding would be encumbered by fiscal coordinators in Finance. Eventually, the PM would print and send via facsimile the work order to the contractor for signature, upon return of the signed document, would sign it him/herself and file the paperwork. Now all documentation and signatures are done electronically and saves time and cost of paper. Once the documents are final, the PM or other designee can "file" the documents in the OnBase document archiving database. The staff can access any document so archived in Tempo.

Figure 3. Tempo Data Accessibility



OnBase

OnBase is an integrated enterprise document management software suite used to capture, route, manage, share and archive high volumes of documents. This includes converting paper documents via scanning to electronic documents and managing electronic documents in their native format (e.g. Microsoft Word, Excel, PowerPoint, digital photos, etc.). Benefits of managing documents electronically include reduced paper storage costs, easier access to documents, and the documents can be centrally managed.

- Ability to store documents electronically in their original formats; for example: Word, PowerPoint, or Excel.
- Reduce, and even eliminate paper records. Staff can scan existing paper records and store them electronically. Staff can create and manage new documents electronically in
- Ease of file retrieval: Unlike paper files, stall can easily locate documents and files from their desks.
- Benefits the environment: by reducing dependence on paper documents, MPCA saves time, money, and trees!
- Saves space: when storing documents electronically, there is no need for the space for file cabinets and the cost of offsite storage.

Statewide Integrated Financial Tools (SWIFT) system:

The MPCA uses the State-Wide Integrated Financial Tools (SWIFT) is the online financial, procurement, and reporting system used by the State of Minnesota. SWIFT system is connected to MPCA's internal Tempo system to provide seamless financial transactions such as work orders, invoicing and payment processing (for permits, certifications and licenses).

Environmental Databases

Environmental Quality Information System (EQuIS)

Since 1972, the home for all of the MPCA's ambient surface water quality monitoring data was the STORET database. The EPA created and distributed STORET, but stopped supporting the software as of September, 2009. The MPCA decided to take this opportunity to find new database software that would better suit their needs.

After an exhaustive collection of user requirements, MPCA concluded the EQuIS database would be the best fit to replace STORET as the agency's water quality monitoring database. In early 2009, the agency purchased EQuIS (www.EarthSoft.com) and since then staff have been setting up the database, migrating the STORET data, and entering new data. The database expanded from its initial configuration. It now includes surface water data, groundwater ambient data, and remediation data from several MPCA programs and other state agencies. In addition, EQuIS stores field parameter and water level/elevation data. All data are submitted electronically using specified formats to ensure data quality and integrity. The MPCA is also planning to use EQuIS as the main storage location of the State's ambient air work run by the internal laboratory and gathered from continuous monitors throughout the State.

The most up-to-date information on the data submittal and review processes are located on the MPCA Surface Water Data Submittal, Review and Reports website. An annual review of data submitted for the surface water program is done on a yearly basis at MPCA to verify data from the year. The following timeline is used for this process:

- Through June 1: Submit project and location metadata
- Through November 1: Submit project lab and field data
- December 1: Begin final data review

- Mid-December of the following year: Complete final data review for assessment related data
- Mid-January of the next year: Data finalized and ready for assessment process

If not already established in EQuIS, data providers are required to submit Project and/or location Establishment Forms before data are be loading in EQuIS. These forms are available on the new Surface Water Data Submittal webpage. The majority of the labs submitting data to the MPCA use the custom MPCA developed electronic data deliverable format called Lab_MN. This format also include the laboratory quality control information. For other labs, data submitted via a data template requiring further manipulation for entry into EQuIS by PCA staff. Data files generated by labs are sent directly to a centralized EQuIS mailbox (wqdata.mpca@state.mn.us) MPCA staff and contractors are able to submit field data electronically using the EarthSoft EDGE product. All Lab_MN and EDGE related files are located on websites administered by the EarthSoft. Staff and external partners providing data to the MPCA reference these sites to download required files and get updated information:
Lab_MN: http://earthsoft.com/products/edp/edp-format-for-mnpca/ and
EDGE: http://earthsoft.com/products/edp/edge-format-for-mnpca/.

Lab_MN: Lab data storage spreadsheet

Lab_MN is an electronic data deliverable (EDD) format developed by the MPCA and MN.IT enabling labs to submit results in an EQuIS-ready format. It incorporates EQuIS data standards and enables remote error checking prior to submitting data to the MPCA. Beginning in 2015, all major labs supplying EQuIS-bound data were required to adopt this standard.

EQuIS Data Gathering Engine (EDGE): Field data collection tool

EDGE is a field data gathering tool used to populate spreadsheets and generate EDDs, which can be used for EQuIS field data storage. EDGE_MN is the EDGE format that used in Minnesota.

The MPCA conducted an EDGE_MN pilot project in January 2014 with eight labs and contractors. After the pilot project, the EQuIS project management team evaluated the benefits of EDGE_MN and is continuing efforts to determine the amount and type of support that the MPCA will need to provide to users following a complete rollout.

The MPCA developed EDGE Standard Operating Procedures and provided training to field staff and contractors.

Air quality databases

LIMS

The Air Monitoring Unit uses a server-based Air Laboratory Information Management Systems (LIMS) database system to manage the high volume of data generated from all aspects of air monitoring, including data validation, storage, and retrieval.

This system is used for inventory tracking and instrument calibration and quality assurance, both in the field and in the laboratory. In addition, LIMS maintains all information regarding monitoring sites and support equipment. The LIMS system is currently being updated using Promium Element as the LIMS from the laboratory equipment, AirVision for continuous data from the field monitors, and MTL for information from the gravimetric laboratory. All of this data will be routed to EQuIS for storage and

from EQuIS be loaded into AQS for reporting to EPA. Data analysts from the MPCA will use EQuIS and Tableau for analysis of air data over time verifying compliance with federal and state standards.

AQS

The Air Quality System (AQS) is EPA's repository for ambient air quality data. Within 90 days of the end of each quarter, MPCA reports all ambient air monitoring data directly to AQS via the internet. Invalidated data are reported with assigned null data codes. The MPCA also reports quarterly precision, bias, and accuracy data consistent with the data reporting requirements specified for air quality data as set forth in 40 CFR § 58.35(c).

Hydstra

Hydstra is a suite of applications and database backend from the KISTERS Company. The implementation of Hydstra at MPCA is a joint effort with MNDNR. The database and applications are housed on a meta-frame server accessible to both agencies. Access to the server is controlled by Citrix/Meta-frame accounts. User rights built into Hydstra control access to the Hydstra application. Read-only access to Hydstra data is provided internally to MPCA staff through a Microsoft Access front-end and through a web application housed on the Hydstra server.

Hydstra data is closely scrutinized through a two level peer initiated audit process. The assigned Station Manager and Data Manager if assigned, according to written policy and procedure manuals work up data in the system. Raw data is preserved and corrected in a new data signal. Some types of corrected data are used to create a new derived data signal (e.g. Flow from stage). Some data signals are aggregated to new time-steps (e.g. Unit Value discharge aggregated to Daily Value discharge). Comments are used throughout the data workup and all data signals are kept separate so any adjustments, derivations, or aggregations can be traced back to the raw data signal. An automated electronic audit is refreshed every morning to show the current state of data for all stations in Hydstra for the year. Once data meet internal criteria for review according to this electronic audit, a peer panel performs a manual audit (with the Station Manager being present to answer questions and receive feedback). This manual audit review is repeated as necessary until the panel approves the data. At that time, data are marked in the system as "Published" and is locked from further changes.

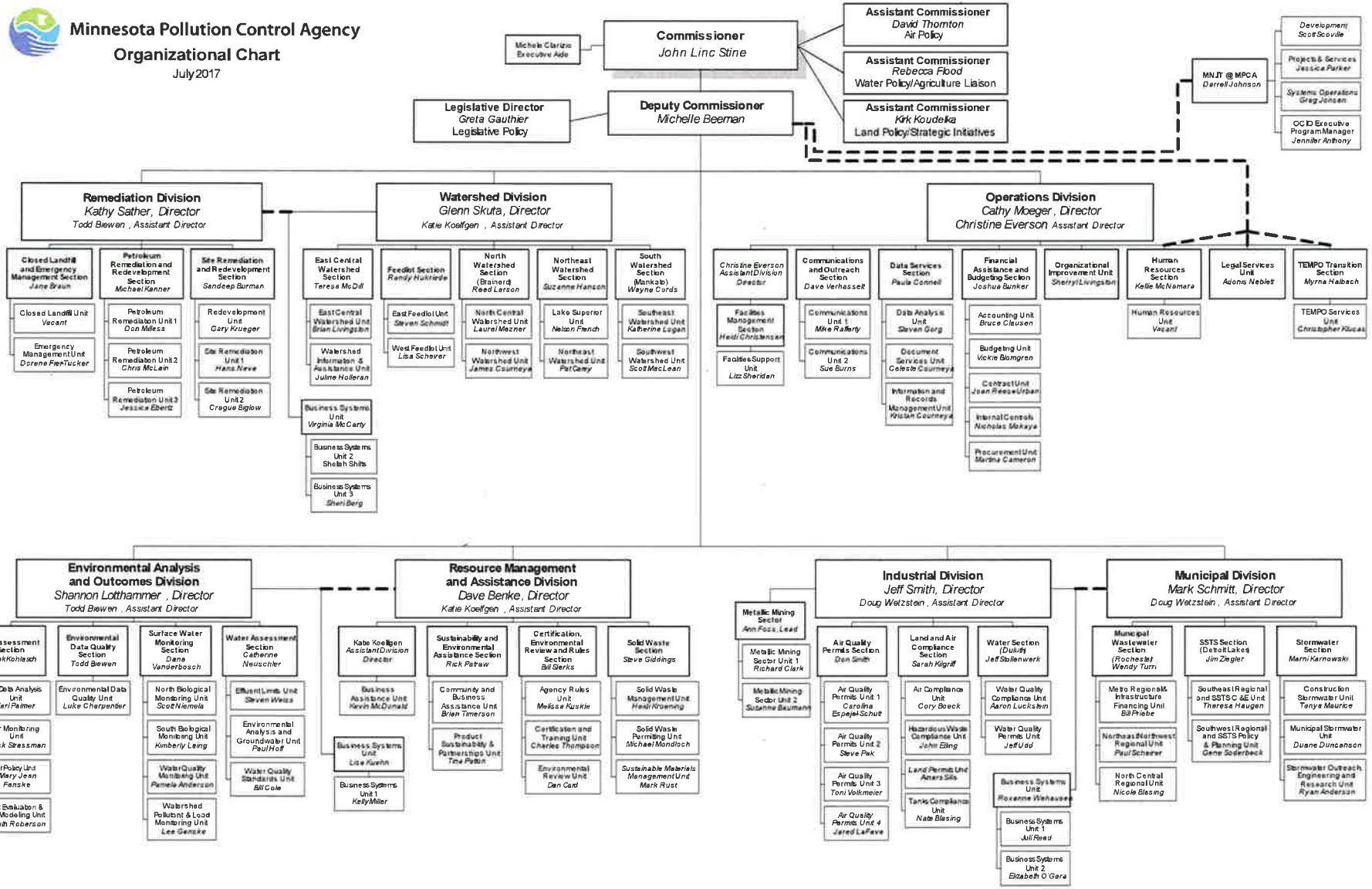
Environmental Data Access (EDA)

The MPCA has developed a database system to provide access to environmental data over the Internet. This system is known as the Environmental Data Access (EDA) system. This system provides access to surface water data. The development team is expanding this system to provide access to air quality and groundwater data.

The EDA system relies on EQuIS for the storage and retrieval of surface water data for lakes and streams. Therefore, all surface water quality data must adhere to the protocols required for data in EQuIS. The system presents up to fourteen standard water quality parameters on the webpage for both lake and stream stations for each calendar year with measurements. Additionally, a user can download the displayed water quality data and additional parameters, if available. Users also have access to biological data, which are collected and maintained by MPCA in a separate database that includes measurements, such as the estimated number of fish and the fish species present in a stream segment. Additionally, surface-water discharge data from MPCA-permitted facilities are also available. Lastly, the system uses a map viewer to display graphically the results of 303(d) and 305(b) surface water body assessments conducted by the MPCA.

Figure A

Minnesota Pollution Control Agency
Organizational Chart
July 2017



i-admin3-02

Figure B

July 2017

Environmental Analysis and Outcomes Division
Environmental Data Quality Section
Todd Biewen
Section Manager/Assistant Division Director

Business Systems Unit

Lisa Kuehn
Office Administrator

Staff:
Charlene Byrnes-Gronau
Duane Gatzke

Business Systems Unit 1

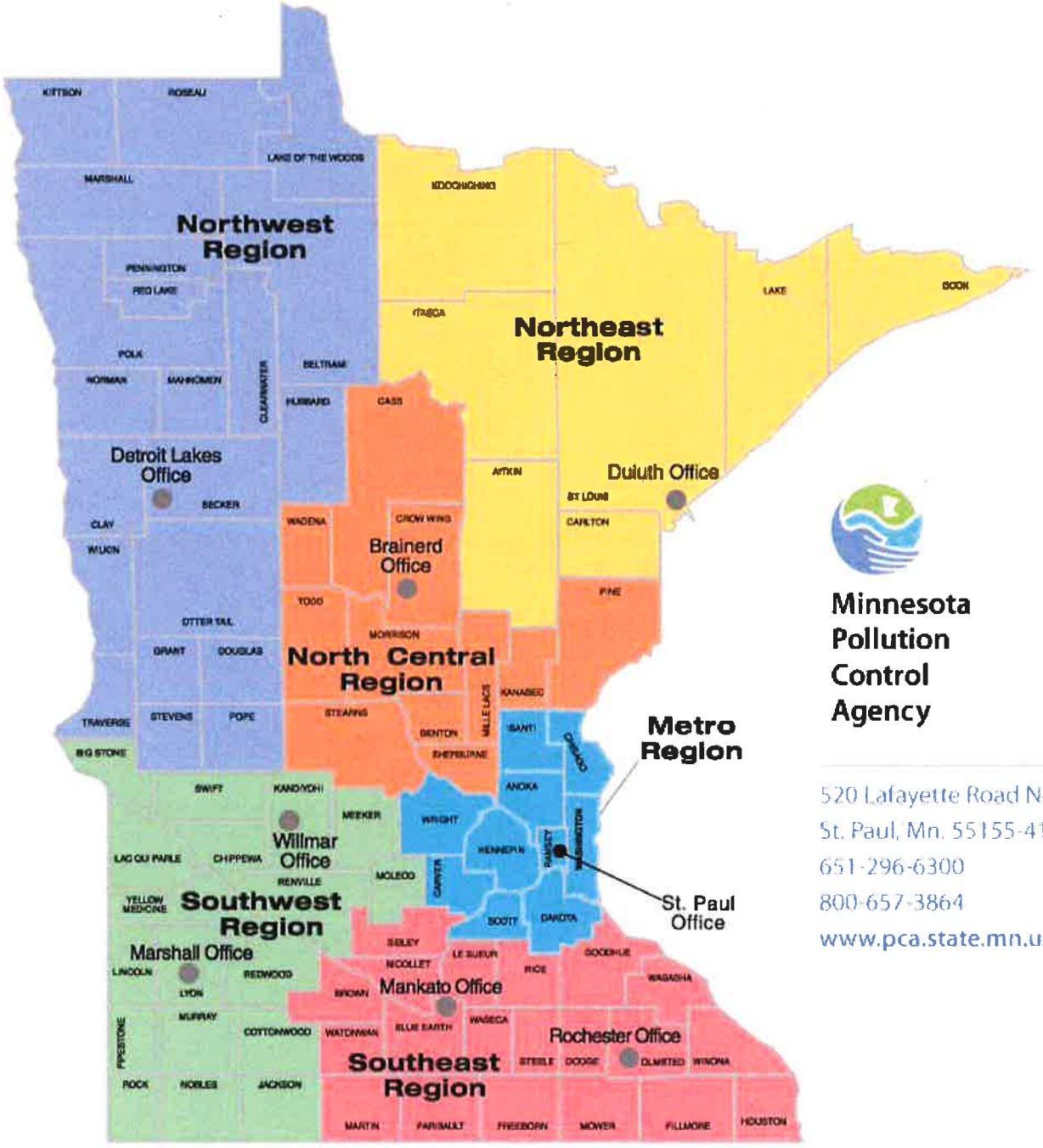
Kelly Miller
Supervisor

Staff:
Diane Belanger
Mary Blackstock
Andrea Ebner (.5)
Jean Evers
Tracy Finch
Jennifer Holstad
Barb Olafson
Mary Osborn
Vonda Sanders
Deborah Schreifels
Beth Tegdesch

Environmental Data Quality Unit
Luke Charpentier
Supervisor

Staff:
Deepa DeAlwis
Robert Derfus
Dennis Fenlon
Nancy Flandrick
Jean Garvin (.75)
Sandra McDonald
Shawn Nelson
Holly Rymer
Bill Scruton
Jennifer Thoreson
David Vaaler

Figure C



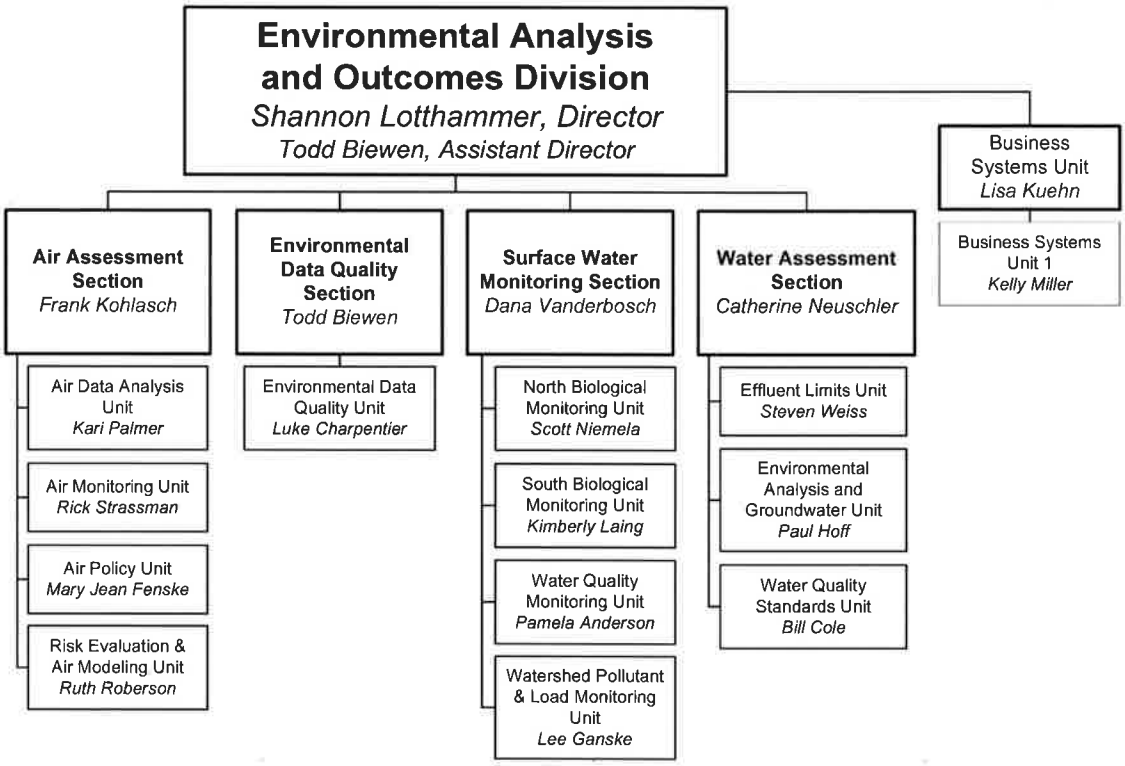
Minnesota Pollution Control Agency

520 Lafayette Road North
St. Paul, Mn. 55155-4194
651-296-6300
800-657-3864
www.pca.state.mn.us

Figure D

July 2017

Minnesota Pollution Control Agency



Staff in the Environmental Analysis and Outcomes Division monitor and evaluate the physical, chemical and biological conditions of Minnesota's environment. This information is used to:

- identify environmental threats and impacts to human and ecosystem health
- lead strategic planning for the agency
- help set environmental goals and measure progress in achieving them
- establish standards
- conduct risk assessments and effluent limits in support of regulatory programs
- make data accessible to agency leadership, staff, stakeholders and citizens

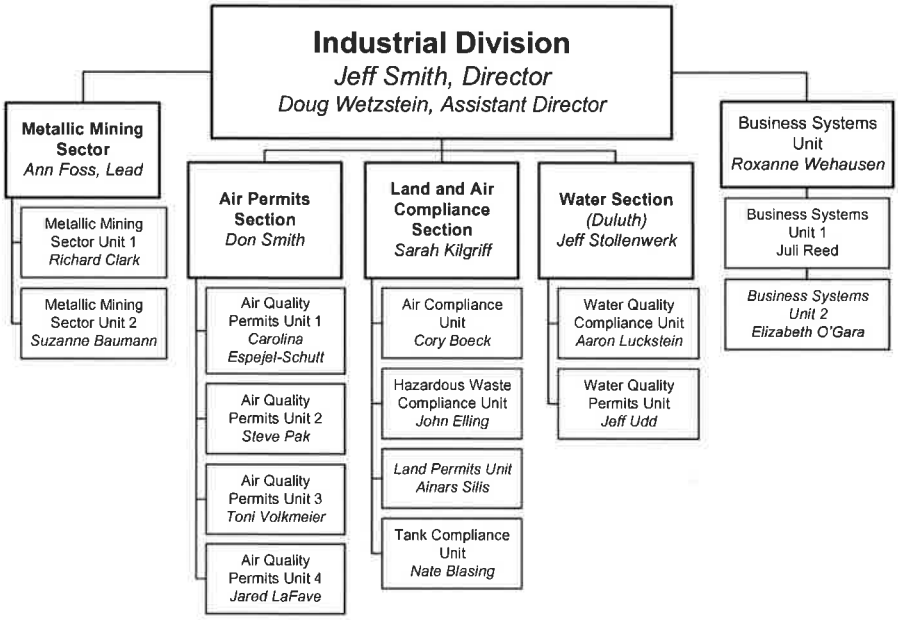
Examples of programs and activities conducted in the division include:

- Air Emissions Risk Analysis
- Biological Monitoring
- Citizen Lake Monitoring
- Citizen Stream Monitoring
- Environmental Data Access
- Environmental Information Report

Figure E

July 2017

Minnesota Pollution Control Agency



The Industrial Division operates the agency's core regulatory programs that work with larger industrial facilities to ensure they are in compliance with air, water, and hazardous waste regulations.

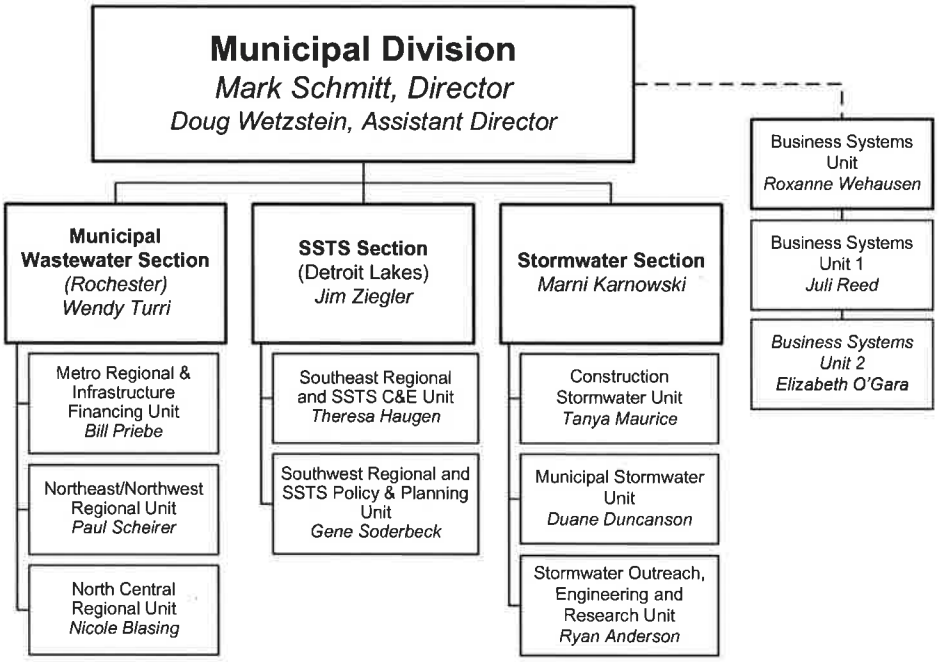
Examples of programs and activities conducted in the division include:

- Air permitting
- Water permitting
- Waste management
- Above ground storage tanks
- Underground storage tanks

Figure F

July 2017

Minnesota Pollution Control Agency

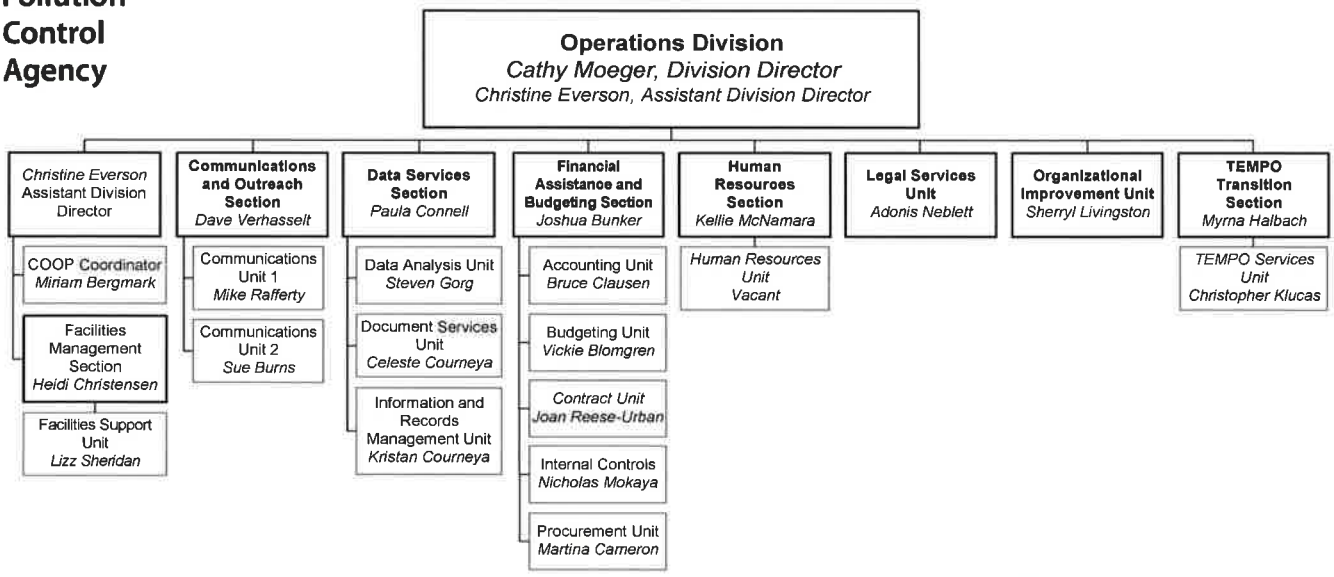


The MPCA's Municipal Division works with cities and towns to ensure proper management of wastewater and stormwater to help protect the environment and citizens. Work includes technical assistance, development of rules and policy, permitting, and compliance and enforcement.

Use the links below to learn more about some of the programs operated in this division.

- Stormwater
- Subsurface Sewage Treatment Systems Program (SSTS)
- Wastewater

Minnesota Pollution Control Agency

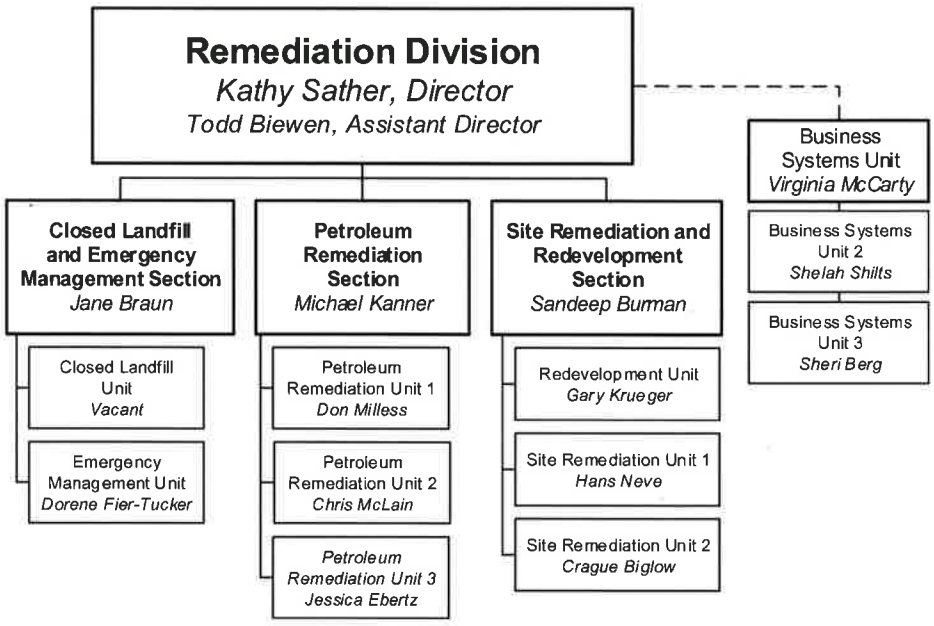


The MPCA's Operations Division enables the management of resources (people, dollars, and knowledge) to meet the Agency's current and future priorities by providing a financial management and reporting framework and messaging of resources to the vision. The functions of this division serve as connections or relationship-building throughout the Agency and enable leadership to obtain and share knowledge about and direct and communicate the Agency-wide management resources.

Figure H

July 2017

Minnesota Pollution Control Agency



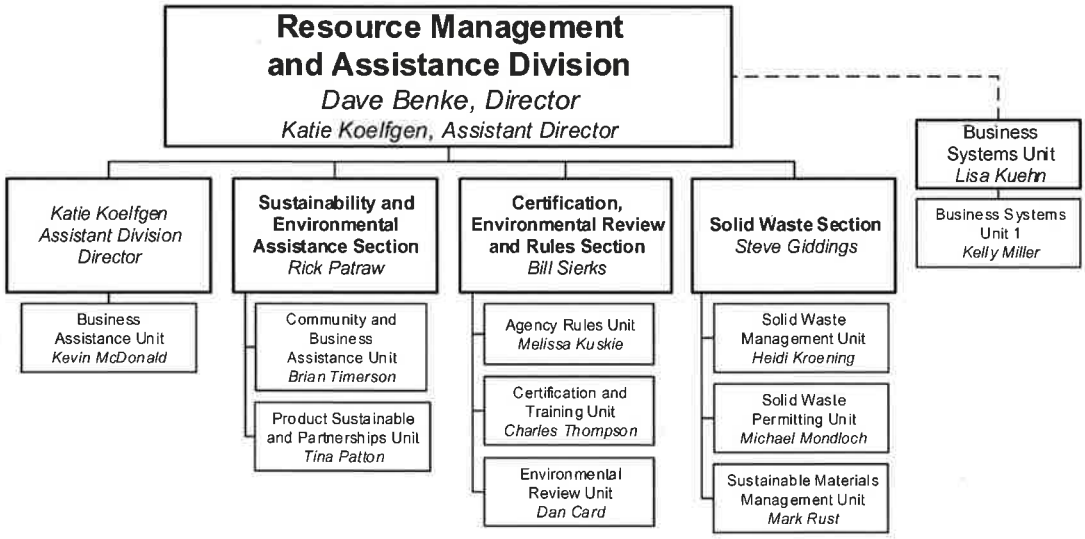
Remediation is the process of cleaning up pollution in the soil, water or air from an accidental spill or from polluting activities that occur over a long period of time. The MPCA has many programs that clean up pollution ranging from Voluntary Investigation and Cleanup (VIC) to the Emergency Management Unit. The Brownfields Program cleans up abandoned land sites contaminated by industry so they can be safely redeveloped. Below are helpful links to remediation programs.

- Cleanup Index Page
- Brownfields Program
- Closed Landfill Program
- Emergency Response Program
- Leaking Storage Tank Program
- Resource Conservation and Recovery Act (RCRA) Program
- Superfund Program
- VIC Program
- What's In My Neighborhood — GIS-based tool for searching for contaminated sites

Figure I

July 2017

Minnesota Pollution Control Agency



The Resource Management and Assistance Division emphasizes the use of voluntary, innovative environmental approaches, including pollution prevention, technical and financial assistance, and environmental education, to develop comprehensive system-based approaches to environmental problems and supports the agency's information and knowledge management systems.

The Solid Waste Section works to create successful, environmentally sustainable businesses through product stewardship, market development, design for the environment (DfE), preventing pollution at the source, reducing toxicity and waste in products and product uses, and helping facilities operate in compliance with regulations. The section also offers the One-Stop Program, in partnership with the Department of Employment and Economic Development, helping new and expanding businesses navigate through environmental regulations and identify pollution prevention opportunities.

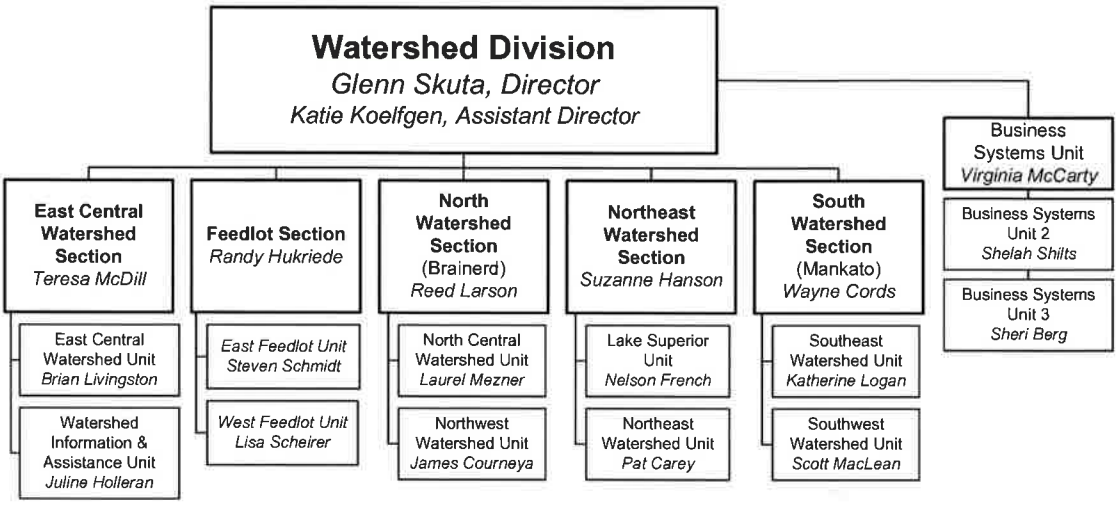
The Sustainability and Environmental Assistance Section works to create stronger and healthier communities by working with community decision makers, educators, and other leaders to educate and inform on environmental issues. The section promotes eco-industrial development, green buildings, and replies upon policy initiatives and financial incentives to promote partnerships that advance the agency's environmental goals and objectives. This section includes the staff in the Business Assistance Unit that answer questions from regulated parties and citizens about air quality, water quality, solid and hazardous waste and storage tank regulations, and help them identify opportunities to prevent pollution. The Section supports the sustainable communities' network, the Living Green Expo, and major conferences and events.

- Environmental Review
- SEEK: An Interactive Directory of Environmental Education Resources
- Small Business Assistance Program
- Solid waste management
- Training Events Calendar

Figure J

July 2017

Minnesota Pollution Control Agency



The MPCA Watershed Division delivers most environmental programs, products and services for smaller, dispersed sources of pollution such as small cities, businesses, and individuals. The Watershed Division has offices located across the state.

Many water quality programs are based in this division. Specific programs include feedlots, basin management, landfill operations, and other programs targeting nonpoint source pollution. Additional information about some of these activities can be found in the links below.

- Basin Management
- Feedlots