

**Maryland**  
**Department of the Environment (MDE)**  
**CATS+ TORFP #U00B7400001**  
**Attachment 18**

**Functional Requirements Document and**  
**Requirements Traceability Matrix for the**  
**ENVIRONMENTAL PERMIT TRACKING**  
**SYSTEM MODERNIZATION (EPTSM)**

This document is responsive to the requirements of MDE task U00B4400022 and the JMT technical proposal specifications dated June 30, 2014, and accepted by the State. The content of this document addresses the following statement of work requirements:

Item 2.6.1.1	Develop detailed requirements associated with the Project Implementation Request (PIR) (implementation) phase of the project, including, but not limited to: functional process requirements, data requirements, system interface requirements, hardware/software requirements, technical requirements and non-functional or operational requirements.	2.8.4.2 – Functional Requirements Document (FRD)
Item 2.6.1.2	Develop a table that links requirements to their origins and traces them throughout the project life cycle; this information will provide a baseline for requirements change control, design and testing.	2.8.4.2 – Functional Requirements Document (FRD) – section pertaining to Requirements Traceability Matrix (RTM)

The format and outline content follows the State of Maryland Department of Information Technology (DoIT) template for Requirements Phase titled “Functional Requirements Document” and posted on <http://doit.maryland.gov/SDLC/Pages/Templates.aspx>.

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## ACRONYMS

Acronym	Definition
AFO	Animal Feeding Operations
AQCP	Air Quality Compliance Program
AQPP	Air Quality Permits Program
ARMA	Air and Radiation Management Administration
CAFO	Concentrated Animal Feeding Operations
CEM	Continuous Emission Monitoring
CFR	Code of Federal Regulations
CHS	Controlled Hazardous Substance
COMAR	Code of Maryland Regulations
COTS	Commercial Off-the-Shelf
CPCN	Certification of Public Convenience and Necessity
CROMERR	Cross-Media Electronic Reporting Rule
DNR	Department of Natural Resources
EEMS	Enterprise Environmental Management System
EPA	Environmental Protection Agency
EPA ID	Environmental Protection Agency Identification Number
EPTSM	Environmental Permit Tracking System Modernization
GIS	Geographic Information System
IDEF	Integrated Definition of Enterprise Functionality
LMA	Land Management Administration
MACT	Maximum Achievable Control Technology Standards
MAFO	Maryland Animal Feeding Operations

Acronym	Definition
MDE	Maryland Department of the Environment
MRA	Maryland Recycle Act
MSW	Municipal Solid Waste
NID	National Inventory of Dams
NOI	Notice of Intent
NPDES	National Pollutant Discharge Elimination System
NSR	New Source Review
OCP	Oil Control Program
OIMT	Office of Information Management
PAF	Problem Activity Form
PCA	Program Cost Account
RCRA	Resource Conservation and Recovery Act
RTM	Requirements Traceability Matrix
SDLC	Software Development Life Cycle
SMW	Special Medical Waste
SOP	Standard Operation Procedure
SSDSP	Sediment, Stormwater & Dam Safety Program
SSO	Sanitary Sewer Overflows
SSTM	Sewage Sludge Treatment and Monitoring
SSU	Sewage Sludge Utilization
STU	Scrap Tire Unit
SWP	Solid Waste Permit
TEMPO	Tools for Environmental Management and Protection Organizations

Acronym	Definition
TIN	Taxpayer Identification Number
TRIP	TEMPO Remote Inspection Process
TSOP	Technical Services and Operations Program
UI	User Interface
VPN	Virtual Private Network
WAL	Work Activity Log
WDUP	Waste Diversion & Utilization Program (New Name Resource Management Program)
WMA	Water Management Administration
WWP	Wetlands and Waterways Program
WWPP	Waste Water Permits Program

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## 1 GENERAL

### 1.1 Project Description

The purpose of the Environment Permit Tracking System Modernization (EPTSM) Project is to support the MDE's effort to plan the "modernization" of their Tools for Environmental Management and Protection Organizations permit tracking system (TEMPO). The primary goal of this modernization effort is to replace the current PowerBuilder user interface (UI) with a web-based user interface that provides access to the TEMPO database and the 12 MDE Programs that utilize it to capture data on the various permits they issue.

#### 1.1.1 Background

The existing system was implemented by tailoring a Commercial off the Shelf (COTS) system called Tools for Environmental Management and Protection Organizations (TEMPO). This system is a client-based application that supports the permit activities for 12 environmental programs that are administered by the following Administrations:

- Air and Radiation Management Administration (ARMA)
  - Air Quality Compliance
  - Air Quality Permitting
- Land Management Administration (LMA)
  - Solid Waste
  - Hazardous Waste
  - Oil Control
  - Resource Management Program
    - Animal Feeding Operations
    - Recycling
    - Sewage Sludge
    - Scrap Tires
- Water Management Administration (WMA)
  - Wetland & Waterways
  - Wastewater
  - Compliance
  - Sediment, Stormwater and Dam Safety

The MDE seeks to minimize the impact of potential data and functionality loss during the modernization effort. They would prefer that the modernization be limited to the user interface and technology modernization, and would like to leave the database mostly as is, as a risk mitigation and cost containment strategy. The MDE wants to ensure the safeguarding of legacy data.

The MDE wants to address productivity issues and user complaints by replacing the current user interface (i.e., PowerBuilder) with a new online system that is easy to navigate and improves the

business processes of accepting an application, the review and approval of the permit application; monitoring permittee compliance with MDE specified conditions; investigating incidents; and implementing enforcement activities. The system has a number of weaknesses that the Department hopes to address through a modernization effort:

#### Navigation and Data Entry Issues:

- Data entry flow is not linear and does not guide the user from one screen to the next screen.
- Data entry is cumbersome and the required navigation is not consistent with business needs. The process also lacks an appropriate level of data entry validation.
- There is no distinction between mandatory and optional data elements.
- Too many clicks are required to access a program specific activity; therefore, users need to select the Administration first in order to start a process.
- Navigation through the system is awkward, and it is not simple to view and group permits, the related status, action items, and data reporting.
- Nonexistence of context sensitive help.

#### Program Specific Issues:

- Lack of flexibility in inserting a new permit condition and/or violation; or deleting a condition and/or violation for a specific permit.
- Many of the drop-down lists are not program specific. The user needs to scroll through a long list to find the options related to the program.
- Lack of ability to define, maintain and display permit conditions and corrective actions that are specific to the permit type.

#### Data Retrieval and Notification Issues:

- Lack of flexibility in generating ad-hoc reports. The process is dependent on DBA to develop queries.
- Search feature is restrictive. It does allow wild card searches so the user needs to know where to place the wild card (\*) in order to get results.
- Lack of ability for the system to generate automatic notifications. For example, upcoming renewals notification and compliance reports that are overdue.
- Visualization of a permit location is poor, since a site or location is documented as a data item (i.e. an address), and it is difficult to readily identify nearby areas unless the entered address or location point is the same.

#### Data Quality

- Lack of timely validation of a record to a master table causes duplicate data issue for a location or person or organization.

### 1.1.2 Purpose

The EPTSM project is directly aligned with Maryland Department of the Environment (MDE), Office of Information Management Technologies (OIMT) and the MDE Programs to achieve MDE's goal of improving the data entry workflow and functions for each of the MDE programs.

The workflows encompass the following areas:

- **Permit Application** – This phase typically includes multiple work flows (not necessarily sequential) established to collect information needed by MDE to determine if an applicant is eligible for a permit. Federal, State, and local laws and regulations typically dictate applicant eligibility.
- **Management of Issued Permits** – This phase entails the activities related to compliance reporting, receiving and reviewing required periodic reports from permittees, updating permittees on new regulations and requirements, and assisting with renewals.
- **Response to Incidents** – This activity deals with response to public concerns about possible violation of regulations that are within the MDE purview.
- **Inspection** – This phase includes workflows involving MDE inspectors who must verify that the permittee is adhering to all requirements and/or limitations associated with the permit.
- **Enforcement** – This phase includes workflows used to track the outcomes of enforcement actions taken by MDE against a permittee or entity found to be out of compliance with permit conditions.
- **Reporting** – This phase encompasses the ability to generate permits, reports summarizing applicants' information, permittee information, inspections, and reference tables in TEMPO, as well as reports to address external and internal requests for information regarding permits, compliance and enforcement activities.

Program areas within MDE approve the use of land-based facilities, equipment, vehicles and land use activities that have been determined by departmental and State policy as well as federal and State legislation to have a risk of contaminating the air, land, and water. Therefore, these represent a possible environmental threat.

“Approval” refers to issuance/rejection of permits, registrations, certifications, licenses granted by MDE after a complete evaluation and review to implement the requirements of Maryland regulations. To facilitate the requirements documentation, all application “Approvals” are called permits in this document, even though the names for these approval documents may vary from one program office to another.

Site inspections are tracked in the legacy system. Site inspections are performed as a part of approving an application or confirming compliance of a permitted site, or are initiated based on a tip, allegation or random spot check on a site that is suspected to be in violation of an environmental regulation. The permits, inspections and enforcement processes will be tracked and reported by the resulting modernized system. The TEMPO Remote Inspection Process (TRIP) is the mobile application used on-site to capture the inspection data.

By providing a centralized web accessible system to document and view permits issued by the different MDE programs as well as reported violations for non-permitted activities, MDE can better assess and report environmental impacts within a geographic area and associated activities.

The envisioned system will be web-based and accessible at least in part by MDE field inspectors in non-real time modes of operation to enable the inspector to record findings in response to a scheduled audit activity or to ad-hoc allegations. The envisioned system solution will provide an intuitive user-interface for data entry, a more flexible and robust reporting capability that does not require special technical expertise for simple search, queries, and leverage Geographic Information Systems (GIS) technology to provide informative mapping and analysis capabilities.

### **1.1.3 Assumptions and Constraints**

Assumptions are future situations beyond the control of the project whose outcomes influence its success. The following are assumptions for this project:

- The new application shall be web-based and use a Microsoft .NET environment for the front end and a companion application for off-line entry will be included in this modernization effort.
- MDE OIMT will be responsible for the data cleanup and MDE OIMT will work together with the vendor to ensure database changes will not affect existing TEMPO WebFOCUS reports and the EPA file extraction. It is assumed that the vendor will be responsible for testing the reports and EPA file extracts.

Constraints are conditions outside the control of the project that limit the design alternatives. The following are constraints for this project:

- There are no constraints.

**1.1.4 Current TEMPO Environment**

MDE’s current environment includes the following hardware and software components, which provide a highly secure, available, reliable and scalable infrastructure to support the 24x7x365 operations of the TEMPO application.

- Microsoft Windows Server Enterprise 2008
- Microsoft Active Directory Enterprise 2003
- Sophos Anti-Virus Version 9.5
- Syncsort Backup Express Version 3.2
- Dell/EMC SAN
- HP Servers
- Oracle 10/11G
- PowerBuilder 10.5.1
- Information Builder’s WebFOCUS, version 7.7.02
- LetterBuilder component configured as a service on a physical server

The development, test and production environments of the TEMPO system are hosted at the MDE Headquarters Data Center in Baltimore. Redundant connectivity to the Internet is provided at a constant 100Mbps through networkMaryland™, which is the State of Maryland’s high-speed network for public sector use.

**1.1.5 Interfaces to External Systems for EPTSM**

Table 1 lists the external applications or interfaces that update EPTSM.

Table 1: Operational Dependencies

Application Name	Sends/ Receives Data from EPTSM, or used to perform queries	Owner	Notes
CME (Compliance Monitoring and Enforcement)	Sends	Hazardous Waste	Hazardous Waste front end that allows users to add inspections and site complaints to TEMPO (legacy system)
HB935	Query only, returns a Yes, No or Not Found and date of query		Approvals of a renewal requires that there are no outstanding tax liabilities. The file contains the tax identifiers (TIN or social security numbers) of delinquent taxpayers. The file is updated weekly.

Application Name	Sends/ Receives Data from EPTSM, or used to perform queries	Owner	Notes
Online Credit Card Processing	Sends/receives at a minimum the date, time, amount, reference number, and permit number of the approved transactions		If design includes a 3 <sup>rd</sup> party vendor for online credit card secure transactions, then this system needs to send and receive information to / from EPTSM.
NPDES Permit for Stormwater Associated with Construction Activity	Nightly Batch job updates TEMPO with all information and documents regarding the permit application and permit	Water Compliance Section	Permit information from NIC for the NPDES Construction Permits sends a report to MDE and a batch job runs nightly.
NODE	Receives as an offline batch upload process		The plan is to continue the existing EPA Node process to create a customizing file extract from EPTSM that is manually uploaded to EPA using an EPA provided process. EPA defines the specified file layout and changes frequently.
Plan Review	Sends to EPTMS	Plan Review	Daily Plan Review file sent from the Plan Review SQL server to TEMPO of GIS data.
QDE Tyrus	Sends to EPTMS	Scrap Tire	Scrap Tire data entry screens that adds Facility reports to TEMPO. Changes or deletions are made directly to TEMPO.

### 1.1.6 EPTSM Sub-Systems

As a part of the new EPTSM system, the existing TEMPO Remote Inspection Process (TRIP) mobile PowerBuilder application shall be rewritten and improved. The new TRIP shall have the ability to capture inspection results, exchange information with mobile devices managed by an EPTSM feature and that can be used to register the mobile devices, periodically update the main lookup tables, and incrementally accept data transfers from the field with information from field inspections.

Requirements related to inspections and mobile application are detailed in Section A4 of the RTM and inspection activities are described in Section 2.4.4.



## 1.2 Document References

These documents were sources of this version of the FRD. They include meeting summaries, white paper analyses, and other Software Development Life Cycle deliverables as well as any other documents that contributed to the FRD.

- Project Charter
- CATS – TORFP #U00B4400022 issued 5/12/2014
- Requirement Workshop Meeting Minutes
- TEMPO Standard Operating Procedures (SOPs)

## 2 FUNCTIONAL REQUIREMENTS

The functional requirements describe the core functionality of the application. This section includes the data and functional process requirements.

### 2.1 Context Diagram

The following diagram depicts the intended overall logical structure of the complete Modernized EPTSM that includes an ETPSM Public Web Portal, EPTSM Internal Web Interface, and an EPTSM Mobile application.

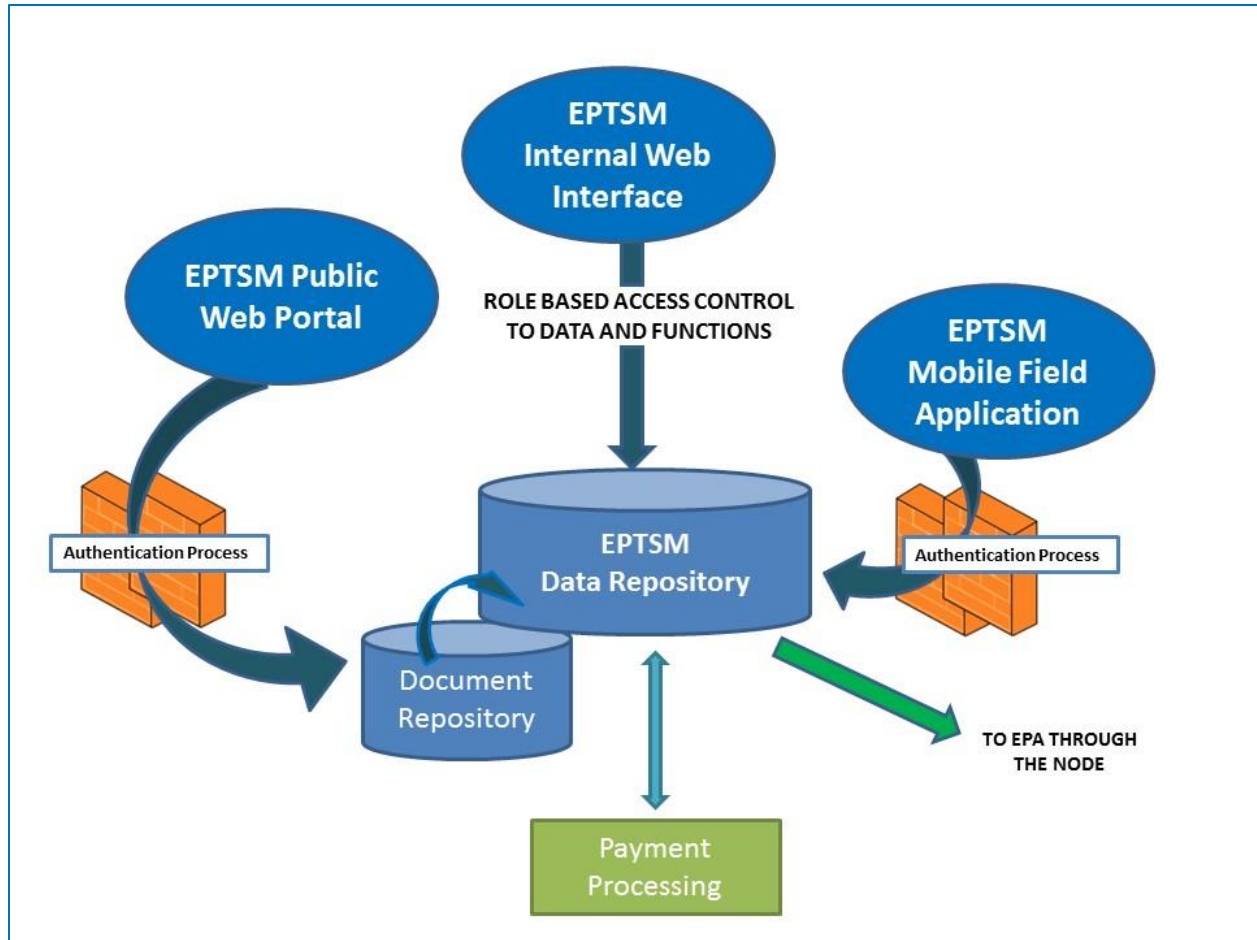


Figure 1: Logical Structure of the Modernized EPTSM

The EPTSM Public Web Portal is a public facing component that provides the means for the public to apply for a permit online, view status of their permits, view fees and fines payable, and pay online as an option. A Payment Processing component that links to an online credit card payment process to accept payment will be integrated with the system. The public facing components are shown for illustrative purposes only and will be rolled out in a separate phase.

The EPTSM internal web is the main enterprise system that supports environmental permit and inspection tracking processes. It includes a document repository that manages scanned documents related to permits that are being issued.

On the right side of the diagram is the system component hosted on a mobile device that the inspector or other MDE staff member can use to take in the field to conduct a partial or full inspection when so indicated by the permit and compliance process or because of a reported incident. When telecommunications access is available by VPN, cellular, or internet, the inspector will initiate the process to synchronize information-collected onsite to the EPTSM Data Repository.

## 2.2 EPTSM Business Model

The EPTSM Business Model is presented using the Integrated Definition of Enterprise Functionality (IDEF) technique. This technique defines the target enterprise in terms of activities, inputs, outputs, constraints or triggers, and mechanisms. IDEF is not a representation of the process; rather, the model represents the exchange of information between areas of activity and the results of these activities as they support the overall scope. In this type of modeling, the order of the boxes is irrelevant

The business model shows high-level activities as boxes labeled with action phrases. These represent groups of processes that support the major business activity. The arrows going in and out of the boxes represent inputs, constraints, outputs, and mechanisms, defined clockwise starting from the left of the box:

- **I**nputs are shown as arrows entering into the Activity box from the left. Inputs are the information or raw material used by the activities and processes that are within the subject of the box.
- **C**onstraints are shown as arrows coming down toward the Activity box from the top. Constraints are events that trigger actions grouped within the box or are the requirements that control the way in which the activities within that box are performed. This could be a date, an event, a regulation, or a budget.
- **O**utputs are depicted as arrows coming out of an Activity box. Outputs are the product of the processes that support the particular activity and can be information or requests sent out to another activity or sent out for processing to another organizational entity. These outputs typically support the operation and purpose of the entire enterprise being modeled.
- **M**echanisms are depicted as arrows going up toward the Activity box from the bottom. Mechanism is a term indicating what or who is conducting the activities and performing the processes within each activity. It can be equipment, a computer system, an organizational unit, or person, for example.

As a group, these are called ICOMS (**I**nputs, **C**onstraints, **O**utputs, **M**echanisms), and the ICOMS represent groups of information, data views, or a notification that is received or sent.

The EPTSM Business Model, as illustrated in Figure 2, identifies the six major groupings of processes that supports MDE's business objective (A0) Ensure Compliance with Environmental Regulations as: (A1) Manage Programs; (A2) Process Applications; (A3) Approve and Maintain Permits; (A4) Inspect and Enforce Compliance; (A5) Provide Information and Reports; (A6) Manage Financial Transactions.

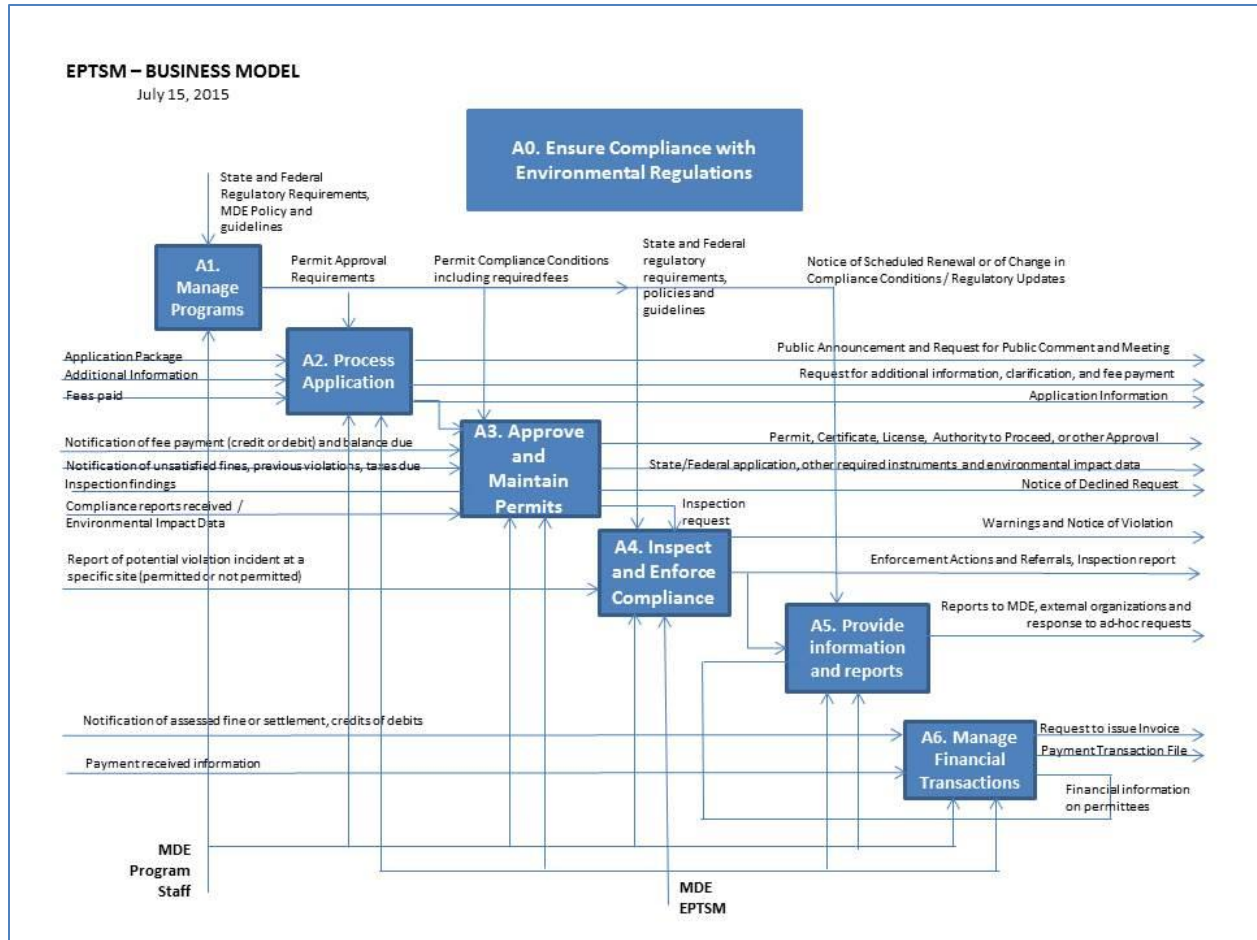


Figure 2: EPTSM Business Model

Activity A1, Manage Programs, drives the EPTSM system for it is within this activity that user names and passwords are administered and user roles and rights are defined. EPTSM will provide a way for the EPTSM System Administrator to manage users and for MDE programs to manage permit specific data requirements.

Activity A2, Process Application is the group of processes supported by EPTSM to accept the application and identify the location, the permittee, and any other individual or organization that will represent the permit holder in MDE matters pertaining to the permit.

Activities A3 and A4 are supported by the most significant levels of effort and these activities will contribute the most significant amount of information to the EPTMS repository for shared information.

Activity A3 includes the approval and issuance of a permit, ensuring that the permittee complies with the conditions outlined in the permit, and providing overall support to the permittee, including updating conditions based on new or revised legislation and handling new information received from the permittee.

Activity A4, Inspect and Enforce Compliance, includes processes supported by the EPTSM related to:

- Conducting onsite inspections, either partial or full, to validate information submitted in a report, to follow up on a remediation or mitigation plan, or as an ad-hoc site visit.

- Responding to a third party expressed concern regarding a possible violation of air, land, or water regulations on environmental contamination or controlled emissions.

Activity A5 is the group of processes related to creating and producing reports, exporting files or obtaining information from the EPTSM system.

Activity A6 is the group of processes related to receiving, recording and tracking payments for fees and penalties, generating a request for an invoice and reconciling the financial data to the Financial Management Information System (FMIS).

Each of the activities identified in the high-level diagram presented above decomposes into a series of processes as documented in the table presented below.

Table 2: EPTSM Processes and Activities

A1. Manage Programs	A2. Process Applications	A3. Approve and Maintain Permits	A4. Inspect and Enforce Compliance	A5. Provide Information and Reports	A6. Manage Financial Transactions
A1.1 Define MDE Organizational Structures, Users and Roles	A2.1 Accept Application	A3.1 Approve Application and Modifications	A4.1 Inspection Request	A5.1 Search and View	A6.1 Determine Amount Due and Post Payments
A1.2 Define Permit Types and Characteristics	A2.2 Receive and Process Applications	A3.2 Issue Permits and Conditions	A4.2 Conduct Inspection	A5.2 Ad-Hoc Queries and Data Analysis	A6.2 Request an Invoice
A1.3 Define Work Activity Log Parameters	A2.3 Find Applicant	A3.3 Process Compliance Reports	A4.3 Document and Communicate Findings	A5.3 Communications / Notifications	A6.3 Reconcile EPTSM Postings to FMIS
A1.4 Define Forms and Templates by Permit Type	A2.4 Upload Documents and Plans	A3.4 Advise and Inform Permittees	A4.4 Conduct Enforcement Action	A5. 4 TEMPO Reports	
A1.5 Provide GIS Capability	A2.5 Manage Work Activities		A4.5 Document Enforcement Activities		
	A2.5 Import Data from External Files				

### 2.3 Inputs, Constraints, Output and Mechanism

Table 3 is a matrix of the ICOMS used in the EPTSM Business Model diagram (Figure 2). The matrix is organized by the activity and within the activity the constraint, mechanism, input and output are described. The inputs, constraints, outputs and mechanism (ICOMS) titles for each activity are listed in the first column.

Table 3: ICOMS

Title in Diagram	Activity Name	Relationship to Activity	Description
<b>A1. Manage Programs</b>			
State and Federal Regulatory Requirements, MDE policies and Guidelines	Manage Programs	Constraint	Guidelines dictating schedules and conditions under which a full or partial inspection is mandated.
MDE Program Staff	Manage Programs	Mechanism	Staff within the MDE programs that define the inputs and outputs.
<b>A2. Process Application</b>			
Permit Approval Requirements	Process Application	Constraint	A checklist of required submissions for approval of a specific permit type to ensure compliance with external and MDE internal regulations.
MDE Program Staff	Process Application	Mechanism	Staff within the MDE programs that define the inputs and outputs.
MDE EPTSM	Process Application	Mechanism	The Environmental Permit Tracking System Modernization
Application Package	Process Application	Input	The application form, filled in, along with the documents and blueprints required to request an approval.
Additional Information	Process Application	Input	The set of data and documentation that the applicant provides to complete or modify an existing application package.
Fees Paid	Process Application	Input	Notification or recognition of payment received needed to complete processing of application.

Title in Diagram	Activity Name	Relationship to Activity	Description
Public Announcement and Request for Public Comment and Meeting	Process Application	Output	Notification to the public informing them of the application request.
Request for additional information, clarification and fee payment	Process Application	Output	Notification to the applicant that additional information is needed to complete the application process.
Application Information	Process Application	Output	Information obtained from the application process.
<b>A3. Approve and Maintain Permits</b>			
Permit Compliance Conditions including required fees	Approve and Maintain Permits	Constraint	A set of requirements established by the MDE program for the specific permit type to include reporting requirements and fees to be paid to remain in compliance with the terms of the approval or permit.
MDE EPTSM	Approve and Maintain Permits	Mechanism	The Environmental Permit Tracking System Modernization
MDE Program Staff	Approve and Maintain Permits	Mechanism	Staff within the MDE programs that define the inputs and outputs.
Application Information	Approve and Maintain Permits	Input	A set of data elements that are provided by the applicant in an application form that is pertinent to the Permit Type to which the applicant is applying. Some of these data elements are required, and the application cannot be processed without these required data. Others are additional information requested on the form and provided by the applicant. Each permit type may have a different set of required information.
Notification of fee payment (credit/debit and balance due)	Approve and Maintain Permits	Input	Notification or recognition that a required fee has been paid either in partial or in full; and that it has been received.

Title in Diagram	Activity Name	Relationship to Activity	Description
Notification of unsatisfied fines, previous violations, taxes due	Approve and Maintain Permits	Input	A status indicator for the Applicant to indicate any history that may interfere with the approval of a new application.
Inspection findings	Approve and Maintain Permits	Input	The inspection findings during an onsite visit that may affect the approval process.
Compliance reports received/ Environmental Impact Data	Approve and Maintain Permits	Input	A status indicator for the Permit that shows whether or not a report is coming due within the next 30 days or that the due date is past; it can also be used to state that it is pending receipt of additional information as of a particular date, and the MDE provided suspense date for receipt of additional information in support of compliance conditions
Permit, Certificate, License, Authority to Proceed, or other Approval	Approve and Maintain Permits	Output	A notification, generated letter, or processing status indicator in the computer system that alerts the applicant that the application has been approved and that a permit and conditions are being issued.
State/Federal application, other required Instruments and environmental impact data	Approve and Maintain Permits	Output	Electronic files containing data as requested by the EPA for the specific permit types that are being processed, and generated for subsequent upload to the EPA systems.
Notice of Declined Request	Approve and Maintain Permits	Output	A notification sent to an applicant to alert them that the application was declined and the reasons thereof.



Title in Diagram	Activity Name	Relationship to Activity	Description
Inspection Request	Approve and Maintain Permits	Output	A request issued from an internal or an external source to conduct an inspection based on a set of circumstances: allegation of potential violation from an outside source, scheduled inspection for specific permit types as part of internal protocol, or unscheduled inspection requested as a random spot check or due to outlier or incomplete information received in compliance reports.
<b>A4. Inspect and Enforce Compliance</b>			
State and Federal Regulatory Requirements, policies and guidelines	Inspect and Enforce Compliance	Constraint	Guidelines dictating schedules and conditions under which a full or partial inspection is mandated.
Inspection request	Inspect and Enforce Compliance	Constraint	Output from Approve and Maintain Permits that triggers a request to conduct an inspection at a particular site.
MDE Program Staff	Inspect and Enforce Compliance	Mechanism	Staff within the MDE programs that define the inputs and outputs.
MDE EPTSM	Inspect and Enforce Compliance	Mechanism	The Environmental Permit Tracking System Modernization
Report of a violation incident at a specific site (Permitted or not permitted)	Inspect and Enforce Compliance	Input	A request issued from an internal or an external source to conduct an inspection based on a set of circumstances: allegation of potential violation from an outside source, scheduled inspection for specific permit types as part of internal protocol, or unscheduled inspection requested as a random spot check or due to outlier or incomplete information received in compliance reports.

Title in Diagram	Activity Name	Relationship to Activity	Description
Warning and Notice of Violation	Inspect and Enforce Compliance	Output	A notification to an applicant or a site owner found in violation of regulations or terms of compliance of an approved permit that the violation exists and that rectification is required within a specified time period. The notice may or may not include a fine.
Enforcement Actions and Referrals, Inspection Report	Inspect and Enforce Compliance	Output	The report created by the inspector indicating any violations encountered during an onsite visit to a site.
<b>A5. Provide Information and Reports</b>			
Notice of Scheduled Renewal or of Change in Compliance Conditions/Regulatory Updates	Provide Information and Reports	Constraint	Information regarding any changes in regulations that are pertinent to a permittee, and changes in compliance reporting that may have occurred since the permit has been issued; modification to existing permits or for future renewals or new applications.
MDE EPTSM	Provide Information and Reports	Mechanism	The Environmental Permit Tracking System Modernization
MDE Program Staff	Provide Information and Reports	Mechanism	Staff within the MDE programs that define the inputs and outputs.
Enforcement actions and Referrals, Inspection Report	Provide Information and Reports	Input	The report created by the inspector indicating any violations encountered during an onsite visit to a site.
Financial information on permittees	Provide Information and Reports	Input	A generated summarization and /or detailed report or listing on financial transactions and payments received and balance information.

Title in Diagram	Activity Name	Relationship to Activity	Description
Reports to MDE, external organizations and response to ad-hoc requests	Provide Information and Reports	Output	A generated summarization and / or detailed list of selected and sorted information prepared in response to scheduled reporting submission or ad-hoc requests for information regarding applicants, permits, compliance, inspection activities, violations and financial transactions.
<b>A6. Manage Financial Transactions</b>			
MDE EPTSM	Manage Financial Transactions	Mechanism	The Environmental Permit Tracking System Modernization
MDE Program Staff	Manage Financial Transactions	Mechanism	Staff within the MDE programs that define the inputs and outputs.
Payment received information	Manage Financial Transactions	Input	Notification or recognition that a required fee has been paid either in partial or in full; and that it has been received.
Notification of access fine or settlement, credits or debits	Manage Financial Transactions	Input	Notification or recognition that a required fine has been paid either in partial or in full; and that it has been received.
Request to issue invoice	Manage Financial Transactions	Output	A request communicated to another office that is charged with creating invoices for fees or fines to be paid, or other type of financial communication of amounts due, amounts credited and balances on account.
Payment Transaction File	Manage Financial Transactions	Output	A file containing one or more financial transactions related to one or more account, which is transmitted to another office for review and submission to the Financial Management Information System (FMIS).
Financial information on permittees	Manage Financial Transactions	Output	A file containing one or more financial transactions or recent financial activities related to one or more accounts.

## 2.4 Functional Requirement Processes

The EPTSM system is a permit tracking system that provides MDE's Programs the ability to manage and track Air, Water and Land Administrations permit activities. The processes include receiving and processing applications, approving and maintaining permits, reviewing plans, inspecting and tracking compliance and violations, and providing information and reports.

The EPTSM functional requirements in this section are the decomposition of the activities and processes listed in Section 2.2, EPTSM Business Model. These processes apply across the board, even though some Programs may perform all steps in the processes and others may only perform a subset.

The level of activities in this section will be presented as a narrative that provides an overview of the processes defined in Section 2.2. The functional requirements that support these processes are detailed in the Requirements Traceability Matrix (RTM) Section 7 of this document.

The requirements encompass MDE's need to more efficiently manage cases for 1) an application for approval/permit, (2) the renewal of an existing approval/permit, (3) an alleged violation or incident that was called in but may or may not involve a site or organization that is under an approval. The overarching requirements will be to:

- Improve the user experience by implementing an intuitive and consistent navigation that guides a user through the permit activities and data entry.
- Provide the ability to display program specific options and screen pages that are related to the user's organization, role and activity being worked on.
- Improve the search feature.
- Provide the ability to build program specific templates to be used to better manage the user interface.
- Provide GIS mapping methods to identify permits, incidents, and violations within a user-defined area.
- Provide the ability to track fees and invoices.

### 2.4.1 *Manage Programs (A1)*

The Manage Programs business area defines the framework and business rules for the various permit activities and supports user's access to the system.

Activity A1: Manage Programs requirements are detailed in Section A1 of the RTM and the requirements are categorized as follows:

- Define MDE Organizational Structures, Users and Role(A1.1)
  - Requirements that supports defining the programs and setting up and managing user profiles.
- Define Permit Types and Characteristics (A1.2)
  - Requirements that support defining program specific permit components, violations, corrective actions and business rules.
- Define Work Activity Log Parameters (WAL) (A1.3)

- Requirements that define the Work Activity Logs, which is a mechanism used by TEMPO, to identify and track the tasks needed to complete the permit activities. The log maintains the start, end and due dates, and allows the MDE user to assign tasks to other MDE users.
- Forms and Templates by Permit Type (A1.4)
  - Requirements to create input pages, forms and template that are specific the program's needs.
- Provide GIS Capability (A1.5)
  - Requirements to provide GIS functionality that supports multiple data layers such as, county boundaries and floodplains.

### **A1.1 DEFINE MDE ORGANIZATIONAL STRUCTURES, USERS AND ROLES**

The EPTSM system will be a secure system that will implement role-based access to the MDE users. This requirement requires that a hierarchical structure be in place to define MDE Programs and Offices and assign MDE users to one or more groups, along with their access permission. With this information, the system will be able to recognize a user as belonging to a program or programs and provide a data view specific to that Program. For example, an MDE user may be a member of the

- Administration: Land Management Administration;
- Program: Resource Management Program;
- Sewage Sludge Utilization Unit; and is responsible for processing permit applications.

This user will be able to perform the functions needed to create, edit, applications and create, edit permits. A user that is not a member of the Sewage Sludge Utilization group will only be able to view the information. The current TEMPO roles and access levels must be retained.

The system must provide a means to define the users of the system by roles established by a System Administrator or other title for the person that can manage user groups, functions and data access. Managing user groups will include the ability to enable and disable accounts, modify account information when needed.

### **A1.2 DEFINE PERMIT TYPES AND CHARACTERISTICS**

The MDE Program Offices have identified the need to be in control of their program specific permit components. The EPTMS system must provide the ability for the Program Manager to define and manage permit items such as, but not limited to, conditions, permit templates, and work activities by permit type.

The flow diagram below represents the permit specific components that are to be defined to manage program activities.

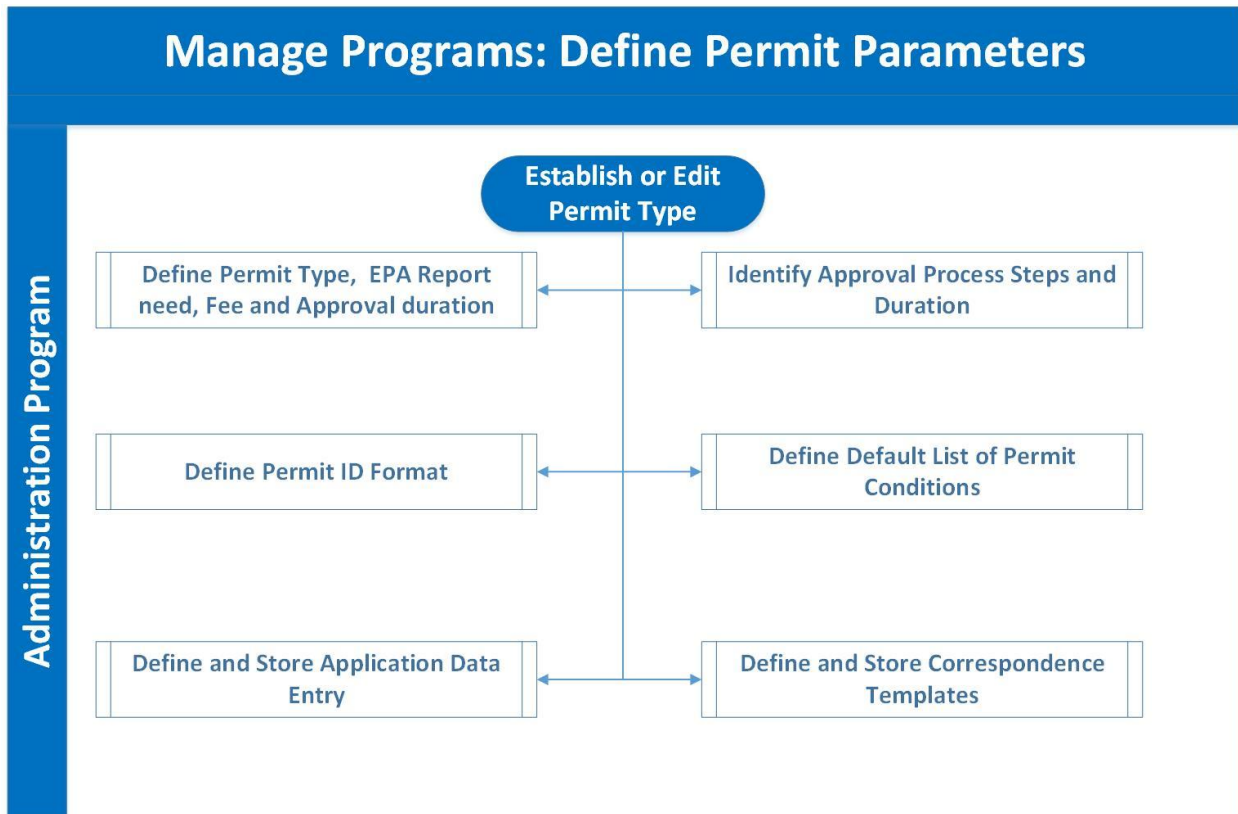


Figure 3: Manage Programs Activity

The EPTSM system will process over 80 different permits and non-permitted activities. Each program will need to define data elements to be collected, fees amounts, permit number format, work activities, checklists, permit conditions, permit templates and correspondence template that will be specific to the permit type.

Table 4 lists permit data elements that would identify a permit’s Administration, Program and business rules such as, how to define the permit number, applicable fees and when to apply, reporting requirements, the need to submit data to EPA, define the renewal period, turnaround times and other items. This is provided as an example of the main elements that define a permit and templates information for that permits. The actual elements will be defined during the design phase.

Table 4: Permit Profile

Element	Description	Mandatory	Example
Administration / Media	Land, Water, Air	Y	Land
Program	Program Name:	Y	Resource Management Program
Sub-Program	Name of sub-program	N	Scrap Tire Unit
Approval Type	Individual Permit, General Permit (GP), Registration, Certification, License, EPA, State GP, other	Y	

Element	Description	Mandatory	Example
Permit Type Name	Permit name	Y	Scrap Tire Hauler License
Permit Type Code	Permit code	Y	RTH
Permit Number Mask	The format for the permit number	Y	YYYY-Permit Type Code – system generated
Need to register with EPA	Yes, No, Conditionally	Y	No
Application Fee Required	Yes, No, Conditionally	Y	No
Application Fee Amount	Dollars and cents amount field, Note: Permit application fees can be a standard rate, or can be calculated based on conditions.	N	\$0.00
Annual Fee Required	Yes, No, Conditionally	Y	No
Annual Fee Amount	Dollars and cents amount field	N	
Application Fee Last Updated Date	Date format	Automatic	Date of Creation – Updated to current date when fee amount is changed and saved.
Permit Renewal Period	How long the permit will last	Y	5 years
Send Renewal Reminder Notice	Yes, No	Y	
Renewal Reminder Notification	Number of days before expiration data	N	60 days
Renewal Fee Amount	Fixed, or conditional	Y	\$0.00
Application Turnaround Period	The amount of time it should take for approval	Y	60 days
Public Information Meeting Required	Yes, No, Conditionally	Y	
Public Hearing Required	Yes, No, Conditionally	Y	
Work Activity Log (WAL) Identifier	The Identifier for the WAL template that is applicable as stored.	Y	DEFAULT IDENTIFIER
Application template	The identifier for the Application Form to be used for data entry and for printing a blank application form.	Y	DEFAULT IDENTIFIER

Element	Description	Mandatory	Example
Compliance Reporting Template	The identifier for the Compliance Reporting Form to be used for data entry and for printing a blank application form.	N	
Reports/ Monitoring Required	Yes, No, Conditionally	Y	
Report Name	Name of the Report(s)	N	
Report Period/Frequency	When is the report due to MDE	N	Semi-Annual (due Aug 1 and Feb 1)
Review Report Turnaround Period	The amount of time it should take for review	Y	
Date Permit Type Created	Date format	Y	Automatically obtained from the system upon first save.
Date Permit Type Updated	Date format	Y	Automatically obtained from the system from first save or modification.
Username last updated	The username of the person that created the profile either if, no updates have been done, or who last updated this permit type profile.	Y	Automatically obtained from the system upon first save or modification.



### **A1.3 DEFINE WORK ACTIVITY LOG PARAMETERS**

Each program will be able to establish and maintain a work activity log (WAL) for each Permit Type in the EPTSM system as well as for response to a possible regulatory violation at a site.

The WAL is a collection of process steps for which an allowable and pre-established cycle time in days is specified. This is the maximum number of days within which the process step must be completed. The Programs and individuals are measured on their performance. Appropriate notification needs to be in place to ensure that permit activity is performed within the allotted time. Therefore, time spent waiting for a response from an applicant or other external entity is exempted from the elapsed time. The system shall provide measures to inform the Program Manager of the status of a permit activity.

There will be a WAL for permit approval and compliance monitoring as well as a WAL for processes undertaken in response to an independent request to investigate outside the life of an application. The request to investigate is triggered by an allegation of a possible violation of a policy or law that is safeguarded by the MDE.

The EPTSM systems will assign a unique identifier for each application WAL template. The template will be associated to the application permit type and used to maintain a record of the application life cycle. Some of the common tasks are:

- Review and approval
- Assignment of approval conditions
- Issuing an official approval document or permit
- Issuing correspondence
- Periodically reviewing reports submitted by the approved applicant regarding their compliance with approval conditions
- Conducting site visits as a part of approval, as a verification of compliance, or in response to a third party reported concern
- Renewing the permit or approval

The system will manage the investigations of sites that are not related to applications or approvals, assign them a unique identifier as an incident (not an application), and maintain a record of their life cycle, listed here in abbreviated outline manner:

- Incident date and details of concern, if any are provided
- Review and determination of type of violation (Air, Water, Land)
- Assignment to inspector for assessment and site visit
- Determination if concern site is under the care of an existing applicant, if not, define the owner of the site of concern or legally responsible party
- Conduct site visit
- Issue inspection report
- Provide warning, notice of violation, fine, or refer to other MDE unit
- Establish Corrective Actions and follow-up

**A1.4 DEFINE FORMS AND TEMPLATES BY PERMIT TYPE**

MDE Programs require customized permit applications, therefore the system must be capable of allowing MDE Program Managers to define and maintain permit specific forms. The forms will be used for online entry of application data for a given permit type.

The templates will be stored for a given permit type along with the:

- Start Date for Use
- Creation Date
- Last Modification Date
- Retirement Date
- Type of change made
- User ID

The diagram below shows how the user with the appropriate permission will be able to select templates that are stored for the specific program permit type. The template will be stored for use in constructing the data entry display for an application form and for a compliance report, as well as for generating a blank copy of the form that can be faxed or emailed to the applicant.

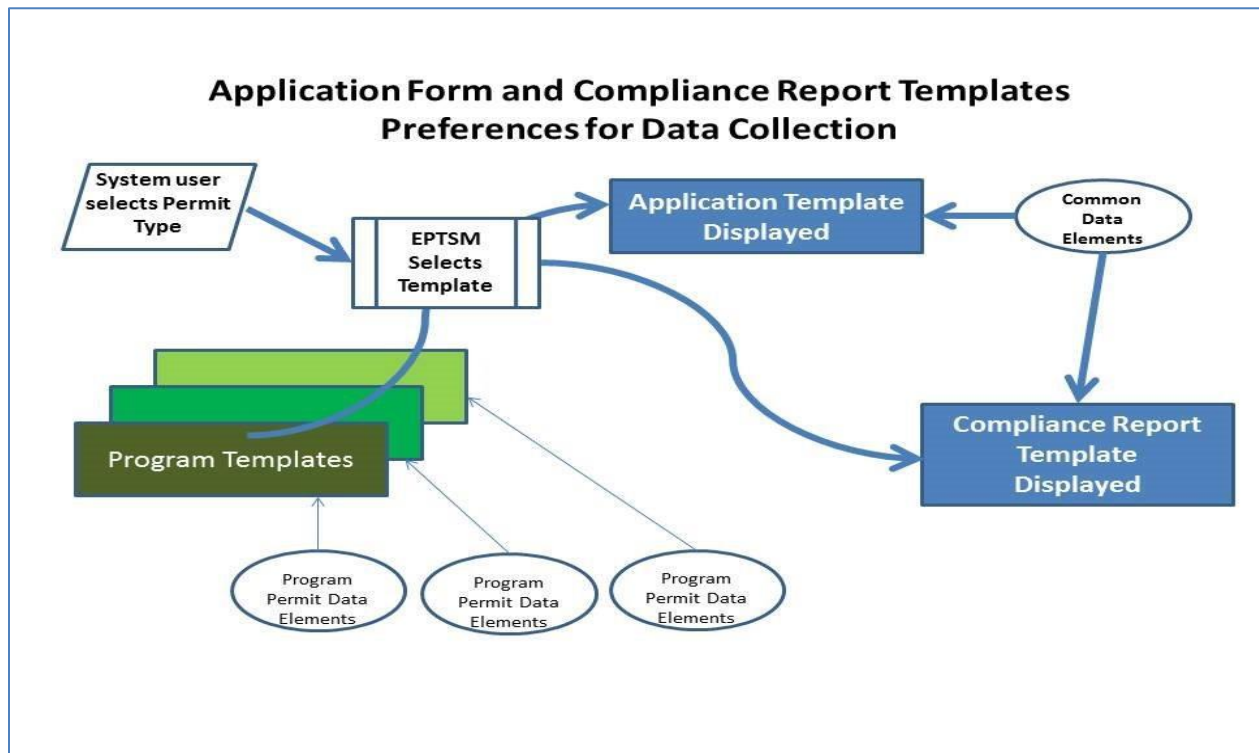


Figure 4: Application Form and Compliance Report Templates

## **A1.5 PROVIDE GIS CAPABILITY**

The EPTSM system will provide a Geographic Information System (GIS) capability to define an applicant's geographic site boundaries and to locate a precise mailing address for both data entry and reporting. MDE authorized users will be able to define the perimeter of a geographic area to display permits for air, land, water, and all or by permit type, or permit number, on a topographical map of an area that can be either specified as contained within a graphically selected area, or by county, in a map of Maryland.

A graphical view will assist MDE users in locating permits by permit type and status and identifying reported incidents by type of incident. The MDE user will be able to select subsets of data based on a variety of criteria including site area, site address, organization and/or person responsible for the permit, owner of the permitted site, and type of contaminant controlled by the permit.

The graphical view will support the ability to display other data layers such as county boundaries and floodplains.

### **2.4.2 Process Application (A2)**

Process Application activity supports the processes to accept the application, identify the location, permittee and contact information and supports the acquisition of data for a new or a renewal application, supporting documents and applicable fees.

Activity A2: Process Application requirements are detailed in Section A2 of the RTM and the requirements are categorized as follows:

- Accept Public Application Online (2.1)
  - Requirement that supports public facing access will be rolled out in a separate phase.
- Receive and Process Applications (A2.2)
  - Requirements to ensure that only authorized users can access the system.
  - Requirements that identify the application such as the approval type, unique identifiers, and application number and other permit identifiers.
  - Requirements to accept requests for new applications, renewal of an existing permit, modification to a permit and transfer of a permit.
  - Requirements to specify the permit location, permittee information and principal contacts or consultants.
  - Requirements for the interface module to present the application approval process in a logical manner that allows a user to enter permit specific data, document the administrative and technical reviews, add the conditions, generate a permit and upload supporting documents.
  - Requirements for a "Resume" feature that allows a user to save the application at any point, bypass the validation, and return to the application at the point where they left off.
  - Requirements for validation.
- Find Applicant (A2.3)
  - Requirements to ensure duplicate information is not created for a location, organization or person.

- Upload documents and plans (A2.4)
  - Requirements related to the Upload feature, defining the file types, ability to upload, access, view, and download documents.
- Initiate and Manage Work Activity Log (WAL) (A2.5)
  - Requirements to initiate the WAL for the selected permit activity.
  - Requirements to manage the tasks, includes the ability to edit, add and remove tasks, stopping and starting the clock, and assignment of tasks.
  - Requirements for the system to calculate the turnaround time and provide status notifications.
- Import application data from external files (A2.6)
  - Requirements to provide the ability to upload data inputs as a batch process.

### **A2.1 AND A2.2 – ACCEPT APPLICATION**

Data collection and entry into the EPTSM system will be accomplished either by the applicant through a public facing website or by MDE after having received an application package from the applicant.

Two distinct processes will be implemented:

- (1) Accept public website application and modifications (A2.1) - Through a public facing web site, the applicant applies for a new permit, renews a permit, or requests a modification to an existing permit. The EPTSM system will allow external users to access the EPTSM system and will use form-based authentication to validate user's credentials at logon. The EPTSM system will provide a means to allow the user to create a User ID and password. The system will send the application request to the MDE program. The MDE business process will include the review of the request. When approved, the EPTSM system will communicate back to the external user, the procedures to setup the logon credentials. The EPTSM system will provide the capability to allow a user to retrieve the User ID and/or password when forgotten.
- (2) Receive physically delivered applications and modifications (A2.2) - Through an internal MDE site accessible by an MDE program user, the MDE user will identify the permit application as a new permit application, renewal, or modification to an existing permit. The MDE representative selects the type of permit desired, and begins the process of completing the applicant information.

The MDE user identifies the applicant organization and/or applicant person, location site, and physical address from the permit application. The system will present to the user a listing of locations, organizations and/or persons generated from a search to select. If the location, organization and/or person does not exist, then the system will allow an authorized MDE user to add the information.

Once the applicant information is completed and submitted, the private sector applicant will be screened by the system for the following conditions. The system will provide the status of each condition to the MDE program representative of the permit request.

- The applicant person and/or organization does not exist in the State or Maryland Comptroller delinquency list.
- The applicant person and/or organization has outstanding violations.

- The applicant person and/or organization owes EPTSM fees.
- The applicant person and/or organization exists and has no outstanding liabilities.

Once the applicant is found to be acceptable, the application is ready for Administrative and Technical review.

A core set of data elements uniquely defines an application and additional information pertinent to the specific permit type may be documented to support MDE processes, required reviews, and reports. This is dependent on the type of permit for which the applicant is applying. These are defined in section A1, where the programs create a template for the Application form, and where the core data elements and the permit specific data elements can be specified. The MDE program will determine the core set of data elements that will be mandatory as this will help the MDE user find permits with common sites and owners.

Some permit types require that a fee be received in order to process the application for approval; others expect a fee to be calculated and notifies the applicant during the approval process and other permits or approvals do not require a fee at all.

The Accepting Application workflow is shown below.

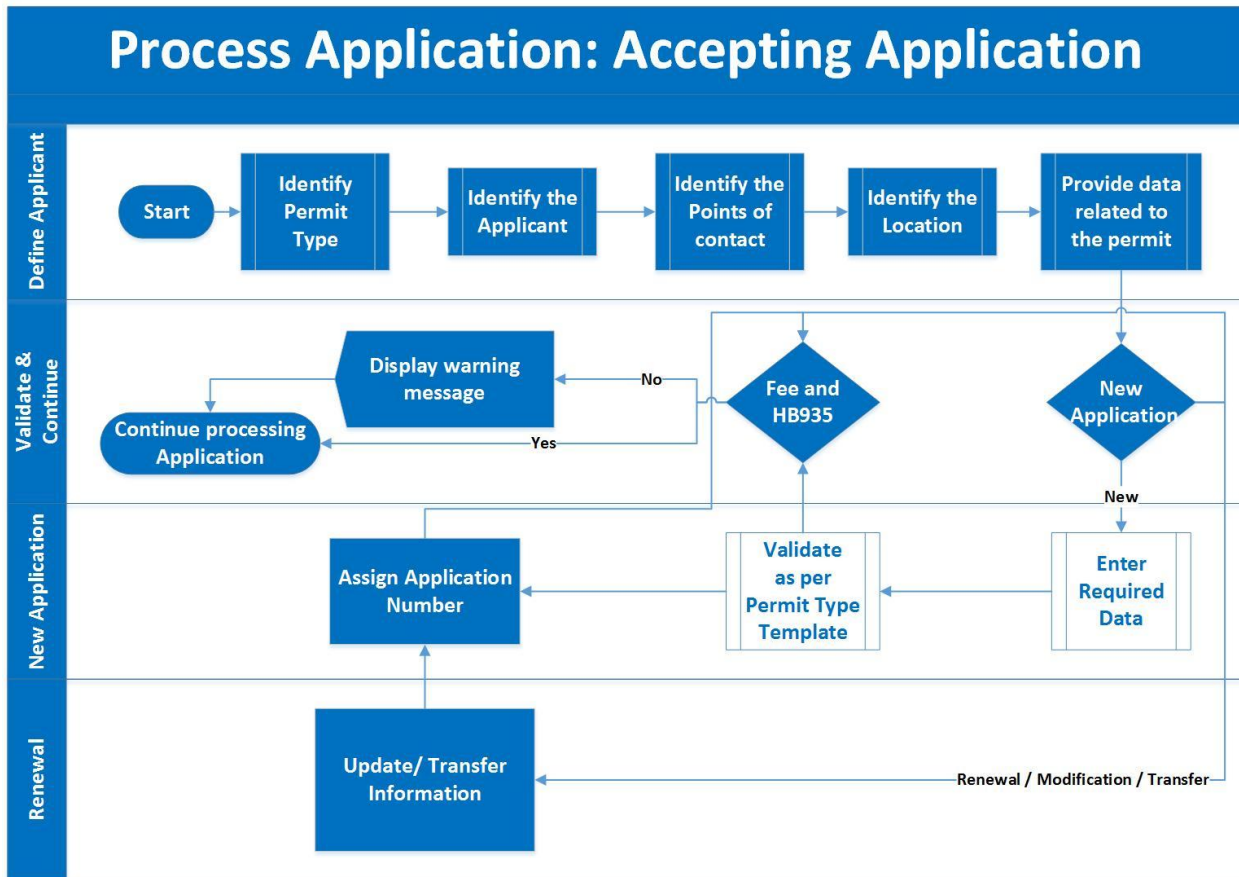


Figure 5: Application Workflow: Accepting Application

### **A2.3 FIND APPLICANT AND ENSURE NO NEGATIVE STATE RECORD**

This area includes processes for the following situations:

- New permit applications
- Renewals
- Transfers and Modifications

#### **New Permit Applications**

Search for site location address, site organization name, applicant organization name (if different), and applicant name, within permit type.

If the system shows that a permit is already approved and current for the site, organization name, and applicant, then contact applicant to clarify.

If one or more of these key data fields is different, but the site is the same or any two other key data fields are the same, contact the applicant to verify that this is a new permit.

Select identifiers for site location address, site organization name, applicant organization name (if different), and applicant name, and join them with permit type to define a new application.

Obtain from the system a new identifier for the application, based on the permit type format. The same identifier will be used once the application is approved.

Enter all the information from the application into the system.

#### **Renewals**

If it is a renewal, the following steps are a part of the process, available in a renewal / transfer screen:

- Enter the permit number and display information related to application
- Does the permit type require issuing a new permit number?
  - If yes, treat it as a transfer (see transfer)
- If no, is any key permit data element changed?
  - If yes, treat as transfer (see transfer)
- If no, validate and update information
  - Validate good standing and annotate in application data field in EPTSM
  - Select a system function that allows you to submit an approval renewal
  - Submit an approval renewal

#### **Transfers and Modifications**

If a modification is submitted, then determine if the modification requires that the permit be reissued.

If the modification requested includes a change in a key data field for defining the permit (according to the required fields for that Permit Type) then permit information needs to be transferred to a new permit number.

If data item to be modified does not impact the key data fields for the permit, then treat as a Modification, adding and editing information under the existing permit number.

#### **A2.4 UPLOAD DOCUMENTS AND PLANS**

The EPTMS users will have the ability to upload documents, therefore the system will include a document management function and a repository for indexed and keyword tagged documents that are associated with an application before and after approval, or with a reported incident. The repository will contain documents, images, and videos. The documents and artifacts in the repository pertaining to an application or an incident will have descriptive titles and the user will be able to browse through these when reviewing information regarding an application, approval or incident, select any given one, view it on screen, download it to the user's computer, or print it.

The system shall include a function that will allow a document or multiple documents to be uploaded to the system by selecting the file or files from a designated directory where it was stored and associate it with an application, approved application, or incident prior to moving it to the designated repository. The MDE programs will define the naming conventions that the system will validate.

The system shall include, in the application and incident folder, data fields that will contain the documents that are stored either electronically or in paper form or both, date received, content of the document, and location(s) where stored. There may be more than one location for a single document if it is stored both electronically and in paper form.

#### **A2.5 MANAGE WORK ACTIVITIES**

Each Permit Type has a Work Activity Log (WAL) defined in the Permit Type Profile. The WAL is a set of processes selected for each Permit Type from a pre-defined list of process steps. For any given Permit Type, the WAL will have a specification of days indicating elapsed time in working days or calendar days, and an indicator for working days or calendar days. When an application or incident is entered into the system, the system will initiate a work activity log specific to the activity and calculate the tasks default due dates.

The MDE user will specify the start date for each step, unless the system can populate it. For instance, an application that was submitted online, the start date for Application Received task would be the date the applicant submitted the application, populated by the system. The MDE user that is entering an application would provide the date that the MDE program received the application.

The WAL will be created by the system when the permit activity is created by the MDE user or when the MDE user selects an online permit submittal to review. The first entry for any permit request or incident would be the date the permit request or incident was received. The WAL will be displayed in its own screen and will be able to be accessed at any time by specific assigned MDE users for managing and editing.

The MDE user will be able to assign or reassign a task to an MDE user, suspend, resume, edit, add and delete tasks, record the task completion date and provide comments as needed. The WAL allows the MDE program to manage and view the status of permit activity at any given time.

WAL activities may need to be suspended for the following conditions:

- Application was incomplete
- Corporate status is forfeited or not in good standing
- HB 935 shows a liability

- There is a non-compliance issue

The suspense and resume dates will serve to discount the corresponding time from the total number of days that the program is required to account for when accomplishing a step in the process. The system shall keep track of total elapsed time, total suspended time and total effective time (elapsed minus suspended time) for each step for each application or incident and ensure the activity will be completed within the expected turnaround time.

- Note: Work Activity Logs are applicable to Incidents (A4.4), Compliance Reports (A3.3), Incident (A4.1), and Enforcement and Conduct Enforcement Actions (A4.4).

## **A2.6 IMPORT DATA FROM EXTERNAL FILES**

Several MDE offices use ancillary systems to collect information regarding permits and applications. Many rely on these ancillary systems to conduct their day-to-day support of permitted sites, and intend to use EPTSM only for basic information sharing. In order to address their needs, it is important that the EPTSM system be capable of importing data from external systems through a function that allows pre-defined data elements to be imported using identifiers that are of common naming between the two systems.

The system currently imports data for the Hazardous Waste program, Water Compliance program and the Plan Review division. The Air Quality Compliance program would like to implement a batch process to upload the information entered on the Air Facility Submittal Document (AFS) screens.

### **2.4.3 Approve and Maintain Permits (A3)**

This activity has been further broken down in this document to clarify the processes grouped therein and clarify requirements for the EPTSM to support.

Activity A3: Process Application requirements are detailed in Section A3 of the RTM and the requirements are categorized as follows:

- Approve Application and Modification (A3.1)
  - Requirements to facilitate the review of the application, ensuring the application is complete, and when needed, record the applicant's tax liability status.
  - Requirements to conduct Administrative and Technical Review, includes Public Participation and data collection.
- Issue Permits and Conditions (A3.2)
  - Requirements to specify the permit conditions.
  - Requirements to create the permit and approve the permit, includes the ability to use blank template or an existing permit as a model for a new permit that can be edited. TEMPO refers to this as 'Bring Forward'. This requirement is applicable to all permit activities.
  - Requirements to track the permit expiration date, submission of compliance reports and notification of these matter to the programs are detailed in sub-section A3.2.2 of the RTM.
- Process Compliance Reports (A3.3)
  - Requirements related to a permittee's submission of compliance reports, monitoring reports and data, permittee submit as a condition of the permit.



- The public facing requirements to submit reports online will be rolled out in a separate phase.
- Requirements related to receiving the compliance report, recording the data received, associating the report to the appropriate permit, or facility and data collection.
- Advise and Inform Permittees (A3.4)
  - Requirements to integrate a composition / letter writing software that supports the user’s need to send out notices, letters and create form letters. The software will need to pull data from the database such as permit / application number, applicant information and other information specific to the notice. For instance, Notice of Deficiency will outline the specific additional documentation or permit application revisions that are required in order to complete the approval process.
  - Requirements to provide automatic notifications to the program users and to permittees.

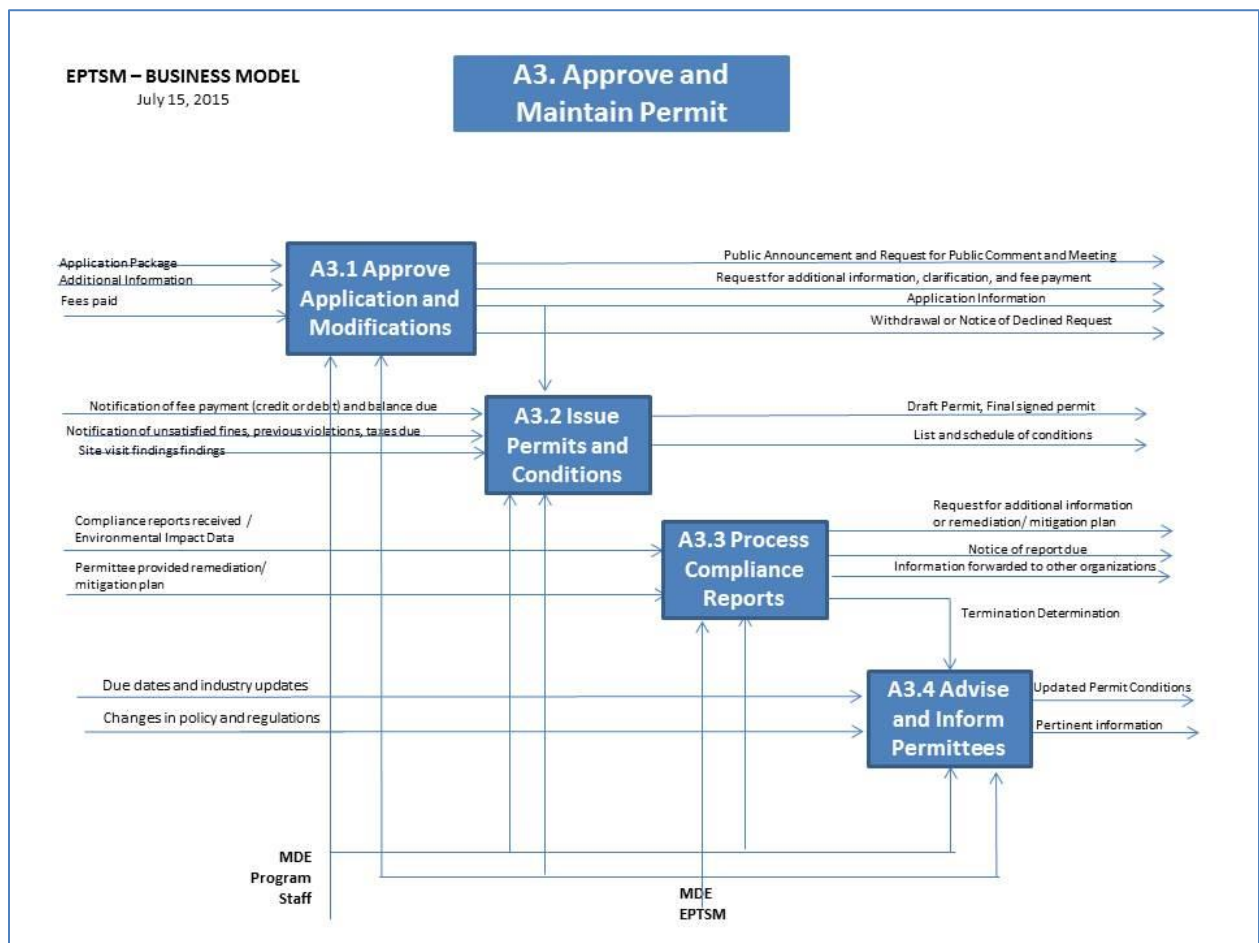


Figure 6: A3: Approve and Maintain Permit

**A3.1 APPROVE APPLICATION AND MODIFICATIONS**

The processes grouped under Approve Application and Modifications include the review and approval of the application that necessitates an administrative and technical review of the application and

supporting documents. Depending on internal and external policies and regulations, or based on the reviewer’s judgment, the technical review may entail a site visit to confirm the information gleaned from the submitted documentation.

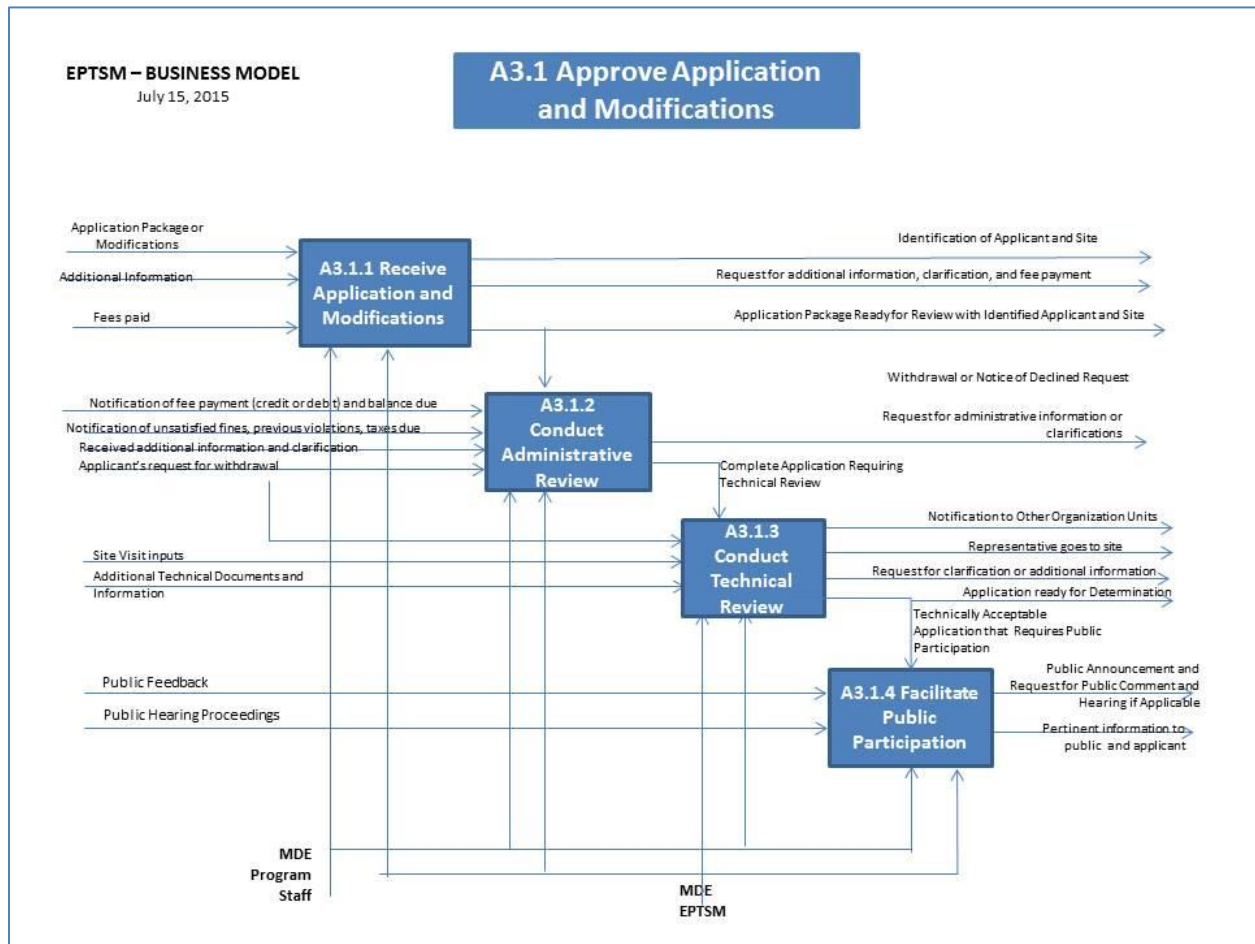


Figure 7: A3.1: Approve and Maintain Permits

In A3.1, the approval processes are undertaken on an as needed basis as decided by each program for the specific permit type, whether the application is new or a renewal, whether it is a request to participate under a general permit, or a request for an individual permit, registration, certification or license. A modification to a request or a permit, or a request to transfer an existing permit to another responsible party are included in the approval processes. The timely recording of events in EPTSM is important, and keeping the history of previous entities responsible is important, along with the date of the change. If a new permit identifier is required, EPTSM will simplify the process by allowing all the information to be transferred to the new permit number, and terminating the old permit number with a notation of transfer in reason for termination.

**Notes:**

- A modification could be a change in the description, or permit parameters submitted for consideration and approval both prior to or after a permit has been issued.
- A transfer is the change of the entity in charge of the permit and responsible for compliance (person or organization or both). Depending on the permit type, a transfer may require a new

permit number and the termination of the previous permit number, or may remain with the same permit number.

Approval processes are triggered by the occurrence of an application being entered into the system. The date that the application is received kicks in a time clock as a first entry in the activity log. The system ensures that the fee is received and recorded in the system, or confirmed as paid online. The MDE user will be able to access the system to view all outstanding applications that are ready for review by date and permit type through the system program interface. The authorized MDE user will be able to assign applications that are pending review to an MDE user through a user interface screen.

The Approval process workflow is shown below.

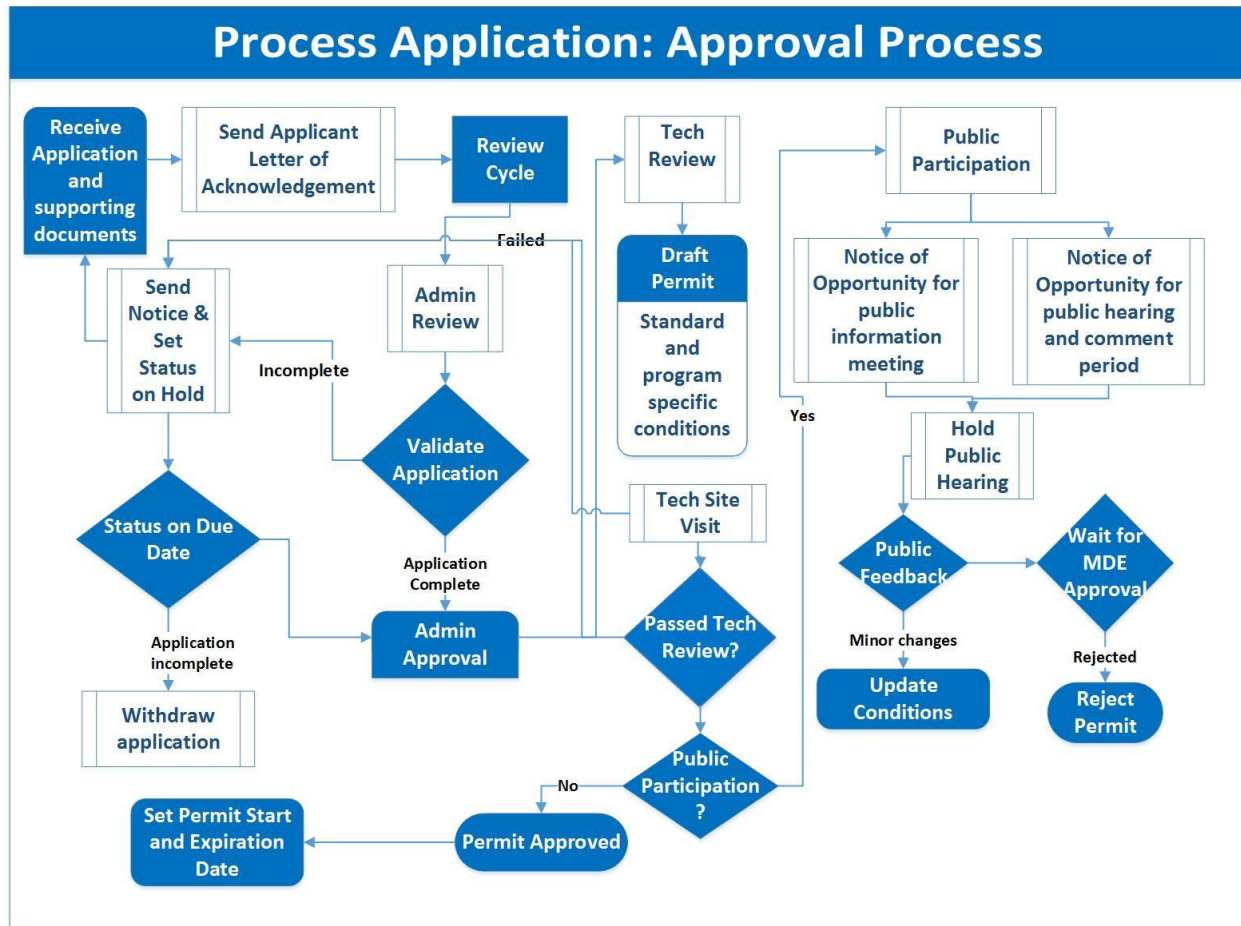


Figure 8: Process Application: Approval Workflow

The Approve Application processes include:

- (1) Establish an approval process milestone tracking system (also known as the work activity log);
- (2) If appropriate, review and scan documents, enter document titles and receipt date in the system, file physical documents, send copies to external offices if appropriate to the permit type.
- (3) Conduct Administrative Review
  - a. List and view all Applications with a status of Submitted by date of submission.

- b. Select an Application and set status to Administrative Review Pending.
- c. Activity log Administrative Review start date is updated.
- d. Review and confirm that all required documents are present and that all required data fields are correct and complete. If not, or if clarification is needed, contact or send a notice to applicant requesting missing information and suspend timer for administrative review elapsed time compliance.
- e. If all is complete, stop timer for Administrative Review and set Technical Review start date, changing status to Technical Review Pending.

The Administrative Review workflow is shown below.

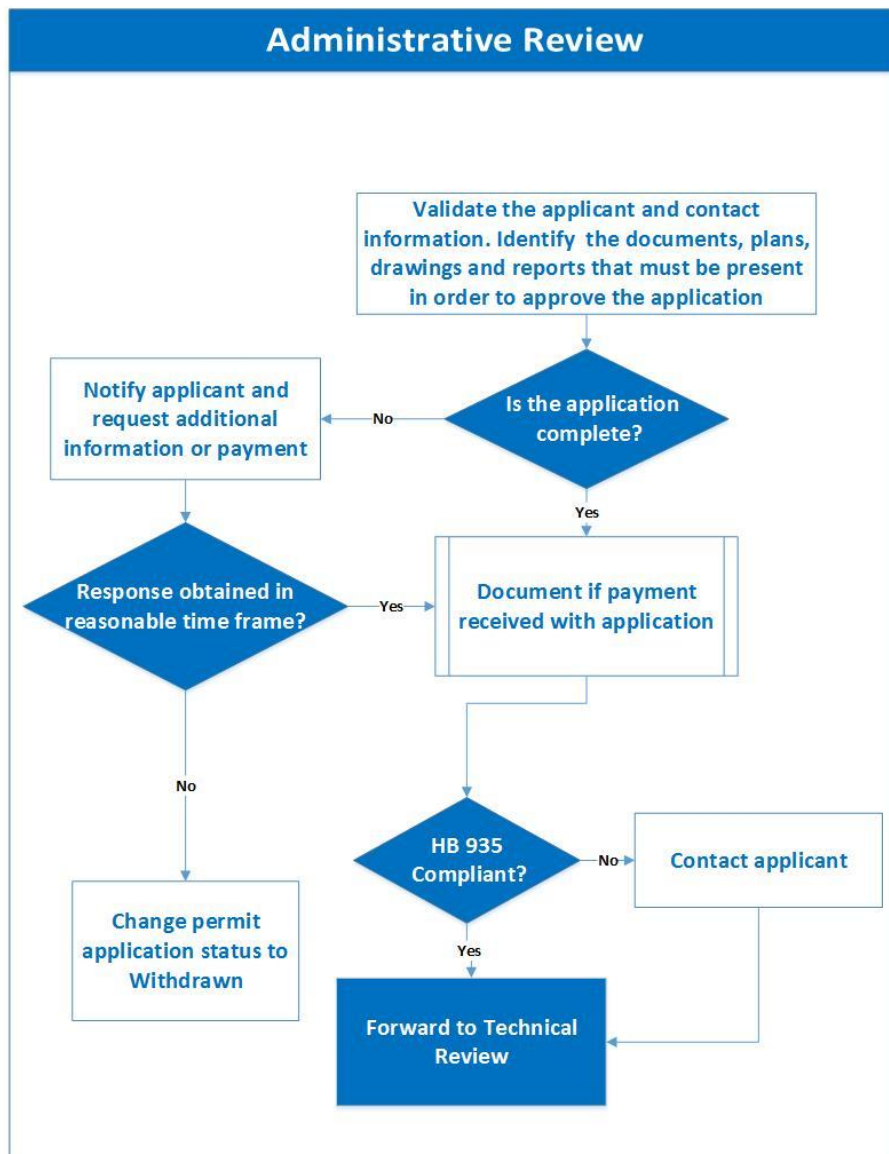


Figure 9: Administrative Review Workflow

(4) Conduct Technical Review

- a. Review information provided on application form.
- b. Review all supportive documents and plans.
- c. Contact applicant for any clarifications or additional information needed and suspend work activity log timer for technical review.
- d. Receive additional information or clarification and resume work activity log timer.
- e. Draft permit.

The Technical Review workflow is shown below.

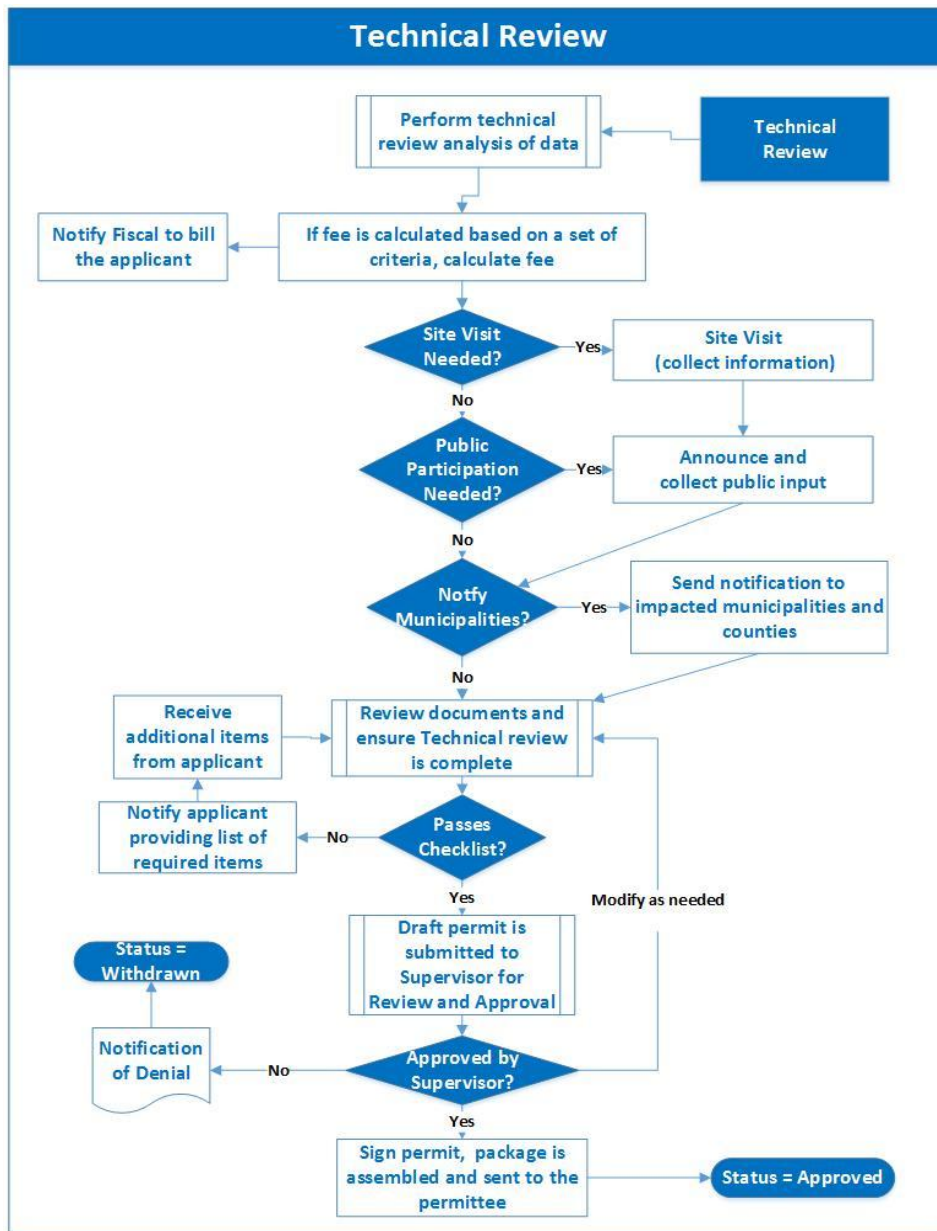


Figure 10: Technical Review Workflow

#### (5) Engage Public Participation

A complex application request may require public participation. Approvals that require public participation must proceed to notify the public once the permit is drafted. This process allows the public to provide comments, attend a public meeting (informative meeting), or attend a public hearing. The dates, venues, and outcomes of these public participation events will be documented in the EPTSM. Public comment documents and, if applicable, public hearing proceedings, may be included in the document management repository and linked with the application identifier in EPTSM.

- a. Public Notice Process: If the permit type requires a Public Notice posting, then:
  - i. Identify public library or other location and request posting of public notice.
  - ii. Update activity log with date of public notice posting.
  - iii. Notify MDE contact in charge of Technical Review when posting elapsed time is complete.
  - iv. Compile all public comment received, include in electronic and/or in paper file (as appropriate for record keeping) with Application documents.
  - v. Respond to public comments.
- b. Public Hearing Process: If the permit type requires a public hearing, document date and place of public hearing, and suspend Technical Review timer until public hearing is closed.
  - i. Identify public library or other location and request posting of public notice
  - ii. Publish public hearing dates in newspaper and save copy of the article.
  - iii. If public hearing concludes with a permit denial, change application status to Application Denied and enter reason; notify applicant.
  - iv. If public hearing concludes with a notification to proceed, and additional documentation is needed from applicant, then request additional information.
  - v. Document public hearing outcomes and conclusion date along with Application.
  - vi. When Public Hearing is concluded and applicant has delivered any additional information requested (including changes in plans), then resume the Technical Review timer.
- c. If Technical Review is concluded, or additional information was not provided after an acceptable timeframe, change status to Technical Review Completed, stop timer.

The Public Participation workflow is shown below.



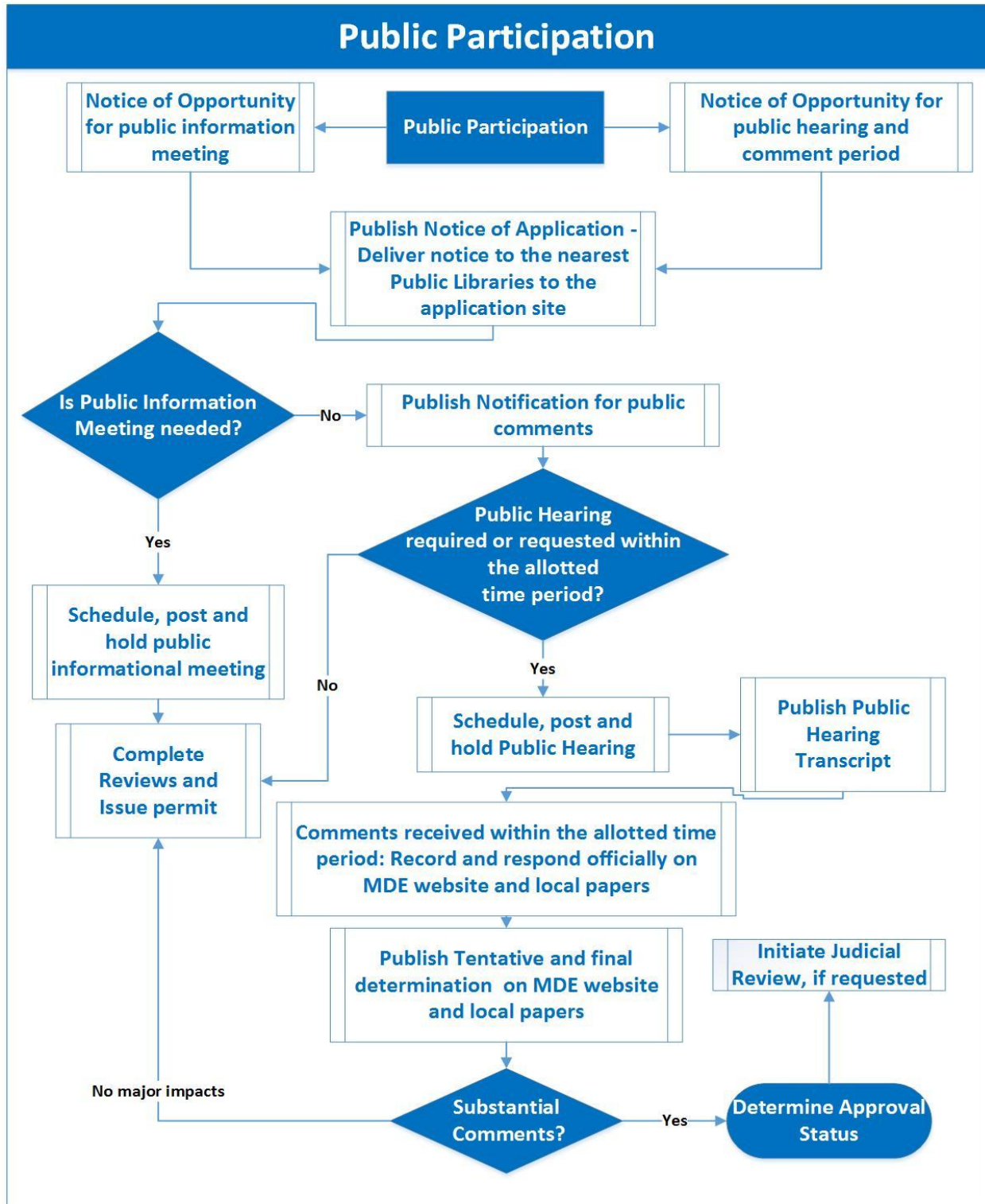


Figure 11: Public Participation Workflow

## (6) Inspections

If a site visit is conducted at the discretion of the technical reviewer, the site visit process is similar to the process for inspection that is outlined in A4. Because it is conducted prior to issuing a permit, it is called a site visit instead of an inspection; otherwise, the process is similar: review the objective and purpose of the visit, determine the site to be visited and the permittee or responsible party for the site, document findings, and create a report.

### **A3.2 ISSUE PERMITS AND CONDITIONS**

Processes related to providing a final approval and generating conditions for approval are managed by a permit writer and the program supervisor who has the final authority to issue the letter of approval/permit. A draft permit is created once reviews have occurred and are complete, and if needed, public comment and hearings have occurred and feedback has been received and reviewed. The permit writer creates the draft permit with the conditions that the responsible entity for the permit or approval must comply. There are standard conditions that are applicable to most permits as well as, permit specific conditions. Permit specific conditions are defined during the Manage Programs activities (A1). The permit writer will retrieve the conditions from the system and edit the conditions as needed. The permit writer will be able to remove conditions that do not apply, add new conditions and edit conditions as needed.

The draft must be reviewed by a supervisor or MDE person authorized to sign off on the permit prior to being issued to the applicant. While the process accommodates all offices and types of permit, the effort and timelines involved in these processes will differ based on the complexity of the documentation that needs to be reviewed.

When approved, a permit package will be sent to the permittee. The documents contained in the package will be determined by the programs. The final document will be marked as final and stored in such a manner so that it cannot be changed.

The permit issuing workflow is shown below.



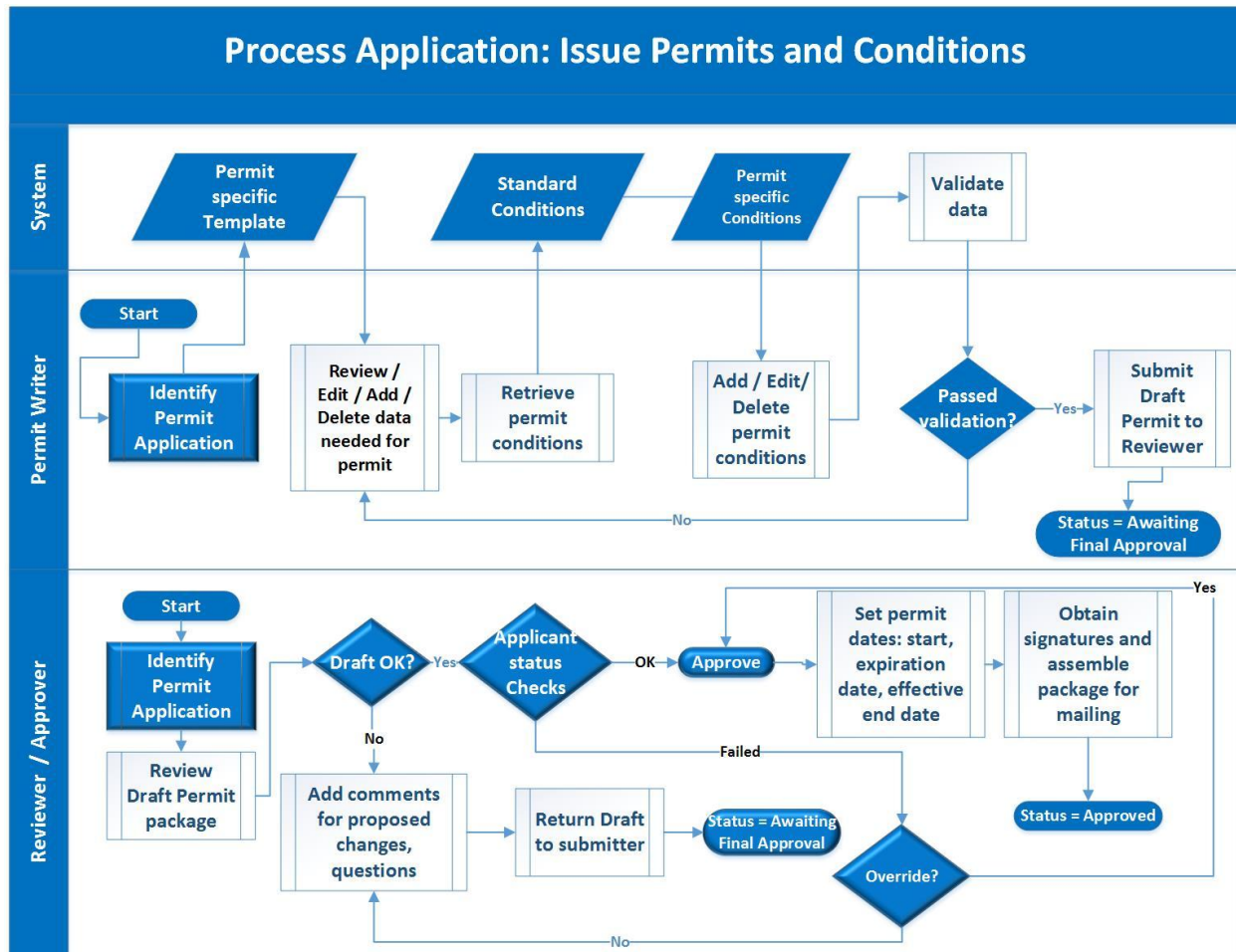


Figure 12: Issue Permits and Conditions Workflow

### A3.3 PROCESS COMPLIANCE REPORTS

The permittee must comply with the conditions defined in the permit. One of the compliance processes is for the permittee to provide self-monitoring reports as a condition of the permit. The reports are submitted on a scheduled basis, and MDE analyzes the data submitted to ensure the expected control of contaminants emitted into the environment (land, water or air) are in compliance.

The Process Compliance Reports activity deals with the processes involved in preparing for compliance reporting and receiving reports from the approved applicants. The processes that will be supported by the EPTSM system will include:

- Creating and issuing a compliance report template for printing and sending to the applicant (defined in A1.4).
- A user interface template that can be used to enter data that is reported by the applicant on the reporting forms (defined in A1.4).
- Sending out reminder notices to the permittee prior to report due date.
- Receiving the report and comparing submitted data to the permit conditions.

- Identify items in report that would indicate a possible violation, such as a reading of a contaminant at a level higher than the threshold amount.
- Managing the work activity throughout the process.
- Compliance Report with a deviation may trigger an inspection.

The process for some programs begins with sending reminder notices to the permittee prior to the reports due date. The MDE program user will need to be notified when a permittee report is due at x days (x days, as defined in the permit profile) prior to the due date and when a permittee report is past due. The MDE user prepares and mails the reminder notice with the report template. The system will provide ability to notify the MDE user, generate the list, and generate mailing labels. A permittee or facility that has not submitted a report by the due date will be contacted by the MDE representative. The permittee has 30-days from the due date to submit the report. The system will notify the MDE user of past due reports.

When compliance reports are received, the authorized MDE user will access the user interface for that permit and enter the date received, which when saved in the system, will update the compliance report due status, and ensure that the permit no longer shows up in the query for permits with reports due or past due.

MDE will conduct an administrative and technical review of the compliance report submitted. The administrative review will ensure receipt and completeness of the submission so that the fields that were required are filled in and the needed documentation was submitted. The technical review entails a review of the values submitted in the report, and the identification of volumes and measures that indicate a violation of the terms of the approval or permit.

If there is a possible violation, then the MDE representative may contact the approved applicant to request verification of these reported measures, or a resubmission of the report, or a plan for remediating the contaminant excess. These decisions will be carried out outside the EPTSM system but may be annotated with a date and comment in the permit file that is maintained in the EPTSM. The decision regarding the level of detail of the annotation is independent of the system. The system will simply provide the ability to maintain a diary associated with each report submission consisting of one or more entries each having a date, username of person making the entry, and a text entry. There may be more than one report submission for each required date of report submission; even though the approved applicant may be required to submit an annual report, MDE may request a second submission based on the reported values received in the report, and the approved applicant may resubmit that report a month later (as an example). Each report submitted by an approved applicant will have a date of submission.

While the system shall have a capability to create, store, modify and print a compliance report form, and an application form, if desired, by permit, the timing of the issuance and sending out of a form to an applicant or approved applicant will be managed outside of the system. The MDE user may have a date field that is not mandatory in the permit file indicating when a compliance report form and a notification of report due was sent out, in order to annotate the permit file.

The Compliance Report workflow is shown below.

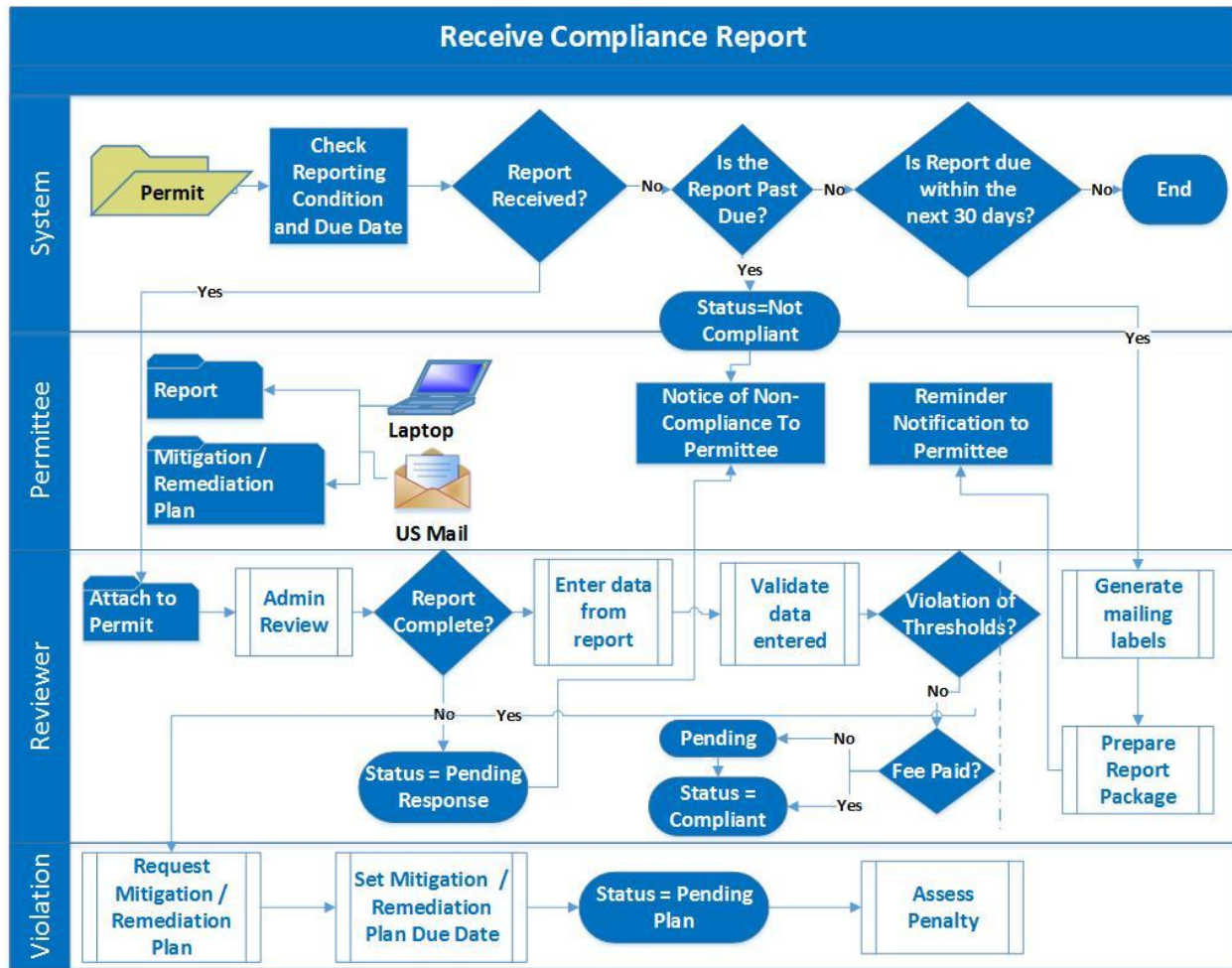


Figure 13: Compliance Report Workflow

### A3.4 ADVISE AND INFORM PERMITTEES

Activity 3.4 entails the ability to keep a record of communication with an approved applicant or responsible party identified in an incident, for communications that are not otherwise accounted for in the processes identified throughout the system. The EPTMS system will maintain a record of all communications to and from an applicant, approved applicant, or incident responsible entity, by organization, person, date, reason for communication, username of person recording the communication, text describing the communication, and an indicator of the media (telephone, email, letter, or in-person).

Communications between permittees and MDE program representative may occur in both directions for a variety of reasons not captured as a part of the application or reporting review and approval process. These communications should be able to be included in the EPTSM as a diary of communications to and from permittees, and letters received or sent should be included in the document management component of the EPTSM system should the program so desire.

EPTSM should have a capability to link into a letter writing software to create letter templates that can be used for a broad range of recipients as needed and to generate letters that are either being issued to a group of applicants or to a single applicant, as appropriate. At a minimum, a record of a

communication, date, title, and summary should be included in the system and associated with an application and approval, or incident for communications that are not specific to an applicant.

#### **2.4.4 Inspect and Enforce Compliance (A4)**

Inspect and Enforce Compliance activity is supported by those processes that will be implemented in EPTSM that will assist the enforcement and compliance staff in assuring compliance.

Activity A4: Inspect and Enforce Compliance are detailed in Section A4 of the RTM and the requirements are categorized as follows:

- Inspection Request (A4.1)
  - Requirements to provide a feature to issue a request for inspection that may be triggered by an application, scheduled inspection or reported incident.
  - Requirements to provide an incident module to identify the inspection site, type of inspections, permittee information, inspection details, who it is assigned to, when it needs to be done.
- Conduct Inspection (A4.2)
  - Requirements to provide a module for inspection on a mobile device and the ability to transfer information from and to the main database and the mobile device.
  - Requirements to obtain a list of inspections and the inspection request, download appropriate information from the database, document findings, get concurrence from the permittee, print and deliver the signed report to the permittee.
  - Requirements to provide a GIS function to select an area of the map that pinpoints permits and non-compliant issues that can be filtered.
- Document and Communicate Findings (A4.3)
  - Requirements that support the ability to upload documents and large files such as zipped files of photos, ensure data is secure, prevent the loss of data during uploads and download and provide a means to ensure that a chain of custody of all electronic files are maintained.
- Conduct Enforcement Actions (A4.4)
  - Requirements that support the need to identify citations / violations, corrective actions, and penalty amounts.
- Document Enforcement Activities (A4.5)
  - Requirement that support the need to prepare litigation package and view enforcement activities.

##### **A4.1 INSPECTION REQUEST**

The inspection process may be triggered by an expressed concern / complaint or may be a scheduled event dictated by agency policy, regulatory compliance or law.

- **Concern** - The incident / complaint comes in as a call, or email and problems that are self-reported by facilities such as sewer bypasses and hazardous spills. MDE has a hotline that records a complaint. The complaint or incident will be entered into the EPTSM system to be tracked until the situation has been resolved. Site complaints may or may not have a permit

associated with it. Incidents are tracked separately for reporting purposes and must be noted accordingly.

- **Scheduled Inspection** - The MDE programs prioritize inspections based on risk to the environment and identify when and what facilities need to be inspected. The inspection frequency will be a permit condition.

An incident request will be forwarded to an inspector indicating the type of incident, priority, media, program, details of the incident, location, and contact information if known.

An inspection request will be forward to an inspector indication the type of inspection, permittee information (name, location, contact information), permit number, inspection details, permit conditions, permit issue date, permit expiration date, permit renewal date, and violation history.

#### **A4.2 CONDUCT INSPECTION**

The inspection will be on-site and most likely inspectors will not have access to the EPTSM system; therefore, the inspectors will need to be able to collect the information on mobile devices. The EPTSM system will provide a mobile component that provides the ability to capture in-the-field data of inspection information that can be synchronized with the EPTSM Data Repository when telecommunications access is available by VPN, cellular or internet.

The inspector will download information from the EPTSM system to their remote device, record information to the remote device and upload the inspection details back to EPTSM.

##### **Incident Inspection**

The inspector will receive the incident request with details of the complaint. The inspector may obtain additional information from the system such as, permits within an area or permit activity for the permittee, if known, historical patterns of significant non-compliance, and violation history, as needed. The inspector will download the information to the mobile device along with the incident request.

While the inspector is on premise, the inspector will need to record information obtained from the inspection. Incidents includes Combined Sewer Overflows (CSO) or Sanitary Sewer Overflows (SSO) Bypass, these incidents will require the inspector to collect data about the CSO, SSO bypass events. The inspector will create an incident report and provide a printed copy of the incident report to the on-site contact person for signature. The incident report will include observation notes and next steps (corrective action). The incident could initiate an enforcement event. The incident will be tracked throughout the process.

The data collected and pictures taken during the inspections will be uploaded to the EPTSM system.

##### **Scheduled Inspections**

MDE performs scheduled inspections, audit and spot checks as prescribed by the permit condition and MDE policy. The MDE programs maintain an inspection schedule of sites to be inspected annually. The inspection list includes the Site Name, Type of Site, Date of Request, Inspector, Project Manager, County, Location, License #, Site Complaint #, Instructions to Inspector, Comments, Inspection Needed by Date, and Date of Last Inspection.

Scheduled inspections are performed to ensure a permittee meets permit conditions or to monitor the success of a program such as the State Electronic Recycling Program. These inspections may be performed on-site or off-site, and the permitted equipment reviewed could be a full review, review of all permitted equipment or partial review, meaning a subset of the permitted equipment. The inspector

will receive an inspection request with the details of inspection. The details will include permit conditions, or a list of equipment or checklist of items that needs to be inspected. The inspector will identify deviations.

Some aspects of processes involved in scheduled inspections.

- Inspector obtains request for inspection, identifies site and purpose
- Inspector defines type of inspection to be conducted
- Inspector contacts site manager or owner
- Inspector meets with site manager/owner
- Inspector observes site and documents observation
- Inspector reviews onsite documentation
- Inspector documents observations
- Inspector determines documents zero, one or more violations
- Inspector issues a warning or a notice of violation
- Inspector fills out a report of inspection

The workflow for initiating and conducting an inspection for an incident, inspection requested by a program user and scheduled inspections is shown below. The inspection is done on-site, and a mobile version of the EPTSM allows the Inspector to download, collect and record inspection results, obtain signature from the on-site contact person and upload the inspection report and support documents to EPTSM. Violations will be noted and forwarded to the Enforcement group.

The Request and Conduct Inspection workflow is shown below.

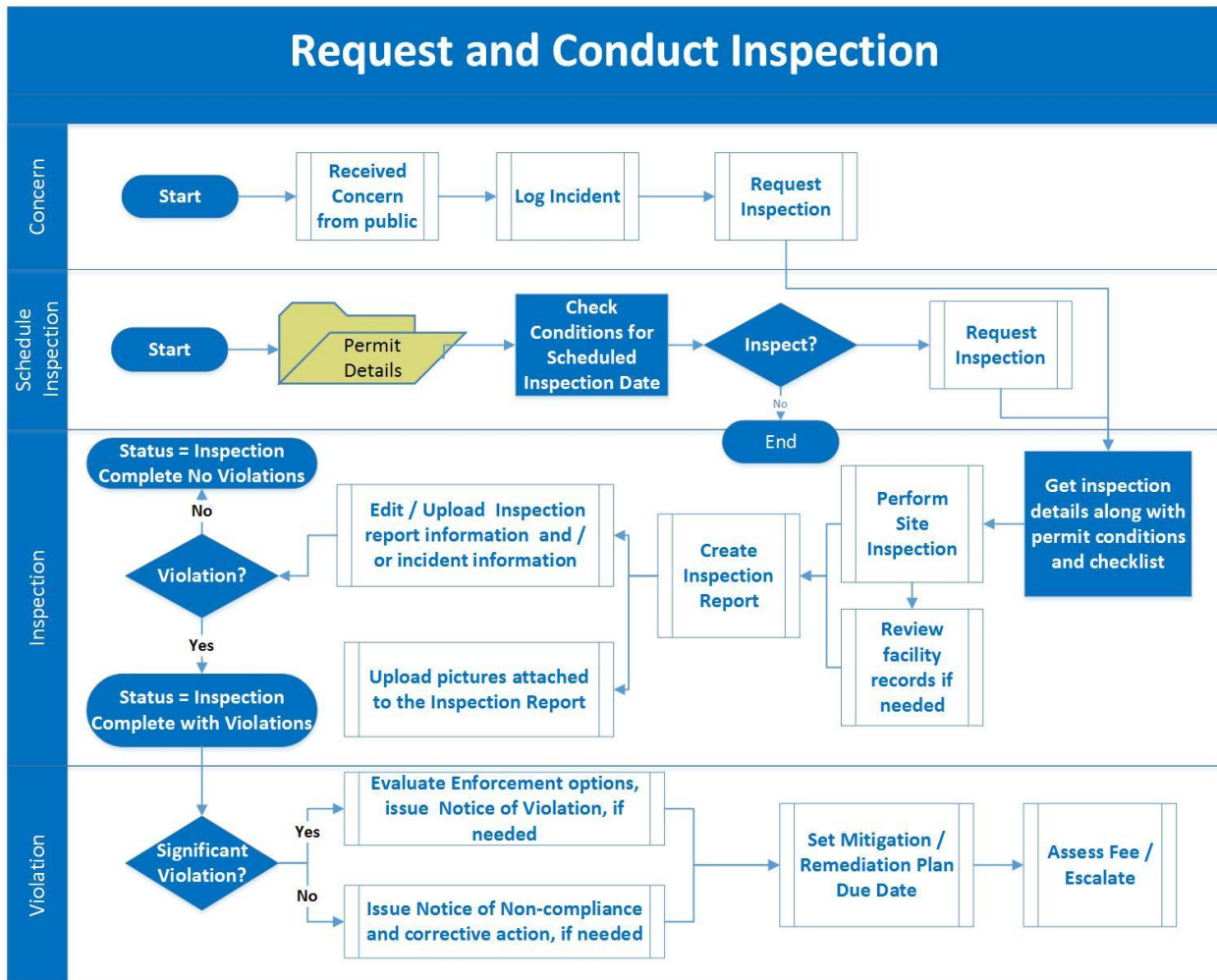


Figure 14: Request and Conduct Inspection Workflow

Some MDE organizational units conduct enforcement actions; others refer those actions out to another organizational unit that deals with enforcement. Air Quality conducts their own enforcement actions, for example. Either way, the EPTSM will provide data fields for the program to document that an enforcement action was initiated, and to document the outcomes and dates of each enforcement action, linked to an approved application or to the responsible party and site of an incident.

The Compliance and Enforcement workflow is shown below.



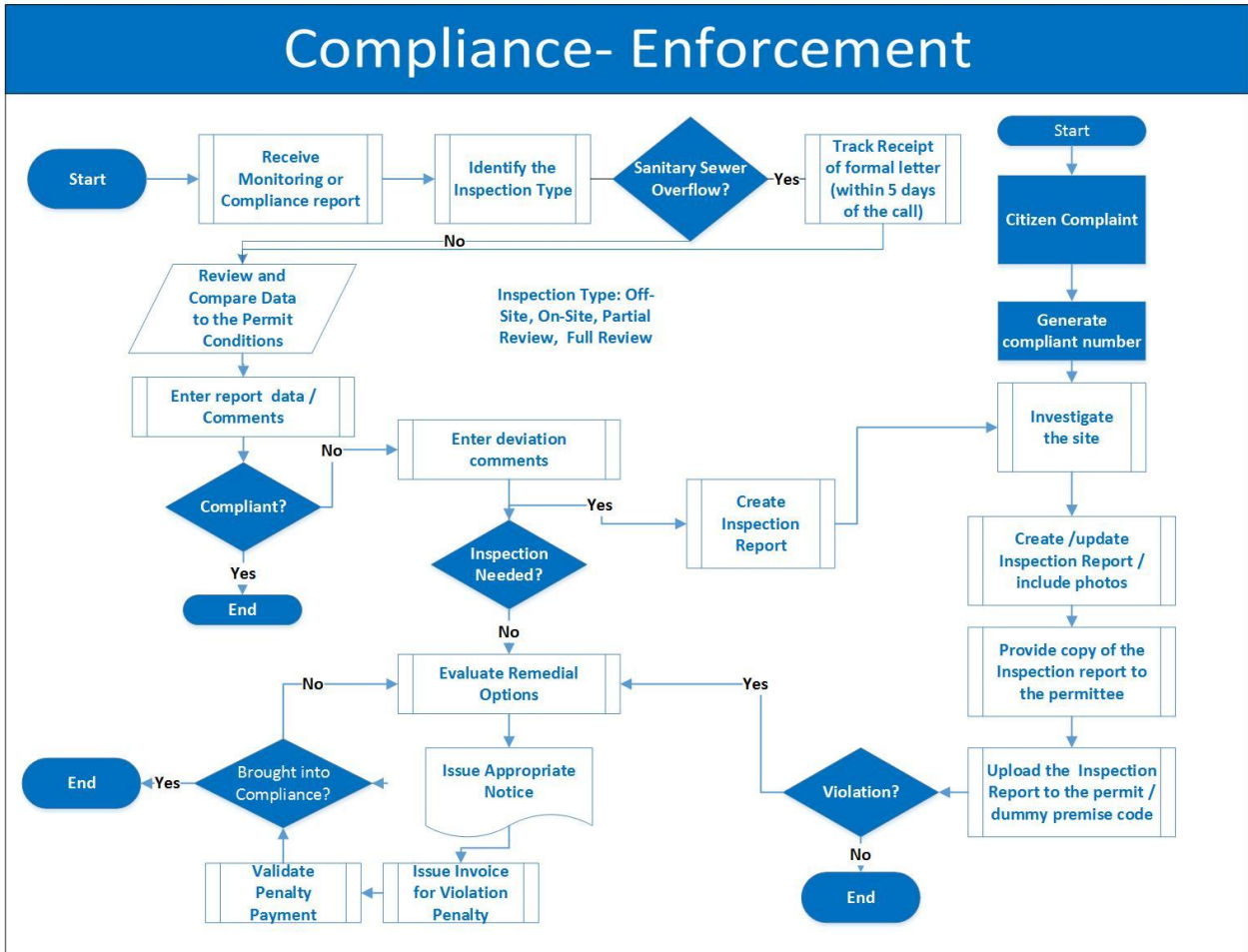


Figure 15: Compliance and Enforcement Workflow

**A4.3 DOCUMENT AND COMMUNICATE FINDINGS**

The inspection observation will be recorded in the Incident or Inspection Report. Deviations, corrective action and/or violations will be entered into the EPTSM system. The incident or inspection request may be assigned to another MDE user or another agency. A work activity log will be maintained to manage and record the life cycle of the incident and inspection.

During the process of the inspection, pictures may be taken or the inspector may need to scan documentation as verification of compliance. The mobile version of the EPTSM application may be used to store the reports, photos and data collected so that the information can be uploaded to EPTSM. The data on the mobile device must be secure and processes will be in place to ensure data is not lost on the device, during transmission, or processing. Backup and disaster recovery equipment and processes to prevent data loss or restore lost data will be implemented.

**A4.4 CONDUCT ENFORCEMENT ACTION**

An Inspection may result in enforcement action, defining corrective actions and assessing a fine. Corrective actions can be pre-defined by permit type. The authorized MDE user will be able to retrieve the corrective actions, add, remove and edit as needed. The following process components are involved in enforcement:



- Send request to applicant for plan to correct outliers and provide timeframe
- Establish and review corrective actions
- Approve corrective action plans
- Contact applicant to revise corrective action plan
- Contact applicant to notify them of a past due report date
- Issue notice of violation
- Issue fines
- Refer applicant to legal if no response
- Terminate permit or approval if no remediation or no response after repeated contact

#### **A4.5 DOCUMENT ENFORCEMENT ACTIVITIES**

The EPTSM system will maintain a record of the enforcement activity by the inspection or incident request.

- Media (Air, Land, Water)
- Program and Sub-program
- Date Issued
- Compliance Due Date
- Date Compliance Achieved
- MDE authorized user responsible for the enforcement
- Items or equipment cited with a deviation or violation
- Penalty Amount
- Corrective Action or Actions
- Responsible Entity (permittee)

#### **2.4.5 Provide Information and Reports (A5)**

The business activity of Provide Information and Reports includes the receipt and processing of requests for information, and the production of scheduled reports that are due to the MDE directorate for the annual reports and as required from each area by the Department.

Activity A5: Provide Information and Reports are detailed in Section A5 of the RTM and the requirements are categorized as follows:

- Search and View Feature (A5.1)
  - Requirements to provide a robust key word search feature to return applications, permits, incidents and enforcement actions that can be filtered by, but not limited to status, media, programs, permit types, counties, date of issuance, expiration date, business name, permit owner, physical address.
  - Requirements to provide a GIS view of the search results.

- Requirements to display the search results in a data grid that can be sorted, filtered and printed and exported as a PDF, excel and CSV files.
- Requirement to display a personalized dashboard providing key indicators related to the user's role and needs.
- Ad-Hoc Queries and Data Analysis (A5.2)
  - Requirements to build ad-hoc queries / reports allowing the user to define data elements and conditions that can calculate totals and averages.
- Letter Building Feature (A5.3)
  - Requirements to create and store correspondence, produce hard copies of correspondence, send email correspondence, and create labels that can be edited and reused.
  - Requirements to create templates for permits, invoice requests, transmittals and other types of documents, to be maintained by the programs.
  - Requirements to send email alerts to authorized users based on information contained in the system database.
- TEMPO Reports (A5.4)
  - Requirement to ensure legacy WebFOCUS reports that have been developed for the legacy TEMPO application will continue to work. The underlying data elements will remain as defined by the TEMPO database.

#### **2.4.6 Manage Financial Transactions (A6)**

The Manage Financial Transactions business area is used to encompass functions the EPTSM system will use to manage payment received for application fees, annual fees, renewal fees, penalties and reimbursements to MDE. Payments could be received by MDE as cash, check, wire transfer or money order and it is envisioned that some payments may be processed online through a secure site with a credit card.

During this activity, there will be manual interaction with Fiscal Services. Fiscal Services uses the State Financial Management Information System (FMIS). FMIS is the document of record for all financial transactions.

Activity A6: Manage Financial Transactions are detailed in Section A6 of the RTM and the requirements are categorized as follows:

- Map fees to FMIS Accounts (A6.1)
  - Requirements to support the programs need to maintain and track detailed payment records, determine the amount due and record the amount received.
  - Requirements to map fees and penalties to the appropriate FMIS cost account, Program Cost Account (PCA) and Agency Object (AOBJ).
- Determine Amount Due (A6.1.1)
  - Requirements to accept online payments (requirements will be rolled out in a separate phase).

- Requirements to capture the fees associated with the permit type (stored in the system), and other fees such as invoices and penalties that have been recorded by a program user.
- Record Payment (A6.1.2)
  - Requirements to record payments, modification to fees, fee waivers or fee exemption.
- Request an Invoice (A6.2)
  - Requirements to initiate a request for an Invoice that will be handed off to Fiscal Services, so that the invoice can be sent out by the programs.
- Reconcile EPTSM postings to FMIS (A6.3)
  - Requirements to provide the ability for the programs to reconcile program specific financial transactions to the FMIS.

The payment received are posted to the FMIS system. Fiscal Services provides program specific Deposit Copy Reports to the programs and each program will post the payments to the appropriate customer in EPTSM. EPTSM will also provide the ability to generate an Invoice Request to FMIS. The invoice is generated in FMIS and a printed copy is sent back to the programs to be mailed to the customer.

The Manage Financial Transactions and Invoice Request workflows are shown below.

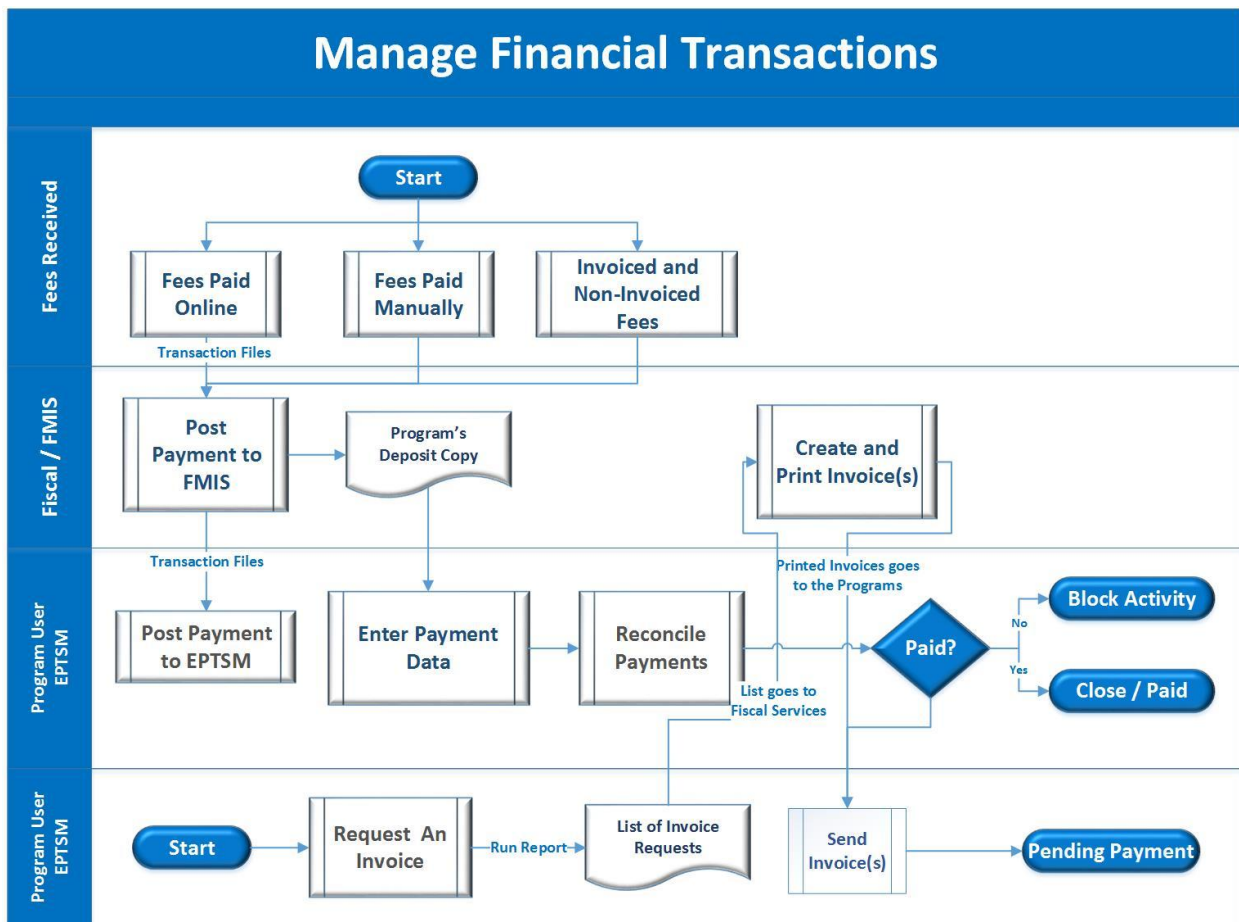


Figure 16: Manage Financial Transactions Workflow

## **A6.1 DETERMINE AMOUNT DUE AND POST PAYMENTS**

The EPTSM system will provide the ability to track the amount due to the payment that has been received. The EPTSM will have the functionality to support financial transactions received from an online payment interface and for the fees that are not submitted online, the Programs will post the payments manually in EPTSM. Note: There is no communication between EPTSM and FMIS systems.

Financial transactions in EPSTM will need to contain the cost accounting codes needed by FMIS and the EPTSM activity details.

### FMIS Details

- Program Cost Account (PCA)
- Customer/ account numbers
- Comptroller Object (COBJ) – Main activity such as violation, fine, application fee.
- Agency Objects (AOBJ) - Provides more detail of the type of violation, fine. AOBJ rolls up to the COBJ. AOBJ may or may not be associated with a permit.
- Invoice Number

### EPTMS Activity Details

- Permit Number (if available)
- Location Site identifier / Facility Name
- Organization and/or person that is responsible for the Location Site
- Address, City, State and zip code
- Amount due
- Payment Received
- Description

#### **A6.1.1 DETERMINE AMOUNT DUE**

The fee types include but are not limited to fines or penalties, settlements, permit application fees, permit renewal fees, registrations, certificates and accreditation, public advertising and violation. The amount due entry in EPTSM will be established differently depending on the activity for instance,

- Most permit activity fees can be pre-defined in the database by permit type. When the fee cannot be determined then the
- Fee may be requested by an invoice. The invoice request will be printed in EPTSM and FMIS will generate the invoice the FMIS. There will be occasions when the
- Fee will be communicated by a letter or notice. The FMIS codes will be included in the letter.

#### **A6.1.2 RECORD PAYMENT**

All payments sent directly to MDE are posted to the FMIS system and reports detailing payment activities are sent to the Programs. The programs post the payment and additional information to the appropriate customer account for the permit activity manually through an EPTSM screen. The system will capture entries for insufficient fund, refunds, cancellation and adjustments.

Requirement to post manual payments for different conditions are detailed in the RTM, Section A6, starting with 6.1.20200

Online payments transaction will be posted to FMIS and a process will be in place to produce daily transaction files for EPTSM that will post the payment to the customer account.

## **A6.2 REQUEST FOR AN INVOICE**

An invoice may be needed to collect payments for different situations. An applicant applies for an application online but decides to pay later, the fee needs to be calculated, a notice of violation (NOV) or a notice of assessment (NOA) has to be issued are some situations that a program may need to issue an invoice. The EPTSM will need the ability to create a request for an invoice. The Invoice Request screen will contain the appropriate details required by the FMIS system to generate the invoice.

The EPTSM system shall allow Programs to create a request for an invoice that can be forwarded (manually) to Fiscal Services. The process will be:

- Programs will create a request for an invoice in EPTSM. The invoice request will provide the appropriate billing information such as customer account, amount due, due date, permit # (if applicable), reason, FMIS codes, and bill to information.
- The Programs will run an EPTSM report to get a list of invoices that need to be created and the report will be forward to Fiscal Services.
- Fiscal Services will assign the invoice number, generate, and print the invoice.
- The invoices are given to the Programs to be mailed to the customer.

## **6.3 RECONCILE EPTSM POSTINGS TO FMIS**

The Programs are responsible for tracking and reporting financial transactions. The EPTSM system will provide the ability to query and display on demand the history of credits and debits against an account, an applicant or an incident site in various ways such as, by date, by program by type of permit, and incident at a minimum.

The MDE Programs will require a means to reconcile FMIS to EPTSM financial records. A report detailing fee reconciliation including what invoices were generated and sent, which payments were received, and which payments are outstanding will be available in EPTSM.

# **3 DATA REQUIREMENTS**

## **3.1 Current Structure**

To the extent possible, the new EPTSM will work with existing TEMPO data tables. The current data structure maintains a set of Master tables that are shared between the programs and tables that store data specific to the permit activities. The master tables are to ensure regulated entities, so that organization and people of interest are not duplicated.

In order to ensure the uniqueness of these records, the OIMT staff reviews the applications and uses TEMPO searches to validate the applicant information and determines how best to enter the applicant, facility, location and other person or organization information from the permit application. Based on the search results and coordination with the program staff, OIMT identifies or creates new master records and provides the new or existing identification number to the programs.

The Master tables contain the following basic data types:

**Agency Interest (AI):** Information about regulated entities of interest to the Department, such as facilities, plants, and cleanup sites. These regulated entities are the largest logical entities of interest the Department wishes to manage (e.g., the largest entity to which a single permit might be issued, etc.). An Agency Interest could be a geographic location or structure or a legal entity (person or organizational unit).

- **Subject Items:** Information about the components that comprise an Agency Interest which are subject to regulation. Examples of small scale Subject Items are individual pieces of equipment, release points, and control devices.

**Organizations:** Information about organizations that are directly related to Agency Interests such as, owners, operators, and contractors.

**People:** Information about people of interest, such as responsible officials, on-site managers, and programmatic contacts.

**Requirements (Conditions):** Permit or non-permit based requirements placed on individual Subject Items, groups, or the entire Agency Interest. These are the rules that must be followed by the responsible party for the Agency Interest to comply with state and/or Federal regulations.

**Activities:** Individual work activities, such as processing a permit, conducting a field inspection, or management of an enforcement action.

**Tasks:** Each work activity is broken down into discrete tasks, such as reviewing an application, completing an inspection report, or contacting a company.

### 3.2 Gap Analysis

The project's requirements workshop sessions identified the following data needs of the EPTSM.

1. Enable financial tracking of all fees and penalties and ability to reconcile EPTSM data with FMIS
  - a. Include fee tables by permit type and violations that provides the ability to calculate fees based on conditions.
  - b. Include tables that map FMIS Codes to the programs.
2. Enable a framework strategy that is capable of onboarding new programs and allows programs to define and maintain templates, input fields (attributes), and business rules.
  - a. Supports the ability to relate default reference data (metadata) by permit type. For instance, reference data for conditions and templates.
  - b. Provide the capability to define and maintain a permit profile (See Table 4); configure business rules such as the amount of time needed to resolve issues, auto-renewal period and notifications, and turn-around times.
3. Enable the ability to manage contact information specific to the permit office rather than having to accept role names given by another office.
  - a. Add program, permit, and role attributes to the contact information.
4. Enable the ability to use GIS capability to display permit activities on a map.
  - a. New tables to support GIS capability.

5. Improve database performance especially while performing searches, and synchronizing data between the ETPSM and the mobile application.
6. Resolve data management issues in capturing and storing data.
  - a. MDE will be responsible for cleaning up the database to remove duplicate AI entries, organization and people entities. MDE will assist in identifying elements that are not used or need to be added.
  - b. The same data is sometimes entered twice and may be stored in different tables.
  - c. Better validation is needed to ensure master data is not duplicated.
7. Support new programs / data not currently captured in TEMPO including, but not limited to:
  - a. Recycle program's ability to track retail electronic inspections, record the retail site, date, compliance results, and observation notes, and status.
  - b. Collect receipt date for Coal Combustion Byproducts (CCB Reports) submitted by facilities (not related to a permit).
  - c. Develop Bay Restoration Fund checklist to determine whether the applicant should be billed a Bay Restoration Fee.
8. Mechanism to support notifications and email feature.
9. Enable an incident module that supports Water Compliance and other incident activities.
  - a. Collect and track combined sewer overflows (CSO), SSO and Bypass events, and non-compliance reporting for both permitted and non-permitted discharges.
  - b. Provide the ability to track and capture historical patterns of non-compliance, and identify potential violations /violators requiring subsequent enforcement action.
  - c. Provide the ability to link the inspection, enforcement action and compliance to the permit, rather than the agency interest.
10. Enable the ability to provide a progress status that shows passages from one phase of processing to another.
  - a. Add a progress status attribute to show the progress of an application or renewal such as 'Pending Administrative review', 'Pending response from applicant', and 'Technical review in progress'. The progress status values will be determined during system design. Note: Progress Status will be applicable to all cases.
11. The Word Processing functionality to create and edit documents such as permits, letters, and transmittals are currently created using a LetterBuilder tool. Changes to the approach of creating documents, or how the documents are stored may necessitate table changes. Documents/ templates are stored as a BLOB in the database and have been identified as contributing to the slow response time when conducting searches.

## 4 EPTSM WIREFRAMES

The following wireframes are provided for illustrative purposes. It is not intended to provide a design solution; it is merely a means to describe visually some of the requirements. User interfaces for each function within the EPTSM need to be congruent with the user role and the purpose of the interface. It

is a business requirement that the data collection interfaces be easy to use and minimize the need to navigate to submenus or to other user interface views back and forth in order to enter data.

The following wireframe illustrates the programs that EPTSM will support.

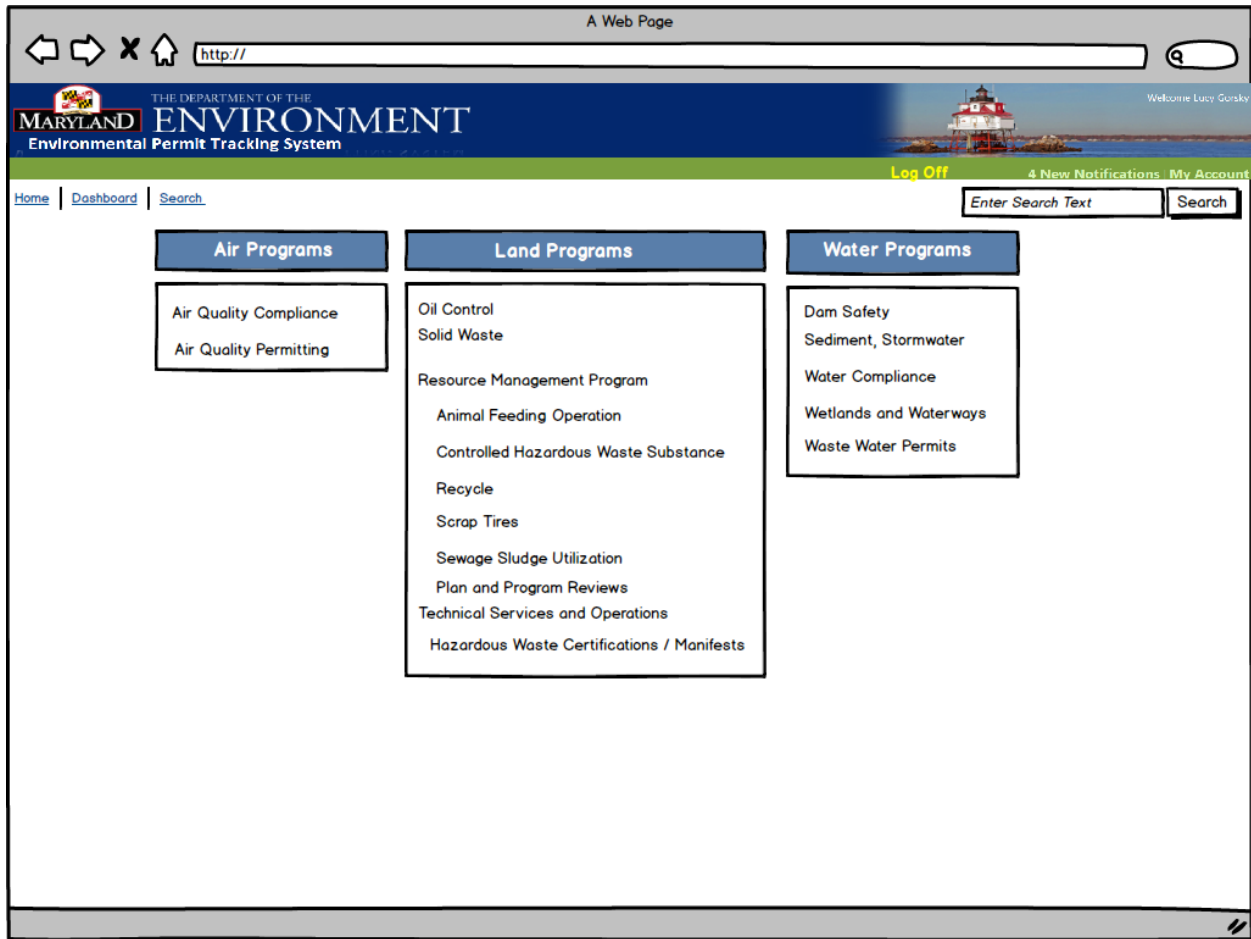


Figure 17: EPTSM Programs

#### 4.1 Sample Dashboard

The EPTSM will make available to the MDE program user a personalized Dashboard of activities that provides the status of all cases within their area of purview and a robust search and filtering capabilities. The dashboard will provide the option to select a permit to view or resume a permit application and the option to create a new application.

An example of a Program specific dashboard is shown below.



A Web Page

http://



**THE DEPARTMENT OF THE ENVIRONMENT**  
Environmental Permit Tracking System

Welcome Lucy Gorsky

[Log Off](#)   [New Notifications](#)   [My Account](#)

---

**Solid Waste Program - Permit Dashboard**

[Home](#) | [Dashboard](#) | [Search](#)

### Permits

Select	Permit #	Status	Large	Adv	Pending	Date Submitted
<input type="checkbox"/>	AA1233	Active	No	No		11/15/2010
<input type="checkbox"/>	AA1234	Being Reviewed	No	Yes		11/14/2010
<input type="checkbox"/>	AA1235	Expired	Yes	No		11/10/2010

**Applicants**

Total Applications: 1,827

Total Active Applications/Permits: 3,291

Total Applications Received: 819

**Non Applicant Sites**

Total Sites: 17,910

### Filters

Start Date:   County:  Permit Type:

End Date:   Municipality:  Permit Status:  Site Status:

- Received
- Pending Information
- Pending Fee
- Approved
- Compliance 30 days
- Compliance Past Due
- Notice of Violation
- Fine/Settlement Due
- Compliant
- Renewal Past 30 days
- Renewal Past Due
- Terminated
- Incomplete Application
- Non Compliance

- Concern Received
- Investigation Pending
- No Violation
- Violation Warning
- Violation Fine

Figure 18: Dashboard

## 4.2 Sample Application

The vision of this project is to provide an interface that improves the navigation, reduces the number of clicks and guides a user through an activity. The EPTSM will recognize the user as a member of an Administration that supports one or more programs. The system will display the program or programs assigned to the user and allow the user to select the program and activity to perform.

The following wireframes are provided to demonstrate the steps that an MDE user will follow to create a new application. This use case is for an MDE user entering a new Solid Waste application.

1. User selects **New Application** from the Dashboard. The system presents the permits associated with Solid Waste for the user to select.

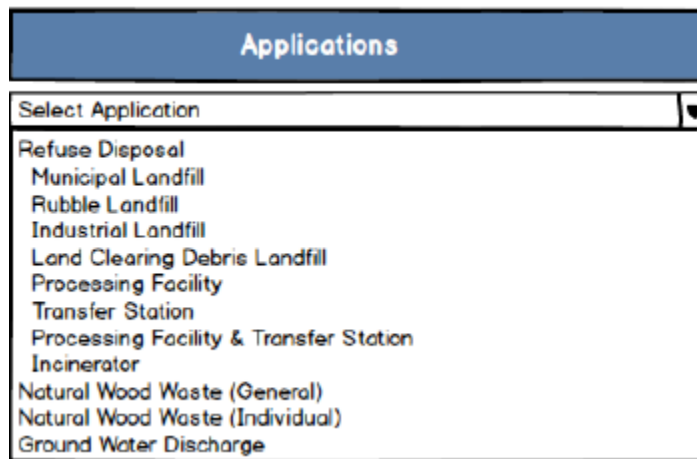


Figure 19: Listing of Solid Waste Permits

2. The System will provide the ability to search for the entity, organization and/or persons that will be associated with the final permit. The wireframe below displays a new application entry page that provides a search feature and the sections of the application that will be input to the system. The Applicant Information, the Business Contact information and the assignment of the application number.

The screenshot shows a web browser window displaying the Maryland Environmental Permit Tracking System. The page title is "Solid Waste Program - Municipal Landfill Permit". A search bar contains the text "landfi". Below the search bar is a table with four rows of search results. The first row is selected. Below the table are three expandable sections: "+Applicant Information", "+Business Contact Information", and "+Assign Permit Number".

Search:  Required Field \* [Export](#)

Select	Identifier	Business Name	Address	City State Zip Code	TBD
<input type="radio"/>	12345	ABC Landfill	1234 Main St	Glydon MD 21157	
<input checked="" type="radio"/>	1357	Alpha Ridge Municipal Landfill	2350 Marriottsville Rd	Woodstock MD 21104	
<input type="radio"/>	2345	Sam's Landfill	5687 Riggs Road	Sparks MD 21152	
<input type="radio"/>	945968	George's Landfill	8787 Shawan Rd	Cockeysville MD 21030	

+Applicant Information

+Business Contact Information

+Assign Permit Number

Figure 20: Find Applicant

3. **Applicant Information:** The MDE user will search for applicant information and select the record. The system will populate the **Applicant Information**. The MDE user has the option to edit the information. The wireframe below displays the selected search results that populates the Application Information.

A Web Page

**MARYLAND ENVIRONMENT**  
Environmental Permit Tracking System

Welcome Lucy Gorsky

[Log Off](#)   [4 New Notifications](#)   [My Account](#)

[Home](#) | [Dashboard](#) | [Search](#)

## Solid Waste Program - Municipal Landfill Permit

Search:  Required Field \*

Select	Identifier	Business Name	Address	City	State	Zip Code	TBD
<input type="radio"/>	12345	ABC Landfill	1234 Main St	Glydon	MD	21157	
<input checked="" type="radio"/>	1357	Alpha Ridge Municipal Landfill	2350 Marriottsville Rd	Woodstock	MD	21104	
<input type="radio"/>	2345	Sam's Landfill	5687 Riggs Road	Sparks	MD	21152	
<input type="radio"/>	945968	George's Landfill	8787 Shawan Rd	Cockeysville	MD	21030	

**-Applicant Information**

Use the Search field to find the Facility or location and then select the record. You may edit the information.

**Legal Name**  \*

**Facility Site / Name**  \*

**Mailing Address:**  \*

**City**  \*   **State**  \*   **Zip Code**  \*

**Telephone Number**  \*   **Telecommunication**   \*

**Email Address**  \*

**Physical Address**

Same as Mailing Address

**Physical Address**  \*

**City**  \*   **State**  \*   **Zip Code**  \*

**+Business Contact Information**

Figure 21: Enter Applicant Information

4. **Business Contact Information:** The applicant provides additional persons or organizations that will be associated with the permit. The MDE user will search for existing persons / organization and select the appropriate record. The wireframe below displays the selected search result that populates the contact information, and the relationship of the contact to the applicant. The MDE user has the option to add other contact persons or organizations.

A Web Page

http://

THE DEPARTMENT OF THE MARYLAND ENVIRONMENT Environmental Permit Tracking System

Welcome Lucy Gorsky

Log Off 4 New Notifications My Account

Home | Dashboard | Search

### Solid Waste Program - Municipal Landfill Permit

Search:  Required Field \*

Select	Identifier	Organization / Person	Address	City State Zip Code
<input type="radio"/>	14444	John Smith	1234 Main St	Glydon MD 21157
<input checked="" type="radio"/>	2222	Ann Tyler	2350 Marriottsville Rd	Woodstock MD 21104
<input type="radio"/>	3333	Jack Jones	5687 Riggs Road	Sparks MD 21152
<input type="radio"/>	4444	George's Landfill	8787 Shawan Rd	Cockeysville MD 21030

+Applicant Information

-Business Contact Information

Use the Search field to find an organization or person and select the record. You may add or edit the information.  
Select the Add Another to add another contact for this application.

Name:  \* Role:  \*

Company:  \*

Mailing Address:  \*

City:  \* State:  \* Zip Code:  \*

Telephone Number:  \*

Email Address:  \*

Telecommunication:  \*  \*

+Assign Permit Number

Figure 22: Enter Business Contact Information

5. **Assign Permit Number:** The MDE user will record the date received, assign an application identifier, and assign the application to a member of the program. The system will provide the option to copy from an existing document or start with a blank template. The user selects **Create Application** to generate the next steps for the application review workflow. The figure below displays the Assign Permit Number wireframe.

Note: For some permit types, the Application number format will be generated by the system based on business rules. The system will append a unique number to the application number.

A Web Page

http://

THE DEPARTMENT OF THE MARYLAND ENVIRONMENT Environmental Permit Tracking System

Welcome Lucy Gorsky

Log Off 4 New Notifications My Account

Home | Dashboard | Search

### Solid Waste Program - Municipal Landfill

Search:

Required Field \*

Location: 1357 Alpha ridge Municipal Landfill - Woodstock

-Application Information

-Business Contact Information

+Assign Permit Number and Reviewer

Activity Year \*

Permit Type \*

Date Received \*

Application / Permit Number \*

Assign To: 

- Tom Jones
- Christina Smith
- Melinda Myers

Bring Forward Options for Application

Bring Forward Options for Application

Bring Forward from an Existing Document

Use a Blank Template

Figure 23: Assign Identifiers and MDE Staff Member

6. Application Workflow: The Application workflow will be comprised of multiple steps based on the permit type and the workflows will be presented in a logical order and are independent. The system will support the creation of checklists, conditions and work activities that are specific to the permit type and provide the ability to upload documents. The following wireframe depicts the application workflow steps.

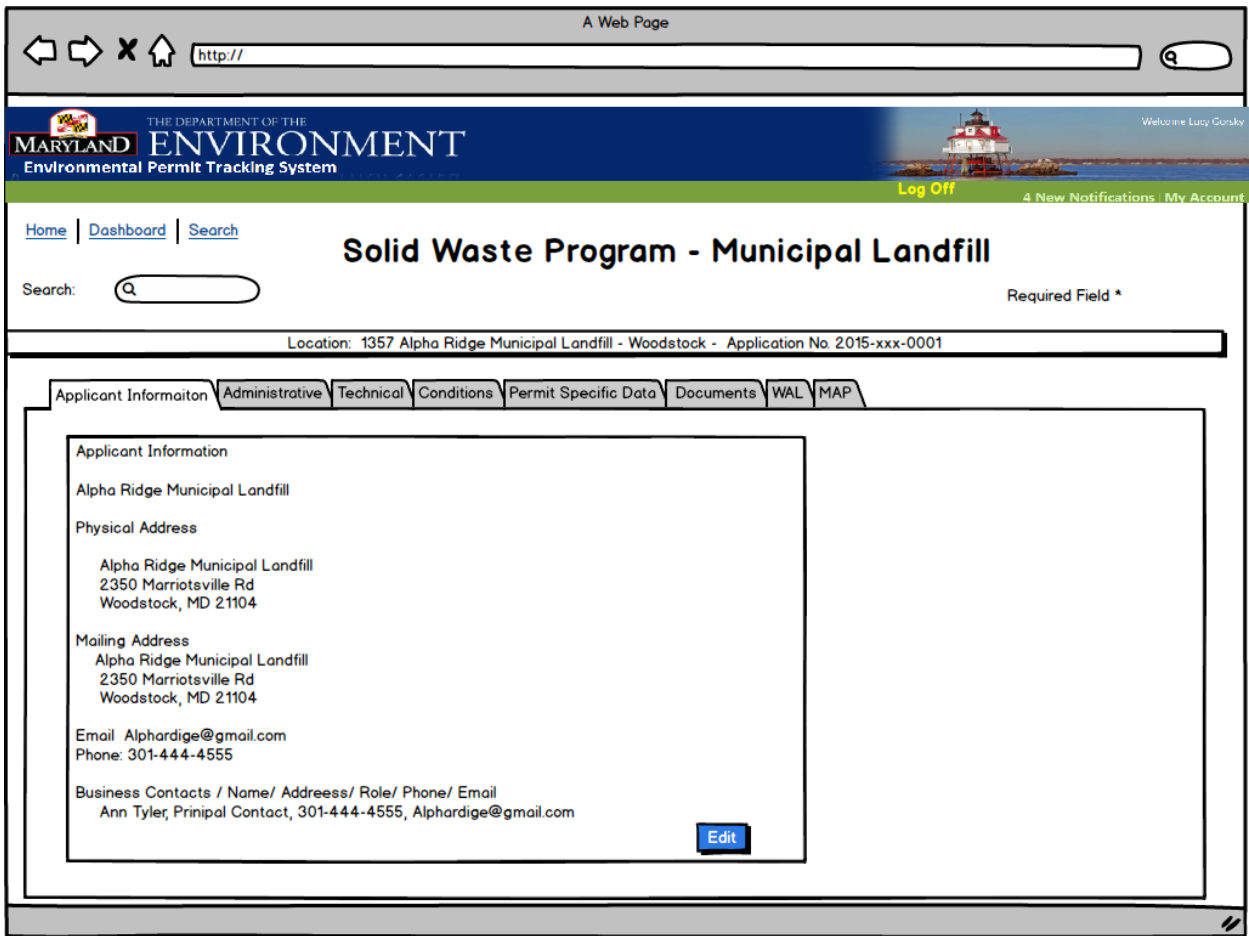


Figure 24: Application Approval Process

- Draft Permit:** The system will provide the ability to generating a draft permit with the appropriate transmittals / letters that will go through a review and final approval and issuance. The following wireframe depicts the Conditions workflow with the ability to add, remove and edit conditions and generate the draft permit.

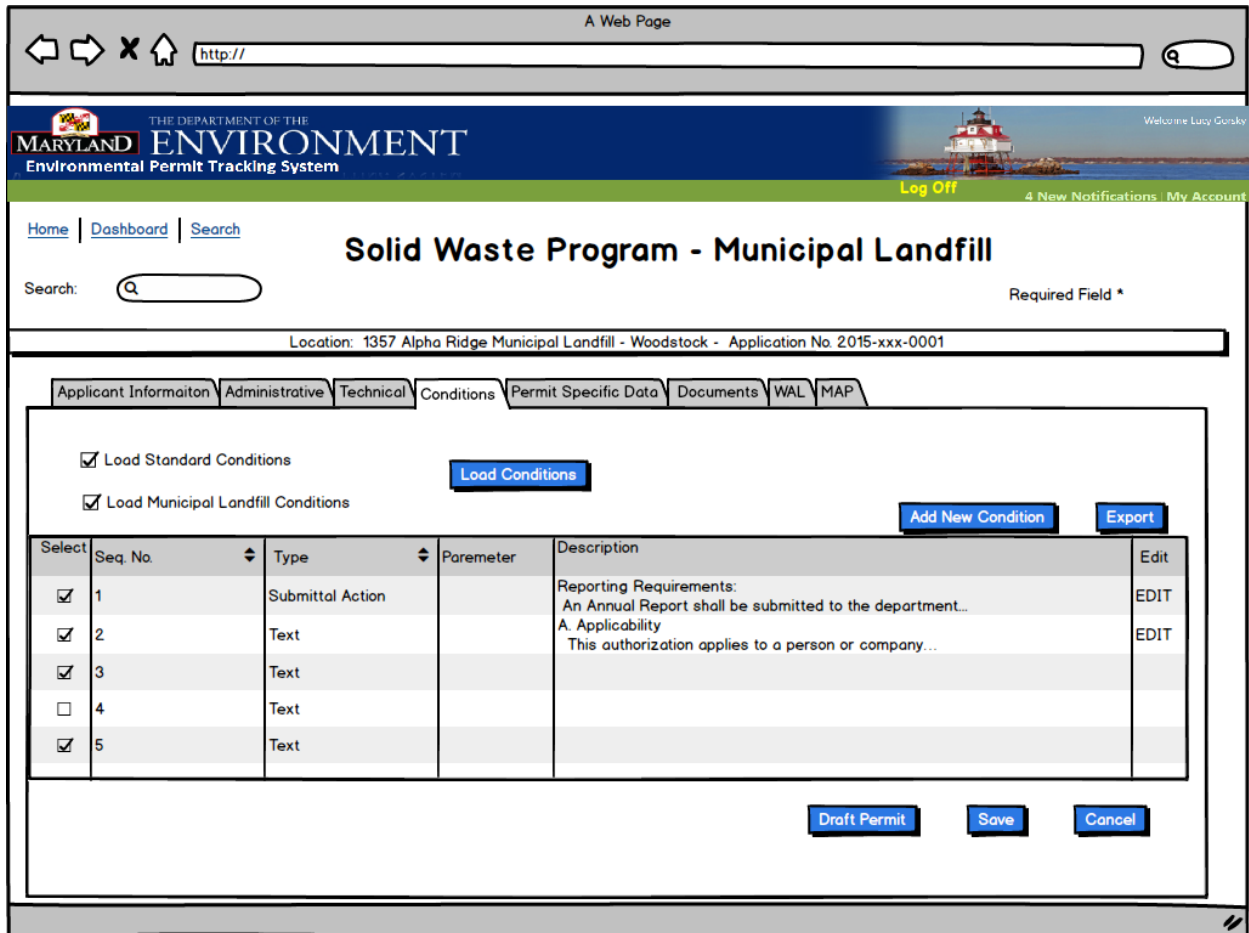


Figure 25: Define Conditions and Draft Permit

### 4.3 Sample Search Feature

The Search features provides a means for the MDE Program user to search and filter the results to identify one or more permits based on various criteria. This is a more comprehensive search that allows the user to search by keywords and / or filter for a specific category. The filters can be saved to allow the user to tailor the default filters. The following wireframe depicts the search and the various criteria.



Home | Dashboard | Search

Clear Search  Search

**Search Filters**

Only those associated with me

**Category**  
[Display All](#)  
[Applications](#)  
[Existing Permits](#)  
[Exemptions](#)

**Status**  
[Display All](#)  
[Active](#)  
[Inactive](#)  
[Withdrawn](#)

**Media**  
[Display All](#)  
[Land](#)  
[Air](#)  
[Water](#)

**Programs**  
[Display All](#)  
[Air Programs](#)  
[Air Quality Compliance](#)  
[Air Quality Permitting](#)  
[Land Programs](#)  
[Oil Control](#)  
[Solid Waste](#)  
[Waste Diversion & Animal Feeding](#)  
[Controlled Hazardous](#)  
[Recycle](#)  
[Scrap Tires](#)

**Permit Types**  
[Display All](#)  
[Refuse Disposal](#)  
[Municipal Landfill](#)  
[Rubble Landfill](#)  
[Industrial Landfill](#)  
[Land Clearing Debris](#)  
[Processing Facility](#)  
[Transfer Station](#)  
[Processing Facility &](#)

**County**  
[Display All](#)  
[Allegany](#)  
[Anne Arundel](#)  
[Baltimore](#)  
[Calvert](#)

**Date of Issuance**

**Expiration Date**

Table | Map

6 Record(s) Selected [Export](#) [Labels](#) [Export](#)

Permit No.	County	Permittee	Category	Status	Large	Adv	Pending	Project Manager	Date	
<a href="#">AA123456</a>	AA	Tom Smith	Existing Permits	Active	No	No		Bill Jones	11/15/2010	<a href="#">MAP</a>
<a href="#">AA23423</a>	AA	Tom Smith	Existing Permits	Active	No	No		Bill Jones	11/16/2010	<a href="#">MAP</a>
<a href="#">AA291891</a>	AA	Tom Smith	Existing Permits	Active	No	No		Bill Jones	11/17/2010	<a href="#">MAP</a>
<a href="#">AA192911</a>	AA	Tom Smith	Existing Permits	Active	No	No		Bill Jones	11/18/2010	<a href="#">MAP</a>
<a href="#">AA10099</a>	AA	Tom Smith	Existing Permits	Active	No	No		Bill Jones	11/19/2010	<a href="#">MAP</a>
<a href="#">AB119291</a>	AA	Tom Smith	Existing Permits	Active	No	No		Bill Jones	11/20/2010	<a href="#">MAP</a>

Figure 26: Search Page

MDE Program user can view more information about a permit by selecting the permit number.

The screenshot shows the Maryland Environmental Permit Tracking System interface. On the left is a sidebar with search filters for Category, Status, Media, Programs, Permit Types, and County. The main area displays a table of 6 records. A pop-up window is open for permit AA123456, showing the following details:

Permit No.	County	Permittee	Category	Status	Large	Adv	Pending	Project Manager	Date
AA123456	AA	Tom Smith	Existing Permits	Active	No	No		Bill Jones	11/15/2010

**Permit ID:** AA123456  
**Received On:** 11/15/2010  
**Issued Date:** 11/30/2010  
**Expiration Date:** 11/30/2015  
**Project Name:** Solid Waste Removal Baltimore County  
**Description:** This is a permit that dictates the removal of solid waste in Baltimore County. Additional permit descriptions would go in this text box. This is a permit that dictates the removal of solid waste in Baltimore County. Additional permit descriptions would go in this text box. This is a permit that dictates the removal of solid waste in Baltimore County. Additional permit descriptions would go in this text box. This is a permit that dictates the removal of solid waste in Baltimore County. Additional permit descriptions would go in this text box.

Figure 27: Search Permit: Permit Information

The EPTSM system can optionally provide a view of permits within an area.

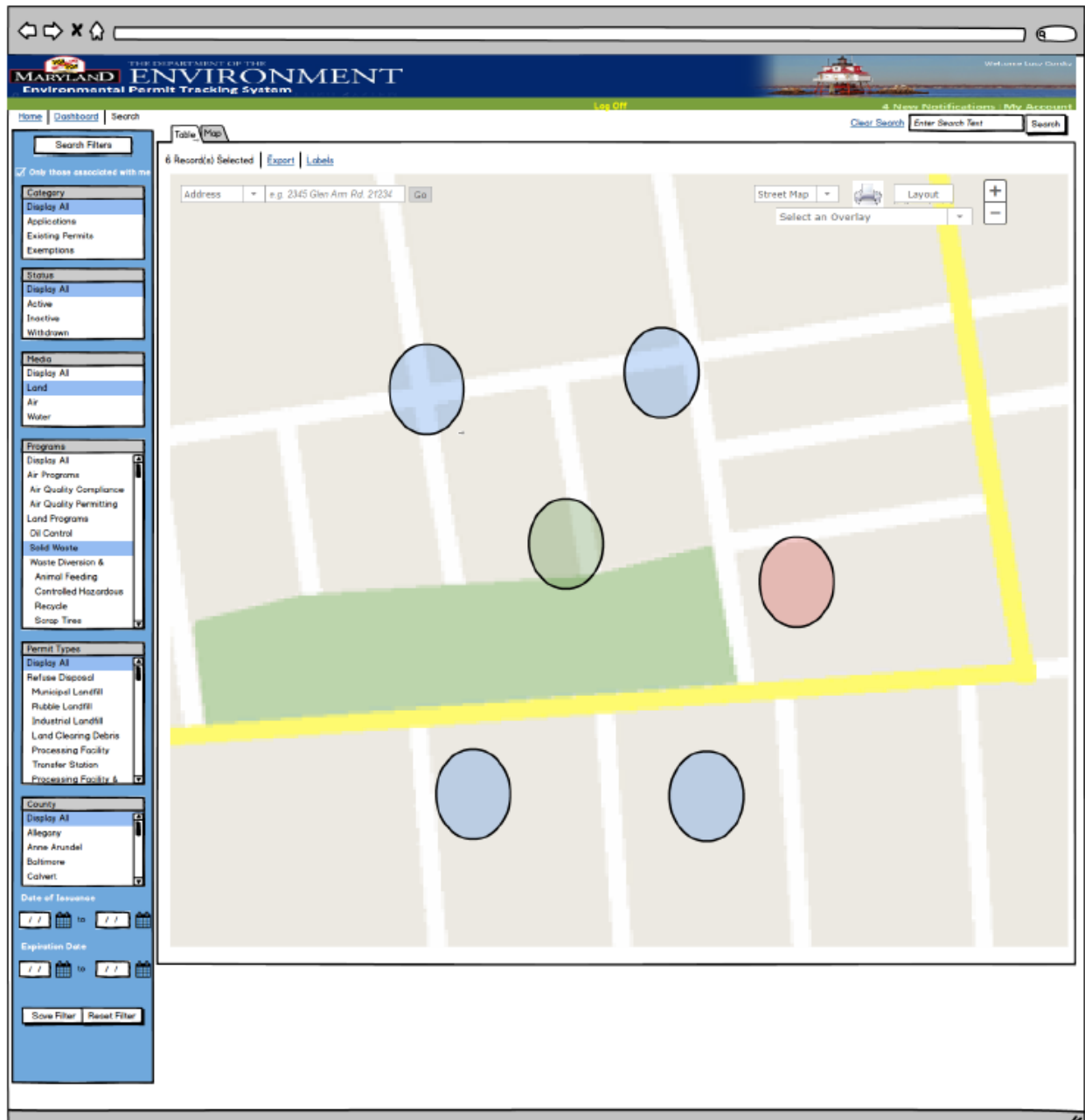


Figure 28: Search Permit: Searched Permits Map View

The MDE user can view more information about a permit by selecting a pinpoint on the map.

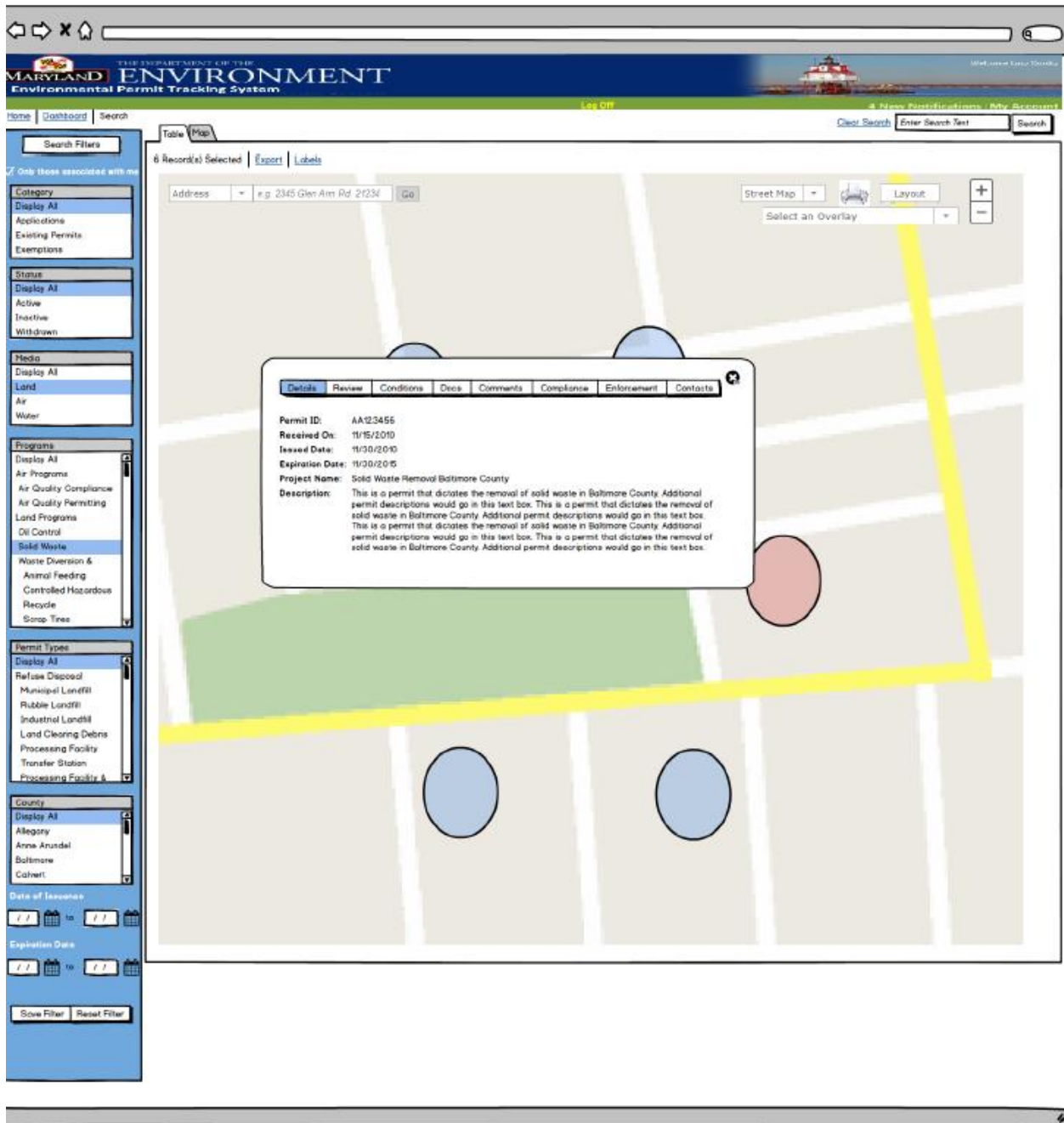


Figure 29: Search Permit: View Permit Information from Map View

## 5 OPERATIONAL, TECHNICAL AND NON-FUNCTIONAL REQUIREMENTS

This section contains the operational, technical, and non-functional requirements that specifies criteria that do not result in observational behavior. The following sections detail the requirements.

General Operational Requirements are as follows:

Non-Functional ID	Requirement
NFR1.00100	The system shall use a .NET environment for the front end, and be capable of using an Oracle database backend.
NFR1.00110	The system shall be compatible at a minimum with the following browsers: IE (version 8 and higher) and Chrome.
NFR1.00120	<p>The system’s user interface shall support MDE's efforts in ensuring the solution complies with Cross-Media Electronic Reporting Regulation (CROMERR). CROMERR provides the legal framework for electronic reporting from regulated entities to the Environmental Protection Agency (EPA) and to states, tribes, and local governments that are authorized to administer EPA. The CROMERR Electronic main processes are:</p> <ul style="list-style-type: none"> <li>• Registration Process</li> <li>• Signature Process</li> <li>• Submission Process</li> <li>• Signature Validation Process</li> <li>• Copy of Record</li> </ul> <p>Please refer to <a href="http://www2.epa.gov/cromerr">http://www2.epa.gov/cromerr</a> for information around the technical requirements.</p> <p>Note: MDE will be responsible for obtaining the approval.</p>
NFR1.00130	The system’s user interface shall comply with Section 508 of the Americans with Disability Act as signed into law in 1990.
NFR1.00140	The system shall implement a web-based interface that provides an intuitive and consistent navigation that guides a user through the permitting activities with limited scrolling or clicking to be less than three clicks when initiating a function.
NFR1.00150	The system shall allow the capability to paste information copied from an external Word document or spreadsheet and copy data from the application to an external document.
NFR1.00160	The system shall minimize the need to enter the same data multiple times by presenting the data when it is available and carrying information forward to the next screen.

Non-Functional ID	Requirement
NFR1.00170	The system shall provide the capability for MDE users to access the system remotely for authorized employees through MDE's firewall.
NFR1.00180	The system shall clearly indicate mandatory fields as 'Required'.
NFR1.00190	The system shall provide context-sensitive help, tailor-made for specific users within a section, division, or program.
NFR1.00200	The system shall provide a way for users to manage preferences and system notifications.
NFR1.00210	The system shall present screens and data fields that are relevant to the user without having to click multiple times to get to their assigned program area.
NFR1.00220	The system shall convert 412 existing PowerBuilder screens to .Net.
NFR1.00230	The system shall redesign 125 commonly used UI's into a more user friendly UI.
NFR1.00240	The system shall ensure that the UI displays the data within fields completely, so that the user does not need to expand the field or is unable to view the content.

### 5.1 Security

The EPTSM system will be a secure system that ensures unauthorized access to the system and data. The system will comply with Maryland Department of Information prescribed security measures including, infrastructure security, cyber security, application security, user password creation rules, and databases audit. Please refer to <http://doit.maryland.gov/publications/doitsecuritypolicy.pdf> for current security requirements.

Non-Functional ID	Requirement
NFR3.00100	The system shall implement system and information integrity security controls including flaw remediation, information system monitoring, information input restrictions (such as validating input in all Web applications), and information output handling and retention, in compliance with the State of Maryland Information Security Policy. <a href="http://doit.maryland.gov/publications/doitsecuritypolicy.pdf">http://doit.maryland.gov/publications/doitsecuritypolicy.pdf</a>

Non-Functional ID	Requirement
NFR3.00110	<p>The system shall implement MDE's security best practices in compliance with the State of Maryland Information Security Policy for the mobile devices and mobile application.</p> <p><a href="http://doit.maryland.gov/publications/doitsecuritypolicy.pdf">http://doit.maryland.gov/publications/doitsecuritypolicy.pdf</a></p>
NFR3.00120	<p>The system shall authenticate MDE's internal users using MDE's Active Directory. Note: MDE's Active Directory shall not be exposed outside the firewall.</p>
NFR3.00130	<p>The system shall use forms-based authentication for authenticating external users and follow DoIT's security requirements for password protection.</p>
NFR3.00140	<p>The system shall limit creation of users with System Admin rights to two. The system administrators will have no access to functional components.</p>
NFR3.00150	<p>The system shall provide an interface to link Active Directory users with application roles. The Application Administrator shall designate a role for the user.</p>
NFR3.00160	<p>The system shall maintain 'roles' with appropriate permission system-wide, module-wise, and/or specific page/field, and reports.</p>
NFR3.00170	<p>The system shall provide a role-base access control strategy to enable or restrict a user's access to system resources. The current roles and access levels must be retained.</p>
NFR3.00180	<p>The system shall ensure all users are mapped to at least one role.</p>
NFR3.00190	<p>The system shall create users by Application Administrators and only such user can edit Master data for the system.</p>
NFR3.00200	<p>The system shall maintain the legacy permittee and a mechanism to create login credentials for the existing external users</p>
NFR3.00210	<p>At the database level, the system shall ensure that only the database administrator user shall be able to login to the database directly. All other database users shall be restricted to the system interface and cannot login to the database directly.</p>

Non-Functional ID	Requirement
NFR3.00220	<p>After the user has successfully logged in, the system shall display the following welcome message: <i>Welcome, &lt;user first name Last Name&gt;</i>.</p> <p><i>There have been &lt;Number of attempts&gt; unsuccessful attempt to logon with your ID. You are logged on to the &lt;dbname&gt; database.</i></p> <p><i>Access to this system is restricted to authorized users only and limited to approved business purposes.</i></p> <p><i>Last Logon: &lt;date and time ET&gt;</i></p>
NFR3.00230	The system shall keep track of the number of unsuccessful attempts, since the last successful attempt, and the date and time of the last successful login.
NFR3.00240	The system shall lock a user's account after the third consecutive unsuccessful login attempt.
NFR3.00250	The system shall allow a user to unlock their account.

## 5.2 Audit Trail

The EPTSM system shall have audit trails for the critical auditable components. The audit logging requirements include:

Non-Functional ID	Requirement
NFR2.00100	The system shall be capable of automatically capturing audit trail entries whenever a record is created, modified or deleted.
NFR2.00110	The system's audit trail content shall include the identification of the User making the entry, the date and time stamp, the record, the original value, and the changed value.
NFR2.00120	The system shall implement an audit trail logging for each record held in the database table object. The record shall have created by, create date, last modified by and last modified date for each record held in the database.
NFR2.00130	The system shall track separately the financial data and changes made to an entry such as the system generated fee, modification or wavier of a fee that identifies the user making the entry, date and time stamp, original value, new value and reason for change.



NFR2.00140	The system shall track separately any approval decisions, status changes and/or override function used by the user. Examples are approvals, rejections, withdrawal, partial payments as fully paid, exemptions, reducing and/or nullifying penalty.
NFR2.00150	The system shall record the key factor (permit number), user affecting the change / creation, data element being changed, previous value, resulting value, date/time of change.
NFR2.00160	The system shall audit all user logins and logouts at the application level as well as database level.
NFR2.00170	The system shall allow an authorized user to view and/or print an audit trail log by specifying zero or more of the following: a date range, user name, and permit number.

### 5.3 Data Currency

Non-Functional ID	Requirement
NR1.00360	The system shall be a real-time system, that is, the data shall be as current as the latest posting of data.

### 5.4 Reliability

Reliability is the probability that the system will be able to process work correctly and completely without being aborted.

Non-Functional ID	Requirement
NFR1.00250	The system shall be available 24x7 subject to MDE's preventive maintenance schedule.
NFR1.00260	The system shall be hosted at MDE and subject to MDE's routine maintenance. The system components shall be selected and/or developed to achieve this reliability for the system.
NFR1.00270	The system shall be stable and available 99.9% of the time and the downtime will not exceed 4 hours a month.

## 5.5 Recoverability

Non-Functional ID	Requirement
NFR1.00280	The system shall have a well-documented recovery procedures for the components, sub-systems or the entire system if failure occurs.
NFR1.00290	The system shall poll all its components and shall send appropriate message to the administrators clearly indicating the component(s) that failed along with logging such information where possible.
NFR1.00300	The system shall have well-documented recovery procedures for the components, sub-systems, or the entire system if failure occurs.
NFR1.00310	The system shall provide disaster recovery and restart capabilities to minimize data loss and/or to maximize system availability. The recovery procedure shall describe both system and data rebuilds, where necessary from the backup file(s) / copies.

## 5.6 System Availability, Fault Tolerance and Performance

Non-Functional ID	Requirement
NFR1.00320	The system shall comply with MDE's existing IT policies and agreements with OEM related to failures.
NFR1.00330	The system response time to display data on screen or print reports should be under 500ms from the time the action is initiated.
NFR1.00340	The system shall continue to operate if any of its non-dependent component / sub-system fails.
NFR1.00350	The system shall display an appropriate message when the system is unavailable.

## 5.7 Capacity

The EPTSM system shall have the capacity to handle the types of volumes described below:

- TEMPO has 281 active MDE users.
- MDE tracks 4,500 new permits issued in TEMPO annually.
- TEMPO supports approximately 40,000 active permits.
- Permit Types: approximately 80
- Types of compliance and/or monitoring reports: approximately 40

- Number of inspections, audits and spot checks: approximately 19,000 (from 7/1/2014 – 6/30/2015)

Database Statistics:

- Agency Interest rows: 940,797
- Permit types rows: 143

## **5.8 Data Retention**

- The EPTSM system is the primary system of record for MDE. There is no system specific data retention requirement as all system data shall be available live online.
- The periodic backup of EPTSM system data shall follow MDE's standard retention policy in force.

## 6 GLOSSARY

Term	Definition
Applicant	The applicant is the person who submits the application. They may or may not be responsible for the permit.
Approval	An approval is any type of permission to perform an activity that the Department issues such as a permit, registration, certification or license. An approval can also be a particular type of permission to perform a particular function where the Department reviews an activity and that activity is being performed in accordance with Departmental methods and accepted procedures.
Case	A case is general term used to encompass the areas that EPTSM supports. EPTSM supports (1) an application for approval/permit, (2) the renewal of an existing approval/permit, (3) an alleged violation or incident that was called in but may or may not involve a site or organization that is under an approval.
Certification	A certification is an approval mechanism that recognizes an individual or a facility as having met special qualifications.
General Permit	A permit issued for a sector of applicants that perform similar processes. This provides an expedited process for both the applicant and the permit issuer as new applicants only must be registered under the general permit, rather than complete the public participation process where all terms of the permit are under scrutiny.
Individual Permit	A permit issued to a specific applicant for their specific activities at a specific location.
License	A permission granted by competent authority to engage in a business or occupation or in an activity otherwise unlawful.
Modification	Specific conditions are changed in a general or an individual permit during the term of that permit. Usually the permit number is changed to indicate that it is a modification.
Permit	An authorization, license, or equivalent control document issued by EPA or an approved state agency to implement the requirements of an environmental regulation; e.g. a permit to operate a wastewater treatment plant or to operate a facility that may generate harmful emissions.

Term	Definition
Permittee	The person or organization who is legally responsible for meeting the conditions of the permit.
Registration	An administrative action that provides coverage under a general permit for the remaining term of that permit.
Renewal	When the effective date expires for an individual or general permit, renewal (with or without modifications) allows a continuation of the permit for another specific period of time.
Transfer	This occurs when the owner or operator of an AI changes and the existing permit is given to the new owner or operator who assumes responsibility for compliance with the permit terms and conditions.

## 7 REQUIREMENTS TRACEABILITY

The Requirements Traceability Matrix (RTM) provides a method for tracking the functional requirements and their implementation through the development process.

The RTM includes columns for the following informational items.

- Requirement Identifier, Functional Requirement and Description
- FRD Reference
- Verification Method (future)
- Requirement reference in Test Plan (future)

The EPTSM RTM follows the activities as defined in Section 2.2. The requirements are numbered to coincide with the activities and sub-activities. For instance, 1.100100, the first digit is the activity (A1 – Manage Programs, the second and third digits represent the sub-activity (A1.1.0 – Define MDE Organizational Structures, User and Roles), and the last three are sequential numbering starting with 100. Please refer to Appendix A - EPTSM Requirements Traceability Matrix.

### A1. Manage Programs

A1.1 Define MDE Organizational Structures, Users and Roles, starting with 1.1.00100

A1.2 Define Permit Types and Characteristics, starting with 1.2.00100

A1.3 Define Work Activity Log Parameters, starting with 1.3.00100

A1.4 Forms and Templates by Permit Type, starting with 1.4.00100

A1.5 Provide GIS Capability, starting with 1.5.00100

### A2. Process Applications

A2.1 Accept Public Website Applications, starting with 2.1.00100

A2.2 Receive and Process Applications, starting with 2.2.00100

A2.3 Find Applicant, starting with 2.3.00100

A2.4 Upload Documents and Plans, starting with 2.4.00100

A2.5 Initiate and Manage Work Activity Log, starting with 2.5.00100

A2.6 Import Data from External Files, starting with 2.6.00100

### A3. Approve and Maintain Permits

A3.1 Approve Application and Modification, starting with 3.1.00100

A3.2 Issue Permits and Conditions, starts with 3.2.00100

A3.2.1 Renewal / Reminder Notifications, starting with 3.2.10100

A3.3 Process Compliance Reports, starting with 3.3.00100

A3.4 Advise and Inform Permittees, starting with 3.4.00100

### A4 Inspect and Enforce Compliance

A4.1 Inspection Request, starting with 4.1.00100

A4.2 Conduct Inspection, starting with 4.2.00100

A4.3 Document and Communicate Findings, starting with 4.3.00100

A4.4 Conduct Enforcement Action, starting with 4.400100

A4.5 Document Enforcement Activities, starting with 4.5.00100

A5. Provide Information and Reports

A5.1 Search and View Feature, starting with 5.1.00100

A5.2 Ad Hoc Queries and Data Analysis, starting with 5.2.00100

A5.3 Communications / Notifications, starting with 5.3.00100

A5.4 TEMPO Reports, starting with 5.4.00100

A6. Manage Financial Transactions

A6.0 Manage Financial Transactions, starting with 6.0.00100

A6.1 Map to FMIS Account, starting with 6.1.00000

A6.1.1 Determine Amount Due, starting with 6.1.10100

A6.1.2 Record Payment, starting with 6.1.20100

A6.2 Request Invoice, starting with 6.2.00100

A6.3 Reconcile and Reports, starting with 6.3.00100

## 8 APPENDIX A – REQUIREMENTS TRACEABILITY MATRIX

The functional and non-functional requirements included in this document are captured in the EPTSM Requirements Traceability Matrix excel document: MDE EPTSM Requirements Traceability Matrix\_v3.xlsx.



MDE EPTSM Master  
Requirements Traceat



Overarching							
Identifier	Functional Requirement	Description	Functional Area	TORFP	FRD Source	Verification Method	Requirement Reference in Test Plan
0.0.00010	The system manages cases, and a case may be (1) an application for approval/permit, (2) the renewal of an existing approval/permit, (3) an alleged violation or incident that was called in but may or may not involve a site or organization that is under an approval.	Manage Cases			Section 2.4		
0.0.00020	The system shall provide support for the identification, registration and tracking of Registered Entities that conduct regulated activities and overseen by an MDE office, but do not require an application.	Manage Cases - non-permitted					
0.0.00030	The system shall provide support for the management of a case that is created from a reported incident, assigning each with a unique identifier. A reported incident can be reported by any MDE staff or any general public entity.	Manage Cases - Incidents					
0.0.00040	The system shall provide for the assignment of unique internal identifier for each application for approval or renewal of an approval/permit.	Manage Cases -Unique identifier for approval or a renewal.					
0.0.00050	The system shall provide for the assignment of multiple user-defined identifiers for each application for approval/permit whether new or renewal.  Note: Some permits will have a permit number and other identifiers such as an EPA ID and/or NPDES number as defined by the program.	Manage Cases -Unique identifier for approval or a renewal.					

Overarching							
Identifier	Functional Requirement	Description	Functional Area	TORFP	FRD Source	Verification Method	Requirement Reference in Test Plan
0.0.00060	The system shall allow the user defined identifier for an approval/ permit to be reusable; this may occur (not always) when the case is a renewal of an existing approval / permit.	Manage Cases -Unique identifier for approval or a renewal.					
0.0.00070	The system shall allow an approval/permit to be renewed an unlimited number of times and when renewed, the permit number for a given location will be the same, the approval year and the permit trigraphy renewal format differs by permit type, and will be defined by the program.	Manage Cases -Unique identifier for approval or a renewal.					
0.0.00080	The system shall provide for the definition of many types of approvals (e.g. permit types), each with a different set of criteria in terms of naming, expiration dates and conditions in which the approval expires, conditions for approval, templates for application data capture, templates for data capture of compliance reporting, work activity log step and elapsed time requirements, user identifier naming convention, and critical components that mandate that if one changes the entire approval/permit must be reissued.	Manage Cases					

Overarching							
Identifier	Functional Requirement	Description	Functional Area	TORFP	FRD Source	Verification Method	Requirement Reference in Test Plan
0.0.00090	The system shall have 5 critical components beyond the date that define an approval or permit which constitute the conditions for which MDE granted an activity that is regulated due to potential environmental impacts: (1) a location or site where the activity will take place, (2) equipment that is being approved for operation at a particular location or site, (3 and 4) the permittee and the representative (person) responsible for compliance with the terms of the approval, (5) the activity that is being approved which can be also defined as the permit type.	Manage Cases					
0.0.00100	The system shall have 5 critical components in addition to the date of incident that define an incident or investigated allegation of possible violation: (1) a location or site where the regulated activity alleged violation was taking place, (2) equipment, if any, that is being used for the regulated activity alleged violation at a particular location or site, (3 and 4) the permittee and the representative (person) responsible for compliance for the site and/or the equipment, (5) the regulated activity that is being investigated.	Manage Cases					

Overarching							
Identifier	Functional Requirement	Description	Functional Area	TORFP	FRD Source	Verification Method	Requirement Reference in Test Plan
0.0.00110	The system shall track each component on its own as well as each component's relationship to one or more approval or a reported incident, and dates in which the relationship was started and ended.	Manage Cases -					
0.0.00120	The system shall support data collection, search, query and reporting functions for documenting and approving an application.	Manage Cases					
0.0.00130	The system shall support data collection, search, query and reporting functions related to a case.	Manage Cases - General					
0.0.00140	The system shall support the process, documentation, notifications, referrals and fee assessments related to enforcement actions.	Manage Cases - Enforcement					
0.0.00150	The system shall support compliance reporting through various types of notifications and letters to applicants, generation of reporting templates, data collection of reported data elements, values and comments, view of comparison for specific data elements to thresholds and to previously reported values, and documentation of remediation and mitigation plans.	Manage Cases - Compliance Reporting			Section 2.4.3 - A3.3		

Overarching							
Identifier	Functional Requirement	Description	Functional Area	TORFP	FRD Source	Verification Method	Requirement Reference in Test Plan
0.0.00160	The system shall recognize the regulated activity location or site as having a unique identifier that refers to a set of one or more multiple sub-components: (1) the street address, (2) County (3) the geographic perimeter, (4) the nature of the site as a structure, room within a structure, a defined section of the structure (room, floor, or suite), land site, body of water, bridge or dam.	Unique Site Identification					
0.0.00170	The system shall be capable of preventing potential duplicate entries for locations, organizations, or persons when creating a new permit application, or synchronizing inspection data from the mobile application.	Unique Identifier					
0.0.00180	The system shall provide a unique system identifier for each reported incident event.	Unique Identifier - Incident					
0.0.00190	The system shall provide for a unique system identifier for each inspection event.	Unique Identifier - Inspection Event					
0.0.00200	The system shall provide a unique system identifier for each open enforcement action.	Unique Identifier - Enforcement event					
0.0.00210	The system shall provide the capability to create a component by duplicating and editing an existing component.  Note: Component is defined as a permit, compliance evaluation, permit application	Duplicating an existing component					
0.0.00220	The system shall provide the capability of copying from one or more source documents into one or more destination documents.	Duplicating an existing component					

Overarching							
Identifier	Functional Requirement	Description	Functional Area	TORFP	FRD Source	Verification Method	Requirement Reference in Test Plan
0.0.00230	The system shall provide a way to document and retrieve additional organizations and representatives (persons) and their relationship to the approval or reported incident; for example, owner of the site, manager of the site or owner's representative and date.	Define relationships					
0.0.00240	The system shall have the ability to define relationships: organizations and people, organizations and organizations, and person and person.	Define relationships					
0.0.00250	The system shall support the process of drafting a permit, validating the conditions of the permit, issuing an official approval and generating documents that may be required to be forwarded to the applicant with the approval.	Create a draft and final official approval and conditions.					
0.0.00260	The system shall support the process and documentation of conducting an onsite inspection, generating and forwarding an inspection report, by providing the capability to use a laptop computer and may provide additional capability for other mobile devices.	Onsite Mobile Application			Section 2.1		
0.0.00270	The system shall support onsite inspection by providing software that provides the capability to capture data collection in offline mode, with the ability to synchronize the data to the database when an online connection is available.	Onsite Mobile Application			Section 2.1		
0.0.00280	The system shall provide customized and pre-defined letters and templates, mail merge capabilities, mailing labels, referral emails, notices and reminders.	Letters, mailing labels, notices and emails.			Section 2.4.3 - A3.4		

Overarching							
Identifier	Functional Requirement	Description	Functional Area	TORFP	FRD Source	Verification Method	Requirement Reference in Test Plan
0.0.00290	The system shall support the data capture and review of financial transactions, fees assessed, payments received, and outstanding balances for applicants, permit holders, people and organizations that have been fined. <del>or otherwise received an invoice</del>	Fee Tracking					
0.0.00300	The system shall accept case related information from externally received data files and allow the user to identify the program, what the data file is for, so that the system can associate the data file to the appropriate case.	Support uploading information to add to a case portfolio of information.					
0.0.00310	The system shall allow the selection of data elements using key data fields for filtering and sorting, for creation of a data file that can be exported for use in other systems, including in MS Excel.	User Defined Export			Section 2.4.5 - A5.2		
0.0.00320	The system shall include an annexed document management system as a referenceable repository for documents, photos, plans and images related to a case.	Document Management					
0.0.00330	The system shall link each inspection event to an application, an approval, a reported incident, or a Registered Entity.	Link an inspection to a case and its components.					

Overarching							
Identifier	Functional Requirement	Description	Functional Area	TORFP	FRD Source	Verification Method	Requirement Reference in Test Plan
0.0.00340	The system shall link an enforcement action to an Activity Site Location and an Activity Responsible Entity (organization and or person).	Link enforcement action to a case and its components.					
0.0.00350	The system shall prevent the creation of duplicate records when a user attempts to enter a case or a critical component of a case.	Improve Efficiency					
0.0.00360	The system shall require a particular piece of information (e.g., permit number) to be entered via text entry only once during the case entry/approval/notification process.	Improve Efficiency					



Overarching							
Identifier	Functional Requirement	Description	Functional Area	TORFP	FRD Source	Verification Method	Requirement Reference in Test Plan
0.0.00370	The system shall maintain and display workflow progress on applications and approvals, specifically milestone dates achieved such, as application received date, public review dates, public hearing dates, permit issue date, scheduled renewal date, actual renewal date, compliance report date due, actual report receipt, and outstanding issues.	Maintain and display work activity log and elapsed times per milestone.					
0.0.00380	The system shall incorporate GIS mapping methods to allow a user to specify an area to display permits and incidents issued within that area.	GIS					
0.0.00390	System should provide a Read-Only interface that depicts an abbreviated chronology, or snapshot, of certain logged events within a given process life cycle - namely Create, Edit, Delete events to documents, or changes in the disposition or status for an active enforcement action.	Audit trails		x	x		
0.0.00400	The system shall store a frozen image or view that cannot be changed as the final copy of a application, permit, inspection reports, supporting document.	Final Documents					

A1 Manage Programs							
Identifier	Functional Requirement	Description	TORFP	Meetings	FRD Source	Verification Method	Requirement Reference in Test Plan
<b>A1.1 Define MDE Organizational Structures, Users and Roles</b>							
1.1.00100	The system shall assign organizational areas to system users for use to select defaults and link to relevant permit types and templates.	Define MDE organization programs and offices	Section 2.3 bullet 4 and 18	x	Section 2.4.1 A1.1		
1.1.00120	The system shall allow an authorized user to assign user roles for access to specific functions.	User profiles		x	Section 2.4.1 A1.1		
1.1.00130	The system shall allow an authorized user to enable and disable accounts.	Manage accounts		x	Section 2.4.1 A1.1		
1.1.00140	The system shall allow an authorized user to modify account information.	Manage accounts		x	Section 2.4.1 A1.1		
1.1.00150	The system shall support programs that are not associated with a permit and perform the same activities of receiving plans, reports, conduct inspections, enforcement and need to track the work activities.	Define MDE organization programs and offices		x	Section 2.4.1 A1.1		
1.1.00160	The system shall recognize the user as a member of an administration and regulatory program and default data access and selections to the user's organizational area.	User profiles		x	Section 2.4.1 A1.1		
<b>A1.2 Define Permit Types and Characteristics</b>							

A1 Manage Programs						Verification Method	Requirement Reference in Test Plan
Identifier	Functional Requirement	Description	TORFP	Meetings	FRD Source		
1.2.00100	The system shall allow authorized users to define permit types for their organization and specify characteristics and business rules.  Examples: 1. Characteristics can be defined as: type of approval, permit type code, permit number mask. 2. Business Rules: Examples: application turn around period, Is public hearing required?	Define Permit Types and characteristics	Section 2.3 bullet 4 and 18	x	Section 2.4.1 A1.2/ Table 5		
1.2.00110	The system shall allow a program to specify a menu of fees that are applicable to their program, by permit type, fee type and when needed conditional fees based on program specific criteria.  Note: Fee types include but not limited to applications, permits, registrations, violations, penalties.	Fees		x	Section 2.4.1 - A1.2		
1.2.00120	The system shall calculate fees based on business rules and storing fees that may be tiered.	Fee Calculation		x	Section 2.4.1 - A1.2		

A1 Manage Programs						Verification Method	Requirement Reference in Test Plan
Identifier	Functional Requirement	Description	TORFP	Meetings	FRD Source		
1.2.00130	The system shall pre-populate a list of standard permit conditions to be applied to any permit type.	Conditions Standard - Template		x	Section 2.4.1 - A1.2		
1.2.00140	The system shall pre-populate a list of program-specific permit conditions that are linked to a permit type.	Conditions Program Specific-Template		x	Section 2.4.1 - A1.2		
1.2.00150	The system shall allow an authorized MDE user the ability to edit, add or remove items from a pre-populated list or template.  Note: Applicable to all templates	Conditions Program Specific-Template		x	Section 2.4.1 - A1.2		
1.2.00160	The system shall allow a MDE authorized user to define default evaluation checklists or forms by permit type, program and compliance activity.	Checklist or Form	Section 2.3 bullet 12	x	Section 2.4.1 - A1.2		

A1 Manage Programs							
Identifier	Functional Requirement	Description	TORFP	Meetings	FRD Source	Verification Method	Requirement Reference in Test Plan
1.2.00170	The system shall store approval type to include but are not limited to: Individual Permit, General Permit, Registration, Certification, License, EPA, State GP.	Define Approval types		x			
1.2.00180	The system shall store relationship types by program.	Define Approval types	Section 2.3, bullet 14	x			
1.2.00190	The system shall allow an authorized program user to make changes to program specific templates, WAL, and default lists.	Manage program specific template, lists, WAL	Section 2.3, bullet 19	x			
A1.3 Define Work Activity Log Parameters							
1.3.00100	The system shall store work activity log templates for each application, inspection, compliance and enforcement activities by program, allowing each MDE Program to define expected elapsed time per step for each permit, inspection, compliance activities and enforcement type.	Work Activity Log by permit type		x	Section 2.4.1, A1.3		
1.3.00110	The system shall allow an authorized MDE user to define work activity log steps as optional.	Work Activity Log -Template		x	Section 2.4.1, A1.3		
1.3.00120	The system shall allow an authorized user to define a new task, or pair of tasks, for the work activity log.	Work Activity -Template		x	Section 2.4.1, A1.3		
A1.4 Forms and Templates by Permit Type							

A1 Manage Programs							
Identifier	Functional Requirement	Description	TORFP	Meetings	FRD Source	Verification Method	Requirement Reference in Test Plan
1.4.00100	The system shall build and display the application input page and pages specific to the permit type for MDE's 12 environmental programs according to the program's defined template.  Note: Although not all programs issue permits they will need to register sites, responsible entities and track information submitted or reported through inspections.	Create UI pages specific to permit type,	Section 2.3 bullet 11	x	Section 2.4.1 - A1.1		
1.4.00110	The system shall enable the creation of customized data collection user interfaces by permit type for applications.	Forms and Templates by Permit Type		x	Section 2.4 - A1.4		
1.4.00120	The system shall enable the creation of customized data collection user interfaces by permit type for capturing compliance report data.	Forms and Templates by Permit Type		x	Section 2.4 - A1.4		
1.4.00130	The system shall enable the creation of customized data collection report forms by permit type that can printed and included in the permit / license package.	Forms and Templates by Permit Type		x	Section 2.4 - A1.4		
A1.5 Provide GIS Capability							
1.5.00100	The system shall allow a user to define the perimeter of a geographic area of a permit application using a GIS method.	GIS mapping		x	Section 2.4 - A1.5		
1.5.00110	The system shall provide GIS capability while creating a permit application, creating incidents, preparing inspection reports and perform searches to locate permits, violations, define precise mailing address by defining an area on the map.	GIS mapping		x	Section 2.4 - A1.5		

A1 Manage Programs							
Identifier	Functional Requirement	Description	TORFP	Meetings	FRD Source	Verification Method	Requirement Reference in Test Plan
1.5.00120	The system shall support additions of map layers to be integrated such as, floodplain overly by County.	GIS mapping		x	Section 2.4 - A1.5		

A2 Process Applications							
Identifier	Functional Requirement	Description	TORFP	Meetings	FRD Source	Verification Method	Requirement Reference in Test Plan
<b>A2.1 Accept Public Website Applications</b>							
2.1.00100	The system shall allow members of the public to apply for a permit, certification, registration, or other approval types using their web browser. The system shall not be browser specific.	Accept public website applications		x	Section 2.4.2 - A2.1		
2.1.00110	The system shall allow the applicant to upload digitized documents. These digitized documents must be among the approved file types allowed by the Department such as PDF, RTF, and JPG.	Accept public website applications - Documents		x	Section 2.4.2 - A2.1		
2.1.00120	The system shall integrate with a publically accessible online payment feature.	Accept public website applications - Payment		x	Section 2.4.2 - A2.1		
2.1.00130	The system shall include a Public Facing function for online applications.	Accept public website applications		x	Section 2.4.2 - A2.1		
2.1.00140	The system shall provide a user interface that enables the public enroll as an applicant and obtain a username and password.	Accept public website applications		x	Section 2.4.2 - A2.1		
2.1.00141	The system shall allow an external user to register in order to submit online applications and/or submit report data related to a permit.	Accept public website applications - Registration		x	Section 2.4.2- A2.1		



A2 Process Applications							
Identifier	Functional Requirement	Description	TORFP	Meetings	FRD Source	Verification Method	Requirement Reference in Test Plan
2.1.00142	The system shall provide a self-service password reset function to unlock and/or to modify valid users passwords for external users.	Accept public website applications		x	Section 2.4.2- A2.1		
2.1.00143	The system shall provide a self-service function to retrieve forgotten user ID for external users.	Accept public website applications		x	Section 2.4.2- A2.1		
2.1.00144	The system shall inform the MDE program of a external user's intent to apply for a permit on-line.	Accept public website applications		x	Section 2.4.2- A2.1		
2.1.00145	After the review of an application for a new external user, the system shall allow an MDE authorized user to provide the applicant with the procedures to set up logon credentials.	Accept public website applications		x	Section 2.4.2- A2.1		
2.1.00150	The system shall allow an external user to access information regarding the status of their application or permit.	Accept public website applications		x	Section 2.4.2 - A2.1		
2.1.00160	The system shall include a feature to allow online applicants to send a message to MDE regarding an application being submitted or that has been submitted.	Accept public website applications		x	Section 2.4.2 - A2.1		
2.1.00170	The system shall allow the applicant to view in read-only mode all applications or approvals submitted by the applicant and allow the applicant to send additional information.	Accept public website applications		x	Section 2.4.2 - A2.1		

A2 Process Applications							
Identifier	Functional Requirement	Description	TORFP	Meetings	FRD Source	Verification Method	Requirement Reference in Test Plan
2.1.00180	The system shall allow the applicant to create or find their application(s) for permit, certification, registration, accreditation, and other approval types and view any outstanding payment(s) or request(s) for additional information.	Accept public website applications		x	Section 2.4.2 - A2.1		
2.1.00190	The system shall send an email notification to the applicant that the application was submitted successfully.	Accept public website applications		x	Section 2.4.2 - A2.1		
2.1.00200	The system shall store a frozen image or view that cannot be changed as the final copy of the applicant's submission.	Accept public website applications		x	Section 2.4.2 - A2.1		
2.1.00210	The system shall include a public online submission work-flow that notifies the appropriate MDE organization that a application has been submitted and is pending review.	Accept public website application		x	Section 2.4.2 - A2.1		
A2.2 Receive and Process Applications							

A2 Process Applications							
Identifier	Functional Requirement	Description	TORFP	Meetings	FRD Source	Verification Method	Requirement Reference in Test Plan
2.2.00100	The system shall provide an intuitive user interface module for MDE program staff to manage the approval process from creation to completion as well as allow the user to track the progress of the approval process. Different approval types have different steps or tasks and are not the same for all approval types. In many cases, the tasks might be different for the same approval type. For example, the tasks for applications submitted online may be different for applications received in the mail. The system must accommodate these variations.	MDE acceptance of public application		x	Section 2.4.2 - A2.2		
2.2.00110	The system shall assign a unique identifier to an application.	Create unique identifier for the application.		x	Section 2.4.2 - A2.2		
2.2.00120	For specific approval types, the system shall retain the user assigned application identifier as the identifier for the resulting approval/permit. The system shall allow for exceptions where a different resulting identifier is required such as for General Permits.	Create unique identifier for the application.		x	Section 2.4.2 - A2.2		

A2 Process Applications							
Identifier	Functional Requirement	Description	TORFP	Meetings	FRD Source	Verification Method	Requirement Reference in Test Plan
2.2.00130	The system shall provide an indicator to show that the application is new, renewal or a modification.	Indicate the type of application		x	Section 2.4.2 - A2.2		
2.2.00140	The system manages cases and assigns a unique identifier to a case (note: a case may be (1) an application for approval/permit, (2) the renewal of an existing approval/permit, (3) an alleged violation or incident that was called in but may or may not involve a site or organization that is under an approval. )	Creating unique identifiers for a case		x	Section 2.4.2 - A2.2		
2.2.00150	The system shall allow the creator of the new application to assign a unique application number identifier to the application that uses a format specific to the permit type.  Note: in some cases the unique application number can be provided by the system based on permit profile business rules.	User identifier for the application with specific format.		x	Section 2.4.2 - A2.2		
2.2.00160	The system shall assign an identification to the site location to be covered by the application, based on geographic coordinates and/or street address. The application is for a regulated activity to be performed at a defined site location that is covered by the permit type.	Defining an applicant, application site, and permit component		x	Section 2.4.2 - A2.2		

A2 Process Applications							
Identifier	Functional Requirement	Description	TORFP	Meetings	FRD Source	Verification Method	Requirement Reference in Test Plan
2.2.00170	The system shall allow the same site to have a variety of approval types.	Defining an applicant, application site, and permit component.		x	Section 2.4.2 - A2.2		
2.2.00180	The system shall allow the different MDE programs to identify the same site by different names but retain the same system generated unique site identifier.	Defining an applicant, application site, and permit component		x	Section 2.4.2 - A2.2		
2.2.00190	The system shall allow the user to either select a previously defined site location from a map or create a new site based on the site's physical address or GPS coordinates and optionally specify a perimeter for the new site.	Defining an applicant, application site, and permit component		x	Section 2.4.2 - A2.2		
2.2.00200	The system shall have a user interface that identifies required field(s). The system shall allow the system administrator to specify the fields that are required and modify them based on program needs.	Defining an applicant, application site, and permit component		x	Section 2.4.2 - A2.2		
2.2.00220	The system shall store business entity tax identifiers but not social security numbers for individuals related to an application / approval or incident site.	Defining an applicant, application site, and permit component		x	Section 2.4.2 - A2.2		
2.2.00230	The system shall recognize an organization and a person as being two distinct types of entities.	Defining an applicant, application site, and permit component		x	Section 2.4.2 - A2.2		

A2 Process Applications							
Identifier	Functional Requirement	Description	TORFP	Meetings	FRD Source	Verification Method	Requirement Reference in Test Plan
2.2.00240	The system shall recognize either an organization or a person as an permittee.	Defining an applicant, application site, and permit component		x	Section 2.4.2 - A2.2		
2.2.00250	The system shall recognize either an organization or a person as an organization's representative.	Defining an applicant, application site, and permit component		x	Section 2.4.2 - A2.2		
2.2.00260	The system shall allow an authorized user to set the status of a person or organization as "Active " or "Inactive".	Defining an applicant, application site, and permit component		x	Section 2.4.2 - A2.2		
2.2.00270	The system shall capture individual(s) involved with the site and categorize these individuals based on their role(s) with that site. An individual can be a person or an organization and capture the contact information of these individuals. An individual can belong to more than one category. Examples of categories include "property owner", "business owner", and "tenant".	Defining an applicant, application site, and permit component		x	Section 2.4.2 - A2.2		
2.2.00280	The system shall allow the user to designate the responsible person(s) from the list of persons that were involved with the site.	Defining an applicant, application site, and permit component		x	Section 2.4.2 - A2.2		
2.2.00290	The system shall allow a user to enter contact and update contact information for each persons including physical address, mailing address, email address(es), phone number(s), and fax number(s).	Defining an applicant, application site, and permit component		x	Section 2.4.2 - A2.2		

A2 Process Applications							
Identifier	Functional Requirement	Description	TORFP	Meetings	FRD Source	Verification Method	Requirement Reference in Test Plan
2.2.00300	The system shall allow the user to select either US Mail or e-mail as the preferred method of notification.	Defining an applicant, application site, and permit component		x	Section 2.4.2 - A2.2		
2.2.00310	The system shall accept and associate multiple user-defined identifiers for a permit application. Note: Some permits will have a permit number and other identifiers such as an EPA ID and/or NPDES number as defined by the program.	Defining an applicant, application site, and permit component		x	Section 2.4.2 - A2.2		

A2 Process Applications							
Identifier	Functional Requirement	Description	TORFP	Meetings	FRD Source	Verification Method	Requirement Reference in Test Plan
2.2.00340	<p>The system shall allow the user to specify one or more components of an application for an approval. Different approval types have its own component type and each component type has its own data entry form or screen unique to that component. The user shall have the ability to make multiple copies of one or more components of an application with each copy of the component uniquely identified by a system generated identifier and the fields in the copies already populated with data from the original component. The system shall provide an intuitive user interface to allow the user to cycle through the various components easily as well as select a specific component to update or view.</p> <p>Note: OCP enters pages of vehicle data.</p>	<p>Enter application data using customized user interface screen specific to the permit type.</p>		x	Section 2.4.2 - A2.2		



A2 Process Applications							
Identifier	Functional Requirement	Description	TORFP	Meetings	FRD Source	Verification Method	Requirement Reference in Test Plan
2.2.00350	<p>The system shall have data entry screens, customized per approval type, that are grouped into the following categories:</p> <ul style="list-style-type: none"> <li>Application / Permit Identifiers</li> <li>Applicant, Location, Contact Info</li> <li>Administration and Technical reviews</li> <li>Permit Conditions</li> <li>Permit Components</li> <li>Attach Supporting documents</li> <li>Work Activity Log Document</li> </ul> <p>The user shall be able to perform data entry for the above categories in any order and shall be able to navigate among the varies categories quickly. The system administrator shall be able to add new categories per permit type when needed as well as make categories inactive per permit type.</p>	Application navigation		x	Section 2.4.2 - A2.2		
2.2.00370	The system shall provide access to stored information to be used as default when entering a new application for an applicant and/or a permit site location that already exists in the system.	Defining an applicant, application site, and permit component		x	Section 2.4.2 - A2.2		

A2 Process Applications							
Identifier	Functional Requirement	Description	TORFP	Meetings	FRD Source	Verification Method	Requirement Reference in Test Plan
2.2.00380	The system shall display a header on every page so that a user knows what they are working on and where they are in the process.	General - Provide header information for the activity the user is to work on		x	Section 2.4.2 - A2.2		
2.2.00390	The system shall allow an internal user to uploaded application package documents.	MDE searches for applicant and site and enters application information		x	Section 2.4.2 - A2.2		
2.2.00400	The system shall provide a dashboard specific to each participating MDE programs, showing the status of all cases within their area of purview.	MDE searches for applicant and site and enters application information		x	Section 2.4.2 - A2.2		
2.2.00410	The system shall recognize the username and the program the user is registered under (SWP for example), and will provide access to information, application, incidents and permits specific to that program, with an option for the user to view all.	General - Display information based on user-specific profile		x	Section 2.4.2 - A2.2		
2.2.00420	The system shall allow the MDE user to enter information from a paper application into the system using a data entry template specific to the application type.	Enter application using customized user interface screen specific to the permit type.		x	Section 2.4.2 - A2.2		
2.2.00430	The system shall allow application information to be entered as the data is available allowing user to access elements of the application randomly.	Defining an applicant, application site, and permit component		x	Section 2.4.2 - A2.2		

A2 Process Applications							
Identifier	Functional Requirement	Description	TORFP	Meetings	FRD Source	Verification Method	Requirement Reference in Test Plan
2.2.00440	The system shall validate if all mandatory data fields are present only when the creation of the application has been completed and the user so indicates it.  Note: Mandatory fields are clearly identified on the page.	Allows a user to by-pass validation		x	Section 2.4.2 - A2.2		
2.2.00450	The system shall allow the user to indicate that the data entry process have been completed. This will then initiate data validation process. After validation, the system shall prompt the user that data for mandatory field(s) are missing, if any, and other issues.	Validate the application		x	Section 2.4.2 - A2.2		
2.2.00470	The system shall include features to enable the user that saved an application to finish later and to be able to return to the application at the same place where they left off.	Allows a user to resume application at a later time		x	Section 2.4.2 - A2.2		
2.2.00480	<del>The system shall allow a user that has resumed a permit application to edit information that was previously entered.</del>	Resume an incomplete application		x	Section 2.4.2 - A2.2		

A2 Process Applications							
Identifier	Functional Requirement	Description	TORFP	Meetings	FRD Source	Verification Method	Requirement Reference in Test Plan
2.2.00490	The system shall check that the entered dates makes logical sense. This only applies to situations where dates can be compared. It shall not allow the user to specify January 16, 2016 as the date that an application for a permit was received AND January 19, 2014 as the date that the permit itself was issued. This date combination would indicate that the individual requested for something in 2016 that was already received in 2014. The individual must request it first before receiving it.	Validate the application		x	Section 2.4.2 - A2.2		
2.2.00500	The system shall favor data entry styles that make batch data entry tasks easier.  Note: It appears that the only way for the Department to specify the correct data entry style is for the vendor to provide multiple ways to enter the data, test each one, and then the Department picks the one that is the easiest to use. And this is repeated for every data entry screen.	Data entry	x	x	Section 2.4.2 - A2.2		

A2 Process Applications							
Identifier	Functional Requirement	Description	TORFP	Meetings	FRD Source	Verification Method	Requirement Reference in Test Plan
2.2.00510	<p>The system shall include the capability to execute program-specific business rules to validate the data entered by the user. The system shall allow the capability to add new or inactivate existing business rules when needed. The system shall automatically execute the validation when the user deems the data entry as completed and also allow the user to execute the validation at any time.</p> <p>The output screen shall identify the data entry form where the issue occurred, the name of the field, and description of the issue. For example, the user entered "out of compliance" for a line item in the "Inspection Checklist Form" but did not enter any text in the comment field. Thus the form name would be "Inspection Checklist", field name is "Comment", and the description should read "the comment field is required when the status indicates out of compliance."</p>	Validate the application		x	Section 2.4.2 - A2.2		
2.2.00520	The system shall allow multiple rows of data values to be entered, where appropriate, by duplicating an existing data row from one up to N times, where N is a user-specified integer	Data entry		x	Section 2.4.2 - A2.2		

A2 Process Applications							
Identifier	Functional Requirement	Description	TORFP	Meetings	FRD Source	Verification Method	Requirement Reference in Test Plan
2.2.00530	The system shall require that the user specify when the application information is believed to be completed and ready for validation to ensure that mandatory fields are filled in.	Validate the application		x	Section 2.4.2 - A2.2		
2.2.00540	The system shall display multiple errors on the same page when validating an application and the data entry.	Validate the application		x	Section 2.4.2 - A2.2		
2.3.00140	The system shall prompt the user for confirmation when creating a new application if there is already an active approval process of the same permit type. Confirmation is not necessary if there is no active approval process for a permit of that type. Active refers to a permit that has not expired or an approval that has been submitted but has not yet reached to completion. An approval process reaches completion when a permit had been issued or the approval process was terminated for some other reason.	Validation		x	Section 2.4.2 - A2.3		
2.2.00550	The system shall allow the user to indicate a draft version of application is ready for review and a notification is sent to the reviewer.	Allow the Reviewer to review the draft application		x	Section 2.4.2 - A2.2		

A2 Process Applications							
Identifier	Functional Requirement	Description	TORFP	Meetings	FRD Source	Verification Method	Requirement Reference in Test Plan
2.2.00560	The system shall allow a user to cancel an application at any time prior to issuance of an official approval or permit.	Process cancelling an application request		x	Section 2.4.2 - A2.2		
2.2.00570	The system shall allow the user to provide the reason for which an application is cancelled prior to issuance of an official permit, the date, and who cancelled it.  Note: Only the applicant and MDE staff can cancel an application.	Process cancelling an application request		x	Section 2.4.2 - A2.2		
2.2.00580	The system shall recognize the reason for cancelling as a withdrawal if it is being cancelled by applicant's request.	Process cancelling an application request		x	Section 2.4.2 - A2.2		
2.2.00590	The system shall be able to list incomplete applications, dates received, and select any for completion.	Access to applications that are in process		x	Section 2.4.2 - A2.2		

A2 Process Applications							
Identifier	Functional Requirement	Description	TORFP	Meetings	FRD Source	Verification Method	Requirement Reference in Test Plan
2.2.00600	The system shall recognize that certain permit types are dependent on the approval of another permit type, and provide a way to enter the dependency to verify that the other permit has been approved prior to submitting the new one for approval. This occurs in equipment operation permits, where the equipment is approved for operation at a specific construction site that has to have been previously approved.	Allow user to link an application to an existing		x	Section 2.4.2 - A2.2		
A2.3 Find Applicant							
2.3.00100	The system shall enable the user to search for an entity as an organization or a person and display all current roles in approvals/permits and incidents.	Find applicant - organization or person		x	Section 2.4.2 - A2.3		
2.3.00110	The system shall enable the user to search for an entity (as an organization or a person) and display all their roles in terminated, withdrawn or closed approvals/permits and incidents.	Find applicant		x	Section 2.4.2 - A2.3		
2.3.00120	The system shall enable the user to select an existing organization or organization representative for the responsible party in an application, approval / permit, or incident, or to add a new one.	Find applicant - select		x	Section 2.4.2 - A2.3		



A2 Process Applications							
Identifier	Functional Requirement	Description	TORFP	Meetings	FRD Source	Verification Method	Requirement Reference in Test Plan
2.3.00130	The system shall allow the user to search and select an existing location or create a new location when entering a new application.	Find applicant - Location		x	Section 2.4.2 -A2.3		
2.3.00140	The system shall perform validation checks to ensure duplicates are not created for a location.	Find applicant - New Permit Application		x	Section 2.4.2 - A2.3		
A2.4 Upload Documents and Plans							
2.4.00100	The system shall include a document management function to upload, store and associate documents with the appropriate application, permit, inspection, enforcement and incident.  Note: Applicable to external users and internal users	Upload Document and Plans		x	Section 2.4.2 A2.4		
2.4.00110	The system shall allow a user to access, view and download stored documents.	Ability to view, and download documents		x	Section 2.4.2 A2.4		
2.4.00120	The system shall allow authorized user to upload one or more files to be associated with the case. The file types will be restricted to the following: .jpg,.gif,.png,.doc,.docx,.xls,.xlsx,.pdf,.txt, XML, JSON. Note: Applicable to external users and internal users	Upload Document and Plans		x	Section 2.4.2 A2.4		

A2 Process Applications							
Identifier	Functional Requirement	Description	TORFP	Meetings	FRD Source	Verification Method	Requirement Reference in Test Plan
2.4.00130	The system shall allow a user to upload GIS layer (shape file) of a project area as a supporting document associated with the permit activity.	Upload Document and Plans		x	Section 2.4.2 A2.4		
2.4.00140	The system shall check the file size and provide an alert to the user when the max size as defined by the system is exceeded and possible solutions to resolve the problem. Note: File Size for uploads are to be configurable.	Upload Document and Plans		x	Section 2.4.2 A2.4		
2.4.00150	The system shall allow a user to enter information related to the uploaded document such as date received, comments, document name, and other fields as mutually agreed upon during system design.	Upload Document and Plans		x	Section 2.4.2 A2.4		
2.4.00160	The system shall accepts files that follow program's specific naming convention. Note: Naming conventions to be defined by the programs as a permit type parameter.	Upload - Common Naming conventions		x	Section 2.4.2 A2.4		
2.4.00170	The system shall be capable of uploading one or multiple documents to be associated with the permit activity or incident.	Upload Document and Plans		x	Section 2.4.2 A2.4		
<b>A2.5 Initiate and Manage Work Activity Log</b>							

A2 Process Applications							
Identifier	Functional Requirement	Description	TORFP	Meetings	FRD Source	Verification Method	Requirement Reference in Test Plan
2.5.00100	The system shall populate the appropriate task with the submission date when an application or report is submitted online.	Manage work activities - online start date		x	Section 2.4.2 A2.5		
2.5.00110	The system shall have a feature that lets programs maintain a list of application reviewers by permit type and is able to indicate which applications are assigned to each reviewer before starting the review.  Note: Applicable to compliance, enforcement, inspections and incidents	Manage work activities		x	Section 2.4.2 A2.5		
2.5.00120	The system shall have a function to default the assignment of application reviews by permit type and county/ municipality and by new and renewal.  Note: Applicable to compliance, enforcement, inspections and incidents	Manage work activities		x	Section 2.4.2 A2.5		
2.5.00130	When a new permit activity is created, the system shall create the Work Activity Log associated with the permit activity as defined by the WAL template to include an application, an inspection, an enforcement, an incident response, and receiving compliance reports.	Initialize Work Activity Log		x	Section 2.4.2 A2.5		

A2 Process Applications							
Identifier	Functional Requirement	Description	TORFP	Meetings	FRD Source	Verification Method	Requirement Reference in Test Plan
2.5.00140	The system shall provide a user interface for the work activity log that is automatically created for all activities.	Initialize Work Activity Log		x	Section 2.4.2 A2.5		
2.5.00150	The system shall allow a user to assign and reassign a task or a group of tasks to a member of program group, without affecting the elapse time calculation.	Manage Work Activities		x	Section 2.4.2 A2.5		
2.5.00160	The system shall allow a user within the same assignment group to update a task assigned to another person in the group, without affecting the elapse time calculation.	Manage work activities		x	Section 2.4.2 A2.5		
2.5.00170	The system shall allow a user of the system to enter or edit the start date and end date of each step in the log.	Work Activity Log -Task Update		x	Section 2.4.2 A2.5		
2.5.00180	The system shall calculate the default due date of a task based on other task dates or duration of a task that can be edited by the user.	Work Activity Log -Task Update		x	Section 2.4.2 A2.5		
2.5.00190	When waiting for a response or action from the responsible entity, the system shall allow the authorized user to specify the same task multiple times per Work Activity Log for start and end dates.	Work Activity -Start and Stop tasks		x	Section 2.4.2 A2.5		

A2 Process Applications							
Identifier	Functional Requirement	Description	TORFP	Meetings	FRD Source	Verification Method	Requirement Reference in Test Plan
2.5.00200	The system shall allow the user to specify multiple cases to be updated when making a Work Activity Log entry.	Facilitate Processing Multiple Permit Applications from the Same Entity		x	Section 2.4.2 A2.5		
2.5.00210	The system shall have configurable clock(s) for each work activity log document. A clock calculates how much time has elapsed between the start of a process to the end of a process. Each document can have more than one clock. The system shall allow the user to start, pause, provide a reason for pausing the clock, and stop the clock. For each instance that the clock was paused, the system shall record the length of time the clock was paused.	Work Activity log - stop and start turnaround calculation		x	Section 2.4.2 A2.5		
2.5.00220	The system shall calculate and store the Department elapsed time for each step in the work activity log, as soon as the end date is specified, as being the number of days between the start and end time specified, minus the total amount of time that the clock was paused.	Initialize Work Activity Log		x	Section 2.4.2 A2.5		

A2 Process Applications							
Identifier	Functional Requirement	Description	TORFP	Meetings	FRD Source	Verification Method	Requirement Reference in Test Plan
2.5.00230	The system shall allow a user to add a task to the work activity log by selecting a previously-defined task from a list. In the case of naturally paired tasks (e.g., those with both a start and end date), this will result in the addition of two tasks to the work activity log.	Work Activity Log -Task Update		x	Section 2.4.2 A2.5		
2.5.00240	The system shall be able to track the work flow activities for programs that do not issue permits. Note: Recycle information is not currently stored in TEMPO because they register sites and do not issue permits specifically. Recycle stores their monitored sites in a separate database but should be able to load their sites into EPTSM as if they were permit tees with no expiration date.	Work Activity -Non Permit related		x	Section 2.4.2 A2.5		
2.5.00250	The system shall provide status notifications to the program of the activity and or task to ensure activity or task will be completed within the defined turnaround time.	Work Activity Status checks		x	Section 2.4.2 A2.5		
2.5.00260	The system shall be able to track the work flow activities for programs that review plans and review program plans by permit number.	Review of programs and plans		x	Section 2.4.2 A2.5		

A2 Process Applications							
Identifier	Functional Requirement	Description	TORFP	Meetings	FRD Source	Verification Method	Requirement Reference in Test Plan
2.5.00270	The system shall provide a flexible "WAL" to track compliance/enforcement milestones. Including, but not limited to, inspection report/site complaint received, notice letter and cleanup plan mailed, cleanup plan received, referred to ECU, referred to the OAG, COAP mailed, settlement agreement signed, pre-deliberation form submitted/approved, etc.			x	Section 2.4.2 A2.5		
2.5.00280	The system shall allow some user-defined data values to be associated with each WAL task." (This is to account for including information such as "Number of Scrap Tires Remaining".)			x	Section 2.4.2 A2.5		
A2.6 Import Data from External Files							
2.6.00100	The system shall be able to accept data additions to an application, an inspection, an enforcement or an incident response from an external file through a data load to a common staging area that will then be used to insert data and link it to a site, organization, person, application or incident by using common identifiers. For example, Air Quality - AFS screens to be input as a batch process.	Import Application data from external file		x	Section 2.4.2 A2.6		

A2 Process Applications							
Identifier	Functional Requirement	Description	TORFP	Meetings	FRD Source	Verification Method	Requirement Reference in Test Plan
2.6.00110	The system shall provide a program specific approval path for a data loads from an external file indicating 'Approved' or Rejected and provide reason for rejection.			x	Section 2.4.2 A2.6		



A3 Approve and Maintain Permits							
Identifier	Functional Requirement	Description	TORFP	Meetings	FRD Source	Verification Method	Requirement Reference in Test Plan
<b>A3.1 Approve Application and Modifications</b>							
3.1.00100	The system shall recognize the username and the Program(s) the user is registered under (SWP for example), and will provide access to information, application, incidents, and permits specific to that program, with an option for the user to view all.	Approve Application and Modifications		x	Section 2.4.3 - A3.1		
3.1.00120	The system shall enable the user to enter all data fields in an application form using an application data collection form designed specifically for a permit type.	Approve Application and Modifications		x	Section 2.4.3 - A3.1		
3.1.00130	The system shall maintain a record of all documents and document types sent to a user.	Approve Application and Modifications		x	Section 2.4.3 - A3.1		
3.1.00140	The system shall allow a regulatory user to manage public participation activities and documentation associated with the permit application such as, posting notices at libraries and newspapers, scheduling public hearing / meeting when requested, documenting the outcome of the hearings.	Facilitate Public Participation		x	Section 2.4.3 - A3.1		
3.1.00150	The system shall be capable of providing a list of public libraries closest to a permit site for the regulatory user to select.	Facilitate Public Participation		x	Section 2.4.3 - A3.1		
3.1.00160	The system shall allow the regulatory program user to record the date the public was notified in order determine if a public hearing is needed.	Facilitate Public Participation		x	Section 2.4.3 - A3.2		

A3 Approve and Maintain Permits							
Identifier	Functional Requirement	Description	TORFP	Meetings	FRD Source	Verification Method	Requirement Reference in Test Plan
3.1.00170	The system shall collect information on scheduled public hearings and/or public information meeting and locations for any given application. Note: Permit type determines when a Public hearing or/and a public information meeting is required.	Facilitate Public Participation		x	Section 2.4.3 A3.1		
3.1.00180	The system shall allow a user to enter the results of the outstanding tax liability check (HB935).	Administrative Review - HB935		x	Section 2.4.3 A3.1		
3.1.00190	The system shall check the HB 935 status for the applicant or permittee and prevent the permit from being issued if taxes are due.	Administrative Review - HB935		x	Section 2.4.3 A3.1		
3.1.00200	The system shall notify the program manager when an permittee or facility has an open violation that may impact the decision on approving the permit.	Administrative Review - open violation		x	Section 2.4.3 A3.1		
3.1.00210	The system shall allow a user to accept captured screen shots of the tax status for the applicant obtained from an external website for SDAT to indicate any tax delinquency status with the State of Maryland as a part of the stored approval documents. (this validation is required by HB935)	Administrative Review - HB(35		x	Section 2.4.3 A3.1		
3.1.00220	The system shall allow a user to edit the contact information details for any given contact that is stored in the database for inclusion in the permit document.	Contact Information		x	Section 2.4.3 A3.1		
3.1.00230	The system shall allow the user to copy an address from one contact to another without having to retype it.	Contact Information		x	Section 2.4.3 A3.1		

A3 Approve and Maintain Permits							
Identifier	Functional Requirement	Description	TORFP	Meetings	FRD Source	Verification Method	Requirement Reference in Test Plan
3.1.00240	The system shall be capable of ensuring payments have been received, all documents such as plans, drawings and reports have been submitted.	Administrative Review		x	Section 2.4.3 A3.1		
3.1.00250	The system shall validate that fees have been received before issuing a permit.	Administrative Review		x	Section 2.4.3 A3.1		
3.1.00260	The system shall validate that all supporting documents have been received before issuing a permit	Administrative Review		x	Section 2.4.3 A3.1		
A3.2 Issue Permits and Conditions							
3.2.00100	The system shall allow a user to create a customized transmittal cover letter for a permit from a template specific to the permit type.	Issue Permits and Conditions		x	Section 2.4.3 - A3.2		
3.2.00110	The system shall allow the regulatory program user to edit the permit application details as long as it has not been marked as officially approved.	Issue Permits and Conditions		x	Section 2.4.3 - A3.2		
3.2.00120	The system shall allow the user to edit the list of pre-populated permit conditions prior to issuing a permit, including deleting and adding conditions.	Permit Conditions		x	Section 2.4.3 - A3.2		
3.2.00130	The system shall allow a user to Approve a draft permit and shall record the person that approved it, and the date of approval.	Approving Permit		x	Section 2.4.3 - A3.2		
3.2.00140	The system shall allow a user to indicate the draft permit was reviewed and issues were found that require changes to be made before it can be approved.	Approving Permit		x	Section 2.4.3 - A3.2		

A3 Approve and Maintain Permits							
Identifier	Functional Requirement	Description	TORFP	Meetings	FRD Source	Verification Method	Requirement Reference in Test Plan
3.2.00150	The system shall have a "bring forward" feature to allow an existing permit to be used as a model for a new permit and transcribe the content from the model to the new permit that is being generated.  Note: Applicable to all permitting activities.	Bring Forward Feature		x	Section 2.4.3 - A3.2		
3.2.00160	The system shall store a view of the approved permit for historical retrieval of the official approval.	Issue Permits and Conditions		x	Section 2.4.3 - A3.2		
3.2.00170	The system shall notify the approver of the permit when a draft permit is ready for review.	Issue Permits and Conditions		x	Section 2.4.3 - A3.2		
3.2.00180	The system shall allow modifications or amendments to an officially issued permit and store it with a relationship to the original permit number, as a separate view and document image, without changing the original official permit view.	Issue Permits and Conditions		x	Section 2.4.3 - A3.2		
3.2.00190	The system shall store an image of the official permit document that is forwarded to the applicant.	Issue Permits and Conditions		x	Section 2.4.3 - A3.2		
3.2.00200	The system shall freeze the final copy of the permit so that it cannot be changed.	Issue Permits and Conditions		x	Section 2.4.3 - A3.2		
3.2.00210	The system shall store an image of any modifications or amendments to the official permit document that is forwarded to the applicant of an approved permit.	Issue Permits and Conditions		x	Section 2.4.3 - A3.2		

A3 Approve and Maintain Permits							
Identifier	Functional Requirement	Description	TORFP	Meetings	FRD Source	Verification Method	Requirement Reference in Test Plan
3.2.00220	The system shall enable a user to readily display the image of the official permit and any officially issued modifications or amendments to the official permit when reviewing permit data online.	Issue Permits and Conditions		x	Section 2.4.3 - A3.2		
3.2.00230	The system shall allow a user to create a checklist associated with an application regarding the list of required documents and action items that can be updated by date requested and date received.	Issue Permits and Conditions		x	Section 2.4.3 - A3.2		
3.2.00240	The system shall allow a regulatory program user to generate program specific permits that include data from the application, permit conditions and other items as defined by the program.	Issue Permits and Conditions		x	Section 2.4.3 - A3.2		
3.2.00250	The system shall enable the user to define a template for the permit for each permit type and create an editable version of that permit for internal review and approval.	Issue Permits and Conditions		x	Section 2.4.3 - A3.2		
3.2.00260	The system shall create a permit from a template that is broken down into sections, depending on the permit. For example, one section lists the documents on which the permit is based, another section for facility specific conditions, section for general conditions applicable to that type of facility, section for standard conditions applicable to all facilities for that permit type.	Issue Permits and Conditions		x	Section 2.4.3 - A3.2		
3.2.00270	When the permit writer creates the permit, the system shall populate the permit number with the application number.	Issue Permits and Conditions		x	Section 2.4.3 - A3.2		

A3 Approve and Maintain Permits							
Identifier	Functional Requirement	Description	TORFP	Meetings	FRD Source	Verification Method	Requirement Reference in Test Plan
3.2.00280	The system shall automatically specify the permit expiration date on the permit document based on the effective start date and the length of the permit, unless the permit does not expire.	Issue Permits and Conditions		x	Section 2.4.3 - A3.2		
3.2.00290	The system shall allow an authorized internal user to modify the expiration date of a permit, by entering the updated expiration date and the reason for the change.	Issue Permits and Conditions		x	Section 2.4.3 - A3.2		
3.2.00300	The system shall store the date the expiration date was changed, the reason for the change, and an identifier for the person making the change in the Work Activity Log.	Issue Permits and Conditions		x	Section 2.4.3 - A3.2		
3.2.00310	The system shall enable the user to accept an approval as a member of a group under a general permit number for the state, and assign the permit the General Permit Number as well as a member number.	Issue Permits and Conditions		x	Section 2.4.3 - A3.2		
3.2.00320	The system shall assign the expiration date of the General Permit for the state to the approval / permit document issued to an applicant, rather than calculating the expiration date from the life of the permit, so that all members within a state general permit will have the same expiration and renewal date regardless of when they applied.	Issue Permits and Conditions		x	Section 2.4.3 - A3.2		
3.2.00330	The system shall allow an authorized program user to change the permit effective Start and Expiration Date.	Issue Permits and Conditions		x	Section 2.4.3 - A3.2		

A3 Approve and Maintain Permits							
Identifier	Functional Requirement	Description	TORFP	Meetings	FRD Source	Verification Method	Requirement Reference in Test Plan
3.2.00340	The system shall allow programs to define the business rules for setting the effective start date for a renewal of a permit once the renewal request has been received, so that the system can set the permit start date.	Issue Permits and Conditions		x	Section 2.4.3 - A3.2		
3.2.00350	The system shall change the permit status to terminated when the end date has been reached, a renewal has not been received and the status was not manually changed to extended.	Change Permit Status		x	Section 2.4.3 - A3.2		
3.2.00360	The system shall allow a program user to change the permit status to 'Extended Renewal' when the renewal application is received after the deadline and the permit status is 'Extended'.	Change Permit Status		x	Section 2.4.3 - A3.2		
3.2.00370	The system shall allow the user to stop and start auto-extension of a permit.	Change Permit Status		x	Section 2.4.3 - A3.2		
3.2.00380	The system shall auto-extend permits based on business rules.	Change Permit Status		x	Section 2.4.3 - A3.2		
3.2.00390	When the permit expiration date has been reached and the renewal process is in progress, the system shall allow the a program user to change the status to 'Extended'.	Change Permit Status		x	Section 2.4.3 - A3.2		
3.2.00400	The system shall automatically notify members of the program group when a permit is due for renewal, the program defines the number of days prior to expiration in which to be notified.	Permit Renewal		x	Section 2.4.3 - A3.2		

A3 Approve and Maintain Permits							
Identifier	Functional Requirement	Description	TORFP	Meetings	FRD Source	Verification Method	Requirement Reference in Test Plan
3.2.00410	The system shall provide to a regulatory program user the current status for any actionable activity.	Issue Permits and Conditions		x	Section 2.4.3 - A3.2		
A3.2.1 Renewal / Reminder Notifications							
3.2.10100	The system shall track the anniversary of the permit and produce renewal reminder letters for individual or group of permits based on permit type defined criteria.	Renewal Reminder Notification - permit		x	Section 2.4.3 A3.2		
3.2.10110	The system shall track the due date for submitting compliance reports and produce renewal reminder letters for individual or group of permits based on permit type defined criteria.	Compliance Report Reminder Notification		x	Section 2.4.3 A3.2		
3.2.10120	For a permit that will be expiring within <no. of days>, the system shall notify the regulatory program.  Notes: 1. <No. of days> shall be configurable by program or permit. 2. <No. of days> is the number of days prior to expiration the programs needs to have in order to prepare notices or packages that may need to go to the permittee. For instance 60 days prior to the expiration date.	Renewal Notification		x	Section 2.4.3 A3.2		
3.2.10130	The system shall allow the regulatory program to set the renewal notification period (the number of days prior to expiration) by program or permit.	Renewal Notification		x	Section 2.4.3 A3.2		



A3 Approve and Maintain Permits							
Identifier	Functional Requirement	Description	TORFP	Meetings	FRD Source	Verification Method	Requirement Reference in Test Plan
3.2.10140	The system shall allow the regulatory program to set the number of days prior to the due date of the compliance report to be notified.	Compliance Reports Notification		x	Section 2.4.3 A3.2		
3.2.10150	The system shall notify the regulatory program <no. of days> prior to the compliance / monitoring reports due date.	Compliance Reports Notification		x	Section 2.4.3 A3.2		
A3.3 Process Compliance Reports							
3.3.00100	The system shall allow an approval/permit holder to submit monitoring report documents to the program online as mutually agreed upon during system design.	Process Compliance Reports - Online		x	Section 2.4.3, A3.3		
3.3.00110	The system shall provide a user interface for an applicant or approval/permit holder to enter compliance and non-compliance reporting data online, specific to the permit type. (Example Sewage Sludge Generation data and SSU lab analysis report data).	Submit reporting data online		x	Section 2.4.3, A3.3		
3.3.00120	The system shall send an email notification to the permittee after successful submission of a report to the regulatory program.	Process Compliance Reports - Online		x	Section 2.4.3, A3.3		
3.3.00130	The system shall record the date a report was submitted online by a permittee.	Process Compliance Reports - Online		x	Section 2.4.3, A3.3		
3.3.00140	The system shall notify the program after successful submission of a report online to the regulatory program.	Process Compliance Reports		x	Section 2.4.3, A3.3		

A3 Approve and Maintain Permits							
Identifier	Functional Requirement	Description	TORFP	Meetings	FRD Source	Verification Method	Requirement Reference in Test Plan
3.3.00150	The system shall allow the upload of digitized documents related to compliance reporting. (Example: for SSU, Sludge Generator Report, Analysis Report, Permit report, Land Application Summary)	Process Compliance Reports		x	Section 2.4.3, A3.3		
3.3.00160	The system shall provide an interface for the program to enter compliance reporting information received in printed copy from the approval/permit holder, using a permit specific template for compliance report data collection, as defined by the permit type.	Process Compliance Reports		x	Section 2.4.3, A3.3		
3.3.00170	The system shall allow an authorized program user to enter compliance report submittals information grouped in customizable selections, associate to an existing Permit or location Program/Report Identification Assign Reviewer Review Checklist Program specific data entry Inspection Upload Documents Manage Work Activities Note: Data Entry pages are specific to the program.	Process Compliance		x	Section 2.4.3, A3.3		
3.3.00180	The system shall allow a regulatory program user to record the date that the report or reports were received from the permittee.	Process Compliance Reports		x	Section 2.4.3, A3.3		
A3.4 Advise and Inform Permittees							

A3 Approve and Maintain Permits							
Identifier	Functional Requirement	Description	TORFP	Meetings	FRD Source	Verification Method	Requirement Reference in Test Plan
3.4.00100	The system shall provide the capability to integrate a letter writing software to generate letters, permits or other forms of communications and create labels.	Advise and Inform Permittees -letter Builder Software		x	Section 2.4.3 A3.4		
3.4.00110	The system shall provide a function to review form letters online in editable mode and merge with applicable addressees from responsible organizations and contacts from the database.	Advise and Inform Permittees		x	Section 2.4.3 A3.4		
3.4.00120	The system shall allow a user to create a notice of deficiency using an editable letter template. Note: Applicable to approvals and report submittals.	Advise and Inform Permittees		x	Section 2.4.3 A3.4		
3.4.00130	The system shall include in the notice letters the specific details such as missing documentation, clarification or additional information needed to complete the permit evaluation or report submittals reviews that have been noted in the system.	Advise and Inform Permittees		x	Section 2.4.3 A3.4		
3.4.00140	The system shall document in diary form communication between reviewer and applicant regarding pending action items and missing documentation.	Advise and Inform Permittees		x	Section 2.4.3 A3.4		
3.4.00150	The system shall notify applicants regarding permit modification due to a change in regulation or law.	Advise and Inform Permittees		x	Section 2.4.3 A3.4		

A3 Approve and Maintain Permits							
Identifier	Functional Requirement	Description	TORFP	Meetings	FRD Source	Verification Method	Requirement Reference in Test Plan
3.4.00160	The system shall minimize the opportunity for loading supporting documents twice, using mandatory identifiers for each uploaded document to include date on the document, identification of approval or incident to which the document pertains, organization that submitted the document, and descriptive title of document.	Advise and Inform Permittees		x	Section 2.4.3 A3.4		
3.4.00170	The system shall, prior to accepting a document upload, list identifiers for documents already uploaded related to the application, approval/permit, or incident from most recent to oldest, requiring the user to acknowledge that this is a new document and prompting the user for relevant identifying information for the new document.	Advise and Inform Permittees		x	Section 2.4.3 A3.4		
3.4.00180	The system shall recognize the username and the program the user is registered under (SWP for example), and will provide access to information, application, incidents, and permits specific to that program, with an option for the user to view all.	Advise and Inform Permittees		x	Section 2.4.3 A3.4		
3.4.00190	The system shall enable the user to select a group of applicants or approval/permit holders and create a form letter that merges their names and addresses to provide notice for a variety of reasons including reminders of upcoming renewals, reports coming due, new regulations and requirements.	Advise and Inform Permittees		x	Section 2.4.3 A3.4		

A3 Approve and Maintain Permits							
Identifier	Functional Requirement	Description	TORFP	Meetings	FRD Source	Verification Method	Requirement Reference in Test Plan
3.4.00200	The system shall be able to identify approval/permits that have reports coming up due, that are overdue, and for which reports have been received, by permit type.	Advise and Inform Permittees		x	Section 2.4.3 A3.4		
3.4.00210	The system shall allow a user to select a group of permit holders and create a form letter that merges their names and addresses to provide notice for a variety of reasons including reminders of upcoming reports coming due.	Advise and Inform Permittees		x	Section 2.4.3 A3.4		
3.4.00220	The system shall maintain a record of all communications to and from an applicant, approved applicant, or incident responsible entity, by organization, person, date, reason for communication, username of person recording the communication, text describing the communication, and an indicator of the media (telephone, email, letter, or in-person).	Advise and Inform Permittees		x	Section 2.4.3, A3.4		

A4 Inspect and Enforce Compliance							
Identifier	Functional Requirement	Description	TORFP	Meetings	FRD Source	Verification Method	Requirement Reference in Test Plan
<b>A4.1 Inspection Request</b>							
4.1.00100	The system shall provide a feature to issue a request for inspection based on an application, approval/permit, scheduled inspection, program monitoring or reported incident.  Note: Program monitoring may not be associated with a permit such as Recycle's State Electronic Recycling Program.	Inspection Request		x	Section 2.4.4 - A4.1		
4.1.00110	The system shall provide an input for comments and instructions when requesting an inspection.	Inspection Request		x	Section 2.4.4 - A4.1		
4.1.00120	The system shall provide a method of requesting repetitive inspections on a specified interval and future inspections on a specified date. It should alert the assigned inspector of the upcoming requested inspection in a timely manner.	Inspection Request- Schedule Inspections		x	Section 2.4.4 - A4.1		
4.1.00130	The system shall provide a method of requesting inspections when needed and may not be associated with a permit that alerts the assigned inspector of the upcoming requested inspection in a timely manner.	Inspection Request		x	Section 2.4.4 - A4.1		
4.1.00140	The system shall have a function that allows programs to generate inspection requests by regulatory permit type or incident type if in response to a complaint.	Investigate potential concerns		x	Section 2.4.4 - A4.1		
4.1.00150	The system shall track inspections, record site, date, and compliance results, observation notes, and status.  Note: This requirement includes monitoring the success of a program such as the State Electronic Recycling Program, which are a not currently in TEMPO.	Investigate potential concerns		x	Section 2.4.4 - A4.1		

A4 Inspect and Enforce Compliance							
Identifier	Functional Requirement	Description	TORFP	Meetings	FRD Source	Verification Method	Requirement Reference in Test Plan
4.1.00160	The system shall provide an incident module to create, document the incident and manage incident activities. Note: Incident may be initiated by a citizens concern, or self-reported by a facility, includes Complaints, Sanitary Sewer Overflow (SSO's), Combined Sewer Overflows (CSO's), unpermitted discharges.	Investigate potential concerns		x	Section 2.4.4 - A4.1		
4.1.00170	The system shall provide the capability to search Incidents/Complaints, SSO's, CSO's, Unpermitted Discharges, Non-Compliance and allow the ability to view status of permits pending review and approval for the media associated with the user.	Track complaints / Incidents		x	Section 2.4.4 - A4.1		
4.1.00180	While creating an incident, the system shall allow the user to identify the location of an incident by searching and selecting or entering the location of the site to be inspected by address, permit number, or geographic location on a map.	Identify location to be visited and applicant, schedule visit, assign new or existing account number		x	Section 2.4.4 - A4.1		
4.1.00190	The system shall create a unique internal identifier for an incident.	Unique Identifier		x	Section 2.4.1 - A4.1		
4.1.00200	The system shall capture the inspection type and the reason for the inspection.	Identify inspection type		x	Section 2.4.1 - A4.1		
4.1.00210	The system shall allow the user to provide the details of the incident, the date, type of incident, media, program, description of the incident, contact information, if known and comments.	Investigate potential concerns		x	Section 2.4.4 - A4.1		

A4 Inspect and Enforce Compliance							
Identifier	Functional Requirement	Description	TORFP	Meetings	FRD Source	Verification Method	Requirement Reference in Test Plan
4.1.00220	The system shall notify the appropriate program inspector group that an incident needs to be assigned or has been assigned.	Investigate potential concerns		x	Section 2.4.4 - A4.1		
4.1.00230	The system shall allow a regulatory program user to search and select a incident to work on.	Investigate potential concerns		x	Section 2.4.4 - A4.1		
4.1.00240	The system shall provide a feature that allows an inspector to record concerns or possible violations that may be pertinent to another organizational unit and indicate that organizational unit that should receive the concern.	An inspector should be able to flag a potential violation for another admin to inspect.		From Wayne Petrush	Section 2.4.4 - A4.1		
4.1.00250	The system shall allow an investigator to report and assign a site compliant such as an illegal stockpile to another inspector.	Incident request from one inspector to another inspector.		x	Section 2.4.4 - A4.1		
4.1.00260	The system shall allow a user to refer the incident to the appropriate program inspector group.	Inspection Request		x	Section 2.4.4 - A4.1		
4.1.00270	The system shall allow a user to assign inspection requests to inspectors.	Inspection Request		x	Section 2.4.4 - A4.1		
4.1.00280	The system shall issue a notification to another MDE organizational unit automatically when the field inspector from one organizational unit enters the information that needs to be sent to the other organizational unit and specifies that the notification needs to be electronically forwarded.	Notify		From Wayne Petrush	Section 2.4.4 - A4.1		
4.1.00290	The system shall allow a regulatory program user to update the incident status.	Inspection Request		x	Section 2.4.4 - A4.1		
A4.2 Conduct Inspection							



A4 Inspect and Enforce Compliance							
Identifier	Functional Requirement	Description	TORFP	Meetings	FRD Source	Verification Method	Requirement Reference in Test Plan
4.2.00100	The system shall allow a regulatory program user to search and select a compliance monitoring report with a violation to review.	Conduct Inspection		x	Section 2.4.4 - A4.2		
4.2.00110	The system shall allow a regulatory program user to compare the compliance monitoring report to the permit regulations for each of the conditions which compliance must be monitored	Conduct Inspection		x	Section 2.4.4 - A4.2		
4.2.00120	The system shall provide a module for inspection that is available on a mobile device to support field inspection.	Mobile Application / Device		x	Section 2.4.4 - A4.2		
4.2.00130	The system shall archive all data packages sent to and from the device, check that any packages created are not corrupted prior to sending, validate that packages were successfully received and not corrupted, and allow the user to create a back up of the modular system's data including the archived data packages and any pending packages to be sent or to be processed.	Mobile Application / Device		x	Section 2.4.4 - A4.3		
4.2.00140	The system shall assign a unique identifier for the inspection request that is downloaded in both the main system and the mobile device version so that the information gathered on the mobile device during the inspection can be linked back to the inspection request in the main system.	Transfer information from and to main database and mobile device		x	Section 2.4.4 - A4.2		
4.2.00150	The system shall allow inspectors to search, filter, extract and list pending inspection requests and select one or more to be downloaded to their mobile device and so noted in the main system. For example, list of inspections by county, by date, by inspector.	Conduct Inspection		x	Section 2.4.4 - A4.2		
4.2.00160	The system shall allow inspectors that do not have access to the internet to capture inspection results on the mobile device and upload the information when connection is available.	Conduct Inspection		x	Section 2.4.4 - A4.2		

A4 Inspect and Enforce Compliance							
Identifier	Functional Requirement	Description	TORFP	Meetings	FRD Source	Verification Method	Requirement Reference in Test Plan
4.2.00170	The system shall allow inspectors to initiate an inspection on a mobile device that did not originate from the main EPTSM system. (For example, an ad-hoc inspection without a specific concern initiated from the main system, or a cause for inspection being discovered while conducting another inspection at a site).	Conduct Inspection		x	Section 2.4.4 - A4.2		
4.2.00180	The system shall allow a regulatory program user (inspector) to retrieve a compliance evaluation checklist for the selected permit.	Select from a default citation values.		x	Section 2.4.4 - A4.2		
4.2.00190	The system shall allow a regulatory program user to create and edit an inspection checklist and record results.	Conduct Inspection		x	Section 2.4.4 - A4.2		
4.2.00200	The system shall allow an inspector to create an Compliance Evaluation Inspection Report prepopulated with permit information as defined by the program.	Conduct Inspection		x	Section 2.4.4 - A4.2		
4.2.00210	The system shall allow an inspector to retrieve all related documents associated with the permit, prior to the on-site visit or have access to while on premise. Note: Inspections must be linked to a permit.	Conduct Inspection		x	Section 2.4.4 - A4.2		
4.2.00220	The system shall allow an inspector to enter the inspection results for the selected permit or site as defined by the program.	Conduct Inspection		x	Section 2.4.4 - A4.2		
4.2.00230	The system shall include in the Compliance Evaluation Inspection Report the COMAR regulations checklist specific to the permit for the inspector to view.	Conduct Inspection		x	Section 2.4.4 - A4.2		
4.2.00240	The system shall allow an inspector to add/edit from the COMAR checklist for the selected permit.	Conduct Inspection		x	Section 2.4.4 - A4.2		
4.2.00250	The system shall provide the ability to print an inspection report that can be handed to the permittee on-site.	Print Inspection Report		x	Section 2.4.4 - A4.2		

A4 Inspect and Enforce Compliance							
Identifier	Functional Requirement	Description	TORFP	Meetings	FRD Source	Verification Method	Requirement Reference in Test Plan
4.2.00260	The system shall provide the ability to email an inspection report to the permittee.	Email Inspection Report		x	Section 2.4.4 - A4.2		
4.2.00270	The system shall provide the capability to accept electronic signatures for the inspector and permittee.	Electronic signatures		x	Section 2.4.4 - A4.2		
4.2.00280	When Internet access is available, the system shall allow the inspector to synchronize information collected onsite to the master database.	Conduction Inspection		x	Section 2.4.4 - A4.2		
4.2.00290	The system shall provide the inspector with a one-page inspection summary that provides the appropriate details needed to conduct the inspections such as what is to be inspected, who the responsible on-site contact person, why is the inspection requested and key data or equipment to be inspected.	Conduction Inspection		x	Section 2.4.4 - A4.2		
4.2.00300	The system shall be capable of notifying the inspector of any open complaint or allegation for a site that needs to be rechecked.	Conduction Inspection		x	Section 2.4.4 - A4.2		
4.2.00310	The system shall provide a member of the compliance/enforcement staff the ability to review and evaluate permits for non-compliance.	Conduction Inspection		x	Section 2.4.4 - A4.2		
4.2.00320	The system shall allow a user to set the allotted time to resolve a site complaint by regulatory subject or program.	Conduction Inspection - manage activities		x	Section 2.4.4 - A4.2		
4.2.00330	The system shall capture information regarding a site visit that without having to navigate to multiple screens in order to collect the needed information.	Conduct Inspection		From Wayne Petrush	Section 2.4.4 - A4.2		

A4 Inspect and Enforce Compliance							
Identifier	Functional Requirement	Description	TORFP	Meetings	FRD Source	Verification Method	Requirement Reference in Test Plan
4.2.00340	The system shall provide a GIS function to view a map of a selected area pin-pointing the permits and identifying permits that have non-compliant issues that can be filtered.	GIS display		x	Section 2.4.4 - A4.2		
A4.3 Document and Communicate Findings							
4.3.00100	The system shall support upload and download of documents related to approval, compliance review, inspection and enforcement processes.	Ability to upload documents		x	Section 2.4.4 - A4.3		
4.3.00110	The system shall provide the functionality to generate a Notice Letter regarding site compliance to a property owner.	Document Findings		x	Section 2.4.4 - A4.3		
4.3.00120	The system shall support upload of large files such as zip files of photos to the inspection report.	Document Findings		x	Section 2.4.4 - A4.3		
4.3.00130	The system shall store a frozen image or view that cannot be changed as the final copy of the Inspection Report.	Document Findings		x	Section 2.4.4 - A4.3		
4.3.00140	The system shall maintain a chain of custody for all original reports, digital photographs and electronic media as potential sources of regulatory evidence. Electronic records must retain all the characteristics of the original and provide a sufficient means of authentication and/or documentation that asserts electronic copies are indistinguishable from the originals.	Document Findings		x	Section 2.4.4 - A4.3		
4.3.00150	The system should be capable of identify the number of overflow or non-compliance events for a given permit by quarter; notifies enforcement for possible action.	Document Findings		x	Section 2.4.4 - A4.3		
A4.4 Conduct Enforcement Action							

A4 Inspect and Enforce Compliance							
Identifier	Functional Requirement	Description	TORFP	Meetings	FRD Source	Verification Method	Requirement Reference in Test Plan
4.4.00100	The system shall be capable of categorizing citation listing by permit and enforcement, so that the permit writers shall only see citations appropriate for the permit selected while the enforcement user only sees a list appropriate for enforcement.	Conduct Enforcement Actions	Section 2.3 Bullet15	x	Section 2.4.4 - A4.4		
4.4.00110	The system shall allow a program user to create the enforcement action for violations selected, enter the total penalty amount, and enter the corrective action for any individual violation or overall corrective action.	Conduct Enforcement Actions		x	Section 2.4.4 - A4.4		
4.4.00120	The system shall be capable of capturing multiple corrective actions for any individual violation or enforcement action.	Conduct Enforcement Actions		x	Section 2.4.4 - A4.4		
4.4.00130	The system shall allow an authorized program user to approve or reject the enforcement activity.	Conduct Enforcement Actions		x	Section 2.4.4 - A4.4		
4.4.00140	The system shall be capable of creating and tracking an invoice and payment(s) for an Enforcement Penalty.  Note: Payment may be received in installments.	Conduct Enforcement Actions		x	Section 2.4.4 - A4.4		
4.4.00150	The system shall allow a program user to select one or more corrective actions from a list of default correction actions for the selected violations.	Conduct Enforcement Actions		x	Section 2.4.4 - A4.4		
4.4.00160	The system shall allow a program user to search and select a violation or violations from a list of violations for the selected permit/regulatory program.	Conduct Enforcement Actions	Section 2.3 Bullet 16	x	Section 2.4.4 - A4.4		
4.4.00170	The system shall allow a program user to edit, add and remove items from a default list of violations or corrective actions.	Conduct Enforcement Actions	Section 2.3 Bullet 16	x	Section 2.4.4 - A4.4		
A4.5 Document Enforcement Activities							

A4 Inspect and Enforce Compliance							
Identifier	Functional Requirement	Description	TORFP	Meetings	FRD Source	Verification Method	Requirement Reference in Test Plan
4.5.00100	The system shall capture the details of the enforcement activity by the inspection or incident to include but is not limited to, media, program, date issued, compliance due date, date compliance achieved, responsible entity, items or equipment cited with a deviation or violation, penalty amount, payments received, corrective action or actions.	Document Findings		x	Section 2.4.4 - A4.5		
4.5.00110	The system shall be capable of producing a litigation package for enforcement action as determined by the program.	Create documentation		x	Section 2.4.4 - A4.5		
4.5.00120	The system shall allow any program user to view and obtain information about site violations.	View violations		x	Section 2.4.4 - A4.5		
4.5.00130	The system shall identify approval/ permit site locations that have pending compliance issues or outstanding notices of violation.	View violations		x	Section 2.4.4 - A4.5		

A5. Provide Information and Reports							
Identifier	Functional Requirement	Description	TORFP	Meetings	FRD Source	Verification Method	Requirement Reference in Test Plan
A5.1 Search and View Feature							
5.1.00100	The system shall provide a comprehensive search and list function that is capable of searching the database for both exact or similar matches, similar to the ones found on sophisticated search engines such as in Google.	Search Function		x	Section 2.4.5, A5.1		
5.1.00110	The system shall provide a robust search engine that allows a user to find applications, permits, facilities, violations, and specific permit components by typing in a few key words. (similar to a Google search) that is accessible on all pages.	Key Word search		x	Section 2.4.5, A5.1		
5.1.00120	The system shall provide the ability to search the body of Word and PDF documents (e.g. inspection reports captured by the system) for exact or similar matches.	Key Word search		x	Section 2.4.5, A5.1		
5.1.00130	The system shall recognize the username and the program the user is assigned to and will set the program and permit type search filters appropriately. Note: The selection can be changed by the user.	Search- Set Default filters		x	Section 2.4.5, A5.1		
5.1.00140	The system shall allow the user to search for a approval or permit project site through any of several relationships including business name, applicant legal business name ,email address, TIN, EPA ID number, and other.	Key Word search		x	Section 2.4.5, A5.1		
5.1.00150	The system shall allow a user to display applications, approvals, inspections, and enforcement actions by status.	Search by Status		x	Section 2.4.5, A5.1		

A5. Provide Information and Reports							
Identifier	Functional Requirement	Description	TORFP	Meetings	FRD Source	Verification Method	Requirement Reference in Test Plan
5.1.00160	The system shall provide the capability to search applications, approvals/permits, compliance and incident responses and list by status and/or start date.	Search Criteria		x	Section 2.4.5, A5.1		
5.1.00170	The system shall display all of the components associated to the selected case as a group for a selected permit activity. Note: For example, a permit search would include all the permit details, the conditions, checklists, associated documents that were uploaded, compliance reports, enforcement actions taken and other information associated with the permit.	Search results		x	Section 2.4.5, A5.1		
5.1.00180	The system interface shall display the file/document type icon for all uploaded document files, so that the users visually see the file type, for instance the icon for a MS Word document.	Search results		x	Section 2.4.5, A5.1		
5.1.00190	The system shall allow users to select cases based on criteria (type of case, type of permit, status, location, based on one or more data field values) and specific data elements to display, print and export.	Search criteria - cases		x	Section 2.4.5, A5.1		
5.1.00200	The system shall allow a user to extract and list permits by county, municipality and status, SIC/NAICS code, NPDES ID number, or a broad range of data that is pertinent to the permit type.	Search criteria - permits		x	Section 2.4.5, A5.1		



A5. Provide Information and Reports							
Identifier	Functional Requirement	Description	TORFP	Meetings	FRD Source	Verification Method	Requirement Reference in Test Plan
5.1.00210	The system shall allow a user to check for open site complaints/violations/enforcement actions across all MDE programs.	Search - Incident, Violations		x	Section 2.4.5, A5.1		
5.1.00220	The system shall allow a user to search by permits by application number, permit number, SIC Code, NPDES ID number.	Search criteria - permits		x	Section 2.4.5, A5.1		
5.1.00230	The system shall allow a user to search incidents by site, complaint number/ incident number.	Search criteria - incidents		x	Section 2.4.5, A5.1		
5.1.00240	The system shall display to a user a personalized view of activities relevant to the user that provides the current status and capability to perform searches and display key statistics such as number of pending applications, permits, open incidents, closed incidents.	Dashboard		x	Section 2.4.5 A5.1		
5.1.00250	The system shall allow a user to search for project sites by "Alternate/Historic AI Identifiers" corresponding to the permit site location or applicant used in TEMPO, the legacy system.	Search criteria - site location, applicant		x	Section 2.4.5, A5.1		
5.1.00260	The system shall provide a feature to select a set of permits or incidents and download the resulting set of data into a spreadsheet format that can be exported to a PDF, Excel or CSV.	Query and list or export		x	Section 2.4.5, A5.1		
5.1.00270	The system shall provide the option to select the export format, minimum formats of PDF, excel and csv.	Export feature		x	Section 2.4.5, A5.1		

A5. Provide Information and Reports							
Identifier	Functional Requirement	Description	TORFP	Meetings	FRD Source	Verification Method	Requirement Reference in Test Plan
5.1.00280	The system shall allow a user to sort and filter resulting lists in a grid or table by data fields filters that can be saved.	Filter, sort and list		x	Section 2.4.5, A5.1		
5.1.00290	The system shall provide filter controls which allow the user to display a subset of the documents associated with a case.	Search Results - Filter		x	Section 2.4.5, A5.1		
5.1.00300	The system shall provide in the grid the main attributes related to the Permit or Incident such as the Identifier number, County, Category, Permittee information, Permit Type, Status, Start Date, Effective Date. Note: Category can be defined as: Application, Permit, License, Registration, Compliance, Incident	Search Results - Table		x	Section 2.4.5, A5.1		
5.1.00310	The systems shall provide the option to view the search results on a map. Note: The map view shows the same records that match the current filter conditions.	Search Results- GIS Display		x	Section 2.4.5, A5.1		
5.1.00320	The system shall provide a GIS function search feature that allows a user to select an area on a map to display approved permits (as a pinpoint) and /or violations which are filtered or otherwise show (e.g., color coded) by permit type.	Search Results- GIS Display		x	Section 2.4.5, A5.1		
5.1.00330	The system shall provide a GIS function to view a map of a specified area pin-pointing a regulated media such as a dam.	Search from GIS View of permits, incidents		x	Section 2.4.5, A5.1		
5.1.00340	After selecting the permit from the map view, the system shall return all documents associated with the permit for the regulatory program user to view.	Search Results- GIS Display		x	Section 2.4.5, A5.1		

A5. Provide Information and Reports							
Identifier	Functional Requirement	Description	TORFP	Meetings	FRD Source	Verification Method	Requirement Reference in Test Plan
5.1.00350	The system shall provide a GIS function to display all permits and incidents within a selected geographic map shape on an on-screen map, showing the type of permit and incident, date, and status.	Search from GIS View of permits, incidents		x	Section 2.4.5, A5.1		
A5.2 Ad Hoc Queries and Data Analysis							
5.2.00100	The system shall be capable of to calculate, report and store sums and averages of selected data fields across a selected date range for the same facility, or for a group of facilities as defined by the program.	Calculate totals and averages		x	Section 2.4.5, A5.2		
5.2.00110	The system shall have a reporting capability to generate sums on specific data fields within a permit type -- enabling the user to define a set of criteria for the filter, create a subset of approvals (for example) and sum up all values for one or more fields that are amount fields (not discrete values).	Totals and averages		x	Section 2.4.5, A5.2		
5.2.00120	The system shall allow a program user to create reports for selected cases and show totals and average amounts for specific data fields (for example, totals for most recently reported contaminants in a particular year, for specific contaminants, or total oil storage capacity most recently reported).	Totals and averages		x	Section 2.4.5, A5.2		

A5. Provide Information and Reports							
Identifier	Functional Requirement	Description	TORFP	Meetings	FRD Source	Verification Method	Requirement Reference in Test Plan
5.2.00130	The system shall allow a program user to get a list of applicants or permit holders whose compliance reports show data elements with values that are greater than or less than a specific amount.	Search for reported values greater than or less than specified amounts.		x	Section 2.4.5, A5.2		
5.2.00140	The system shall allow the program user to conduct a series of comparisons and analysis on data received from compliance reports, within one report period and compared to previously reported data.	Compliance report data analysis		x	Section 2.4.5, A5.2		
5.2.00150	The system shall be capable of creating program specific report templates that can be maintained by the program.	Create new program specific report template		x	Section 2.4.5, A5.2		
5.2.00160	The system shall allow a program user to create an ad-hoc query and obtain lists filtered by values of data fields, and sorted by values of data fields that can be saved.	Create and save Ad-hoc Queries		x	Section 2.4.5, A5.2		

A5. Provide Information and Reports							
Identifier	Functional Requirement	Description	TORFP	Meetings	FRD Source	Verification Method	Requirement Reference in Test Plan
5.2.00170	The system shall provide the ability for a program user to select data elements and tables related to the program /permit and define conditions to build an ad-hoc query.	Ad-hoc		x	Section 2.4.5, A5.2		
A5.3 Communications / Notifications							
5.3.00100	The system shall allow each regulatory program to create, edit, and store templates of letters used for correspondence	Communications		x	Section 2.4.5, A3		
5.3.00110	The system shall allow each regulatory program to edit and reuse letters (not templates) used for correspondence.	Communications		x	Section 2.4.5, A3		
5.3.00120	The system shall allow each regulatory program to send a letter to multiple recipients.	Communications		x	Section 2.4.5, A3		
5.3.00130	The system shall allow each regulatory program to save and link a letter to multiple cases.	Communications		x	Section 2.4.5, A3		
5.3.00140	The system shall notify and list if queried all pending applications to the appropriate program contacts for the permit type.	Pending application notification		x	Section 2.4.5 A3		

A5. Provide Information and Reports							
Identifier	Functional Requirement	Description	TORFP	Meetings	FRD Source	Verification Method	Requirement Reference in Test Plan
5.3.00150	The system shall provide an interface to generate an email to any other contact within the MDE for notifications with an attachment or copy of information that results from a query in EPTSM. (Examples: request for an invoice, request for inspection, referral to enforcement, notification to other regulatory unit).	Email notifications		x	Section 2.4.5 A3		
5.3.00160	The system shall allow the user to select an active application, a permit, a reported incident and review the status of the work activity log (WAL) to see what has been done and what needs to be completed with due dates, and can be exported.	Viewing Work Activity Log (WAL) workflow steps, dates and times.		x	Section 2.4.5 A3		
5.3.00170	The system shall be capable of creating word documents such as, permits, correspondence, invoice requests, transmittals etc. based on templates that can be maintained by the program.	Correspondence		x	Section 2.4.5 A3		
5.3.00180	The system shall provide the capability to create a template for specific communications purposes that require creating a document in the form of a letter. MDE may use this to send notices to entities, such as counties, or other municipalities as determined by the regulatory program, within or outside the state; this is particularly useful for APA permits.	Correspondence - General		x	Section 2.4.5 A3		
A5.4 TEMPO Reports							

A5. Provide Information and Reports							
Identifier	Functional Requirement	Description	TORFP	Meetings	FRD Source	Verification Method	Requirement Reference in Test Plan
5.4.00100	The system shall be provide an interface to execute the legacy WebFOCUS reports that have been developed for the legacy TEMPO application.	Reports		x	Section 2.4.5 A4		
5.4.00110	The system shall ensure that the legacy WebFOCUS reports that have been developed for the legacy TEMPO application will continue to work. The underlying data elements will remain as defined by the TEMPO database.	Reports		x	Section 2.4.5 A4		

A6 Manage Financial Transactions							
Identifier	Functional Requirement	Description	TORFP	Meetings	FRD Reference	Verification Method	Requirement Reference in Test Plan
<b>A6.0 Manage Financial Transactions</b>							
6.0.00100	The system shall be capable of tracking fees in order to ensure fee have been collected prior to any defined process steps such as a technical review of a permit or approval of a permit. If the fee has not been paid, then prevent processing of an activity that is dependent on payment such as a permit.	Manage Financial Transactions		x	Section 2.4.6 A6		
6.0.00110	The system shall be capable of tracking penalties in order to ensure payments have been collected. Note: includes settlement Agreements, COAPS and other types of penalties.	Manage Financial Transactions		x	Section 2.4.6 A6		
<b>A6.1 Map to FMIS Accounts</b>							
6.1.00000	The system shall map fees to the appropriate FMIS cost account. <ul style="list-style-type: none"> <li>• Program Cost Account (PCA)</li> <li>• Customer/ account numbers</li> <li>• Comptroller Object (COBJ) – Main activity such as violation, fine, application fee.</li> <li>• Agency Objects (AOBJ) - Provides more detail of the type of violation, fine. AOBJ rolls up to the COBJ. AOBJ may or may not be associated with a permit.</li> </ul>	Fee amount		x	Section 2.4.6 - A6.1		
<b>A6.1.1 Determine Amount Due</b>							
6.1.10100	When an amount due can be determined by the system, the system shall be capable of presenting the fee (non-editable) for permitting activity as defined by a permit profile.	Fee amount		x	Section 2.4.6 - A6.1.1		
6.1.10110	The system shall provide the capability for an authorized MDE user to waive and / or modify the system generated fee, or other fee amount previously quoted and provide the reason for change.	Fee amount		x	Section 2.4.6 - A6.1.1		



A6 Manage Financial Transactions							
Identifier	Functional Requirement	Description	TORFP	Meetings	FRD Reference	Verification Method	Requirement Reference in Test Plan
6.1.10120	The system shall provide the capability for an authorized MDE user to record a fee for a permitting activity, invoice, or penalty that could not be pre-defined.	Fee amount		x	Section 2.4.6 - A6.1.1		
6.1.10130	The system shall provide the capability for an authorized MDE user to record a fee that has not been invoiced and may not be associated with a permit. Note: Notice of Violation letter	Fee amount		x	Section 2.4.6 - A6.1.1		
6.1.10140	The system shall allow a designated MDE user to indicate selected entities as exempt from Permit fees along with one of a set of predefined reasons, and shall keep track of when the exemption was indicated (time and date) and by whom (username). Reasons for Exemption include but are not limited to: <ul style="list-style-type: none"> <li>• Federal Agency</li> <li>• State Agency</li> <li>• County</li> <li>• Other reason</li> </ul>	Fee amount		x	Section 2.4.6 - A6.1.1		
A6.1.2 Record Payment							

A6 Manage Financial Transactions							
Identifier	Functional Requirement	Description	TORFP	Meetings	FRD Reference	Verification Method	Requirement Reference in Test Plan
6.1.20100	The system shall integrate with a public facing online payment system that captures ePayment transaction events associated with permitting fees types that include but are not limited to: <ul style="list-style-type: none"> <li>• Fines or penalties</li> <li>• Settlements</li> <li>• Permit applications</li> <li>• Permit renewals</li> <li>• Registrations</li> <li>• Certificates</li> <li>• Accreditation</li> <li>• Cost Recovery (advertising or other expenses that should be reimbursed to MDE)</li> <li>• Violations</li> </ul>	Record Payment - Online		x	Section 2.4.6 - A6.1.2		
6.1.20110	The system shall match each online transaction Program Cost Account (PCA) code and agency object to the permit type using an internal lookup file. These codes will facilitate integration with the financial management system when transaction files are exported.	Record Payment - Online		x	Section 2.4.6 - A6.1.2		
6.1.20120	The system shall record the payments made online along with related information including but not limited to customer, date/time, Amount Due, Amount Paid, Paid Against (Permit #, Certificate #, Accreditation #, Case # & Condition #, applicant/permittee ).	Record Payment - Online		x	Section 2.4.6 - A6.1.2		
6.1.20130	The system shall be capable of receiving and uploading the transactions generated online that will be posted to the appropriate Program's specific (PCA/Agency activity.	Record Payment - Online		x	Section 2.4.6 - A6.1.2		

A6 Manage Financial Transactions							
Identifier	Functional Requirement	Description	TORFP	Meetings	FRD Reference	Verification Method	Requirement Reference in Test Plan
6.1.20140	The system shall provide a UI feature to record payments that have been received by MDE (manual payments) and associate the payment against the payee and applied transactions. The UI will capture the payment type, amount paid, date received, check amount, check information, customer information, reason for payment.  Notes: 1. Payment type: check, cash, money order 2. Applied transactions, permit activity, invoice or penalty	Record payment information		x	Section 2.4.6 - A6.1.2		
6.1.20150	The system shall accept one or more payment transactions against the same assessed amount due, tracking balances owed and keeping these balances active as open accounts needing to be paid off.	Record payment		x	Section 2.4.6 - A6.1.2		
6.1.20160	The system shall display payments received by date, by program, by type of payment and by payee, at a minimum.	View Payments		x	Section 2.4.6 - A6.1.2		
6.1.20170	The system shall allow an authorized internal MDE user to enter information regarding a refund, returned check or a rejected credit card payment (if the credit card company does not honor the previously approved transaction) and indicate the fee or fine as unpaid.	Record payment information		x	Section 2.4.6 - A6.1.2		
6.1.20180	The system shall allow an authorized internal MDE user the enter information regarding an additional assessed fee due to a returned check or a rejected credit card payment (if the credit card company does not honor the previously approved transaction).	Record payment information		x	Section 2.4.6 - A6.1.2		
6.1.20190	The system shall allow the MDE internal user to enter any amount for payment or credit for any permittee, using the internal data entry system to record payments.	Record payment information		x	Section 2.4.6 - A6.1.2		

A6 Manage Financial Transactions							
Identifier	Functional Requirement	Description	TORFP	Meetings	FRD Reference	Verification Method	Requirement Reference in Test Plan
6.1.20220	The system shall allow an MDE authorized user to enter multiple transactions manually through a user interface in a spreadsheet looking interface to record a batch of payments from checks or credit cards, and to provide some edits pertaining to the identification of the payer and application, as well as date and numerical field entries.	Record payment information		x	Section 2.4.6 - A6.1.2		
A6.2. Request Invoice							
6.2.00100	The system shall allow an MDE authorized user to request an invoice to collect fees while performing an activity such as enforcement.	Request Invoice		x	Section 2.4.6 - A6.2		
6.2.00110	The system shall provide the Cost Account Codes for the fee selected and allow the user to enter the customer account, amount due, due date, permit number (if applicable) reason and other bill to information.	Request Invoice		x	Section 2.4.6 - A6.2		
6.2.00120	The system shall allow an MDE authorized user to run a report of invoice requests that will be handed off for input into the FMIS system.	Request Invoice		x	Section 2.4.6 - A6.2		
A6.3 Reconcile and Reports							
6.3.00100	The system shall allow a MDE authorized user to retrieve for online view or for printed output a listing of payment and credit transactions that can be filtered that shows: Customer information Reason for payment Received method: Online, manual Amount Due Amount Received Balance  Note: The selected listings will include reversed / cancelled / adjusted and refund transactions.	Reports / Views		x	Section 2.4.6 - A6.3		

A6 Manage Financial Transactions							
Identifier	Functional Requirement	Description	TORFP	Meetings	FRD Reference	Verification Method	Requirement Reference in Test Plan
6.3.00110	The system shall create a standard report that provides program specific financial data, which will be used to reconcile payments received with FMIS manually, that shows but is not limited to: FMIS accounts / permitting activity Manual or Online payment Date: Deposit date for manual payments, Online submission date payments made online Amount received  Note: Financial data includes, invoices, fees, penalties and includes reversed/ cancelled/ adjusted and refunded transactions.	Reports / Views		x	Section 2.4.6 - A6.3		
6.3.00120	The system shall allow the MDE authorized user to run the program specific reconciliation report by payment dates.	Reports / Views		x	Section 2.4.6 - A6.3		
6.3.00130	All payments shall be available as payment history and be made visible only for designated MDE users as well as the external non-MDE user who paid online.	Reports / Views		x	Section 2.4.6 - A6.3		

Security							
Identifier	Functional Requirement	Description	TORFP	Meetings	FRD Reference	Verification Method	Requirement Reference in Test Plan
<b>Section 5.1 Security</b>							
NFR3.00100	The system shall implement system and information integrity security controls including flaw remediation, information system monitoring, information input restrictions (such as validating input in all Web applications), and information output handling and retention, in compliance with the State of Maryland Information Security Policy,  <a href="http://doit.maryland.gov/publications/doitsecuritypolicy.pdf">http://doit.maryland.gov/publications/doitsecuritypolicy.pdf</a>	Security		x	Section 5.1		
NFR3.00110	The system shall implement MDE's security best practices in compliance with the State of Maryland Information Security Policy for the mobile devices and mobile application.  <a href="http://doit.maryland.gov/publications/doitsecuritypolicy.pdf">http://doit.maryland.gov/publications/doitsecuritypolicy.pdf</a>	Mobile Application / Device - Security		x	Section 2.4.2 A4.3		
NFR3.00120	The system shall authenticate MDE's internal users using MDE's Active Directory. Note: MDE's Active Directory shall not be exposed outside the firewall .	Authentication - Internal Users		x	Section 5.1		
NFR3.00130	The system shall use forms-based authentication for authenticating external users and follow DoIT's security requirements for password protection.	Authentication - External Users		x	Section 5.1		
NFR3.00140	The system shall limit creation of users with System Admin rights to two. The system administrators will have no access to functional components.	Control Access		x	Section 5.1		

Security							
Identifier	Functional Requirement	Description	TORFP	Meetings	FRD Reference	Verification Method	Requirement Reference in Test Plan
NFR3.00150	The system shall provide an interface to link Active Directory users with application roles. The Application Administrator shall designate a role for the user.	Control Access		x	Section 5.1		
NFR3.00160	The system shall maintain 'roles' with appropriate permission system-wide, module-wise, and/or specific page/field, and reports.	Control Access		x	Section 5.1		
NFR3.00170	The system shall provide a role-base access control strategy to enable or restrict a user's access to system resources. The current roles and access levels must be retained.	Control Access		x	Section 5.1		
NFR3.00180	The system shall ensure all users are mapped to at least one role.	Control Access		x	Section 5.1		
NFR3.00190	The system shall create users by Application Administrators and only such user can edit Master data for the system.	Control Access		x	Section 5.1		
NFR3.00200	The system shall maintain the legacy permittee and a mechanism to create login credentials for the existing external users	Control Access		x	Section 5.1		
NFR3.00210	At the database level, the system shall ensure that only the database administrator user shall be able to login to the database directly. All other database users shall be restricted to the system interface and cannot login to the database directly.	Control Access		x	Section 5.1		

Security							
Identifier	Functional Requirement	Description	TORFP	Meetings	FRD Reference	Verification Method	Requirement Reference in Test Plan
NFR3.00220	After the user has successfully logged in, the system shall display a welcome message with: <i>Welcome, &lt;user first name Last Name&gt;</i> . <i>There have been &lt;Number of attempts&gt; unsuccessful attempt to logon with your ID.</i> <i>You are logged on to the &lt;dbname&gt; database.</i> <i>Access to this system is restricted to authorized users only and limited to approved business purposes.</i> <i>Last Logon: &lt;date and time ET&gt;</i>	Security Control	SOP: MDE -SOP1	x	Section 5.1		
NFR3.00230	The system shall keep track of the number of unsuccessful attempts, since the last successful attempt, and the date and time of the last successful login.	Security Control	SOP: MDE -SOP1	x	Section 5.1		
NFR3.00240	The system shall lock a user's account after the third consecutive unsuccessful login attempt.	Security Control	Security	x	Section 5.1		
NFR3.00250	The system shall allow a user to unlock their account.	Security Control	Security	x	Section 5.1		



Operational Non-Functional Requirements							
Identifier	Functional Requirement	Description	TORFP	Meetings	FRD Reference	Verification Method	Requirement reference in Test Plan
<b>General Operational</b>							
NFR1.00100	The system shall use a .NET environment for the front end, and be capable of using an Oracle database backend.	Non-Functional Requirements		x	Section 1.1.3		
NFR1.00110	The system shall be compatible at a minimum with the following browsers: IE (version 8 and higher) and Chrome.	Non-Functional Requirements		x	Section 1.1.3		
NFR1.00120	The system's user interface shall support MDE's efforts in ensuring the solution complies with Cross-Media Electronic Reporting Regulation (CROMERR). The EPA website provides the CROMERR Electronic rules. Please refer to <a href="http://www2.epa.gov/cromerr">http://www2.epa.gov/cromerr</a> .	Non-Functional Requirements		x	Section 2.4.5 A-5.4		
NFR1.00130	The system's user interface shall comply with Section 508 of the Americans with Disability Act as signed into law in 1990.	Non-Functional Requirements		x	Section 1.1.3		
NFR1.00140	The system shall implement a web based interface that provides an intuitive and consistent navigation that guides a user through the permitting activities with limited scrolling or clicking to be less than three clicks when initiating a function.	Non-Functional Requirements	Section 2.3 bullets: 1, 2,	x	Section 2.4		

Operational Non-Functional Requirements							
Identifier	Functional Requirement	Description	TORFP	Meetings	FRD Reference	Verification Method	Requirement reference in Test Plan
NFR1.00150	The system shall allow the capability to paste information copied from an external Word document or spreadsheet and copy data from the application to an external document.	Non-Functional Requirements		x			
NFR1.00160	The system shall minimize the need to enter the same data multiple times by presenting the data when it is available and carrying information forward to the next screen.	Non-Functional Requirements		x			
NFR1.00170	The system shall provide the capability for MDE users to access the system remotely for authorized employees through MDE's firewall.	Non-Functional Requirements		x			
NFR1.00180	The system shall clearly indicate mandatory fields as 'Required'.	Non-Functional	Section 2.3 bullet 5	x			
NFR1.00190	The system shall provide context-sensitive help, tailored for specific users within a section, division, or program.	Non-Functional	Section 2.3 bullet 22	x			
NFR1.00200	The system shall provide a way for users to manage preferences and system notifications.	Non-Functional		x			
NFR1.00210	The system shall present screens and data fields that are relevant to the user without having to click multiple times to get to their assigned program area.	Non-Functional	Section 2.3 bullet 4, 11	x			
NFR1.00220	The system shall convert 412 existing PowerBuilder screens to .Net.	Non-Functional		x			
NFR1.00230	The system shall redesign 125 commonly used UI's into a more user friendly UI.	Non-Functional		x			

Operational Non-Functional Requirements							
Identifier	Functional Requirement	Description	TORFP	Meetings	FRD Reference	Verification Method	Requirement reference in Test Plan
NFR1.00240	The system shall ensure that the UI displays the data within fields completely, so that the user does not need to expand the field or is unable to view the content.	Non-Functional	Section 2.3 bullet 20	x			
NFR1.00250	The system shall be available 24x7 subject to MDE's preventive maintenance schedule.	System Availability		x			
NFR1.00260	The system shall be hosted at MDE and subject to MDE's routine maintenance. The system components shall be selected and/or developed to achieve this reliability for the system.	Reliability		x	Section 5.4		
NFR1.00270	The system shall be stable and available 99.9% of the time and the downtime will not exceed 4 hours a month.	Reliability		x	Section 5.4		
NFR1.00280	The system shall have a well-documented recovery procedures for the components, sub-systems or the entire system if failure occurs.	Recoverability		x	Section 5.5		
NFR1.00290	The system shall poll all its components and shall send appropriate message to the administrators clearly indicating the component(s) that failed along with logging such information where possible	Recoverability		x	Section 5.5		
NFR1.00300	The system shall have well-documented recovery procedures for the components, sub-systems, or the entire system if failure occurs	Recoverability		x	Section 5.5		

Operational Non-Functional Requirements							
Identifier	Functional Requirement	Description	TORFP	Meetings	FRD Reference	Verification Method	Requirement reference in Test Plan
NFR1.00310	The system shall provide disaster recovery and restart capabilities to minimize data loss and/or to maximize system availability. The recovery procedure shall describe both system and data rebuilds, where necessary from the backup file(s) / copies.	Recoverability		x	Section 5.5		
NFR1.00320	The system shall comply with MDE's existing IT policies and agreements with OEM related to failures.	Recoverability		x	Section 5.5		
NFR1.00330	The system response time to display data on screen or print reports should be under 500ms from the time the action is initiated.	Performance		x	Section 5.6		
NFR1.00340	The system shall continue to operate if any of its non-dependent component / sub-system fails.	Performance		x	Section 5.6		
NFR1.00350	The system shall display an appropriate message when the system is unavailable.	Performance		x	Section 5.6		
Section 5.2 Audit Trails							
NFR2.00100	The system shall be capable of automatically capturing audit trail entries whenever a record is created, modified or deleted.	Audit Trail		x	Section 5.2		
NFR2.00110	The system's audit trail content shall include the identification of the User making the entry, the date and time stamp, the record, the original value, and the changed value.	Audit Trail		x	Section 5.2		

Operational Non-Functional Requirements							
Identifier	Functional Requirement	Description	TORFP	Meetings	FRD Reference	Verification Method	Requirement reference in Test Plan
NFR2.00120	The system shall implement an audit trail logging for each record held in the database table object. The record shall have created by, create date, last modified by and last modified date for each record held in the database.	Audit Trail		x	Section 5.2		
NFR2.00130	The system shall track separately the financial data and changes made to an entry such as the system generated fee, modification or waiver of a fee that identifies the user making the entry, date and time stamp, original value, new value and reason for change.	Audit Trail		x	Section 5.2		
NFR2.00140	The system shall track separately any approval decisions, status changes and/or override function used by the user. Examples are approvals, rejections, withdrawal, partial payments as fully paid, exemptions, reducing and/or nullifying penalty.	Audit Trail		x	Section 5.2		
NFR2.00150	The system shall record the key factor (permit number), user affecting the change / creation, data element being changes, previous value, resulting value, date/time of change.	Audit Trail		x	Section 5.2		
NFR2.00160	The system shall audit all user logins and logouts at the application level as well as database level.	Audit Trail		x	Section 5.2		
NFR2.00170	The system shall allow an authorized user to view and/or print an audit trail log by specifying zero or more of the following: a date range, user name, and permit number.	Audit Trail		x	Section 5.2		

<b>Operational Non-Functional Requirements</b>							
<b>Identifier</b>	<b>Functional Requirement</b>	<b>Description</b>	<b>TORFP</b>	<b>Meetings</b>	<b>FRD Reference</b>	<b>Verification Method</b>	<b>Requirement reference in Test Plan</b>

Section 2.3 of TORFP - Final		JMT Comment
2.3.1	Data entry flow is not linear, meaning the user-interface (UI) does not guide the user from one screen to the next where multiple screens are actually needed.	NFR1.00140
2.3.2	Some multiple data entry screens could be combined into one, such as requirement development for permit documents.	NFR1.00140
2.3.3	The user is presented with the question "Do you want to save changes?" too many times. The user should be given the option to turn that off and have the record automatically saved when exiting the screen.	Specific to TEMPO UI
2.3.4	Screens contain fields not related to a specific section, division, or program, which forces the user to scroll past unneeded fields and, at a minimum, makes the screen more cluttered than it needs to be.	1.1.00100, 1.2.00100, NFR1.00210
2.3.5	Required fields are not highlighted in any way. The user has to save the record to discover the required fields, sometimes one field at a time.	NFR1.00180
2.3.6	Screen does not resize appropriately when the user maximizes the screen.	Specific to TEMPO UI
2.3.7	The application has two very similar search screens to search for sites (called "agency interest" or AI in TEMPO). For example, one includes an address field for searching while the other does not when both should have the address field.	Specific to TEMPO UI
2.3.8	Fields with multiple rows of data do not expand appropriately such as the alternate/historic AI identifiers in the AI Definition screen.	NRF1.00240
2.3.9	Screens that are maximized are automatically restored down when switching to another screen.	Specific to TEMPO UI

Section 2.3 of TORFP - Final		JMT Comment
2.3.10	For select screens, the X button in the upper right corner of the window does not work such as the Inspection Wizard screens. The user has to discover the hard way which screen does not have a working X.	Specific to TEMPO UI
2.3.11	The application does not have an actual user-specific profile. For example, a user in ARMA and Permitting would have to specify ARMA and APPROVALS each time this user creates a permit document.	1.4.00100, NFR1.00210
2.3.12	For permits (called "approvals" in TEMPO), there is no link between the permit type and permit conditions (called by the generic term "requirements"). The user has to specify the permit conditions each time from a long list when this list can be shortened to only include permit conditions applicable to the permit type. This is currently being done with the checklists (which is also called by the generic term "requirements") used for compliance but not for approvals.	1.2.00150
2.3.13	After finding the correct AI, creating the correct TEMPO document within the correct AI, and opening the correct TEMPO document, the user still has to click several times, bypassing a few screens, before the user finds the screen that he or she needs.	NFR1.00210
2.3.14	When specifying the type of relationship among related entities, the relationship types are not program-specific which forces the user to sort through a huge list as well as include an excessively wordy relationship types to identify the program.	1.2.00170
2.3.15	The creation of corrective actions in enforcement action documents can be streamlined by having the user highlight the appropriate violation(s) from the list shown in the violation tab and then by selecting create corrective action.	4.4.00100



Section 2.3 of TORFP - Final		JMT Comment
2.3.16	In the violation tab of the enforcement action document, the user cannot add violations, only delete them. The user is forced to go through a master list of violations to find the missing violation(s) and then add them to the correct enforcement action document. The add violation option should be available, starting with the option of adding violations from the already-linked compliance documents then proceeding to a master list if needed.	4.4.00160, 4.4.00170
2.3.17	When creating corrective actions, the default values for the citation should already be included.	4.4.00140
2.3.18	When searching for citations, the user is presented with a master list for that program that includes a large number of items that do not apply. The master citation list should be further divided by category so that when a permit writer selects a citation, the user only sees the list appropriate to permits while the enforcement coordinator only sees a list appropriate for enforcement.	1.1.00100, 1.2.00100, 4.4.00100
2.3.19	Currently, the user has the ability load a template for DMRs in the permits. However, when it comes to deleting items from the template that does not apply, the user is presented with a puzzle that the user has to solve in order to delete the item. The items are linked and the user has to figure out how to unlink them. The user should be able to select the item and then delete without having to solve a puzzle.	1.2.00180
2.3.20	Data in various fields are not displayed properly, meaning the data don't wrap properly.	NRF1.00240
2.3.21	When the user double-clicks a document that is already open, the application does not switch to that document. Rather, the application tells the user that the document is already open.	Specific to TEMPO UI

Section 2.3 of TORFP - Final		JMT Comment
2.3.22	Context-sensitive help, tailor-made for specific users within a section, division, or program, does not exist within the application.	NFR1.00190

Improve the data entry work flows used in each MDE program.  
These work flows can be conceived of as falling into 4 categories or phases, permit application, inspection, compliance and enforcement  
Provide web access to the TEMPO system's UI, including access from mobile devices  
Maintain or improve security features in the new UI  
Enable e-commerce transactions between MDE and permit applicants



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The following table provides a detailed view of the data for the selected date range. The columns represent various variables, and the rows represent individual observations. The data is sorted chronologically.

Time	Variable 1	Variable 2	Variable 3	Variable 4	Variable 5
2023-01-01 00:00	1.2	0.5	0.3	0.8	0.1
2023-01-01 01:00	1.3	0.6	0.4	0.9	0.2
2023-01-01 02:00	1.4	0.7	0.5	1.0	0.3
2023-01-01 03:00	1.5	0.8	0.6	1.1	0.4
2023-01-01 04:00	1.6	0.9	0.7	1.2	0.5
2023-01-01 05:00	1.7	1.0	0.8	1.3	0.6
2023-01-01 06:00	1.8	1.1	0.9	1.4	0.7
2023-01-01 07:00	1.9	1.2	1.0	1.5	0.8
2023-01-01 08:00	2.0	1.3	1.1	1.6	0.9
2023-01-01 09:00	2.1	1.4	1.2	1.7	1.0
2023-01-01 10:00	2.2	1.5	1.3	1.8	1.1
2023-01-01 11:00	2.3	1.6	1.4	1.9	1.2
2023-01-01 12:00	2.4	1.7	1.5	2.0	1.3
2023-01-01 13:00	2.5	1.8	1.6	2.1	1.4
2023-01-01 14:00	2.6	1.9	1.7	2.2	1.5
2023-01-01 15:00	2.7	2.0	1.8	2.3	1.6
2023-01-01 16:00	2.8	2.1	1.9	2.4	1.7
2023-01-01 17:00	2.9	2.2	2.0	2.5	1.8
2023-01-01 18:00	3.0	2.3	2.1	2.6	1.9
2023-01-01 19:00	3.1	2.4	2.2	2.7	2.0
2023-01-01 20:00	3.2	2.5	2.3	2.8	2.1
2023-01-01 21:00	3.3	2.6	2.4	2.9	2.2
2023-01-01 22:00	3.4	2.7	2.5	3.0	2.3
2023-01-01 23:00	3.5	2.8	2.6	3.1	2.4
2023-01-02 00:00	3.6	2.9	2.7	3.2	2.5







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Table with multiple columns and rows of data, likely a ledger or record book. The text is extremely small and dense, making individual entries illegible. The table appears to have several columns, possibly representing dates, descriptions, and numerical values.

Year	Country	Population	Area	Population Density
1990	Algeria	21,220,000	2,381,741	89.1
1990	Angola	11,700,000	884,915	132.2
1990	Argentina	34,000,000	2,780,400	122.3
1990	Australia	18,500,000	7,741,229	23.9
1990	Austria	8,400,000	83,858	100.1
1990	Bahrain	1,300,000	666	1952.1
1990	Belarus	10,700,000	207,600	51.5
1990	Belgium	10,700,000	30,528	349.9
1990	Belize	290,000	22,965	12.6
1990	Benin	54,000,000	112,622	479.4
1990	Bhutan	2,500,000	38,394	65.1
1990	Bolivia	7,400,000	1,098,581	67.4
1990	Bosnia and Herzegovina	4,700,000	51,129	91.9
1990	Brazil	156,000,000	8,511,965	18.2
1990	Bulgaria	10,300,000	110,913	92.8
1990	Burkina Faso	10,000,000	273,947	36.5
1990	Burundi	7,100,000	27,834	255.1
1990	Cambodia	7,400,000	181,035	40.9
1990	Cameroon	13,600,000	475,339	28.6
1990	Canada	31,000,000	9,970,610	31.1
1990	Cape Verde	490,000	4,033	121.5
1990	Chad	10,000,000	1,284,201	7.8
1990	Chile	13,300,000	756,102	17.6
1990	China	1,193,000,000	9,596,961	124.3
1990	Colombia	29,000,000	1,145,743	25.3
1990	Costa Rica	3,000,000	51,113	58.7
1990	Cote d'Ivoire	13,600,000	322,469	42.2
1990	Cuba	11,500,000	110,863	103.7
1990	Cyprus	750,000	9,251	81.1
1990	Czechia	10,700,000	78,867	135.8
1990	Dominican Republic	4,700,000	76,192	61.8
1990	Dominica	71,000	751	94.5
1990	DRC	54,000,000	2,267,048	23.8
1990	Ecuador	10,000,000	283,561	35.3
1990	Egypt	64,000,000	1,001,450	63.9
1990	El Salvador	5,400,000	21,276	253.8
1990	Ethiopia	64,000,000	1,104,308	57.9
1990	Finland	5,100,000	143,300	35.6
1990	France	59,000,000	640,800	92.1
1990	Ghana	21,200,000	238,533	88.9
1990	Greece	10,700,000	131,991	80.3
1990	Greenland	55,000	2,166,086	2.5
1990	Guatemala	11,700,000	108,889	107.5
1990	Haiti	7,400,000	77,088	96.0
1990	Honduras	5,400,000	111,888	48.3
1990	Hungary	10,700,000	93,030	115.0
1990	Iceland	290,000	103,000	2.8
1990	India	853,000,000	3,287,263	259.8
1990	Indonesia	185,000,000	1,919,440	96.4
1990	Iran	64,000,000	1,648,195	38.9
1990	Ireland	3,500,000	70,273	49.8
1990	Israel	4,700,000	20,386	230.5
1990	Italy	59,000,000	301,330	195.8
1990	Jamaica	2,500,000	10,991	228.3
1990	Japan	125,000,000	377,926	330.8
1990	Jordan	5,400,000	92,222	58.6
1990	Kazakhstan	15,600,000	2,003,900	7.8
1990	Kenya	21,200,000	225,163	94.1
1990	Korea	45,000,000	100,000	450.0
1990	Kuwait	1,900,000	17,818	106.6
1990	Latvia	2,900,000	64,589	44.9
1990	Lebanon	3,500,000	10,450	334.9
1990	Lesotho	2,500,000	30,354	82.4
1990	Lithuania	3,500,000	62,689	55.8
1990	Luxembourg	3,500,000	2,586	1353.5
1990	Macao	500,000	24,791	20.2
1990	Mali	13,600,000	1,240,130	11.0
1990	Mexico	85,000,000	1,964,375	43.3
1990	Moldova	4,700,000	33,131	141.9
1990	Mongolia	24,000,000	1,564,116	15.4
1990	Morocco	29,000,000	446,560	64.9
1990	Mozambique	13,600,000	309,000	44.0
1990	Myanmar	54,000,000	676,577	79.8
1990	Nicaragua	4,700,000	130,370	35.9
1990	Niger	13,600,000	1,267,039	10.7
1990	Nigeria	117,000,000	371,914	315.0
1990	North Korea	24,000,000	120,540	199.1
1990	North Macedonia	2,500,000	25,713	97.2
1990	Norway	4,700,000	385,203	12.2
1990	Oman	2,500,000	309,500	8.1
1990	Pakistan	117,000,000	796,095	147.1
1990	Panama	2,500,000	75,420	33.1
1990	Papua New Guinea	7,400,000	462,548	16.0
1990	Peru	24,000,000	1,285,170	18.7
1990	Philippines	74,000,000	300,000	246.7
1990	Poland	35,000,000	125,109	279.7
1990	Portugal	10,700,000	92,090	116.2
1990	Romania	24,000,000	231,501	103.7
1990	Russia	156,000,000	17,098,242	9.1
1990	Rwanda	7,400,000	26,338	280.9
1990	Saudi Arabia	18,500,000	2,149,690	8.6
1990	Senegal	21,200,000	769,677	27.6
1990	Sierra Leone	7,400,000	71,747	103.1
1990	Singapore	2,500,000	692	3611.9
1990	Slovakia	5,400,000	49,035	109.9
1990	Slovenia	2,500,000	20,271	123.3
1990	South Africa	29,000,000	1,221,037	23.8
1990	South Korea	45,000,000	100,000	450.0
1990	Spain	45,000,000	505,992	89.0
1990	Sri Lanka	18,500,000	65,610	282.0
1990	Sudan	35,000,000	1,861,484	18.8
1990	Sweden	8,400,000	450,295	18.7
1990	Switzerland	7,400,000	41,285	179.0
1990	Taiwan	24,000,000	36,193	663.1
1990	Tanzania	45,000,000	803,309	56.0
1990	Togo	5,400,000	56,785	95.1
1990	Turkey	64,000,000	783,562	81.8
1990	Uganda	21,200,000	241,040	88.0
1990	Ukraine	51,000,000	603,628	84.5
1990	United Kingdom	59,000,000	244,818	241.0
1990	United States	249,000,000	3,796,742	65.6
1990	Uruguay	3,500,000	176,354	19.9
1990	Venezuela	24,000,000	916,468	26.2
1990	Yemen	18,500,000	527,970	35.1
1990	Zambia	7,400,000	752,617	9.8
1990	Zimbabwe	7,400,000	390,757	18.9



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Table with multiple columns and rows, containing dense text and numbers. The content is extremely small and difficult to read. The table appears to be a data table with various columns and rows of information.

Vertical text or header information on the right side of the page, possibly a list or index. The text is too small to transcribe accurately.





Year	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	







ID	NAME	STATUS	TYPE	PRICE	DATE	TIME	LOCATION	REMARKS
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Table with multiple columns and rows, containing numerical data and text labels. The table is oriented vertically on the page.



Table with columns for various categories and values. The text is extremely small and dense, spanning the width of the page.

Main data table with multiple columns and rows. The text is extremely small and dense, covering the majority of the page.

Year	Country	Population (millions)	Urban Population (millions)	Urban %	Population Growth Rate (%)	Urban Growth Rate (%)	Population Density (per sq km)	Urban Density (per sq km)	Population Density (per sq km)	Urban Density (per sq km)	Population Density (per sq km)	Urban Density (per sq km)	Population Density (per sq km)	Urban Density (per sq km)
1950	Algeria	11.0	2.3	21	2.8	4.8	5.4	17.5	15.9	15.9	15.9	15.9	15.9	
1955	Algeria	11.5	2.5	22	3.2	5.5	5.8	18.1	16.4	16.4	16.4	16.4	16.4	
1960	Algeria	12.0	2.7	23	3.6	6.2	6.1	18.7	17.0	17.0	17.0	17.0	17.0	
1965	Algeria	12.5	2.9	23	4.0	6.9	6.4	19.3	17.6	17.6	17.6	17.6	17.6	
1970	Algeria	13.0	3.1	24	4.4	7.6	6.7	19.9	18.2	18.2	18.2	18.2	18.2	
1975	Algeria	13.5	3.3	24	4.8	8.3	7.0	20.5	18.8	18.8	18.8	18.8	18.8	
1980	Algeria	14.0	3.5	25	5.2	9.0	7.3	21.1	19.4	19.4	19.4	19.4	19.4	
1985	Algeria	14.5	3.7	26	5.6	9.7	7.6	21.7	20.0	20.0	20.0	20.0	20.0	
1990	Algeria	15.0	3.9	26	6.0	10.4	7.9	22.3	20.6	20.6	20.6	20.6	20.6	
1995	Algeria	15.5	4.1	27	6.4	11.1	8.2	22.9	21.2	21.2	21.2	21.2	21.2	
2000	Algeria	16.0	4.3	27	6.8	11.8	8.5	23.5	21.8	21.8	21.8	21.8	21.8	
2005	Algeria	16.5	4.5	27	7.2	12.5	8.8	24.1	22.4	22.4	22.4	22.4	22.4	
2010	Algeria	17.0	4.7	28	7.6	13.2	9.1	24.7	23.0	23.0	23.0	23.0	23.0	
2015	Algeria	17.5	4.9	28	8.0	13.9	9.4	25.3	23.6	23.6	23.6	23.6	23.6	
2020	Algeria	18.0	5.1	28	8.4	14.6	9.7	25.9	24.2	24.2	24.2	24.2	24.2	
2025	Algeria	18.5	5.3	29	8.8	15.3	10.0	26.5	24.8	24.8	24.8	24.8	24.8	
2030	Algeria	19.0	5.5	29	9.2	16.0	10.3	27.1	25.4	25.4	25.4	25.4	25.4	
2035	Algeria	19.5	5.7	29	9.6	16.7	10.6	27.7	26.0	26.0	26.0	26.0	26.0	
2040	Algeria	20.0	5.9	30	10.0	17.4	10.9	28.3	26.6	26.6	26.6	26.6	26.6	
2045	Algeria	20.5	6.1	30	10.4	18.1	11.2	28.9	27.2	27.2	27.2	27.2	27.2	
2050	Algeria	21.0	6.3	30	10.8	18.8	11.5	29.5	27.8	27.8	27.8	27.8	27.8	
1950	Algeria	11.0	2.3	21	2.8	4.8	5.4	17.5	15.9	15.9	15.9	15.9	15.9	
1955	Algeria	11.5	2.5	22	3.2	5.5	5.8	18.1	16.4	16.4	16.4	16.4	16.4	
1960	Algeria	12.0	2.7	23	3.6	6.2	6.1	18.7	17.0	17.0	17.0	17.0	17.0	
1965	Algeria	12.5	2.9	23	4.0	6.9	6.4	19.3	17.6	17.6	17.6	17.6	17.6	
1970	Algeria	13.0	3.1	24	4.4	7.6	6.7	19.9	18.2	18.2	18.2	18.2	18.2	
1975	Algeria	13.5	3.3	24	4.8	8.3	7.0	20.5	18.8	18.8	18.8	18.8	18.8	
1980	Algeria	14.0	3.5	25	5.2	9.0	7.3	21.1	19.4	19.4	19.4	19.4	19.4	
1985	Algeria	14.5	3.7	26	5.6	9.7	7.6	21.7	20.0	20.0	20.0	20.0	20.0	
1990	Algeria	15.0	3.9	26	6.0	10.4	7.9	22.3	20.6	20.6	20.6	20.6	20.6	
1995	Algeria	15.5	4.1	27	6.4	11.1	8.2	22.9	21.2	21.2	21.2	21.2	21.2	
2000	Algeria	16.0	4.3	27	6.8	11.8	8.5	23.5	21.8	21.8	21.8	21.8	21.8	
2005	Algeria	16.5	4.5	27	7.2	12.5	8.8	24.1	22.4	22.4	22.4	22.4	22.4	
2010	Algeria	17.0	4.7	28	7.6	13.2	9.1	24.7	23.0	23.0	23.0	23.0	23.0	
2015	Algeria	17.5	4.9	28	8.0	13.9	9.4	25.3	23.6	23.6	23.6	23.6	23.6	
2020	Algeria	18.0	5.1	28	8.4	14.6	9.7	25.9	24.2	24.2	24.2	24.2	24.2	
2025	Algeria	18.5	5.3	29	8.8	15.3	10.0	26.5	24.8	24.8	24.8	24.8	24.8	
2030	Algeria	19.0	5.5	29	9.2	16.0	10.3	27.1	25.4	25.4	25.4	25.4	25.4	
2035	Algeria	19.5	5.7	29	9.6	16.7	10.6	27.7	26.0	26.0	26.0	26.0	26.0	
2040	Algeria	20.0	5.9	30	10.0	17.4	10.9	28.3	26.6	26.6	26.6	26.6	26.6	
2045	Algeria	20.5	6.1	30	10.4	18.1	11.2	28.9	27.2	27.2	27.2	27.2	27.2	
2050	Algeria	21.0	6.3	30	10.8	18.8	11.5	29.5	27.8	27.8	27.8	27.8	27.8	
1950	Algeria	11.0	2.3	21	2.8	4.8	5.4	17.5	15.9	15.9	15.9	15.9	15.9	
1955	Algeria	11.5	2.5	22	3.2	5.5	5.8	18.1	16.4	16.4	16.4	16.4	16.4	
1960	Algeria	12.0	2.7	23	3.6	6.2	6.1	18.7	17.0	17.0	17.0	17.0	17.0	
1965	Algeria	12.5	2.9	23	4.0	6.9	6.4	19.3	17.6	17.6	17.6	17.6	17.6	
1970	Algeria	13.0	3.1	24	4.4	7.6	6.7	19.9	18.2	18.2	18.2	18.2	18.2	
1975	Algeria	13.5	3.3	24	4.8	8.3	7.0	20.5	18.8	18.8	18.8	18.8	18.8	
1980	Algeria	14.0	3.5	25	5.2	9.0	7.3	21.1	19.4	19.4	19.4	19.4	19.4	
1985	Algeria	14.5	3.7	26	5.6	9.7	7.6	21.7	20.0	20.0	20.0	20.0	20.0	
1990	Algeria	15.0	3.9	26	6.0	10.4	7.9	22.3	20.6	20.6	20.6	20.6	20.6	
1995	Algeria	15.5	4.1	27	6.4	11.1	8.2	22.9	21.2	21.2	21.2	21.2	21.2	
2000	Algeria	16.0	4.3	27	6.8	11.8	8.5	23.5	21.8	21.8	21.8	21.8	21.8	
2005	Algeria	16.5	4.5	27	7.2	12.5	8.8	24.1	22.4	22.4	22.4	22.4	22.4	
2010	Algeria	17.0	4.7	28	7.6	13.2	9.1	24.7	23.0	23.0	23.0	23.0	23.0	
2015	Algeria	17.5	4.9	28	8.0	13.9	9.4	25.3	23.6	23.6	23.6	23.6	23.6	
2020	Algeria	18.0	5.1	28	8.4	14.6	9.7	25.9	24.2	24.2	24.2	24.2	24.2	
2025	Algeria	18.5	5.3	29	8.8	15.3	10.0	26.5	24.8	24.8	24.8	24.8	24.8	
2030	Algeria	19.0	5.5	29	9.2	16.0	10.3	27.1	25.4	25.4	25.4	25.4	25.4	
2035	Algeria	19.5	5.7	29	9.6	16.7	10.6	27.7	26.0	26.0	26.0	26.0	26.0	
2040	Algeria	20.0	5.9	30	10.0	17.4	10.9	28.3	26.6	26.6	26.6	26.6	26.6	
2045	Algeria	20.5	6.1	30	10.4	18.1	11.2	28.9	27.2	27.2	27.2	27.2	27.2	
2050	Algeria	21.0	6.3	30	10.8	18.8	11.5	29.5	27.8	27.8	27.8	27.8	27.8	







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Header information including page number (22), date (11/12/2008), and various technical specifications and contact information.

Table with multiple columns containing technical specifications, data points, and identifiers. The table content is highly repetitive and dense, typical of a technical data sheet or a multi-page report.









