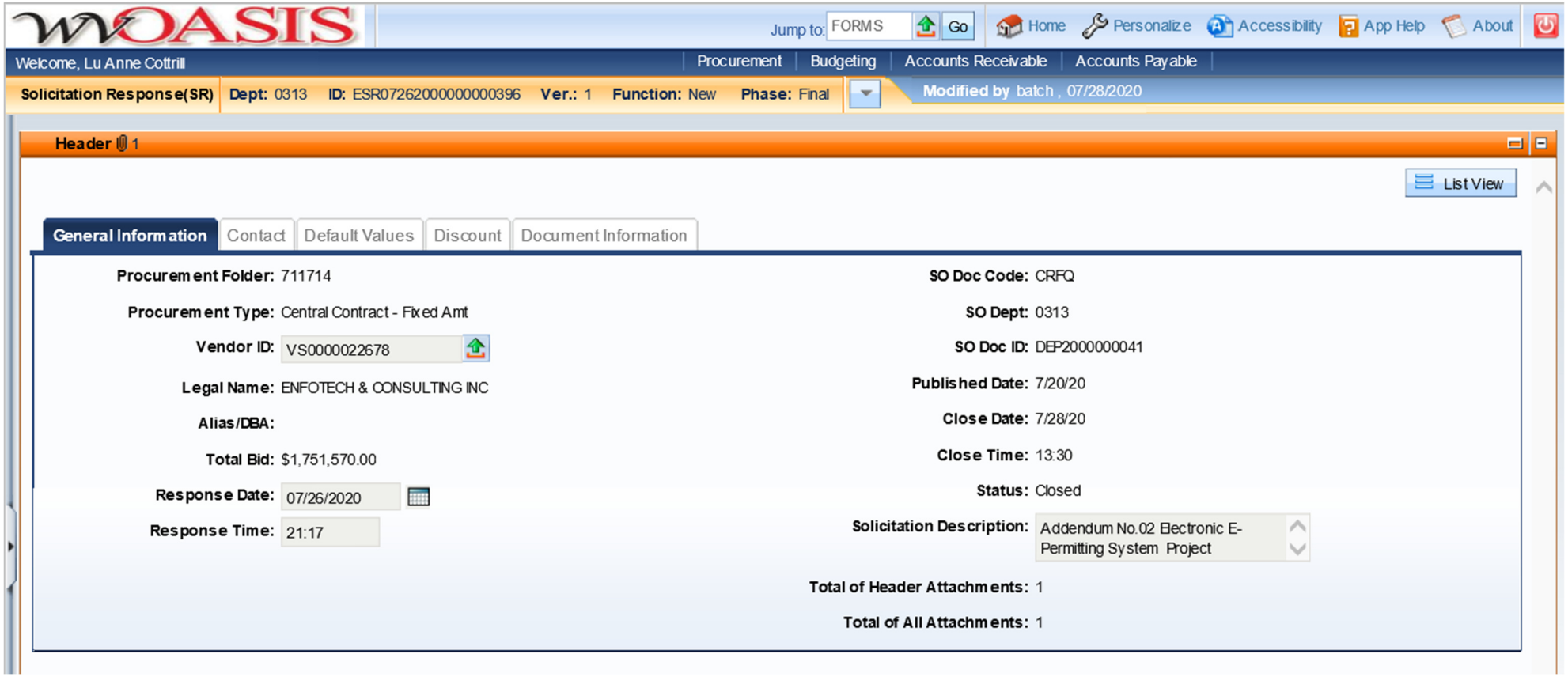
The following documentation is an electronically-submitted vendor response to an advertised solicitation from the *West Virginia Purchasing Bulletin* within the Vendor Self-Service portal at ***wvOASIS.gov***. As part of the State of West Virginia's procurement process, and to maintain the transparency of the bid-opening process, this documentation submitted online is publicly posted by the West Virginia Purchasing Division at ***WVPurchasing.gov*** with any other vendor responses to this solicitation submitted to the Purchasing Division in hard copy format.


wvOASIS
Jump to: FORMS Go
Home
Personalize
Accessibility
App Help
About
Welcome, Lu Anne Cottrill
Procurement
Budgeting
Accounts Receivable
Accounts Payable
Solicitation Response(SR) Dept: 0313 ID: ESR07262000000000396 Ver.: 1 Function: New Phase: Final
Modified by batch , 07/28/2020
Header 1
List View
General Information
Contact
Default Values
Discount
Document Information
Procurement Folder: 711714
Procurement Type: Central Contract - Fixed Amt
Vendor ID: VS0000022678
Legal Name: ENFOTECH & CONSULTING INC
Alias/DBA:
Total Bid: $1,751,570.00
Response Date: 07/26/2020
Response Time: 21:17
SO Doc Code: CRFQ
SO Dept: 0313
SO Doc ID: DEP2000000041
Published Date: 7/20/20
Close Date: 7/28/20
Close Time: 13:30
Status: Closed
Solicitation Description: Addendum No.02 Electronic E-Permitting System Project
Total of Header Attachments: 1
Total of All Attachments: 1

Purchasing Division
2019 Washington Street East
Post Office Box 50130
Charleston, WV 25305-0130

State of West Virginia
Solicitation Response

Proc Folder : 711714

Solicitation Description : Addendum No.02 Electronic E-Permitting System Project

Proc Type : Central Contract - Fixed Amt

Date issued	Solicitation Closes	Solicitation Response	Version
	2020-07-28 13:30:00	SR 0313 ESR07262000000000396	1

VENDOR

VS0000022678

ENFOTECH & CONSULTING INC

Solicitation Number: CRFQ 0313 DEP2000000041

Total Bid : $1,751,570.00 **Response Date:** 2020-07-26 **Response Time:** 21:17:05

Comments:

FOR INFORMATION CONTACT THE BUYER

Guy Nisbet

(304) 558-2596
guy.l.nisbet@wv.gov

Signature on File **FEIN #** **DATE**

All offers subject to all terms and conditions contained in this solicitation

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Ln Total Or Contract Amount
1	Electronic EPermitting System				$1,299,730.00

Comm Code	Manufacturer	Specification	Model #
43232802			

Extended Description : Electronic EPermitting System

Comments: Please see the attached "WVDEP E-Permit Technical Proposal_DWWM20-01_enfoTech.PDF" for additional details

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Ln Total Or Contract Amount
2	Post-Launch Maintenance Period				$108,000.00

Comm Code	Manufacturer	Specification	Model #
81112201			

Extended Description : Post-Launch Maintenance Period - 12 Month Post-Launch Maintenance Period after the last features have been deployed. Hours are estimated at 60 hours per month for 12 months for a total of 720 hours. Vendor will only bill for actual hours used.

Comments: Please see the attached "WVDEP E-Permit Technical Proposal_DWWM20-01_enfoTech.PDF" for additional details

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Ln Total Or Contract Amount
3	nViro Software Suite Enterprise Licensing or equal	1.00000	EA	$180,000.000000	$180,000.00

Comm Code	Manufacturer	Specification	Model #
43230000			

Extended Description : nViro Software Suite Enterprise Licensing or equal
This includes the license and maintenance & support for the first year.

Comments: Please see the attached "WVDEP E-Permit Technical Proposal_DWWM20-01_enfoTech.PDF" for additional details

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Ln Total Or Contract Amount
4	Software Support renewal for yr 2				$40,960.00

Comm Code	Manufacturer	Specification	Model #
81112200			

Extended Description : Software Support renewal for yr 2

Comments: Please see the attached "WVDEP E-Permit Technical Proposal_DWWM20-01_enfoTech.PDF" for additional details

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Ln Total Or Contract Amount
5	Software Support renewal for yr 3				$40,960.00

Comm Code	Manufacturer	Specification	Model #
81112200			

Extended Description : Software Support renewal for yr 3

Comments: Please see the attached "WVDEP E-Permit Technical Proposal_DWWM20-01_enfoTech.PDF" for additional details

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Ln Total Or Contract Amount
6	Software Support renewal for yr 4				$40,960.00

Comm Code	Manufacturer	Specification	Model #
81112200			

Extended Description : Software Support renewal for yr 4

Comments: Please see the attached "WVDEP E-Permit Technical Proposal_DWWM20-01_enfoTech.PDF" for additional details

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Ln Total Or Contract Amount
7	Software Support renewal for yr 5				$40,960.00

Comm Code	Manufacturer	Specification	Model #
81112200			

Extended Description : Software Support renewal for yr 5

Comments: Please see the attached "WVDEP E-Permit Technical Proposal_DWWM20-01_enfoTech.PDF" for additional details

PREPARED FOR

West Virginia State Department of Environmental Protection (WVDEP)

Electronic EPermit System Project (EPermit)

Solicitation No. DEP2000000041

Technical Proposal

JULY 28, 2020

1368 How Lane
North Brunswick, New Jersey 08902
www.enfotech.com

Table of Contents

1. Responses to Mandatory Requirements

enfoTech demonstrates our compliance with the Bid solicitation mandatory requirements.

1. **Bid Solicitation Section 4.1.1: COTS Product:** The vendor must provide an existing commercial off the shelf (COTS) customizable software. The goal is to start with an existing system that can be configured to the specific needs and workflows matching WVDEP's business processes.
   - enfoTech will meet these requirements
   - The proposed EN Suite COTS software is configurable and will meet all WVDEP's project requirements.
   - Please review the Proposal section 2.2 through 2.7 for a high-level overview of EN Suite.
   - A Table below presents a summary of all our responses, and the high degree fit of EN Suite, COTS software, for the EPermit System project. EN Suite, the proposed solution, will meet 207 RFP requirements (89%) with out-of-box features.

Response Code	Count	PCT (%)
4: Requirement will be met with COTS software Out-of-box features	207	89%
3: Requirement will be met with COTS software after configuration effort	25	11%
2: Requirement will be met with an extension customized for EPermit project	0	
1: Requirement will be met by integration 3rd party software to the COTS software	0	
0: Not available	0	

Detailed responses to each RFP requirements are presented in the Proposal section 7.1.

2. **Bid Solicitation Section 4.1.2: Professional Consulting Services:** outline the current environment within WVDEP and provide an overview of the programs within the four (4) areas that define the scope of work for this engagement. In addition to purchasing a COTS Environmental Permitting System that has the features listed in Part One, the scope of this project involves professional consulting by the vendor to work with WVDEP's subject matter experts to bring five (5) programs online in twenty-four (24) months.
   - enfoTech will meet these requirements
   - The Team offers experiences obtained from the past 25 years of implementing the proposed solution at other state agencies for comparable size and complexity as required by the WVDEP project.
   - enfoTech includes a comprehensive Project Implementation Plan (Section 5) to work with DEP side-by-side to complete the project. Please see our demonstration presented in Proposal:
     - Section 3: enfoTech qualifications, experiences, project references
     - Section 4: Key Persons and their resumes
     - Section 5: Project implementation Plan, project strategy, the work plan, training, data migration, SDLC quality assurance, data security plan, and Section 508 compliance.

3. **Bid Solicitation Section 4.1.3: Data and System Security Requirements:** outline DEP's requirements for data confidentiality, integrity and availability.
   - enfoTech will meet these requirements
   - Please see our demonstration presented in Proposal:
     - Section 5.4.1: System Configuration Management
     - Section 5.4.2: Security Testing

4. **Bid Solicitation Section 4.1.4: Contract and Project Management:** outline DEP's requirements for contract execution and project management.
   - enfoTech will meet these requirements

- Please see our demonstration presented in Proposal:
  - Section 5.3.2: Discover phase to identify features
  - Section 5.3.3: Iterative Development and Rolling Product Launch
  - Section 5.3.6: Governance (support to WVDEP IT Steering Committee for Change Management)
  - Section 5.3.6: Post Launch Maintenance Period
  - Section 5.3.1: Monthly Invoice
  - Section 5.3 and 5.4.1: System Development Lifecycle Requirements
  - Section 5.3.4.1.3: System and technical documentation requirements

5. **Bid Solicitation Exhibit C: NIST Data & System Security:** outline DEP's requirements for data and system security requirements
   - enfoTech will meet these requirements
   - Please see our demonstration presented in Proposal:
     - Section 5.3, 5.4.1 : SA3 System Development Lifecycle Requirements
     - Section 5 : SA5 Project and System Documentation
     - Section 2.2, 2.3, 2.5, 5.4 : SA8 Security & Engineering Practices
     - Section 2.5, 2.6, 2.7 : SA9 External System Services
     - Section 5.3, 5.4 : SA10 Developer Configuration Management
     - Section 5.3.2, 5.3.3, 5.3.4, 5.4: SA11 Developer Security Testing

In addition, enfoTech offers unique values to the EPermit system Project.

- **Company Experiences and COTS Products:**
  - enfoTech's corporate focus has been on environmental permitting, compliance reporting, and code enforcement since 1994. We have successfully implemented over 200 large-scale IT projects for regulatory agencies domestically and internationally.
  - enfoTech is a technology-oriented company that develops enterprise-wide environmental compliance COTS software and provides related consulting services. We invested 30% of company spending on new technologies, product upgrades, and new products. We bring fruits of our innovation to our clients.
  - Since 2002, enfoTech has continuously participated in EPA's National Environmental Information Exchange and has been one of key contributors to develop core technologies for the EN community to facilitate electronic data exchange among agencies, data publishing, data discover, and data analysis.
- **The proposed Project Team:**
  - Consists of professionals who specialize in delivering enterprise-wide environmental database systems. They all have IT project experiences for all environmental programs for all media and are well versed in environmental domain knowledge and leading-edge computer technologies, which are essential qualifications for the project. The **11 team members** (1 PhD, 10 Masters) will bring with them ~ 180 man-years of enterprise-wide environmental IT project experiences. The team is also well balanced with: 4 business experts, 4 system and 3 database professionals.
  - Have expertise in facilitating discussions with a large group of users with diverse background to reach consensus on requirements, business process improvements, system configurations, and implementations. We are experienced in providing training and support to our clients for a smooth roll-out of new IT systems.
  - The team has the domain know-how and technical skills to accomplish the tasks being assigned to them for this project. Based on project needs, additional resources will be made available to effectively complete the project requirements.
- **Quality Assurance:** enfoTech is a Capability Maturity Model Integration (CMMI) Level 3 candidate corporation. Our SOPs and best practices follow stringent SDLC requirements to ensure the best possible quality of all deliverables; and are stable, repeatable, sustainable.

2. Solution Overview (Responses to Bid Sec. 4.1.1 COTS Software Suite)

2.1 Understanding of Project Requirements

DEP has provided a clear vision and requirements for the EPermit system project. enfoTech has reviewed the bid solicitation and subsequent amendments, understands the project needs and feels confident that we could offer products and services to meet project requirements and exceed DEP expectations. This section recaps our understanding of project objectives.

Project Objectives

1. **Purchase a configurable COTS software suite to establish a centralized EPermit system repository with the following capability**
   - Purchase a configurable COTS software suite that meets bid requirements (Bid section 4.1.1)
   - Centralize permitting, inspection, compliance, enforcement data management for 4 business areas, with potential for expansion to other DEP business areas
   - Offer an Online Portal to the regulated community to conduct e-Business with DEP, streamline business processes, improve efficiency, and improve overall services to the community
   - Offer an Online Portal to DEP staff to process permit/license requests, manage workflows, manage reporting obligations, compliance schedules, and track progresses
   - Integrate with DEP existing systems to contribute to the DEP's enterprise data management goal
     - **ERIS interface**: for Facility and Contact data, and Responsible Officer (RO) authentication
     - **wvQASIS** interface: for invoicing and payment receipt management
     - **ApplicationXtender** interface: for document management
     - **ESRI** GIS interface: for data layer sharing to improve geospatial data analysis capability
     - **SAP** interface: for data import/export to contribute data to the enterprise data warehouse
     - **CDX** interface: for electronically sending data to USEPA
   - Improve data quality through online data validations
   - Enhance data discovery, data analysis, data aggregation, and reporting capability
   - Mobile technology to streamline field inspection
   - Submit data electronically to USEPA via CDX
2. **Acquire consulting services to configure COTS products to support DEP's five (5) programs**
   - Obtain consulting services to work with WVDEP's subject matter experts to bring five (5) programs online in twenty-four (24) months

   1. **Solid/Hazardous Waste Management**
      - Permitting (5 classes: A, B, C, D, E, F)
      - Permit processes for New, Renewal, Minor Modification, Major Modification
      - HW Handler notification,
      - HW Emergency Fund and fee collection
      - Configure **30** submittal Solid Waste forms as listed in Bid Attachment B: Solid Waste Forms

   2. **Groundwater Protection**
      - Support Nine (9) sub-programs
        1. Dust suppression
        2. Underground Injection Control (UIC)
        3. GW Monitoring wells
        4. GW Monitoring well driller certification
        5. GW Remediation

6. GW Protection Plans
7. GW Protection Fund and fee collection
8. GW Inspections and Inspection Follow-up
9. GW Quality standards & variances

- Configure **27** GW templates to be used for submittal, inspection, issuance as listed in Bid Attachment B: Groundwater Forms

3. **Water Use Management**
   1. Enable ~ 400 LQU water users to self-enroll and self-report water use information required by DEP
   2. Support **3** application types and workflows
      - LQU Public Water supplier (PSC regulated water utilities)
      - LQU Oil and Gas Operator (fracking operations)
      - LQU Industrial/Commercial Water Survey (all other water use)
   3. Support water use regulatory requirements
   4. Future Needs: support water withdrawal permits

4. **Support Water & Waste Mobile Inspection and Enforcement**
   1. Water and waste inspection business processes
      - Configure **8** Water and Waste templates to be used for inspection as listed in Bid Attachment B: Water & Waste Inspection Forms
   2. Environmental Complaint Intake
      - Improve complaint intake
      - Track resolution progress

5. **Hazardous Waste Mobile Inspection and Enforcement**
   1. Hazardous waste inspection business processes
   2. HW inspection requirements
   - Configure **23** Hazardous Waste templates to be used for inspection as listed in Bid Attachment B: Hazardous Waste Inspection Forms

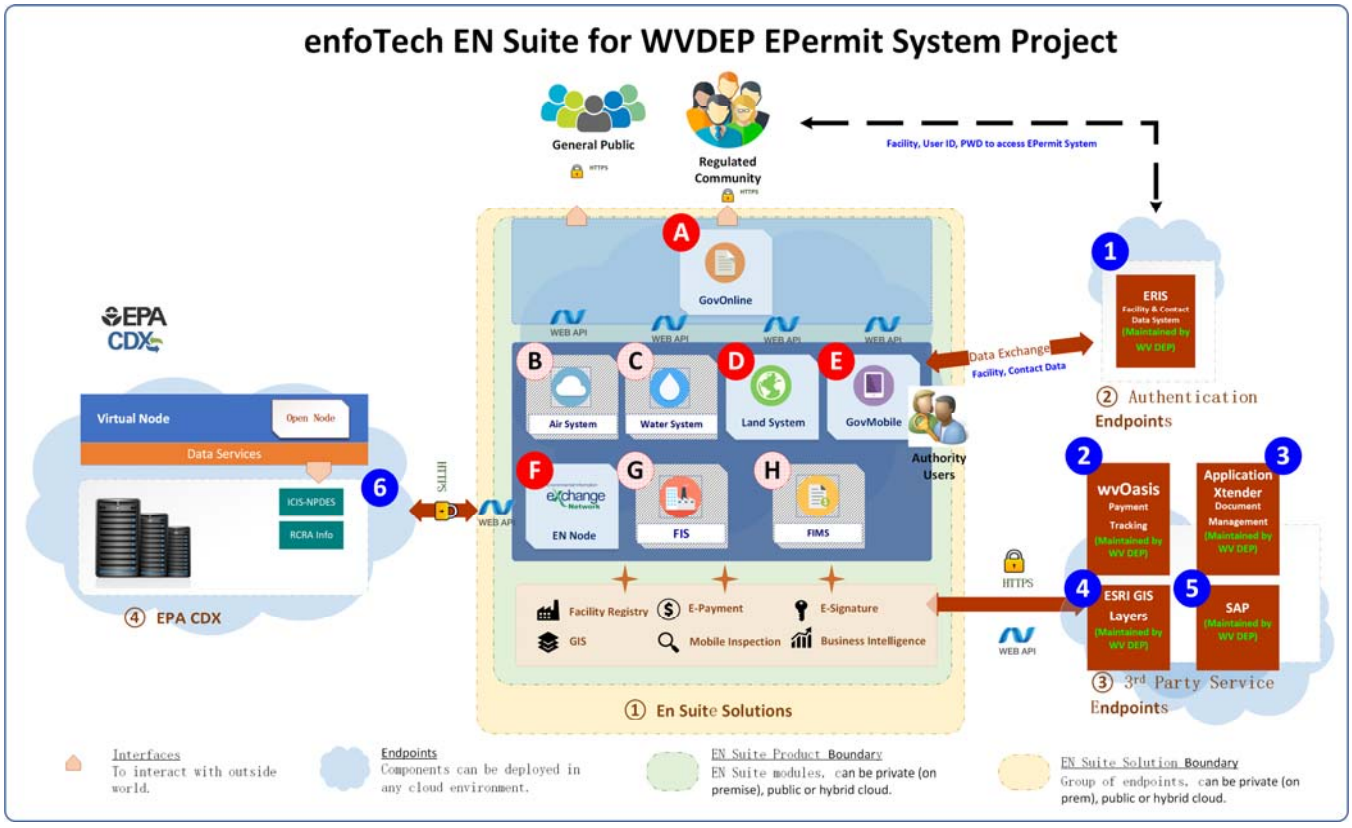
3. **Offer tools to allow DEP to make system modifications and accommodate new requirements resulting from dynamic nature of environmental regulations and future process improvements and changes**
4. **Meet DEP IT Technical, Data and System Security Standards**
5. **Meet EPA's CROMERR Requirements**
6. **Provide services to flow DEP data from EPermit database to EPA CDX**
7. **End-to-end Implementation Services:** Project facilitation, System configurations, Initial Database Setup, Training, Documentation. Only RCARInfo data migration is needed as most of current processes are paper based. Potential needs are to load limited facility data from USEPA RCRAInfo system.
8. **DEP desires to have the EPermit System completed with 730 calendar days after the contract award, and achieve the following benefits.**
   - Help DEP efficiently and responsibly meet environmental standards
   - Serve as a unifying platform to support staff in meeting DEP's service objectives
   - Greatly minimize manual processes
   - Support DEP's internal business practices for permitting, inspection, compliance, enforcements
   - Reflect centralization, standardization and sustainability of information technology resources

2.2 Functional Overview of the Proposed Solution (COTS software for Base System)

2.2.1 High-level Solution Overview (EN Suite)

enfoTech proposes the EN Suite, a COTS software, as the base for the EPermit project. The EN Suite consists of 8 product components that are built with open protocols and services-oriented technologies so that each system component could: (1) operate as a stand-alone system, or (2) work together with other components to form an enterprise solution, or (3) interfaces with state's existing data systems to support business objectives for each program and obtain the maximum return on investment.

For the EPermit project, enfoTech proposes to 5 EN Suite system components (A D E F) are listed below.



Legends of Solution Overview:

A **GovOnline**: a CROMERR compliant Portal to support online permitting, compliance reporting, complaint intake, and online payment.

B **Air System**: a central Air compliance data system. It consists of two subsystems: **(1) EIS:** Inventory is designed to help the authority to manage air emission sources, emissions, and emission-based fees. It also allows the air facility to calculate emissions and submit reports via the Internet. **(2) AQS**: is a central database for managing ambient air quality monitoring data. The system interfaces with real-time air monitoring equipment for real time data collection, data quality checks, API index calculation, field data management, geospatial analysis, and time series air quality trend graphs. The public can view air quality, search/export data. The System supports data submission to US EPA. The Air System is not included in the EPermit project scope, but is available for future expansion.

C **Water System**: a central Water compliance data system. It consists of two subsystems: **(1) Inventory:** Water-Inventory is designed to help the authority manage their wastewater control programs. It tracks facilities, outfalls, permits, discharge limits, inspections, sampling results, compliance/enforcement, and mandated under the NPDES programs. The System supports data submission to EPA's ICIS-NPDES. **(2) WQX**: is a web-based system designed to streamline the collection and management of Ambient Water Quality monitoring data. The Water-WQX system allows laboratories, contractors, and volunteers to establish projects, sampling locations, and submit monitoring data via the Internet. The System also validates data on all submissions to ensure data quality. It manages sampling requirements, trip schedules, QAP plans, and offers geospatial and trending analyses of water quality data. The System supports data submission to EPA's WQX. It supports authority's review, workflow, Inspection, renewal, and enforcement. The Water system is not included in the EPermit project scope, but is available for future expansion.

D **Land**: a central data repository for the land protection programs. System tracks the solid/hazardous waste generators/transporters/TSDF, waste disposal plans, site remediation, clean-up projects, inspections, compliance and enforcement. Land System supports environmental programs for RCRA waste handler, waste generator, transporter, TSDF, waste tire, asbestos remediation, lead-based paint remediation, brownfield sites, superfund site cleanup, underground storage tank, tier II reporting and fee, HW reporting and fee, solid wastes, and many more.

E **GovMobile**: support e-Inspection, e-Sampling, and Search EN Suite databases in the field. GovMobile supports all devices such as Tablet (for iOS, Android, and Windows base), iPad, iPhone, Android phone, etc.

F **EN Node (or Virtual Node)**: An Exchange Network data node to facilitate data exchange between the authority and USEPA, EN partners, and other data consumers.

G **FIS: Facility Information System**: a central Facility Information Management repository. It maintains unique Mater Facility IDs for the facility, provide tools to allow the authority to reconcile facility data, and maintain cross reference and links between the master facility ID and sub-systems. FIS integrates sites, facilities, contacts, and environmental interests across multiple databases to provide a holistic view of environmental history and current status at a site or facility. FIS subsystem will not be viable to DEP users and be used as a staging database to facilitate an interface between the EN Suite and DEP's ERIS for facility and contact data exchange.

H **FIMS: Financial Information Management System**: a central Fee Management System to track accounts, charges, generate invoices, track payments, calculate interest for late/no payment, and perform annual financial clearance. FIMS also offers APIs to accept changes generated from other data systems, and post payment status back to the other data systems. FIMS subsystem will not be included in the Epermit project. enfoTech will build an interface between the EN Suite and DEP's wvOasis for invoice and payment management.

Legends of Interface Overview:

1 **ERIS Interface:** an interface between the EPermit system and DEP's ERIS for exchanging Facility and Contact data.

2 **wvOasis Interface:** an interface between the EPermit system and DEP's wvOasis for invoicing and payment receipt management.

3 **ApplicationXtender:** an interface between the EPermit system and DEP's ApplicationXtender for document management.

4 **ESRI GIS Interface:** an interface between the EPermit system and DEP's ESRI for consuming GIS layers maintained at the ESRI system.

5 **SAP Interface:** an interface between the EPermit system and DEP's to export data to SAP to support DEP's data warehouse reporting. Work Scope to be defined during the project discovery stage.

6 **CDX Interface:** an interface for DEP to flow data from the EPermit system to USEPA via CDX. enfoTech proposes to use the EN Node or Virtual Node to support data flows to USEPA.

Legends of Architecture Overview:

① **EN Suite Solutions:** Contains multiple Products/Modules to provide IT platform to support environmental compliance processes in air, water, land protection areas. The Suite use a common data warehouse to manage data and reuse common software features across all products/modules. EN Suite also provides a Portal to allow the regulated community to interact with the authority in a secure and CROMERR compliant environment. The authority, the regulated entity, other contributing authorities, and general public will use the EN Suite to collaborate work and streamline environmental management processes.

② **Data Consumers Endpoint:** Data Consumers who are authorized to use the data will interact with the EN Suite using Web APIs. EN Suite offers APIs to support bi-directional data exchange and system integrations with external data systems.

③ **Authentication Endpoint:** Components can be deployed in any cloud architecture by accessing API Services vendors provided

④ **3rd Party Service Endpoints:** Components can be deployed in any cloud architecture by accessing API Services 3rd party vendors provided.

enfoTech will deliver EN Suite COTS system based on Microsoft SQL Server database (minimum database requirement: SQL Server 2012; Recommend database requirement: SQL Server 2017 and up.)

A Table below provides a cross reference of how the Solution will meet/exceed DEP's Epermit high-level project objectives.

Project Requirement	GovOnline	EN - Water	EN - Land	GovMobile	EN Node or Virtual Node
1. Public Portal for the regulated community to make all submittals for permits, licenses, compliance reports, paying fees, and compliant	✓				
2. Data system to manager facility, permit, inspection, compliance, enforcement, for Water programs		✓			
3. Data system to manager facility, permit, inspection, compliance, enforcement for Sold and HW programs			✓		
4. Discovery, data analytics, reports, data export	✓	✓	✓	✓	
5. Geospatial data presentation & analysis		✓	✓	✓	
6. Mobile technology		✓	✓	✓	
7. Online public portal for general public	✓				
8. Reporting to EPA		✓	✓		✓
9. DEP Workflow management	✓	✓	✓	✓	
10. External system interfaces	✓	✓	✓		

Portals: The solution will include two Portals. They are:

1. **Public Portal: (One-stop portal for online permitting, compliance reporting, request financial aids, etc.)**
   - For the Regulated Entity: Single Sign-on for a Responsible Official (RO). Register an account, establish RO privilege for an Entity, manage consultants, certify submittals, receive renewal alerts, pay fee, track DEP review progress, and make revisions. Submit compliance reports.
   - For the Consultant: Register an account, prepare draft submittals for RO, review progress
   - For General Public: Search permits, reports published by DEP and contain no confidential business information. No account will be required. Submit complaints/incidents online and track resolution progress.
2. **Authority Portal:** Single Sign-on. For DEP staff to receive alerts on assignments, perform work, track review comments, generate draft permits, finalize and issue permits, manage inspections, record internal activities, and track compliance & enforcement, conduct data analysis, data mining, and generate reports. EN Suite also allows the DEP staff to enter/track requests received in paper. It will also support work collaboration with sister agencies in conjunction with the DEP work flows and to receive alerts on assignments, perform review, and provide comments.

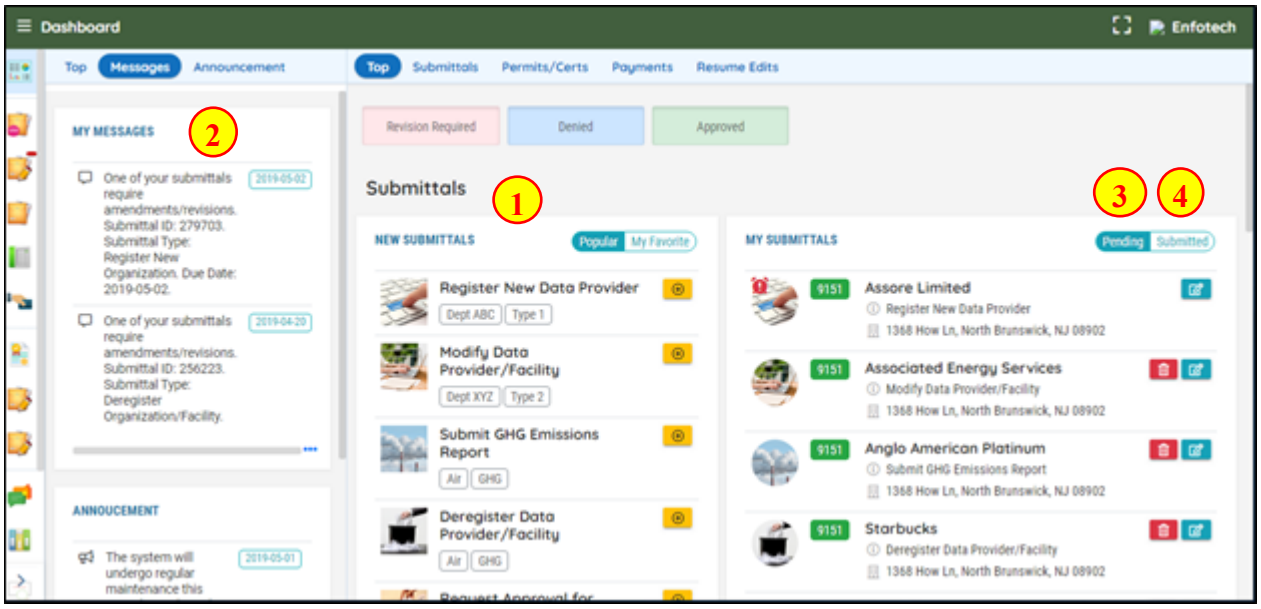
The System is scalable to accommodate simultaneous access by a large user base and is also extensible to support adding new submittal types to meet future business requirements. The System also maintains a system log for security, audit trail, and performance optimization. EN Suite provides a suite of web APIs for bi-directional data exchange with external databases.

2.2.2 EN Suite Public Portal for the Regulated Community

After logging into the Public Portal, a user will be presented with a Dashboard specific to his/her account profile. An example screen is illustrated below.

2.2.2.1 Dashboard

(A). Dashboard for Public Users



1 "Start a New Submittal" provides user with quick links to start: A new permit application, or a new compliance report, or a new financial aid request, or a complaint.

2 The 'Message Center' provides a link to any communication done via the system. This provides a shortcut for the user to see e-mails or correspondence messages that are sent to them. The messages are a hyper-link in order to allow the user to zoom in for more detailed information about the correspondences or announcements.

3 The 'Upcoming Submittal Obligations' allows the user to view any submittal obligations they have or compliance reports that need their attention. Upcoming submittal obligations will be automatically generated by EN Suite based on the Permit terms and conditions.

4 The 'Permits/Licenses' section lists the different permits/licenses issued to the facility which the User is responsible for. The User can choose to Renew, Amend/Update, or Terminate for the different permits/licenses that are issued to them. "Inspection Result": allows user to view inspection result, including inspection report and other supporting documents (i.e. photos, meeting memos, etc.) prepared by the Agency.

Online Help: EN Suite offers additional online help features:

- **Online screen help text**: the License Administrator could configure screen help specific to each data entry screen
- **Online Video Tutorial**: EN Suite integrates with video tutorial that could be viewed online.
- **Spell check**
- **Audit trail (to track the data change history)**

2.2.2.2 Make a Submittal

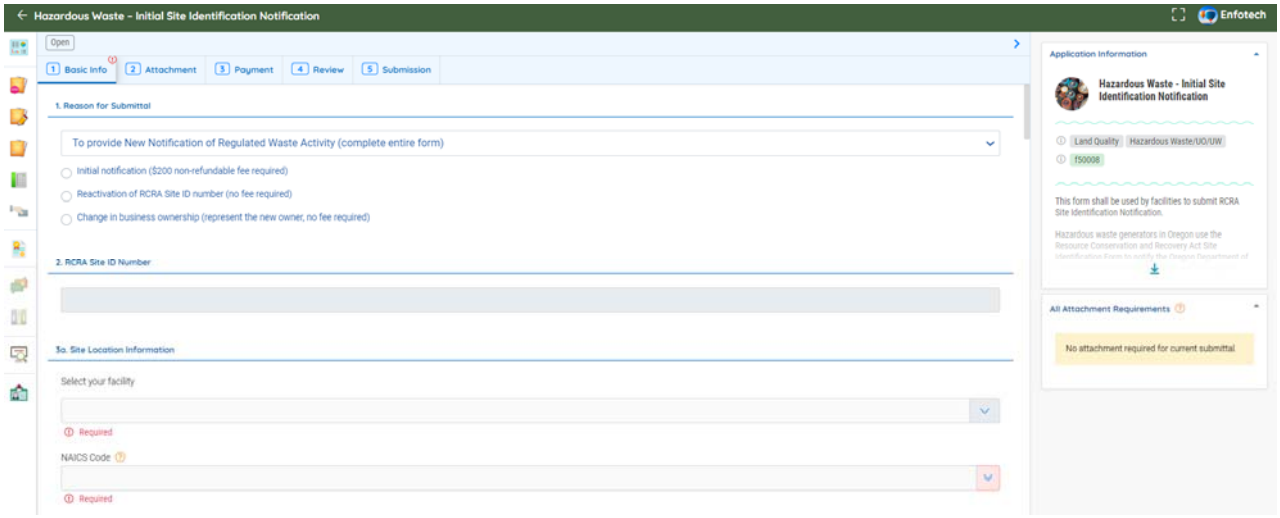
Once an account is established, the user could begin online submittals. EN Suite Public Portal has been used to support various online submittal types. They include:

1. **Permit applications**: environmental permits for air/water/waste, professional licenses, construction permits, etc.
2. **Compliance Reporting**: air emission report, wastewater discharge monitoring report, waste tire quarterly report, solid waste quarterly tonnage report, etc.
3. **Financial Aid Requests**: grant, loan, request for reimbursement for remedial activities, etc.
4. **Payment**: online payment via credit card, ACH, by check, money order, etc.
5. **Complaint/Comment/Inquiry**: submit complaint, comments on public notice, inquiry, etc.
6. **Inspection**: request inspection, propose inspection time slots, etc.

Being able to submit applications online provides a way for both public and agency users to electronically organize submissions, track, and share progress from anywhere and anytime as long as the user can access the internet. This section will describe the standard process of preparing submittals in EN Suite system, different submittal type may have slight variations.

(A) Submittal Wizard

The user will be guided by a Wizard to complete the submittal form. An example screen is illustrated below:



- **Basic Info**: to complete a submittal form. DEP License Administrator could tailor the screen to show online help, required data entry fields, and data validation rules.
- **Attachment**: to upload supporting documents required for this license. The Licensee could choose to mail the support documents. The application will not be deemed completed until after the required supporting documents are received by the licensing entity. The License Administrator could tailor the license to specify required supporting documents.
- **Payment**: to pay the required fee. The Licensee can pay online via credit card, debit card, account transfer, or mail check/money order via postal mail. The application will not be deemed completed until after the required fee is paid in full.
- **Review**: to validate the entire application package to ensure that it meets the minimum submission criteria mandated by the Authority.
- **Submission**: to certify the application data and submit to the licensing entity. A submission receipt will be automatically generated by the EN Suite. EN Suite will auto-generate an email confirmation to acknowledge the receipt, completeness determination, technical review status, and the decision.

(B) Data Entry Help

System provides a wide variety of functions to provide help and instructions to user.

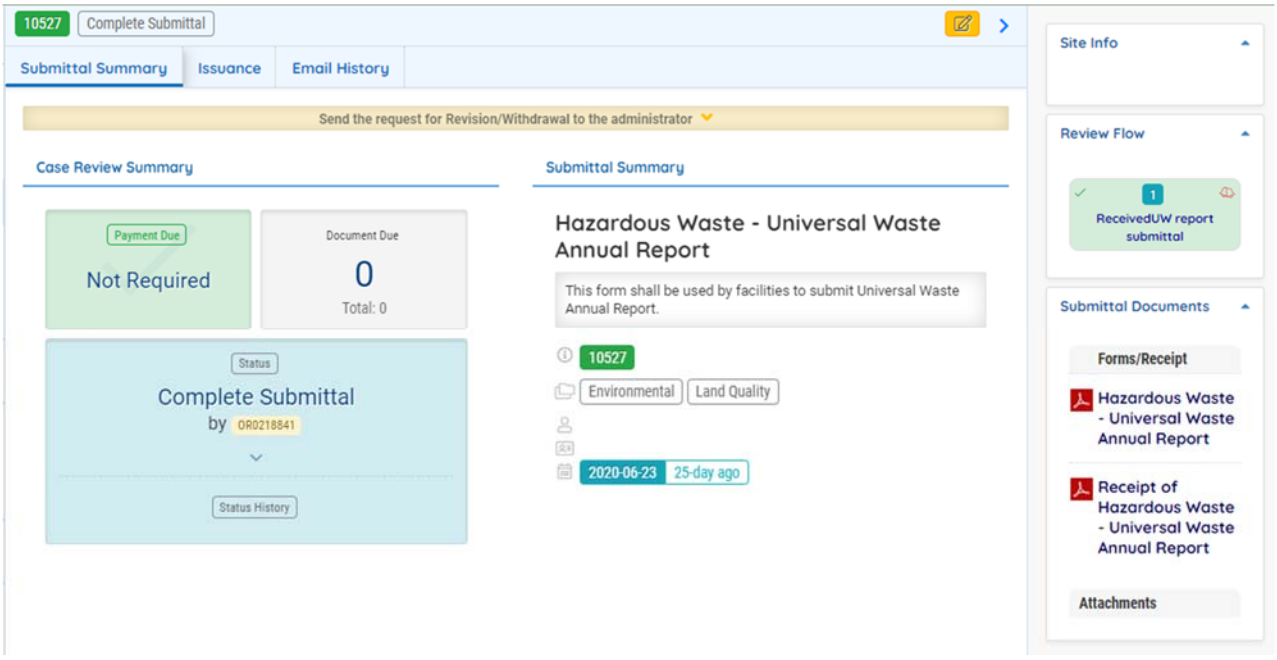
- **Hover-over instruction**: when user hovers the cursor over to certain field, system will display a floating tip with explanations on the data field;
- **Question mark icon**: when user move the cursor to the question mark icon, system will display instructions;
- **Helpful document URL link**: for certain areas, system can also provide URL to navigate user to other websites for a more detailed and in-depth instructions;
- **Video tutorial**: user can also click a link to watch video tutorial on using the system;
- **User manual**: user can click to read / download a user manual on using the system;
- **General instruction**: wherever necessary, system display general instruction text in yellow banner

2.2.2.3 Tracking Review Progress of Each Submittal

The ability to track submitted applications allows the user to effectively manage submissions. Users can track the applications they have submitted by navigating to the 'Manage Submitted Case menu bar under "Submittal" tab. The user can also withdraw, amend, or terminate their submittals. EN Suite provides an advanced search option, giving the user more search parameters to use. EN Suite provides the following features for the user to keep track of their submission:

- Ability to review submission detail
- Track Authority review status regarding the submission
- Viewing issuances related to the submission
- Communicating with the Authority regarding the submission
- E-mail tracking of notifications sent by the Authority

An example screen below shows how the public user could continue to track DEP's review progress on each of their submittals.



(A) Review Copy-of-Record

A public user may have several submissions for their facility(s) so it is important for them to be able to have a tool to review their submissions. The 'Track Submitted Application' tabs can be broken down into the following:

- **Submittal:** user can view information related to the submission and status - EN Suite displays: Submission ID, Application Type, Submission Date, Submitter details, Most Recent Application Status, Status History with Comments and Most Recent Application Form.
- **Attachments:** displays any attachments that have been uploaded to EN Suite during submission process; if attachments were uploaded during submission process, the applicant can upload additional sets of attachments in this page.
- **Payment:** displays total fee, payment made and fee balance; user is able to make additional payments via credit card or electronic check if there are any pending balances on the application fee.
- **Work Activities:** display the review process for this application
- **Issuance:** displays all permits that have been issued for the submission in question.
- **Correspondence:** allows applicant to initiate correspondence with agency users, but is visible to third-party users as well.
- **Email History:** displays a list of emails that have been manually sent by agency users, and are not system-automated.

(B) Track Review Status

The public user could monitor DEP progress on their permit application and view each task's complete date and status. This allows the public user to keep track of the DEP review progress.

2.2.2.4 Tracking Issuances from the Authority

The user can also keep track of documents that have been issued. In some cases, the Authority will issue multiple draft permits that will be displayed in this section so that the applicant may see which draft permit should be used in moving on to the final permit. In issuance tab, the System will show the permit type, permit number, and the type of permit issued. The user can also view / download an electronic copy of the issuance document.

2.2.2.5 Tracking Correspondences with the Authority

EN Suite provides a feature to allow the facility user to send notification to the Authority. Being able to contact the Authority is necessary to resolve any issues that require attention and effectively reduce the time needed to resolve any issues. The user can access this section if there is any new correspondence through the message center. The correspondence tab within the submission will only display correspondence regarding the selected submission. The correspondence history will contain time stamps of the conversations, the time the correspondence was created, and the subject.

2.2.2.6 Tracking Email History

EN Suite maintains a history of all emails pertaining to each submittal, issued by EN Suite. This provides an easy method of record keeping of when they were notified by the EN Suite system and the details of the e-mail. Only e-mails generated by EN Suite are stored in this section. This may prove to be useful in situations where the applicant did not receive an e-mail due to various reasons but can use this tool to check on e-mails regarding their submission sent by the system.

2.2.2.7 Other Submittal Actions

EN Suite also supports other submittal actions include: (1) Agency sends back, (2) Withdraw, (3) Applicant requests to revise, (4) Cancel / Terminate, (5) On Hold. For each of those requests, the user is required to enter a valid reason. By doing so, the Authority will make a decision of whether or not to approve or deny the request.

2.2.2.8 Permit and Issuance Management

The permit and issuance management module offers the Public User the following features:

- Track Agency's review status for their permit submissions

- Manage permits issued by Authority
- Renew existing permits
- Amend permits
- Submit permit termination request

2.2.2.9 Co-signer Feature

Some environmental submittals will require multiple signers to certify the data contained in the submittal. EN Suite supports this requirement by allowing the Responsible Official (RO) to invite person(s) to view specific contents of the submittal and certify data accuracy. The co-signer feature allows the RO to be fully responsible for the submittal, control data security on whom to invite to view "portions" of the submittal and certify the data for the RO.

The process is outlined below:

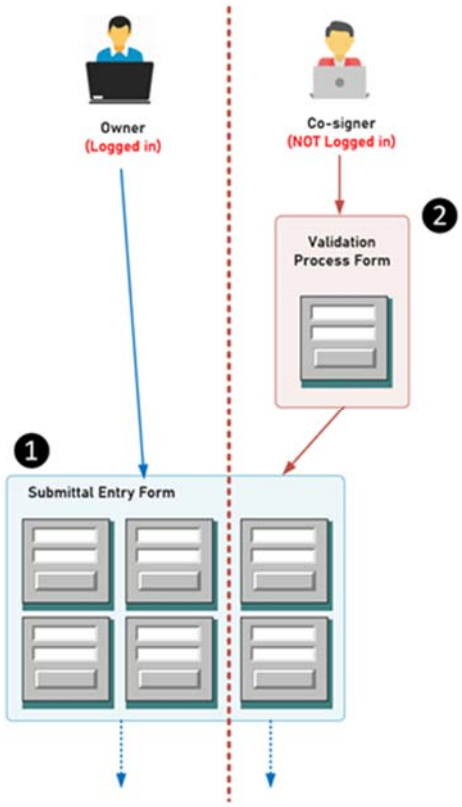
❶: The RO will:

- Invite con-signer(s) to view/certify portions of the submittal
- Enter the email address and phone # of each invitee

The System will automatically issue email alerts to the Co-signer(s) and invite them to review the document and sign.

❷: The Co-signer will:

- Automatically receive an email alert to view/certify the data included in the submittal. The email will contain a hyperlink to EN Suite to allow the con-signer to jump to the submittal and view portions of the Submittal data
- also receive a security code received on the phone # specified by the RO
- will need to enter the security code to authenticate his/her identity. (This is a second factor authentication)



EN suite verifies the security code. After passing the security check, the con-signer will be taken to the portions of the Submittal that the RO asks him/her to view and certify. After con-signer's signature, EN Suite will record the action as part of copy-of-record along with the submittal.

2.2.2.10 Cradle-to-Grave Status Tracking

EN Suite tracks each stage of submittal with a unique status code through the entire permit life cycle. Examples of standard status codes are listed below.

(A) **Submittal Status Tracking Codes**

1. Partial Submittal	2. Complete Submittal	3. Scheduled	4. Admin Review Start
5. Admin Review Completed	6. Tech Review Start	7. Tech Review Completed	8. Public Comment Period Open
9. Public Comment Period Closed	10. Approved	11. Permit Issued	12. Withdraw
13. Terminated	14. Modification	15. Revised Archived	16. Denied

17. Closed	18. On Hold	19. Rejected	20. Renewal
21. Renewal Archived			

(B) **Permit Status**

1. Issued	2. Expired	3. Termination	4. Extension
5. Permit Issued	6. Interim	7. Incomplete	

2.2.2.11 Manage and Complete Reporting Obligations

EN Suite tracks Reporting obligations, monitors their receipt status, and alert the Authority users of potential no-compliance to meet reporting obligations. Report obligations are created by the Authority user and are useful to respond to the following environmental process:

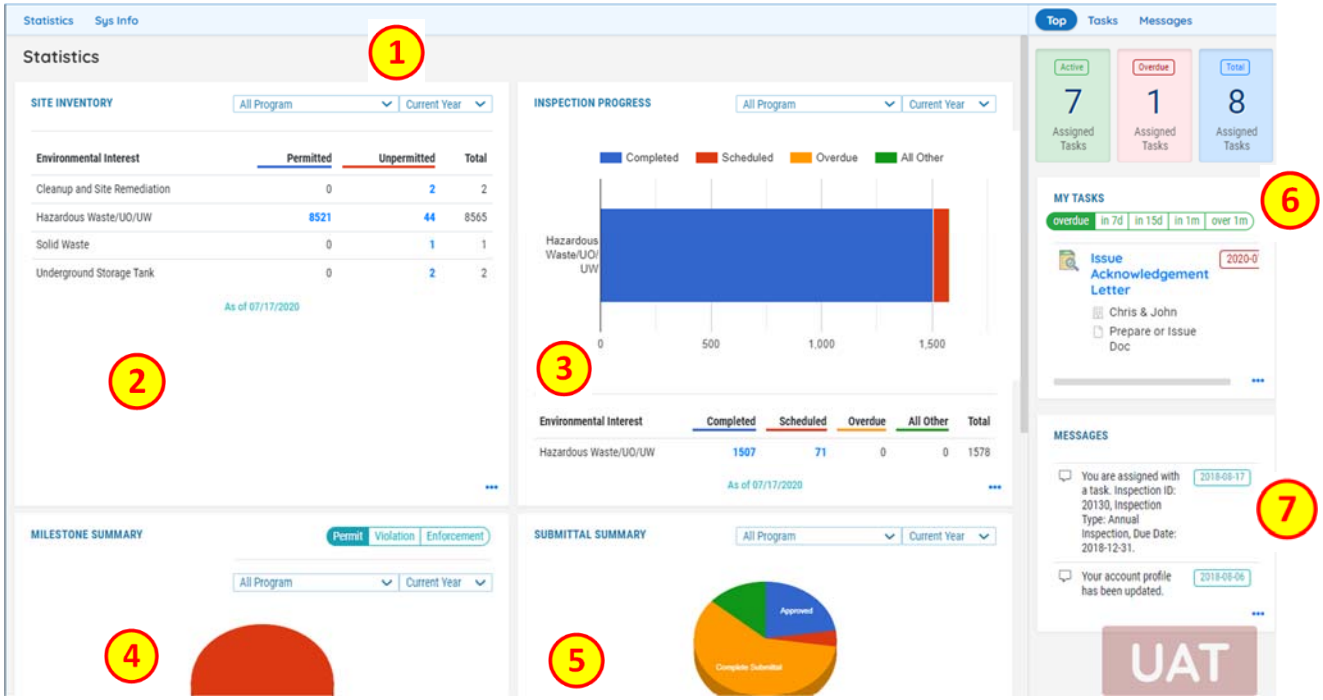
1. Post permitting compliance reports
2. Annual permit renewal
3. Annual compliance reporting
4. Annual fee payment
5. An Authority's demand from the regulated entity in response to an Inspection
6. An Authority's demand from the regulated entity in response to a Violation
7. An Authority's demand from the regulated entity in response to an Enforcement

When the Authority establishes reporting obligations, the obligations will be automatically pushed to the Public Portal for the regulated entity to complete. Public users should follow the instruction on each reporting obligation form and enter data accordingly. Based on different types of Subsystems and different types of reporting obligations, Public users should be able to work through different forms.

After Public users submitted the reporting obligation, the status in Reporting Obligations Module should change to "Submitted," and this reporting obligation record should be displayed in the Submittal Module. Authority users could click on the orange eye icon in the last column to view the submittal.

2.2.3 EN Suite Authority Portal & Subsystems (Air, Water, Land) for Authority Users

2.2.3.1 Authority Dashboard



The dashboard contains the following configurable elements which display to the user a general overview of current activities associated to them.

1 **Search by 'Business Group' and "Year"**: a drop-down list of all business groups within the Authority for user to select and view the summary of each group. Options of the drop-down list can be controlled based on user's role and business group. This function is provided for a manager to track the performance and work load of each staff under his/her group.

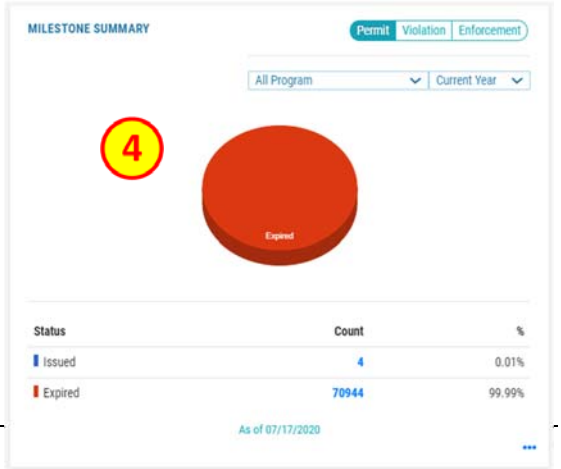
2 **Site Inventory**: a high-level view of the regulated community for both permitted and on-permitted. The **blue numbers** are hyperlink to take the DEP user to drill down to those site records to view or edit the data.

3 **Inspection Progress**: a high-level view of inspection activities performed by DEP. The **blue numbers** are hyperlink to take the DEP user to drill down to those inspection records to view or edit the data.

4 **Milestone Summary**: a high-level view of DEP work progress for 3 major business processes (for each environmental program, and by year)

1. Permitting
2. Violation
3. Enforcement

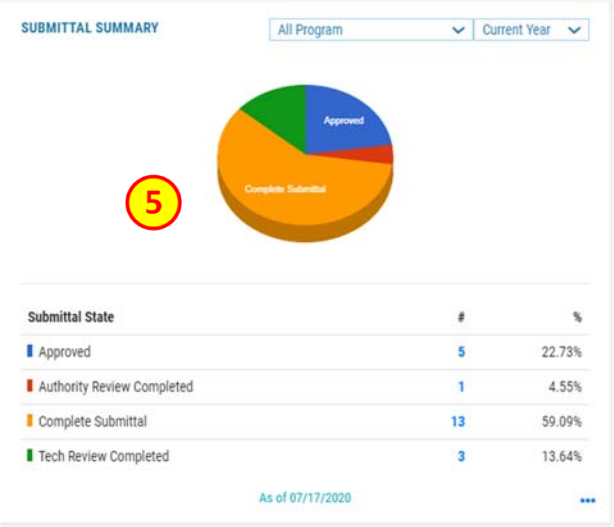
The **blue numbers** are hyperlink to take the DEP user to drill down to those records to view or edit the data.



5 **Submittal Summary**: a high-level view of DEP work progress for processing all submittals received from the regulated community (for each environmental program, and by year)

Submittals include:
- Permit/License application
- Compliance report
- Paying fees
- Complaints
- Etc.

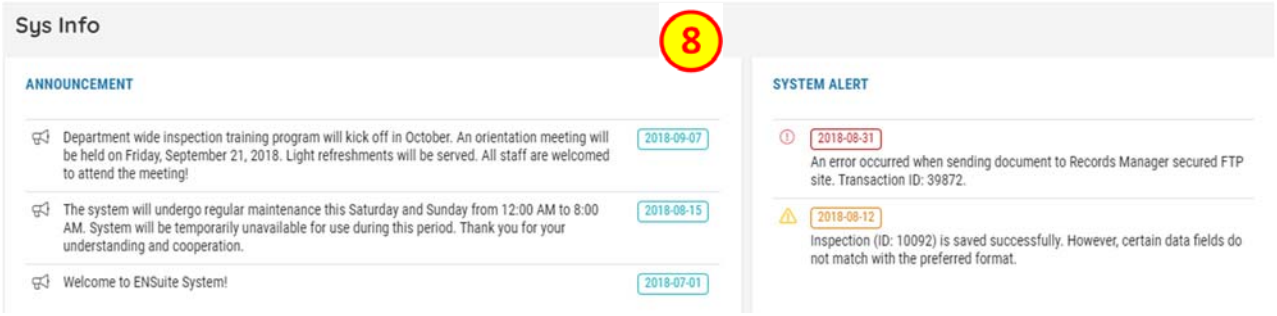
The **blue numbers** are hyperlink to take the DEP user to drill down to those records to view or edit the data.



6 **'My Task':** list tasks have been assigned to the user (personalized). Each task name is a hyper-link to allow the user to zoom into the corresponding task.

7 **'Message':** notifies the user of any communication that requires his/her attention. Clicking on the notification will bring the user to the section where the message is displayed.

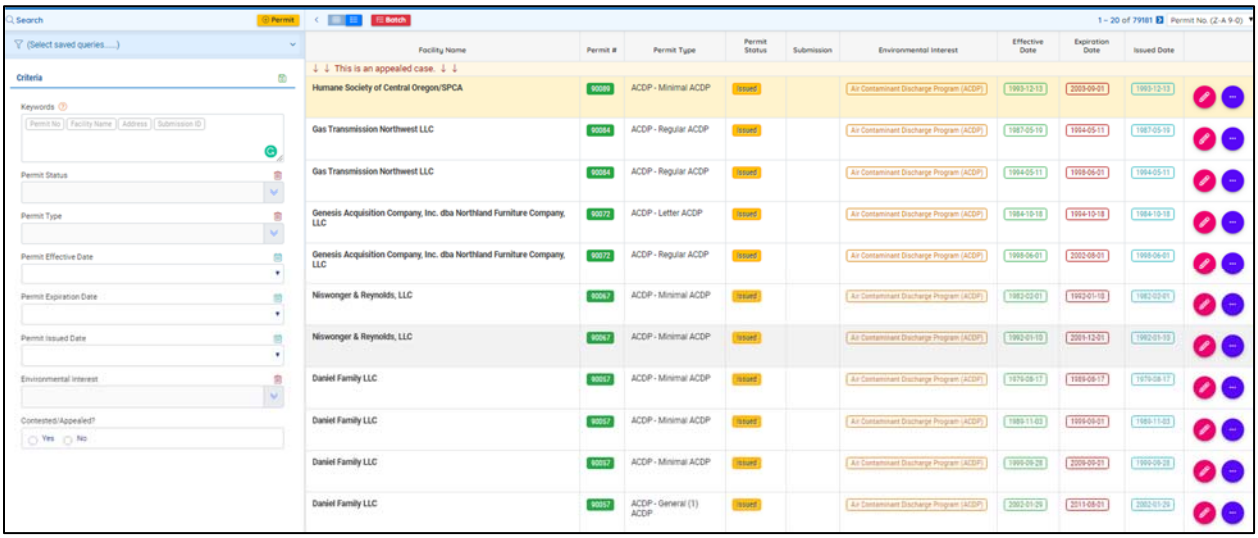
8 **'Sys Info':** displays system-wide announcements and important alerts that will require the user's attention. Please see an example screen below.



2.2.3.2 Submittal Review & Management

The EN Suite – Agency Portal provides several tools to assist DEP in processing submittals, manage workflows, communicate with the RO, make decision, and issue a final permit/certificate.

The submittal will appear in the 'Submittal Review' module of the 'Submittal' section after the public user submitted the submittal. From this module, the DEP user can start type the Permit No, Facility Name, Address and submission ID to search the submittal, the search result also can be filtered by status, type, effective date, expiration date, issued date, environmental interest and contested/appealed. The contested and appealed case will be highlighted and indicated in the list view on the right-side panel.



2.2.3.2.1 Submission Info

Selecting a submittal record will allow DEP user to drill down to see details, including:

- Data captured in the submittal form
- Attachments: displays all documents associated with the submission. This could range from 'Building Layout' to 'Individual Test Data' depending on the requirement for the application. If documents were received by general mail, the user can scan and upload the documents associated with the application in the 'Recevied Files for Required Documents' section.
- Payment
- Submittal receipt: System records the submission copy-of-record and allows user to view the application in either PDF format or in "online form" version. If there is any revision to the original submittal, the original submittal will be archived.
- The **Send Notification** feature allows the user to e-mail the applicant directly at any given time.
- Status Change History of Submittal: System tracks status change history of each submittal. User can view any significant activities associated with a submittal in a table as shown on the right.

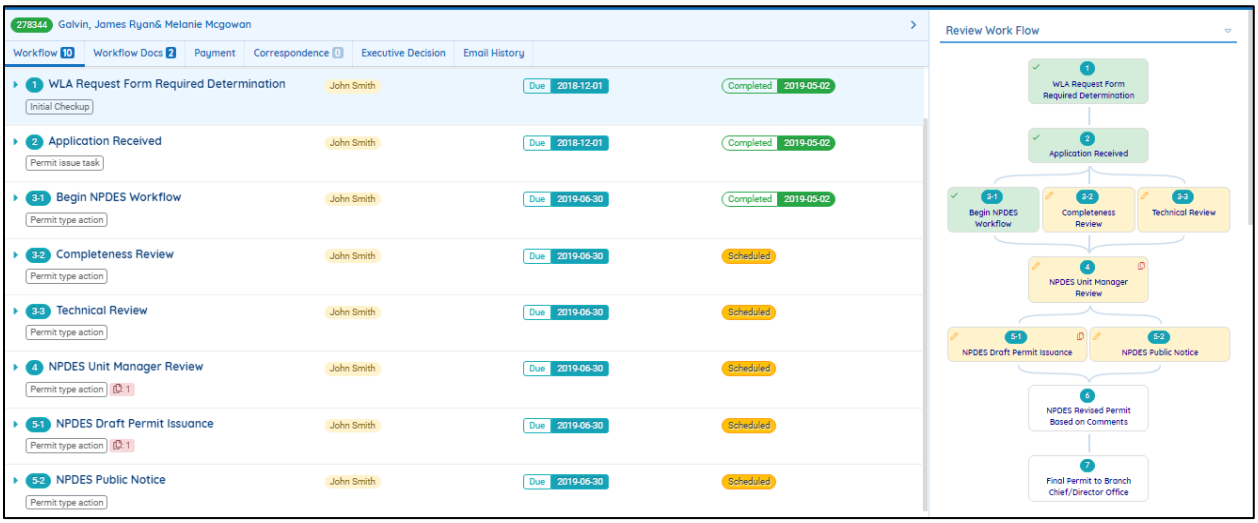
2.2.3.2.2 Workflow Management

(A) Work Activities

Each submittal type can have its own work flow which is configurable by submittal type supervisor. System tracks the process from cradle to grave. Specifically, it tracks the following information:

- Task name
- Assigned to
- Task status
- Default due date
- Completion date
- Task comments
- Documents generated or issued during the work task
- Recommendations or decision on the submittal

An example screen showing workflow task management is illustrated below. EN Suite will automatically assign Task to the default staff based on the workflow template, display the assignments at each DEP user's dashboard, track Task due dates, and provide alerts to each user for upcoming or overdue tasks.

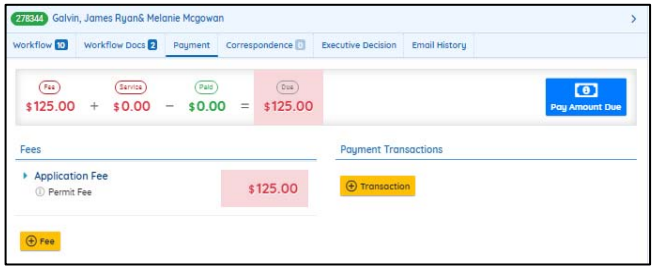


(B) Correspondence with Applicant

DEP user and applicant can communiate with each other via a "chat" window to discuss the submittal and its progress.

(C) Track Payment

DEP user could track payment status required for each submittal. This screen will automatically display most up-to-date financial data based on external system interfaces.



(D) Track Review Comments

DEP user could record review comments occurred at each workflow task.

(E) Enable a Public Notice

DEP user could push a submittal to the Public Portal to enable "Public Notice". The DEP user could include and mark non-confidential documents to go along each Public Notice record. The DEP user could also specify the Public Notice period (begin date, and end date).

General public could search, review, and provide comments during the public comment period.

All public comments received will be automatically stored under each submittal to allow DEP user to review, process, and respond.

2.2.3.2.3 Issuance (Issue a Permit/License/Decision Letter)

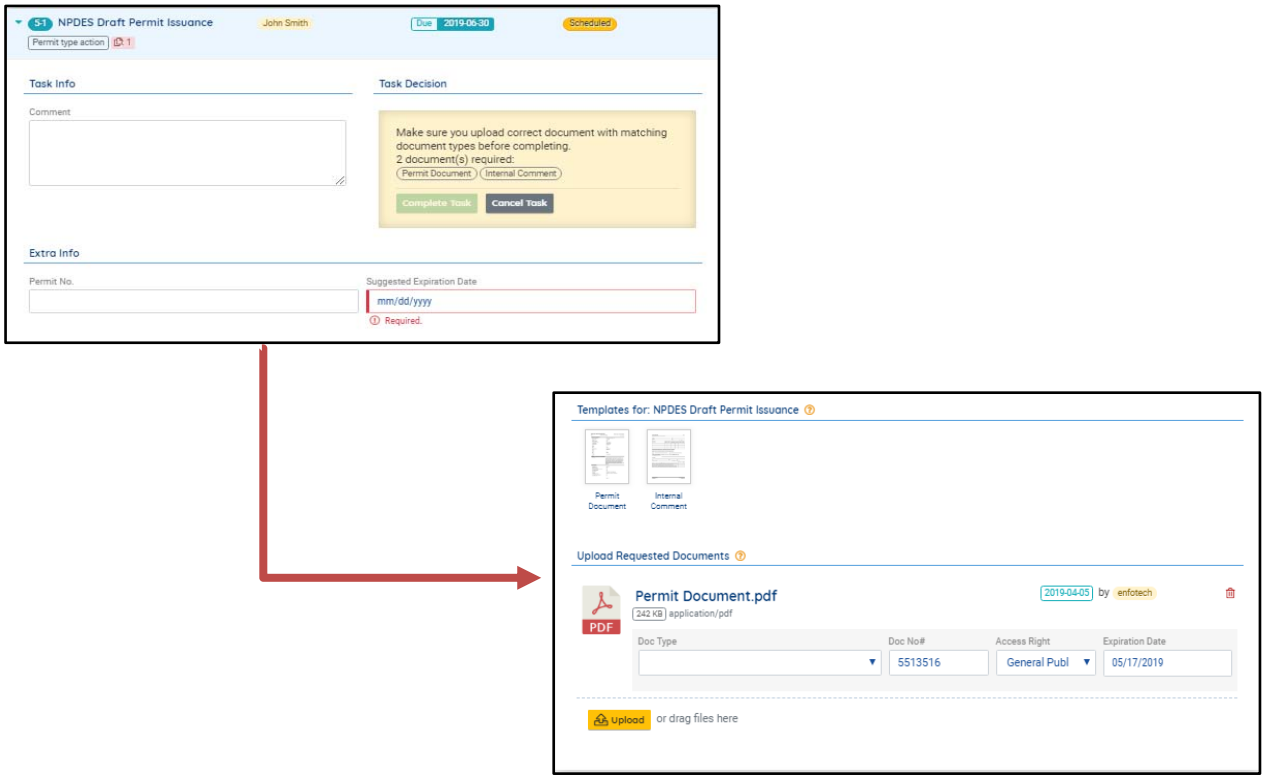
EN Suite provides capabilities for drafting issuances in the workflow. Various functions can be provided via configuration unique to each submittal. They include:

(A) Generate issuance document:

- Support configuration to define which issuance type(s) should be available within certain workflow
- Capability to automatically generate issuance templates (based on the paper templates provided by program side) within specified work tasks

- The issuance templates can be configured in MS Word file format
- The auto-generated issuance templates can auto-populate data from database tables (per defined bookmarks to retrieve database data)

This diagram shows an example workflow to drafting issuance:



(B) Manage draft issuance documents:

- DEP Staff can review, download, and save the issuance documents
- If the issuance documents are in MS Word format, Authority staff can modify and re-upload a new version
- System can also provide check-in/check-out function to manage documents versions and record the change details

(C) Track special data elements during issuance:

- The system also supports tracking of additional data fields, unique to each submittal type, in the issuance process

(D) Upload supporting documents:

- DEP Staff are also able to upload supporting documents during the submittal review
- The uploaded documents can be in multiple formats PDF, word, excel.
- The user could define access privilege for each document such as (1) Limit to Authority internal staff only, (2) Available to the RO and Authority, (3) Available to RO, Authority, and General Public (for Public Notice purpose)

(E) Publish Issuance to the RO

Once the document is issued, the RO could review the issuance from either their account dashboard or permits/license page.

The Permit module allows the DEP staff to manage all permits and licenses issued to the regulated community. It tracks:

- Facility ID and name (or Individual for license)
- Permit ID, Name. and Revision #
- Permit terms and conditions
- Relevant permit application data
- DEP review comments during the permitting process
- Permit documents (Word merge) or in PDF file format

(F) Post Issuance Tracking Module (Compliance/Enforcement/Renewal)

Upon issuance of a permit, EN Suite offers regulatory compliance. Examples include:

1. Compliance Reporting
   - Automatically generate reporting obligations required by the permit.
   - Present future reporting obligations automatically to the Facility users at their Dashboard upon login.
2. Post Issuance Activity Tracking
   - Facilitate DEP internal workflow to review compliance submittals.
   - Issue alert based on submission deadline.
   - Allow DEP to track post issuance Inspections.
   - Issue alerts to the regulated facility for upcoming permit renewal.
3. Manage violations and enforcements: All post issuance activities are linked to the original application and permit to maintain a complete cradle-to-grave data tracking for each permit life cycle.

2.2.3.2.4 Email History

EN Suite tracks all email communications issued for each submittal case. The 'Email History' tab allows the user to view all emails that were sent by the system for the selected submittal record.

2.2.3.3 Site, Environmental Interests

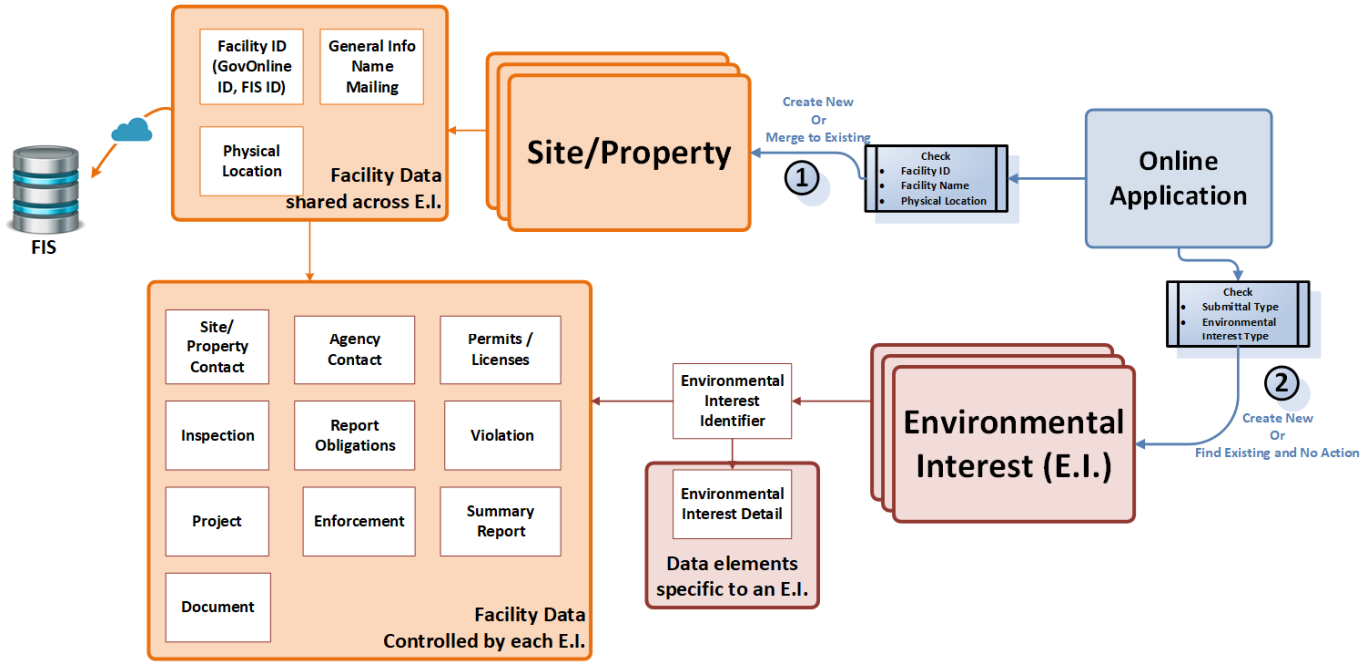
A site can be a regulated entity whose business activities should follow certain environmental regulations. It can also be a non-regulated entity that DEP has a project with. It can as well as be a property/land that has environmental issues. Within each of the agency portals, DEP can manage the following information of a site:

1. **Site/Property Information**: Basic Information of the site.
2. **Site/Property Contact**: The site's contact list.
3. **Environmental Interest**: All Environmental Interests that the site has been associated with.
4. **Agency Contact**: All Agency Contacts that have been assigned to the site.
5. **Submittal/Issuance**: All of the submittals and permits that the site has.
6. **Project**: All projects that DEP works with on the site.
7. **Inspection**: All inspections conduct to the site.
8. **Violation**: All violations that the site has.
9. **Enforcement**: All enforcement actions related to the site.
10. **Agreement/Project**: All Fee-related agreements signed with the site.
11. **Fee/Expenditure Log**: Fee and Payment records between DEP and the site.

12. **Summary Report**: Summary reports that are related to the site.
13. **Document**: Other related documents.

Site - Environmental Interest Data Model

Environmental Interest is another important concept in the EN Suite solution. For each site/property, it can be associated with one or multiple environmental interest(s) for the DEP user to conduct environmental activities, i.e. Exxon may be subject to Title V, and NPDES programs. Each environmental interest will need to manage data elements and records specific to its own program. The following data model of EN Suite is the foundation of such functionality and flexibility.

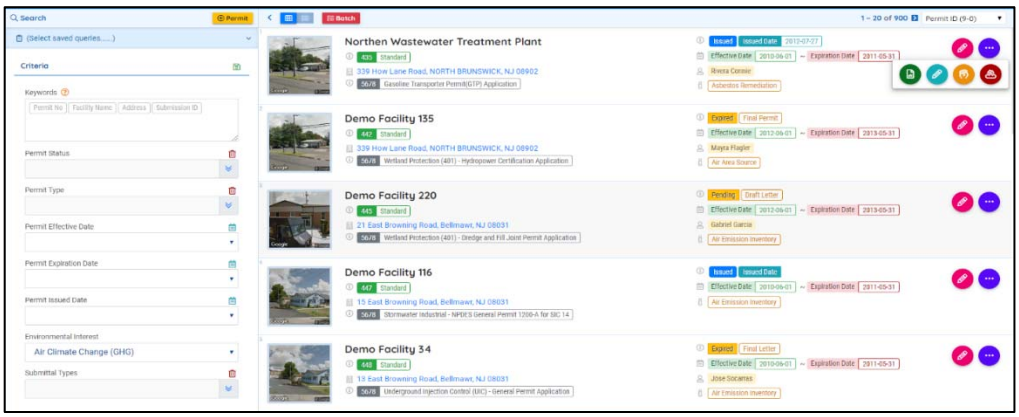


When an online submittal is submitted to DEP via GovOnline, based off the submittal type, corresponding environmental interest will be assigned to the site. Authority user can then begin to manage program specific information of the site within the EN Suite Subsystems.

2.2.3.4 Permit, License, Registration Management

After a permit/license/notification request is made by the DEP user, the entire case will be sent to the relevant Subsystem for post permitting compliance management. They include:

- Status management for
  - Active
  - Amendment
  - Renewal
  - Revoke
  - Termination
  - Contested
  - Appeal
- Reporting Obligations tracking



- Fee payment tracking
- Inspection
- Compliance & Enforcement

2.2.3.5 Inspection

(A) Schedule Inspections

The DEP user can schedule Inspection(s) in batch or one-at-a-time. For each inspection, the user could define

- Inspection category and inspection type;
- Start and end date of the inspection;
- Inspector;
- Location the inspection will be conducted
- Inspection form to be used (inspection form is configurable)

(B) Inspector Assignment

EN Suite tracks inspector name and provides a map view for manager to view each inspector's assigned inspections on the map, and to streamline the assignments as deemed necessary.

(C) Record Inspection Results

The inspector could record their inspection results or edit their results though the manage inspection module. Templates for inspection results are based on inspection type. Different type of inspections will have different templates for the user to log the result.

(D) Capture Pictures & Video Clips

The inspector could store pictures or video clips taken during the inspection trip.

(E) Voice Dictation & Capture Signature

If the inspector uses a mobile device to record inspection results, GovMobile will support voice dictation and to capture signature during the inspection trip.

(F) Flag Violations

The inspector could flag violations and issue enforcements resulting to each inspection.

(G) Follow-up Inspection Scheduling

EN Suite supports the "follow-up" inspection to allow the inspector to flag an inspection trip that will require a follow-up and its due date.

(H) Manager Review

EN Suite supports manager's review for each inspection report produced by the inspector.

(I) Email Review

EN Suite allows the DEP user to email the approved inspection report to the site contact.

2.2.3.6 Reporting Obligations

EN Suite tracks Reporting obligations, monitors their receipt status, and alert the Authority users of potential no-compliance to meet reporting obligations. Report obligations are useful to respond to the following environmental process:

1. Post permitting compliance reports
2. Annual permit renewal
3. Annual compliance reporting
4. Annual fee payment
5. An Authority's demand from the regulated entity in response to an Inspection
6. An Authority's demand from the regulated entity in response to a Violation

7. An Authority's demand from the regulated entity in response to an Enforcement

2.2.3.6.1 Create Report Obligations

(A) Batch Creation

EN Suite provides the "Master List" function for DEP user to create reporting obligations, publish and notify facilities, manage submitted compliance reports, and even create violations / NOV to late or no reporting facilities by batch.

(A.1) Generate Master List

Based off the "Master List Type", system will automatically loop through database to pull out a list of facilities that are subject to the conditions of compliance reporting.

(A.2) Publish Master List and Notify

After DEP user reviews and confirms the readiness of the Master List, agency user can publish the Master List. Once published, the obligation will be pushed to GovOnline - Public Portal. When facility user logs into GovOnline, they will see the obligation on their dashboard. System will also send out notification to remind them of reporting due dates.

(A.3) Track Reporting Status on Master List and Take Further Actions

DEP user can search records and filter the Master List by Site/Property Name, Published or Not, Submitted or Not, Have Inspection, Have Violation, Have Enforcement, Notified, Inspection Type, and Violation Type. For facility(s) that have not submitted reports after due date, DEP user can take action to conduct inspection, create violation, or issue enforcement document. These actions can be taken in batch within a Master List.

(B) Create Ad-hoc Report Obligation

EN Suite supports the Authority user to create ad-hoc report obligations based on the need from

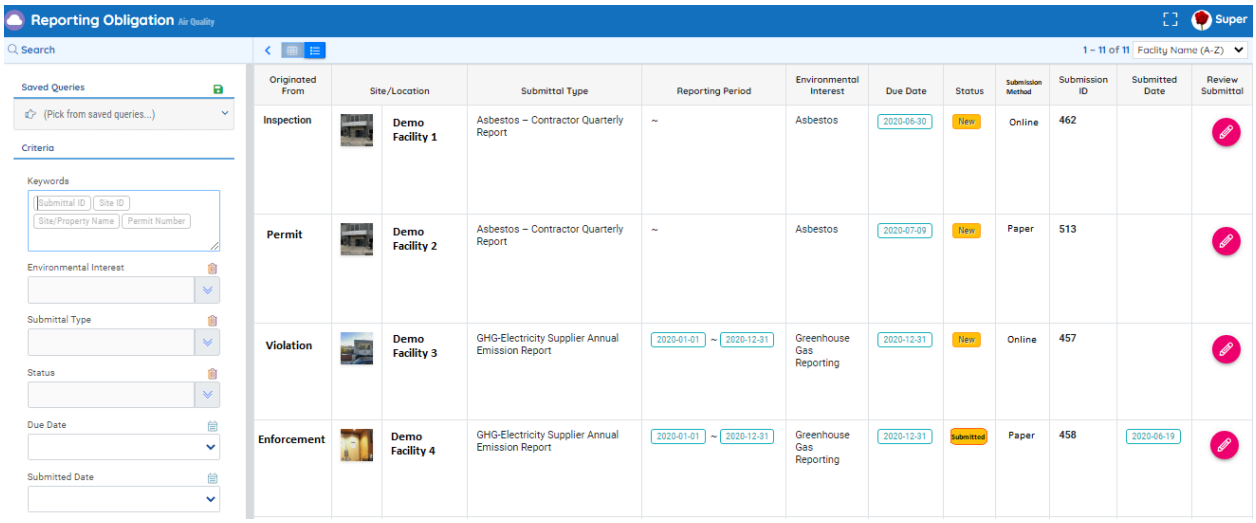
1. An Authority's demand from the regulated entity in response to an Inspection
2. An Authority's demand from the regulated entity in response to a Violation
3. An Authority's demand from the regulated entity in response to an Enforcement

2.2.3.6.2 Track Reporting Obligations

(A) View Reporting Obligations at the Console

The Authority user could track all reporting obligations from different business areas at the Console.

Authority users can search for specific reporting obligations through the search criteria panel on the left with the following searching criteria: Keywords, Environmental Interest, Submittal Type, Status, Due Date, Submitted Date, Reporting Date, and Submission Method.



Reporting Obligation Console will display the following types of records:

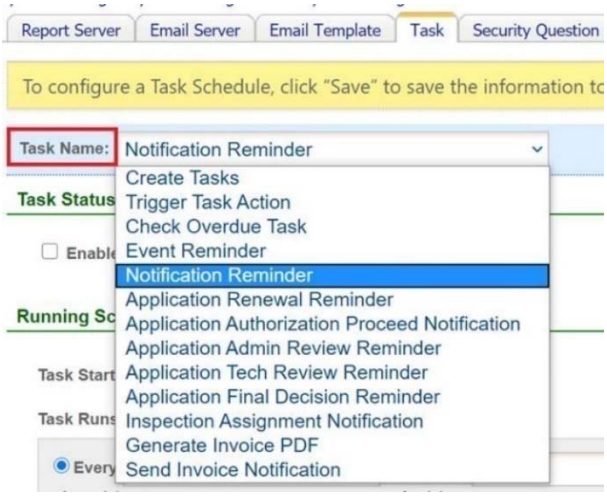
- Obligations New created with no data entry.
- Obligations completed by the public user via Online submission
- Obligations completed by the Authority user for entering data received in paper from the regulated community

(B) View Report Obligations at the Site Level

Reporting obligations are also linked to each regulated site. The Authority user could navigate to a Site record and view all reporting obligations under an existing site.

2.2.3.7 Notification

EN Suite supports the Authority user to define "Notification" needs so that the System could automatically send out email reminders to the regulated community. The "Notification" feature could be configured at each submittal type level.



Notification feature could be useful to support environmental compliance. For example,

- Permit Renewal
  - 1st notice at ### days before the expiration date
  - 2nd notice at ## days before the expiration date
  - 3rd notice at # days before the expiration date
- Compliance Reporting
  - 1st notice at ### days before the report due date
  - 2nd notice after report due date
- Comply with Compliance Milestones
- Annual fee payment
- Annual air emission
- Monthly DMR reporting
- Quarterly waste tire report
- Annual solid waste reporting
- More…

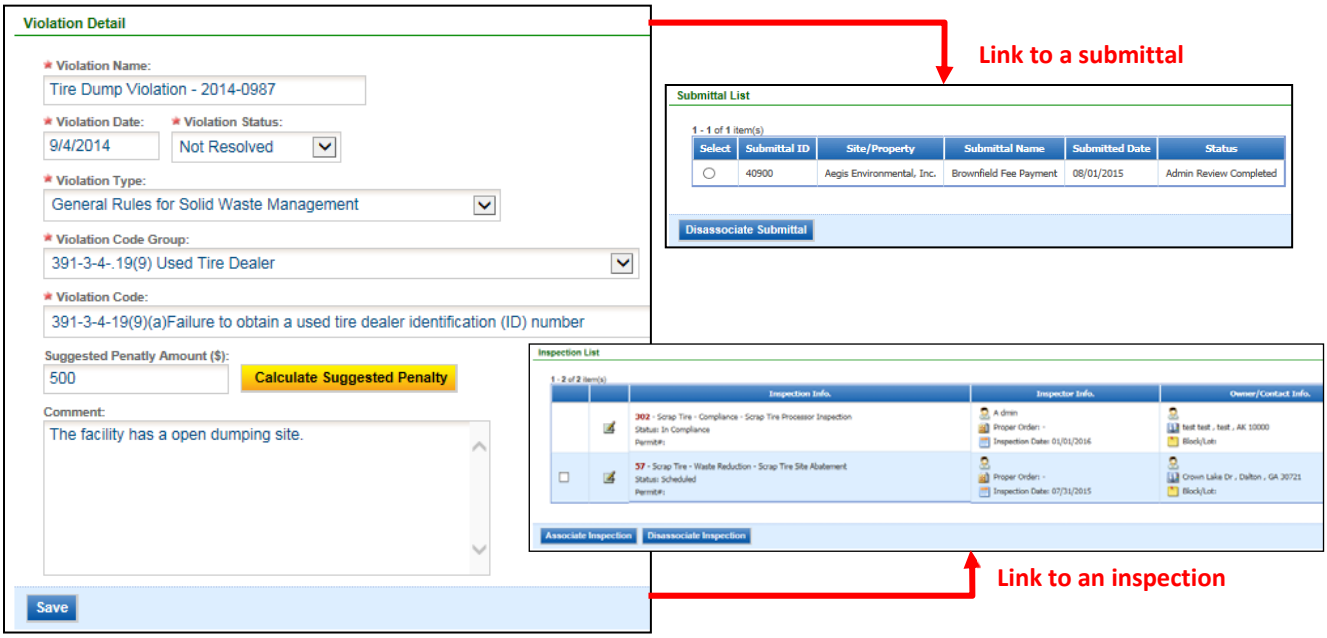
2.2.3.8 Enter Data Received in Paper

EN Suite supports the Authority user to enter submittal data received in paper. Once the data in entered in the System, the System will automatically close out the report obligation designated for the submittal.

2.2.3.9 Violation & Enforcement

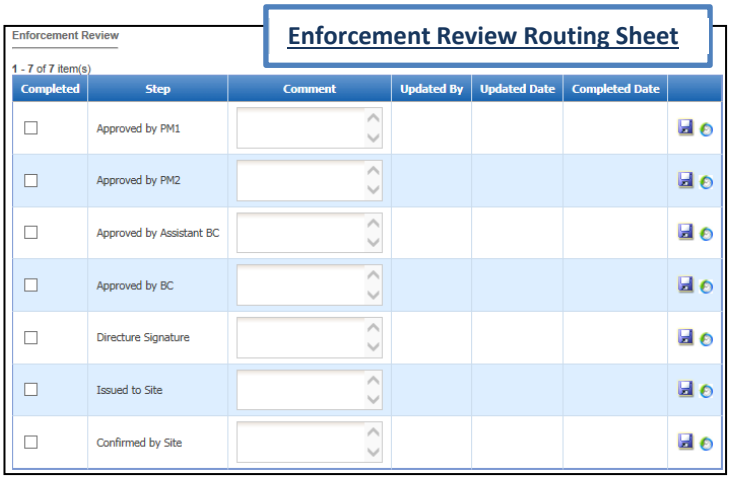
The Violation & Enforcement module provides a complete module for violation tracking and enforcement management. In EN Suite – Agency Portals, a **violation** record tracks:

- The violation type, and the rule that the site did not comply with,
- The suggested penalty fee could be calculated by system based off the violated rules,
- It can be tied with site's submittals, or inspections to identify the trigger of the violation.



Enforcement records the action that DEP takes to force the site to comply with environmental rules. EN Suite Agency Portals allow DEP user to:

- Link one or multiple violations into one enforcement record;
- Automatically generate enforcement document based off the enforcement type;
- Track routing progress within DEP to review, comment, and eventually issue the enforcement action to site;
- Automatically calculate a penalty amount based off the violations linked to the enforcement, as well as track the payment status.



2.2.3.10 Project Management

EN Suite provides a project management module to manage all relevant information under one big "Project" folder. The Project module is suitable for:

- Multi-year environmental projects such as hydropower plant construction, or watershed dredge projects.
- Multi-step and multi-form permitting process such as UST construction and operating permits

The relevant information might include:

- Multiple submissions,

- Bi-directional communications between the regulated communities and the Authority over multiple years.

Tracking Features include:

Project Basic Info

- Project Name, Project Number, Tracking Number, Project Type, Status
- Project Manger
- Project Description
- Project Phases (configurable)

Team Members

The Authority Project Manager can assign and reassign the project team members and manage members' access privileges.

Submittal

The Authority user can link and manage all related submittals made for this project.

Inspection

The Authority user can track inspection records performed for the project.

Project Document

The Authority user can add/update/delete and manage all documents for the project. Documents could be those received from the public user or ones created internally by the Authority user.

2.2.3.11 Public Notice Management

EN Suite supports the Authority to manage public notice events. Features include the following:

(A) For the Authority User

- Authority user could push a submittal to the Public Portal to enable "Public Notice".
- Authority user could include and mark non-confidential documents to go along each Public Notice record.
- Authority user could also specify the Public Notice period (begin date, and end date)
- All comments received for this public notice will be automatically linked to this submittal record, and organized for the Authority user to review and respond

(B) For the Public User

- Public user could search the Public Portal to find "public notices" issued by the Authority
- Public user could submit comments to the Authority before the comment period end date

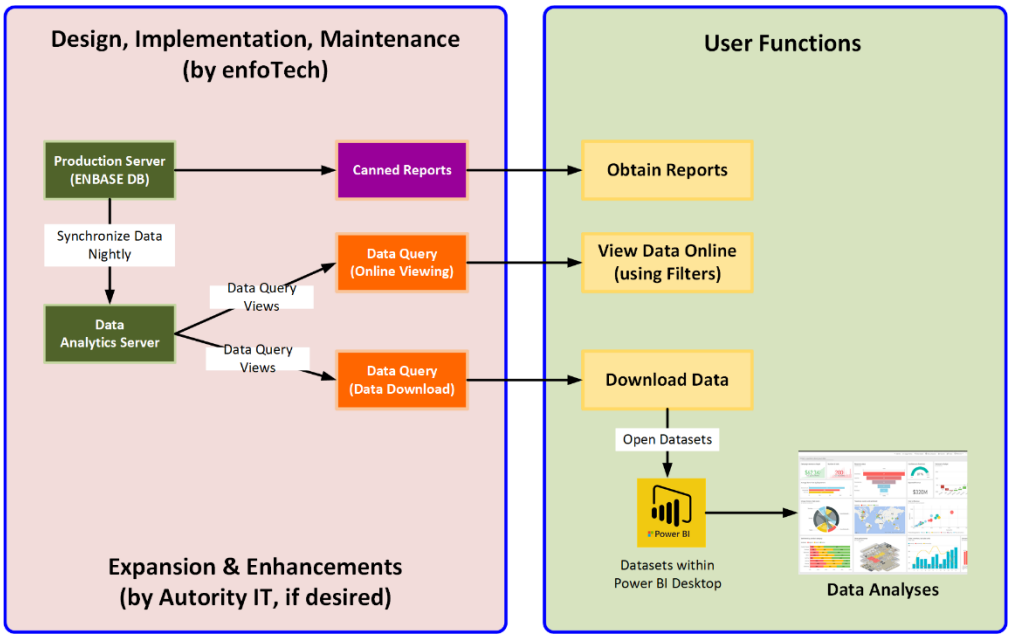
2.2.3.12 Report Console

EN Suite offers standard canned reports and user-defined data query. DEP Admin could develop new reports and add them to EN Suite without any coding changes. DEP Admin could also develop standard data query statements and publish them for other DEP users to use.

1. **Standard Reports**: Reports can be created with SQL Server reporting services. It Supports data filters and can export reports to other file formats (Word, Excel, CSV, PDF, TIFF, XML, HTML, etc.).
2. **Data Query (Online Viewing)**: Query tool lets users to analyze data via a user-friendly interface.
3. **Data Query (Data Download):** to download data to Excel for additional analyses. It does not require other software or special installation.
4. **Performance Reports and Resource Balancing**: EN Suite tracks DEP internal tasks, personnel assignment, due date, complete date, and status. It offers comprehensive resource management

reports to help managers to review overdue tasks, analyze points of delay, identify project critical paths, and to eliminate overdue tasks through resource balancing.

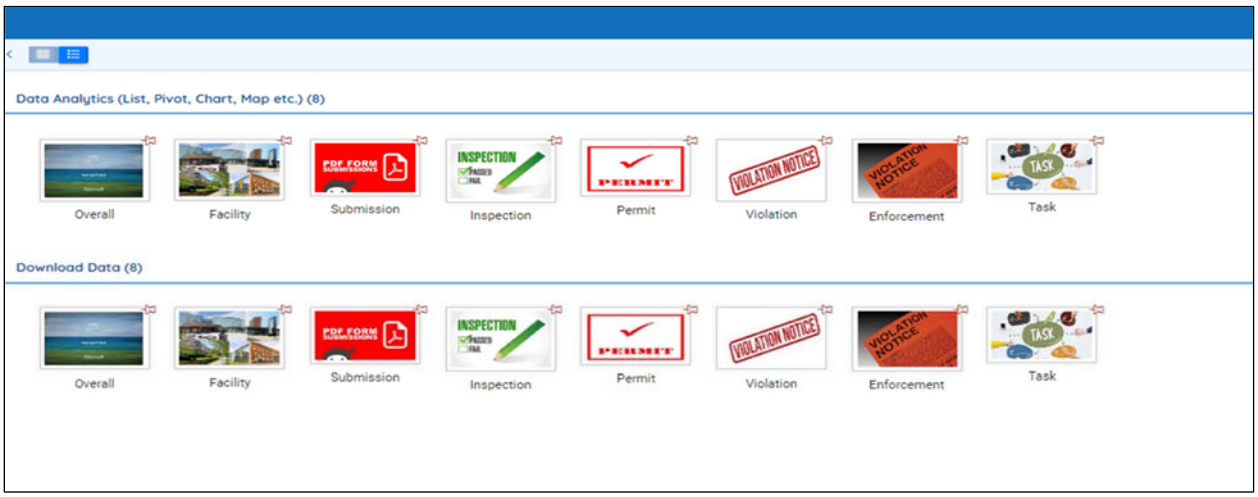
EN Suite provides Analytics tools to the Authority users to discover, interpret, and communicate meaningful patterns in data. High-level overview of Data Analytics architecture is presented in a diagram below.



Analytics offers fractures to two types of Authority users.

User Type	Functionality	Comments
General User	▪ Filter, sort, graph data online Potential datasets are not yet determined, but might include: Overall, Facility, Submittal, Inspection, Permit, Violation, Enforcement, Task	▪ Intended for general users ▪ Use-to-use ▪ No special hardware or software installation is required ▪ Cannot download data to user's local computer for further analyses
Power User	▪ Download the data to user's computer for further analyses ▪ Filter, sort, graph data online Potential datasets are not yet determined, but might include: Overall, Facility, Submittal, Inspection, Permit, Violation, Enforcement, Task	▪ Intended for users with interest in analyzing data beyond the default functions ▪ Use-to-use ▪ Need to install "Power BI Desktop" on user's computer

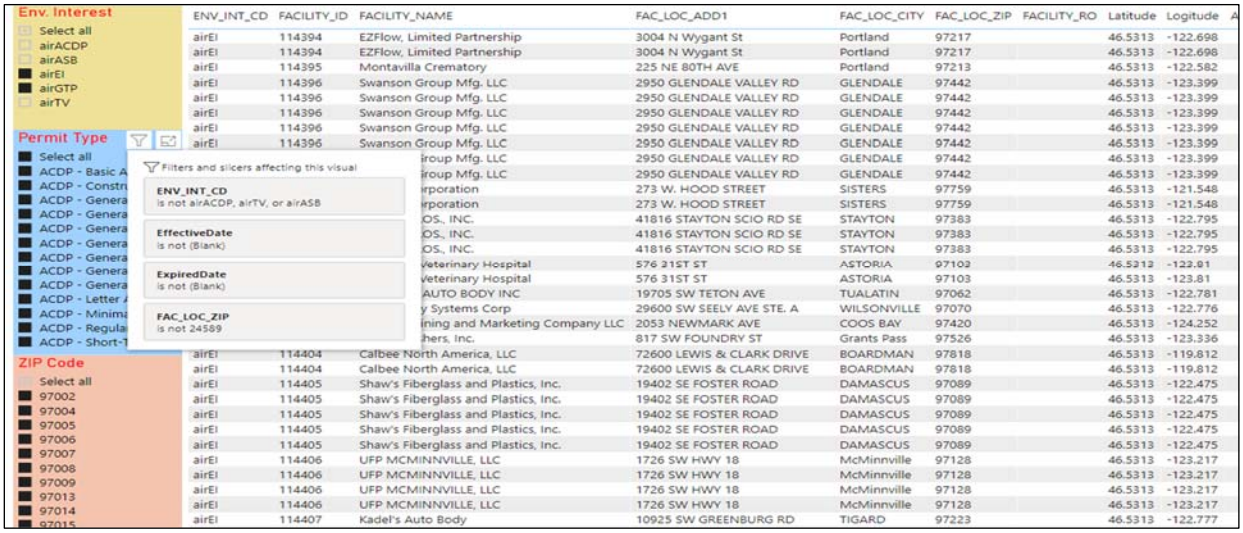
The data analytics might include datasets in major interest areas. An example screen is shown below.



(A) Data Analytics tool (Power BI)

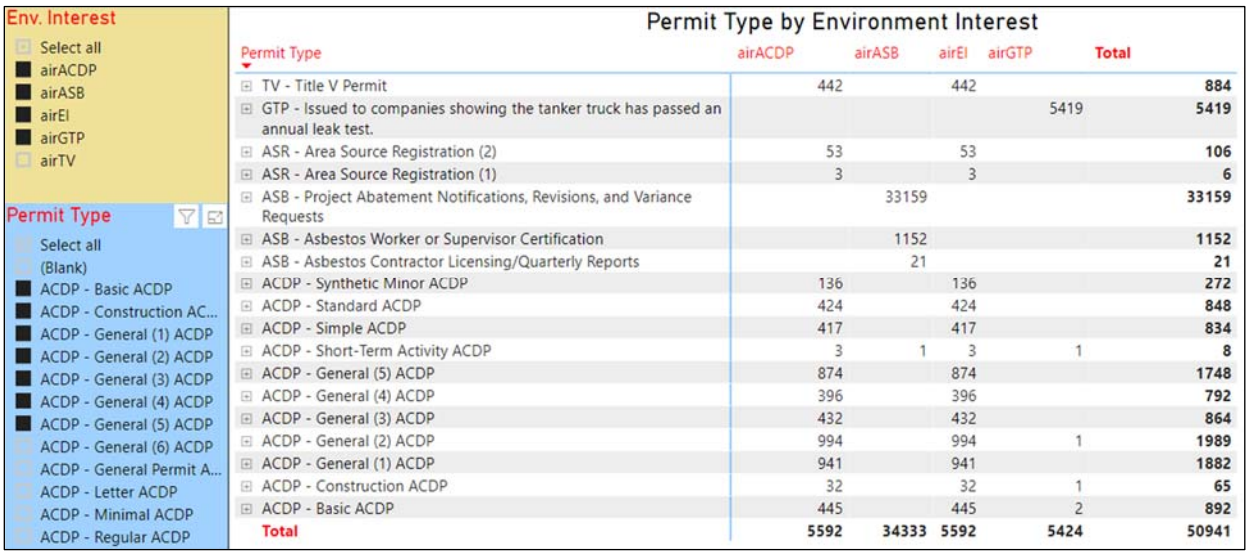
The data analytics tool provides the following modes:

- **List** - The first page data analytics shows list view of detail information. The Authority user can select the search category from left side panel and add filter to the data.



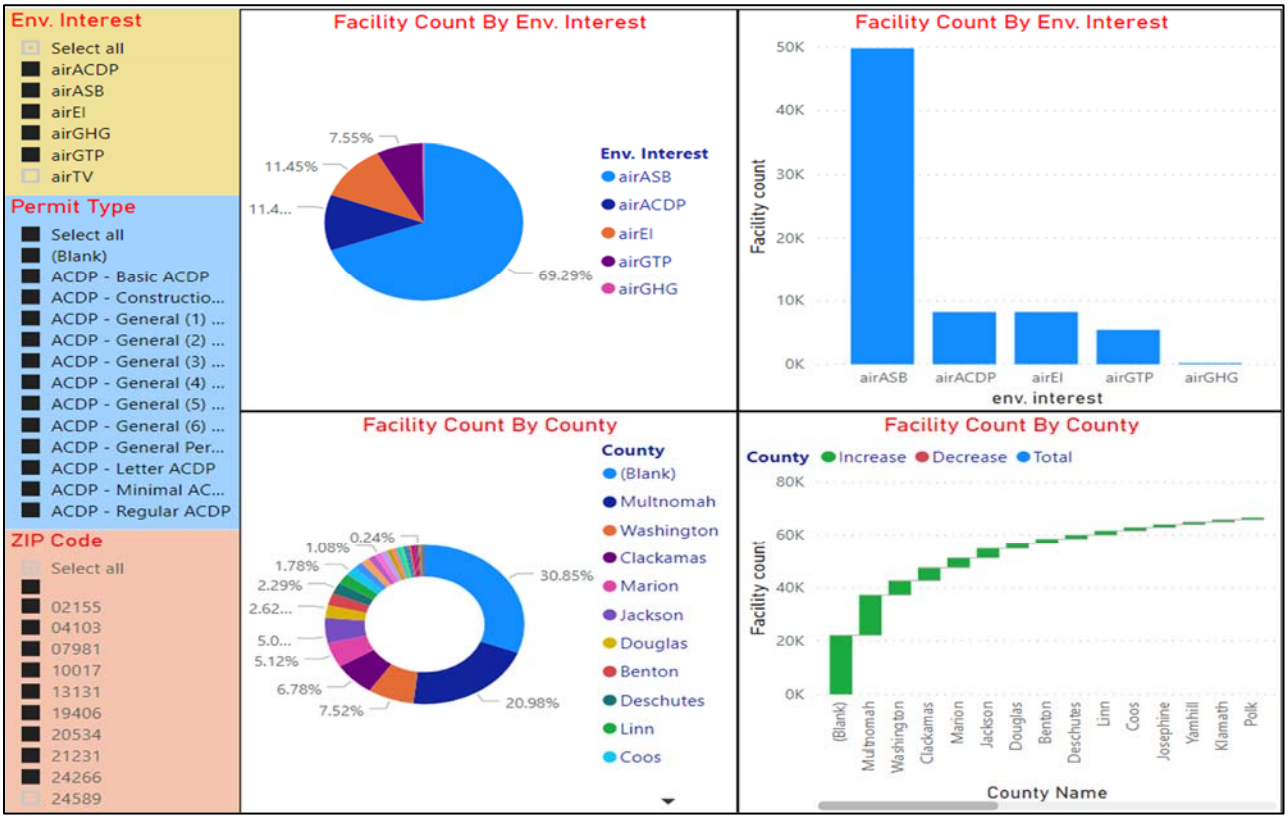
- **Pivot** – The second page of data analytics shows summary information base on the group information on left panel (Environmental interest, Permit Type), Authority user can select the search category from left side panel and add filter to the data.

The Data analytics tool provides Drill Down function, by click the Down Arrow on the top right. The Authority user can drill down to detail for selected group, click on the double down arrow, system will display the next level of hierarchy, the Authority user will also have option to expand all the down level hierarchy.



Permit Type	airACDP	airASB	airEI	airGTP	Total
TV - Title V Permit	442		442		884
GTP - Issued to companies showing the tanker truck has passed an annual leak test.				5419	5419
ASR - Area Source Registration (2)	53		53		106
ASR - Area Source Registration (1)	3		3		6
ASB - Project Abatement Notifications, Revisions, and Variance Requests		33159			33159
ASB - Asbestos Worker or Supervisor Certification		1152			1152
ASB - Asbestos Contractor Licensing/Quarterly Reports		21			21
ACDP - Synthetic Minor ACDP	136		136		272
ACDP - Standard ACDP	424		424		848
ACDP - Simple ACDP	417		417		834
ACDP - Short-Term Activity ACDP	3	1	3	1	8
ACDP - General (5) ACDP	874		874		1748
ACDP - General (4) ACDP	396		396		792
ACDP - General (3) ACDP	432		432		864
ACDP - General (2) ACDP	994		994	1	1989
ACDP - General (1) ACDP	941		941		1882
ACDP - Construction ACDP	32		32	1	65
ACDP - Basic ACDP	445		445	2	892
Total	5592	34333	5592	5424	50941

- **Chart** – the third page of data analytics display the graphic chart base on the selection of group on the left side panel. Authority user can click ▽ to filter data on the chart.



- **Map** – the 4th page of data displays the facility location on the map, Authority user can click on the facility location drill down to the location detail view.

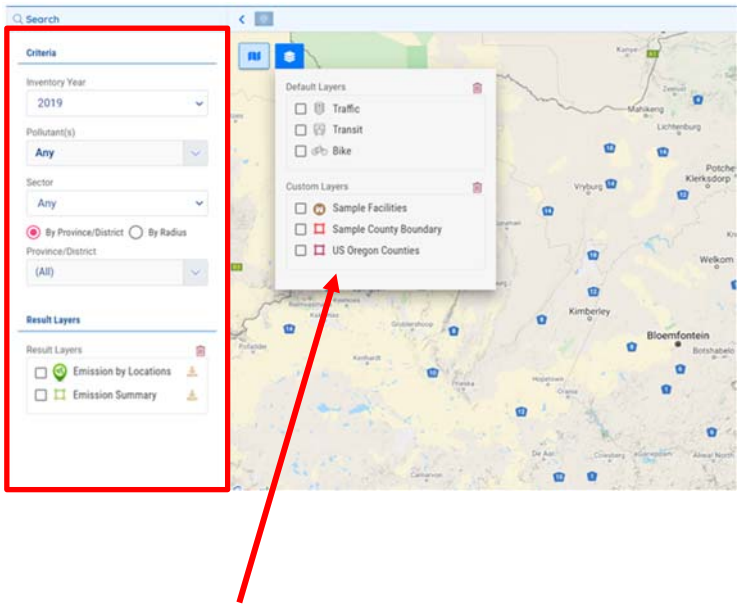
2.2.3.13 Other EN Suite Core Features

- **Data Edit Audit Trail:** tracks data change history for each submittal made on online entry forms.
- **Alert and E-mail Notification:** is used to automatically send e-mail notification to the public user. E-mail messages can also be defined in the Configuration module by the DEP administrator. The e-mail messages can be configurable for each submittal type.
- **User Account and Permission Management:** "role based" security module similar to the Windows operating system.
- **System Extension (Configuration Module):** allow the DEP administrator to add new submittal types, configure work flow, and modify existing forms to accommodate future business requirements.

2.2.4 GIS Data Analysis Tool

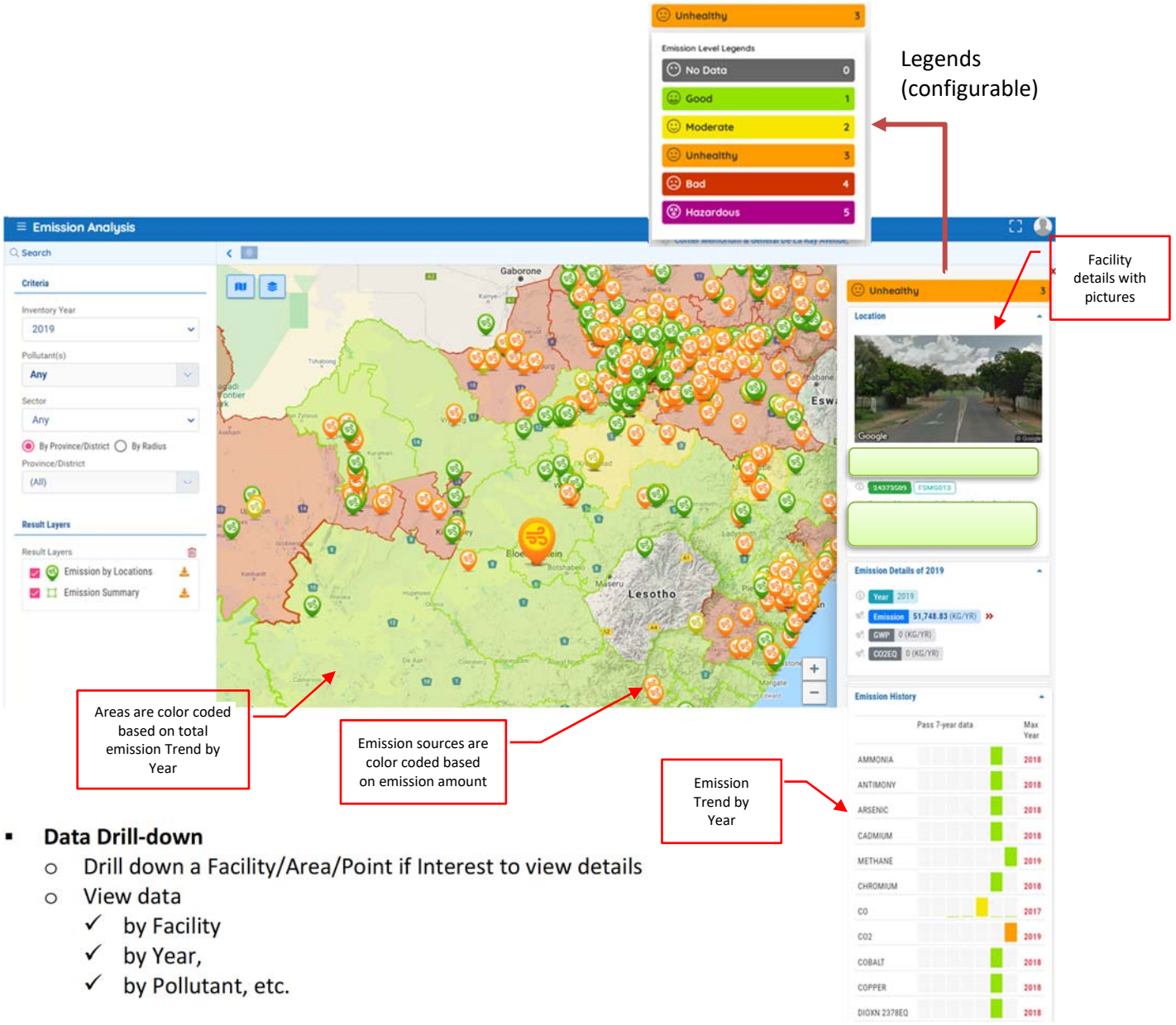
EN Suite offers a geospatial data analysis tool. Features include:

- **GIS Engine:** Google Map API
- **Base Map**: Google maps
- **Data Search:**
  - Search data by either a single criteria parameter or multiple criteria parameters
  - Search data via: 1) key in data, 2) Drop-Down Selection, and 3) Radio Button Selection.
  - Search data by Boundaries, in which GIS Users can draw a circular or square outline over a specific area on the Google Map of South Africa and all sources within the drawn boundary will be displayed and appear in the search results.
  - Search criteria could be configurable to tailor for different environmental media



- **Data Layers**: Support multiple GIS layers and from external data sources
  - **Raster Layers:** A layer that references a raster or image as its data source from the EN Suite database.
  - **Service Layer:** A layer used to display ArcGIS services.
  - **Geoprocessing Layer:** A layer used to display the output of a geoprocessing tool

- **Data Display**:
  - **Facility:** all facilities meeting the data search criteria will be displayed on the map
  - **Environmental Index:** The system could calculate environmental index (such as total emissions, total discharge, API, WQI, etc.), aggregate data by geographical area, and display the environmental index values in color-coded legend.
  - Support **Zoom-in** and **Zoom-out** for data discover



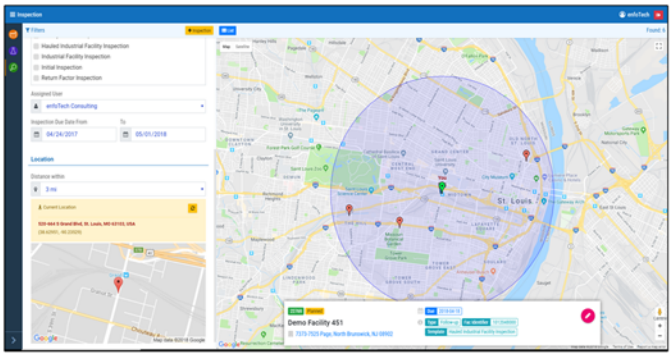
- **Data Drill-down**
  - Drill down a Facility/Area/Point if Interest to view details
  - View data
    - ✓ by Facility
    - ✓ by Year,
    - ✓ by Pollutant, etc.

2.2.5 GovMobile

GovMobile is a cross-platform software system that provides a user-friendly tool to collaborate field operations and the office staff work in a paperless environment. The office staff could create field work requests and the field personnel will receive their assignments automatically real-time on their personal device with detailed information to carry out field work. The office staff could track field work status and review the results real-time once the work is completed by the field personnel.

GovMobile could be used to support a wide spectrum of field operations, including:

- Conduct inspection,
- Perform sampling,
- Flag violations,
- Issue enforcement actions,
- Respond to emergency or incidents, and
- Search, zoom-in and edit the backend database



GovMobile can integrate with any backend database to exchange data bi-directionally so that tasks scheduled for a staff in the backend database could be automatically sent to the designated staff's device, and work completed by the staff in the field could be automatically uploaded to the backend database. Example features are listed below:

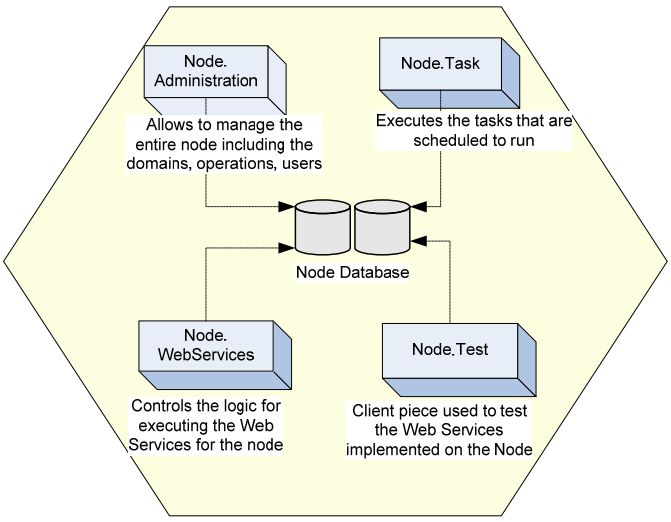
- ✓ Runs on multi-platform: Android, Windows, iOS
- ✓ Ability to work on both online or off-line mode
- ✓ Dashboard to show "my assignments", due date, location, and work requirements
- ✓ Show nearly assignments on a map and provide best routing to complete the work
- ✓ Support key word search with the wild card option
- ✓ Support voice dictation to record your field comments
- ✓ Capture field work reports with photos or video clips
- ✓ Support device's picture editor function to embellish the pictures
- ✓ Support touch screen and capture signature
- ✓ Email inspection/sampling reports to the facility contacts, case manager, etc.

2.2.6 EN Node (or Virtual Node)

EN-Node is a Web Services-based data exchange portal. Built using Web services, it allows other trading partners to access your environmental data in a secure and consistent manner. In addition, the EN-Node provides capabilities for submitting data to other Network Nodes, including EPA's Node and the Nodes of other states. The Node consists of four sub-applications:

- **Node.WebServices:** An engine that controls the logic for responding to Web Service requests on the Node. When responding to a Web service request, Node.WebServices will execute logic plugged in for a particular data flow.
- **Node.Task:** Provides the capability to execute tasks on a scheduled basis, which allows the state to schedule and initiate Web service exchanges. These scheduled tasks typically involve the invocation of Web Services on other Nodes, such as EPA's Node. The scheduled tasks are configured by a Domain Admin for a particular data flow.

Components of Node



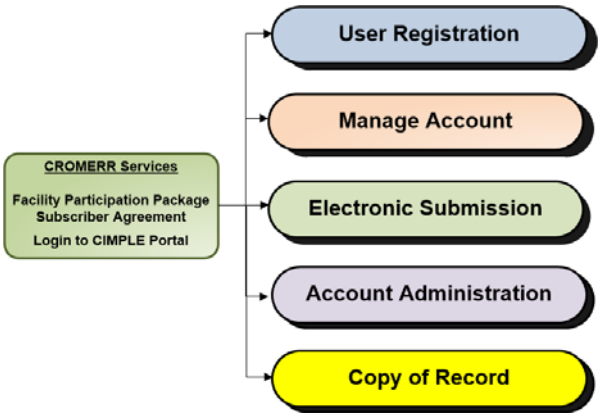
- **Node.Administration:** A Web interface that allows Node and Domain administrators to configure the Node and manage data flows. The Node.Administration application serves as an interface to configure the Node.WebServices, Node.Task, and Node.Client applications.
- **Node.Client:** A simple Web interface that allows individuals to invoke Web Services on any Node, including the e-Node. This application can be useful for either testing your Node functionality, or can serve as a simple Node client to invoke Web services on other Nodes.

2.3 EN Suite COTS Core Features

2.3.1 CROMERR Compliance

(A) CROMERR Compliance

GovOnline has been verified by USEPA and meets CROMEER requirements. EPA has issued enfoTech a GovOnline CROMERR template that could be used by GovOnline clients to seek CROMERR approval and obtain a streamlined review from EPA.



We provide the following business process diagrams to illustrate how 5 major CROMERR requirements will be supported.

A detailed CROMERR Checklist (~ 35 pages) with business processes, system functions, supporting documents has also been prepared for multiples states that use the similar system.

(1) Registration (include two components)

1. **User Registration**: including ESA signing, and DEP's approval
2. **Electronic Identity Proofing**: GovOnline has integrated with the EPA's Shared CROMERR Services to electronically verify user's identity. If verification is successful, there will be no need to submit signed paper ESA to DEP.
3. **Account Administration**: to ensure that ROs comply with the e-Signature requirements

(2) Signature Process

- ROs are required to sign ESAs and submit their requests to DEP in order to establish a RO account with certification privilege
- Account Management process is used to demonstrate GovOnline's audit trail capability and ensure that RO stays in compliance with electronic signature requirements.
- GovOnline has integrated with the EPA's Shared CROMERR Services to electronically verify user's identity. If verification is successful, there will be no need to submit signed paper ESA to DEP.

(3) Submission Process

- RO e-signature is bonded with each submittal
- RO could view human readable COR prior to submission
- All submittals are locked, no change, no-repudiation
- Acknowledgement is shown on screen and also sent to the submitter's email account

(4) Signature Validation

- e-Signature is validated for each submittal
- Validation includes
  - User ID, Password, PIN, and correctly answered Challenge Question
  - Signature is included as part of the Copy-of-Record
  - A receipt confirmation (via email) is issued to the signature holder.
    - To notify the RO's e-signature has been used to submit a report to DEP.

- ❖ If the RO finds it not the case, the RO is required to notify DEP immediately.
- Binding e-Signature with each "Submittal"

(5) Creation and Maintenance of the Copy of Record (COR)

- **Create Copy-of-Record:** Once the submission is received by CROMERR SERVICES, the system will apply a secure hashing encryption algorithm known as "SHA-2". The SHA-2 hashing algorithm is applied to the document content, password and PIN.
- **Storage of Copy-of-Record:** CROMERR SERVICES stores a copy of the submission exactly as it was received. Every time the file is opened, a CRC check is performed to compare the current copy of record with which was originally submitted. This ensures document integrity.
- **Retrieve and View Copy-of-Record:** multiple searching filters are available for the User to find a submission of interest. User can view COR in a human readable format.
  - ❖ Revision History Is Kept: If the user submits a revision to the original submission, CROMERR SERVICES will save both submissions in the system. In CROMERR SERVICES, all historical submissions are retrievable in the systems.
- **RO to make Revision to the Copy-of-Record:** all revisions are kept in GovOnline.

(B) CROMERR Account Service and Management

enfoTech will build an interface to enable data exchange between EPermit and the DEP's ERIS system. ERIS System will be the DEP's central system for creating/managing the regulated entity and contacts. The Epermit system will use the data from the ERIS for public user authentication.

2.3.2 Permit Life Cycle Management (Cradel-to-Grave tracking)

The Solution tracks the entire permit life cycle from cradle to grave. Features include:

- **Status Tracking**: It maintains over 20 statuses and supports "triggers" or "workflow" based on each status change
- **Time Tracking**: System also tracks "time" spent for each step in the permitting process. For example, System allows the DEP staff to "send back" the application package to the applicant and asking for additional information. In this case, the "clock" will stop. After the applicant submits a revision and DEP confirms that the revision is deemed complete, the clock will resume.
- **Billable Hours Tracking:** System allows the DEP users to track time spent to process a permit application. Tracking will be kept at each permit application level and could include: Date, Person, Work hours, Reference task, Description, Hourly rate (can be automatically default to a rate defined by the DEP Admin, Labor cost (calculated), Invoice Status
- **Fee Payment Status:** System also supports invoice generation and fee payment status tracking. enfoTech will build an interface to enable data exchange between EPermit and the DEP's wvOasis System. wvOasis will be the DEP's central invoice and payment management system.

2.3.3 Project Management (for complex/multip-year permitting and site remediation)

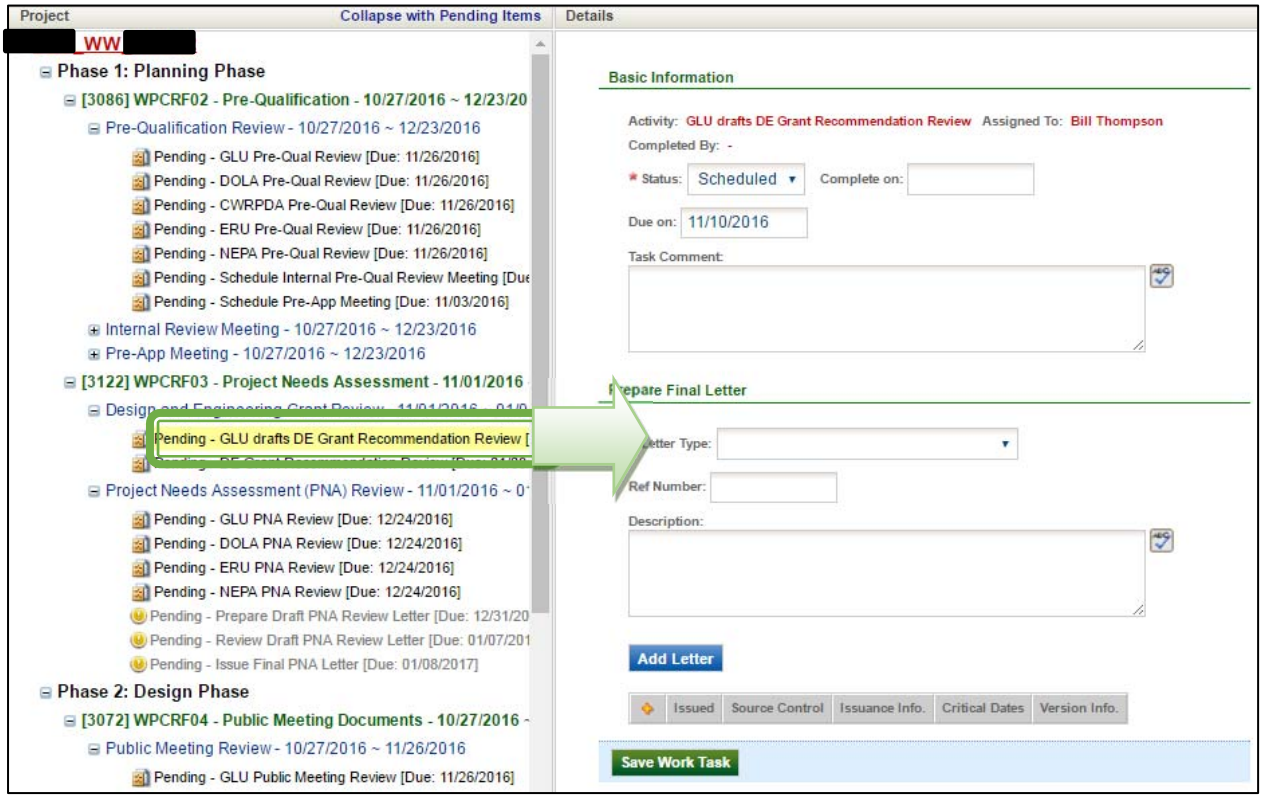
DEP user can use EN Suite to manage a project involving multiple submissions, bi-directional communications between the site and DEP over multiple years. Project modules provides:

- ✓ **"Tree View"** layout for user to easily zoom into any phase, milestone, task or document of a project. When DEP user clicks on project, phase, submittal, milestone, or review tasks in the tree-view, the corresponding details will be displayed on the right panel.

- ✓ **"Gantt Chart"** layout for user to quickly get an overview of the project status

For each project, DEP user can manage:

- **Project Basic Information**: Project name, project type, project statue, project number, project manager, project description, and associated site/facility can be tracked on project basic information page.
- **Project Team**: Project Team can be established and managed on Project Team page. Project Manager is able to add/remove project team member from available agency users, and grant Project Manager Access for specific team members, if necessary.
- **Project Detail Information:** Additional project information can be tracked on Project Detail Information page.
- **Project Phase:** Project phases are system-generated based on the project type selected. Agency user is able to edit phase name, description, start date, end date, display sequence, and also add/delete phases.
- **Manage Submittal:** track and review all submittals submitted by facility for the project.
- **Complete Project Task:** For each task, agency user can click on the desired task in the tree-view on the left panel, and enter review comments, upload review documents, track additional information on the right panel. Agency user is also capable of add ad-hoc work task under any milestone
- **Conduct Inspection:** On Inspection page, agency user is capable of create new inspections or associate existing inspections to this project
- **Track Document:** Issued documents and review documents are listed on Documents page with the following information: document link, facility name, issuance name, status, issuance date, RO information.



2.3.4 Data Validation

The Solution Implements the data validation rules to ensure data meet minimum data quality, meet business rules, and provide mandatory information. The system will pre-populate the application form with data from previous application records, existing permit conditions to minimize data errors.

2.3.5 Data Change History

Solution allows users to search and retrieve submittals, make change, and save. The System will also track each revision and data change history.

2.3.6 Management of Attachments

(A) DEP to Define Required Attachments

EN Suite will accept any file types that have been permitted by the DEP permit supervisor in the Permit Property configuration screen. The DEP Permit supervisor has the ability to define/change acceptable file types through the configuration screens, without coding change.

(B) Public User to Submit Attachments

The applicant can provide attachments that are required by each permit application type. EN Suite provides the user to either digitally upload and provides information if the user rather mails their documents to the agency instead.

(C) Search Documents

EN Suite supports file upload for submissions, inspection, review, and issuance. One submission record could accept multiple file uploads at various stages of the permit life cycle. The System offers the "Search" function to search documents by key word(s).

2.3.7 Reporting & Data Analytics

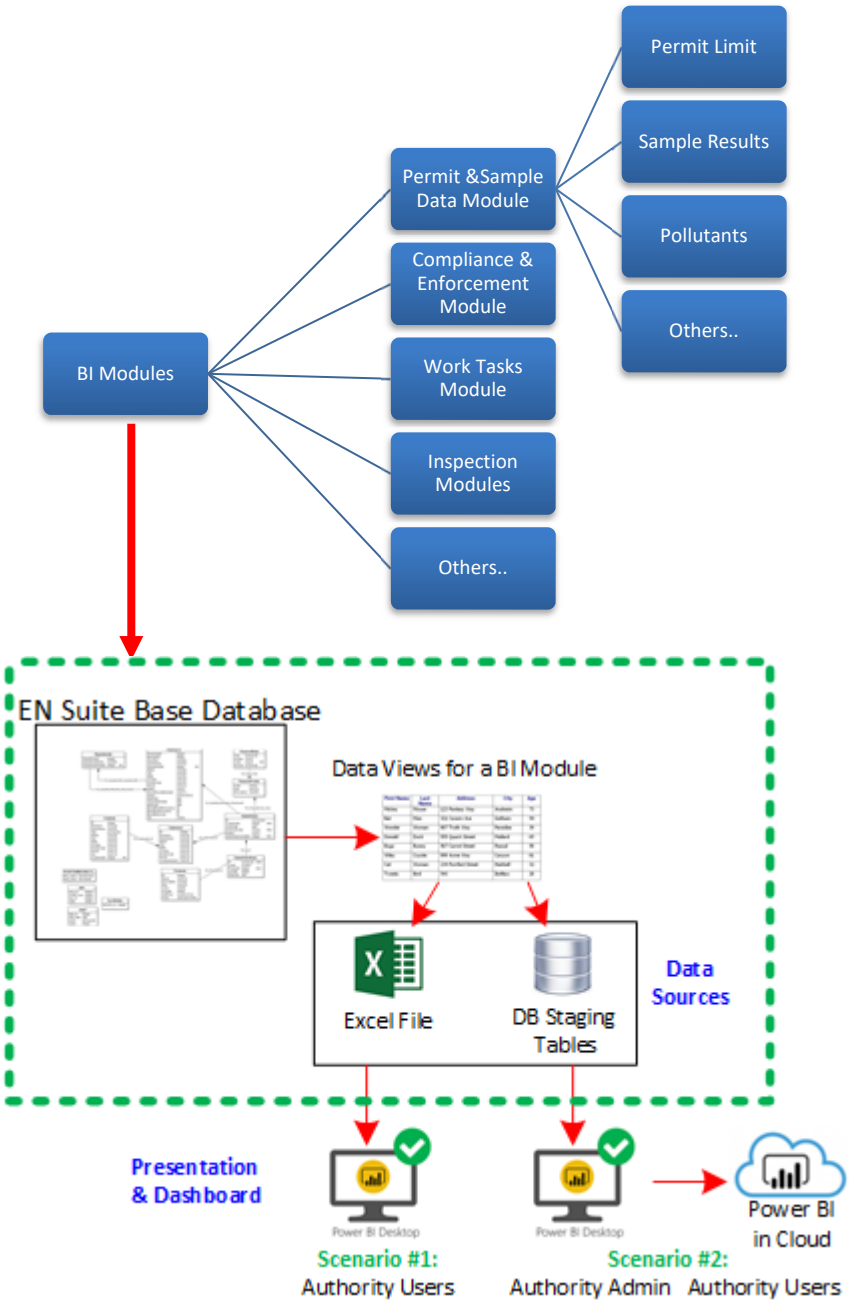
The Solution supports three reporting options:

1. **Report Viewer (for Canned Reports):**
   - Supports both SQL Server Reporting Services and Crystal Reports
   - Supports data filters
   - Export reports to other file formats (Word, Excel, CSV, PDF, TIFF, XML, HTML, etc.)
   - DEP can develop new reports in SQL Reporting Service and upload the report to the Report Viewer and setup user access security
   - Users with proper security can access the reports

2. **Data Query:**
   - Query tool lets users to query data
   - View data only
   - Query results will be displayed on screen in a table and can be exported to Excel
   - Does not require other software or special installation.

3. Data Analytics:

- Divide database into modules and group relevant elements into the same module
- Link all related tables to a big database View
- Present the data View in Excel or Power BI interface. The database view will work with all common data analysis tools such as Power BI or Tableau
- End users could use Drop-and-Drop to extract data into Excel. Format the data into tables, chart, lines, and group/sort the data.



2.3.8 Business Process Improvements

The Solution offers the copy-data feature to reduce data entry effort and improve data quality. Example use of such copy-data feature are listed below.

1. Amend an Application

- User selects an existing submittal and chooses to "Amend"
- GovOnline creates a new application ID record
- GovOnline copies all data from the previous application file to the new application record
- GovOnline links the new application ID to the old version

2. Renew a Permit

- User selects an existing Permit and chooses to "Renew"
- GovOnline creates a new application record
- GovOnline copies all data from the previous application file to the new application record

- GovOnline assigns a new application ID to the new record
- GovOnline links the new application ID to the permit being renewed

3. **Terminate a Permit**
   - User selects an existing Permit and chooses to “Terminate”
   - GovOnline creates a new application record
   - GovOnline copies relevant facility data from the permit to the new application record
   - GovOnline links the new application ID to the permit being renewed
4. **Apply a New Permit for an Existing Regulatory Facility**
   - User searches and selects a Facility record from the Facility Explorer database (that stores Facility data currently regulated by DEP)
   - GovOnline copies relevant facility data from the Facility Explorer to the new application record
5. **Copy an existing Application**
   - User searches and selects an Application record from their submittal history
   - GovOnline copies all data from the previous application file to the new application record
6. **Change Permit Contact**
   - User initiate a Permit Contact Change form from GovOnline
   - User selects a Permit from a list of their permits
   - GovOnline copies relevant facility data from the permit to the new application form
7. **Submit a Compliance Report to DEP**
   - User starts data entry with a report obligation from their dashboard
   - GovOnline prepopulates relevant data on the from

2.3.9 Online Payment Option

he Solution offers the following features to support online payment. The Solution will allow for integration of current DEP system for accepting online payment.

(a) Fee Calculation
- Fee calculation module to calculate proper application fee based on DEP fee schedule
- Track DEP time spent for application review for billing purpose

(b) PCI DSS Compliance
- Comply with the PCI DSS
- Certificate is shown on right

(c) Acceptable Payment Types
- Credit Cards
- ACH
- Check

(d) Payment Processor Integrations
- Web APIs to interface with payment processor
- Track payment processor result including success/fail, confirmation ID, date

2.3.10 Simple and Easy-to-Use

(A) Ease to Use for Public Users

GovOnline is easy to use through several system design concepts: Dashboard, Pull-Down Menu, Hyper Links, Data Entry Wizard, Pick List, and Online Help.

1. **Dashboard**: the user can readily see the to-do list of tasks that has been scheduled by the user or the system. Announcement posting capability also enables faster communication among staff of various levels within and outside the DEP.
2. **Pull-Down Menu:** the user can access each system function through pull-down menus.
3. **Hyper Links**: the user can click on hyperlinks to jump to the areas of interests
4. **Data Entry Wizard**: The Applicant will be guided by a Wizard to complete the permit/license application. An example screen is illustrated on right:
   - **Basic Form**: to complete an online form, the Authority Administrator could tailor the screen to show online help, required data entry fields, and data validation rules.
   - **Attachment**: to upload supporting documents required for this license. The Licensee could choose to mail the support documents. The submittal will not be deemed completed until after the required supporting documents are received by the licensing entity. The License Administrator could tailor the license to specify required supporting documents.
   - **Validation**: to validate the entire application package to ensure that it meets the minimum submission criteria mandated by the Authority Administrator.
   - **Payment**: to pay the required fee. The Licensee can pay online via credit card, debit card, account transfer, or mail check/money order via postal mail. The application will not be deemed completed until after the required fee is paid in full.
   - **Submission**: to certify the application data and submit to the licensing entity. A submission receipt will be automatically generated by the EN Suite. EN Suite will auto-generate an email confirmation to acknowledge the receipt, completeness determination, technical review status, and the decision.
5. **Pick Lists**: Online data entry forms support pick lists to reduce data entry and improve data quality.
6. **Online Help:** EN Suite offers additional online help features:
   - **Online screen help text**: the License Administrator could configure screen help specific to each data entry screen
   - **Online Video Tutorial**: EN Suite integrates with video tutorial that could be viewed online.
   - **Spell check**
   - **Audit trail (to track the data change history)**

(B) Ease To Use for DEP Users

The dashboard contains the following configurable elements which display to the user a general overview of current activities associated to them.

The home page is a custom view dependent upon the logged-in account. This means that Inspector A will have different information displayed in the home page compared to Permit Writer B, depending upon what the user's responsibilities are. The home page uses a "web part" view similar to widely used applications such as Google or Yahoo, making it easier for first-time users to configure their own home page.

(C) Ease To Learn

User help text at the top of each application web page is also configurable. By default, system-defined help and navigation guide text will be pre-populated on all context blurbs at the top of web pages. This

text can be modified by the DEP administrator to continuously utilize it as a training tool. For example, once the users are acquainted with the system, the description context can be changed to include "caution", "tip", and "Q&A"-type information.

Built-in security also allows for each staff member to only view information pertinent to his or her role. This eliminates any confusion for the user who only needs to log into the system to view the work to be completed, perform the task, and log out. This user workflow driven feature will ease the training and learning efforts. Online help will be available to the user from any screen in the application at the click of a button.

2.3.11 Microsoftt Actiov Directory Integration

enfoTech certifies that the proposed Solution (EN Suite) integrates with Microsoft Active Directory for security authentication. After the access is granted, EPermit system will manage each user's data access privileges within the EPermit system.

2.3.12 Protection of Confidential Information

The Solution supports the user to flag confidential business information and exclude the data from public disclosure.

2.4 Extendibility to Accommodate Changes & New Requirements

2.4.1 Change/Add Permit Types and Their Properties

The Solution offers extensive configuration options to support different business processes required for each permitting type. The Portal consists of:

- **Core Components**: are reusable for all submittal types without system coding change
- **System Configuration Tools**: are used to extend the Portal to support all submittal types with configuration options. All configuration settings are saved in XML files. Coding changes are very minimum.

A high-level overview of major system components to offer system extension to support all submittal types and to meet their own business processes and workflows is listed below.

Reusable Core Components (without any coding change required)

Component	Comments
CROMERR Services	Account management, Security, Identity proofing, Signature authority, ESA, Review before submit, Bind signature with Submittal, Receipt confirmation, Copy-of-record, Transition check, non-repudiation, etc.
Submittal Service	RO and Consultant management, Dashboard, Submittal Wizard, SMS Alert, Track Status, Document Search
Notification Service	Manage tasks, assignment, due date, status, and send notifications to proper persons to alert upcoming tasks.
System Interfaces	Facility Profiler, GIS, Record Management, Active Directory, data exchange with external databases
Fee Payment	Credit card, ACH, pay by check, pay upfront, pay later, payment tracking
Mobile Inspection	Mobile inspection software to manage trips, tasks, and work results for each individual who use the device.
Violation	A Central violation management console with record filters to support Unit specific violation records.

Component	Comments
Enforcement	A Central enforcement management console with record filters to support Unit specific enforcement actions.

System Configuration Tool (Configuration options to make changes and accommodate future requirements)

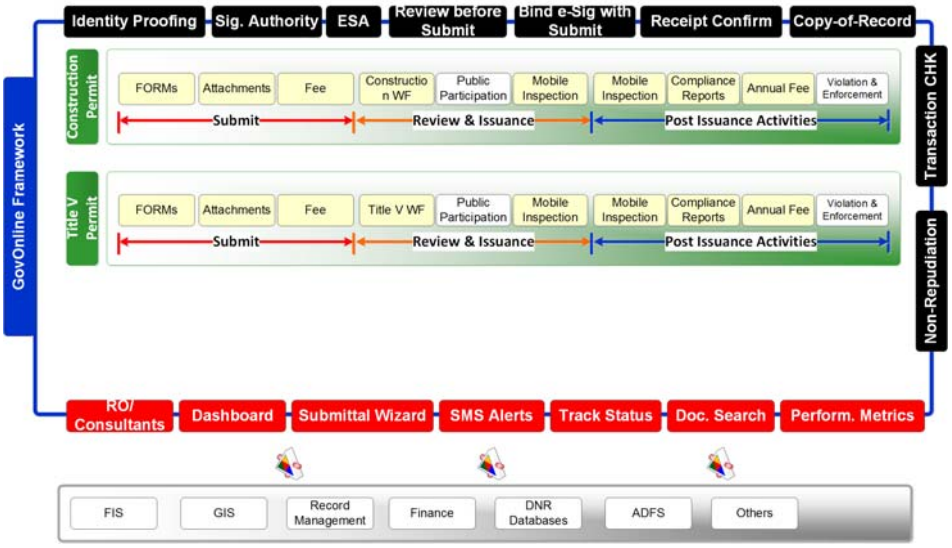
EN Suite system has been installed at multiple states and has demonstrated records to support thousands of users. In addition, EN Suite offers many configuration options to allow the DEP administrator to extend the online submittal types to meet future business requirements. It supports the following configurations

- Controls the global system configuration settings
- Change or Add new Submittal Types
- Configure online data entry properties, attachment requirements, fee structure
- Configure workflow required for each submittal type including review, approval, revision, renewal
- Configure renewal cycle, expiration date calculation, termination rules
- Configure inspection requirements, if required
- Configure reference data (for dropdown list values) and data validation rules
- Manage properties for the Public Inquiry module
- Monitor system performance and event logs

Each submission type could be managed separately under EN Suite system, with its own properties.

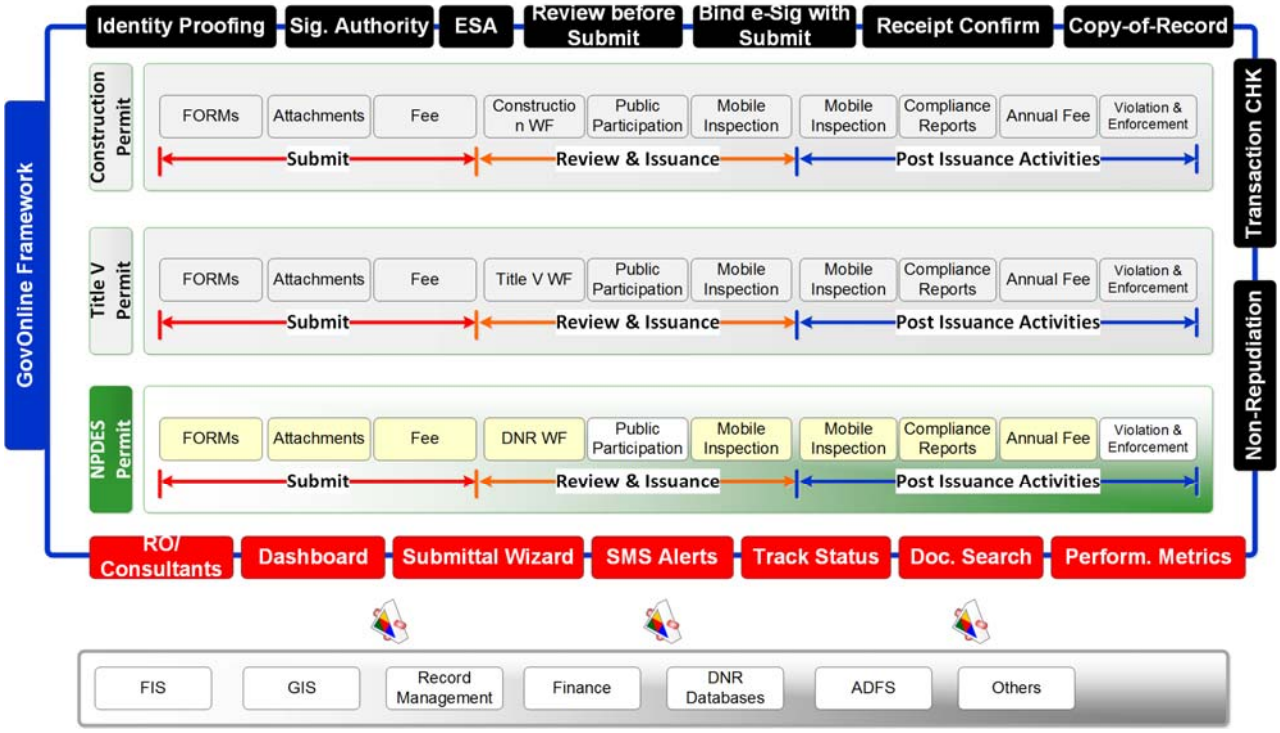
Component	Comments
Submittal Management	A Central Console to manage properties unique to each submittal type. For example, online form, attachment requirements, fee calculation, validation rules, workflow, issuance documents, etc.
Form Engine	For each submittal type, configuration options to add/change/delete data elements, validation rules, and online help messages. All data entry forms are saved in an JSON file. EN Suite will present data entry form based on the XML file and capture user input together with the XML file. When making changes to the online form, we will need to redeploy the XML file without any system change.
Attachment Option	For each submittal type, configuration options to specify attachments required for the submittal. Setting for mandatory, optional, mailing addresses, etc. Configuration will be saved in a JSON file. When making changes to attachment settings, we will need to redeploy the XML file without any system change.
Fee Calculation	For each submittal type, configuration options to specify calculation formula to determine the fee amount. Configuration will be saved in a JSON file. When making changes to fee logics, we will need to redeploy the JSON file without any system change.
Workflow Engine	For each submittal type, configuration options to specify workflow, tasks, assigned personnel, due date, and status. Configuration will be saved in a JSON file. When making changes to workflow, we will need to redeploy the JSON file without any system change.
Issuance	A Central Console to manage issuance document using Word Merge function. A submittal could have multiple issuance types such as draft permit, cover letter, public notice, final permit, etc.
Message Templates	Email templates used for each event in the license/permit life cycle
Notification	Person(s) who should receive a notification for each event. Message template to be used for each notification type
Flow Properties	Manage: Disclaimer statement, Security precaution statement, Certification statement, Receipt
Sub System	Manage External system interface

The following diagram illustrates EN Suite configurations after the air construction and Title V permits are completed.



The following diagram illustrates extending the EN Suite system to accommodate additional submittal types.

- Existing submittals will work independently with no affect from newly added submittal types
- New submittal types will reuse core components and operate independently with its own properties, online forms, workflow, and issuance documents.



2.4.2 Form Builder

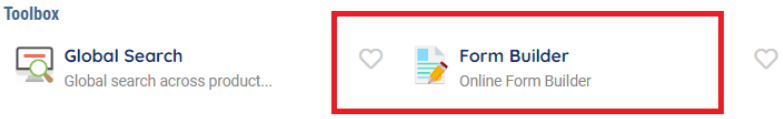
The Solution offers the Form Builder to allow the Authority Admin to add a new submittal form without coding changes. Each submittal type can have its own data entry form(s), attachment requirement, fee schedule, and workflow. The data entry is represented by an JSON file which will support:

- Add a new form

- Allow for user-defined data fields
- Can use queries to identify data for dropdowns, checkboxes, and radio buttons
- Configure rules and conditions between Fields (i.e., if answer is “Other”, must fill in description text box)
- Filter one dropdown list based on selection in another
- Validation: Required Fields, Field Level (type, length, etc.)
- Allows for pop-ups to facilitate related data entry
- Supports tooltip message (mouse over help text)

Form Builder

Form Builder Tool to allow authorized users to create new simple online Forms for their new online submittal requirements.



A. Form builder offers the following building block components:
   1. **Basic Data Type**: for Text Field, Number, Password, Text Area, Checkbox, Select Boxes, Time, Select, Radio Button, Button, Content
   2. **Advance Data Type/Group**: for Email, Url, Phone number, Address Field, Date/Time, Day Picker, Modal Edit, Currency, HTML Elements, Upload File, Nested Form, Signature, Map Location
   3. **Layout/Presentation**: Table, Field Set, Panel, Multi-Columns, Tabs
   4. **Data**: Data Grid, Editable Grid

B. Form builder offers the following features:
   1. **Designer:** drag and drop components to design online Form
   2. **Form Preview:** preview and test online Form
   3. **Data Preview:** view data enter result in JSON format
   4. **Publish**: publish to allow it for use to capture data

2.4.3 Workflow Engine

Workflow Engine will provide configuration options to allow the DEP system administrator to define standard workflows and related tasks and to support work collaboration within the DEP. The Engine manage all business rules in either the database or XML. Rules are configurable by DEP and require no coding change. The Work Flow configuration options include:

- Define a business process. Business Process data include:
  - Process name
  - Process description
  - Trigger conditions
  - Execution condition (in sequence or in parallel)
- Define template tasks involved for each Business Process. Task data include:
  - Task name
  - Task type
  - Default work duration
  - Default person to receive this task assignment
  - Task execution sequence
  - Execution type (in sequence or in parallel)

For example, the Engine will manage permit review tasks, resource assignment, due date, and status. The System will automatically alert to the staff for upcoming due tasks, display them on their individual dashboard, and help the unit manager to monitoring work progress. Functions include:

(A) For the Regulated Entity

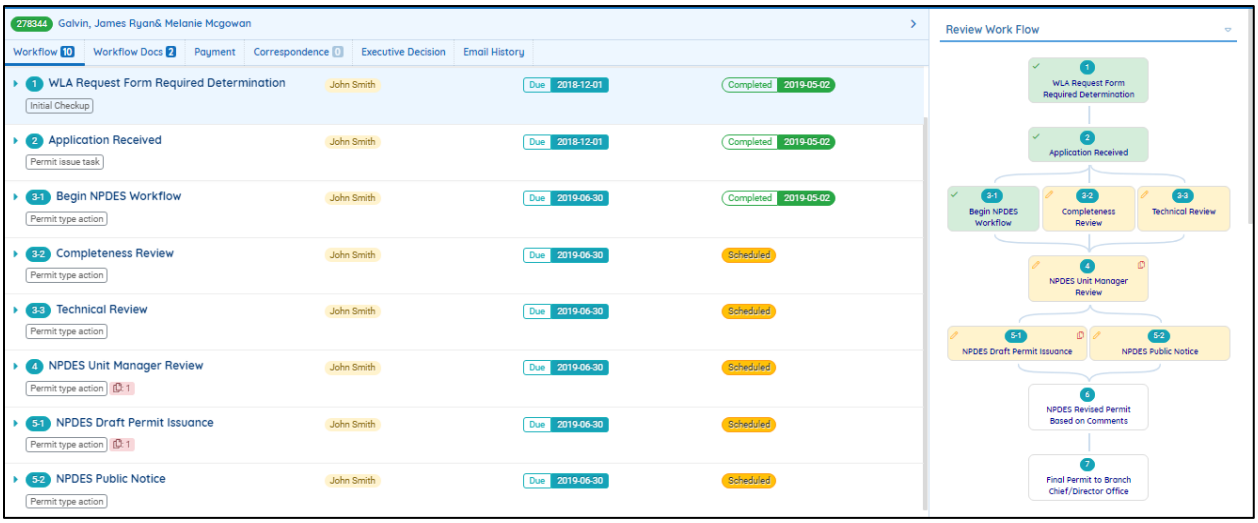
After making a submittal, the regulated entity user(s) could monitor the workflow through either of the following:

- New Alerts on the Dashboard
- "Work Activities" screen for each submittal (see an example screen below. The Regulated Entity cannot see the DEP staff name assigned to each task or the target due date, unless DEP wishes to share such details with the Public. Instead, they can only see the Task name and Status.)

(B) For the DEP staff

After receiving a submittal, the EN Suite will automatically create a set of workflow tasks and assign those tasks to "default" DEP staff with a "default" due date. Each DEP staff will:

- Automatically receive email alerts for Tasks assigned to him/her
- See New Alerts on the Dashboard
- Manage work in the "Work Activities" screen for each submittal (example screen on the right)



The Solution tracks all information generated from each submittal's life-cycle, including review activities, documents, comments, etc. They are:

- To-do list, DEP resource assignment, due date. To-to tasks might include administrative completeness review, inspection, technical review, drafting permit, public notice, and final approval. (the To-do list will be configurable and be based on DEP's business processes specific to each submission type)
- Correspondences between DEP and the regulated entity.
- Email communications between the DEP staff and the regulated entity user.
- Inspection reports associated with the Application/Compliance reports.
- Pictures, draft permits, support documents, drawings, Excel as part of the Application or can be generated during the application review process.

EN Suite automatically generate a notification (email or SMS message) to appropriate personnel (plan reviewer, permit writer, investigator, or contact person) when there is no activity for a predefined number of days or the deadline is approaching.

(C) For DEP Supervisors

EN Suite allows the DEP supervisors to define standard workflows and task assignments and work collaboration among the staff members. The Workflow configuration options include:

- Define a business process: include Process name, description, Trigger, Execution (in sequence or in parallel)
- Define template tasks: include Task name, type, default work duration, default person to receive this task assignment, status, etc.

EN Suite also provides a work performance matrix report to show overall permit review to meet certain response timeline, status of each project, the task it is at and who are assigned to complete with a target due date.

2.4.4 Document Genration Engine (Word Merge and Adobe Form Population)

Application Form

For each applicant type, Solution will generate an Adobe file to mimic DEP application forms with data input by the Applicant. The Adobe document is accessible to the applicant at any time so that they could use it to verify their data during the preparation, confirm what are entered before submission, keep the final copy after submittal, and retrieve it in future for reference.

Documents Issued by DEP

Merge Feature: EN Suite also supports the Word merge and Adobe form merge functions. For each application type, it might result in multiple issuance document types raging from Request for Information, Draft Permit, Public Notice, to Final Permit. For each issuance type, EN Suite will store a document template that consists of boiler plate language and “data fields” to be used to merge user input data from application forms or permit data entered by the DEP staff.

Check-out & Check-in Feature: EN Suite manages all documents within the database and maintain document versions to ensure good document integrity. The System allows the user to:

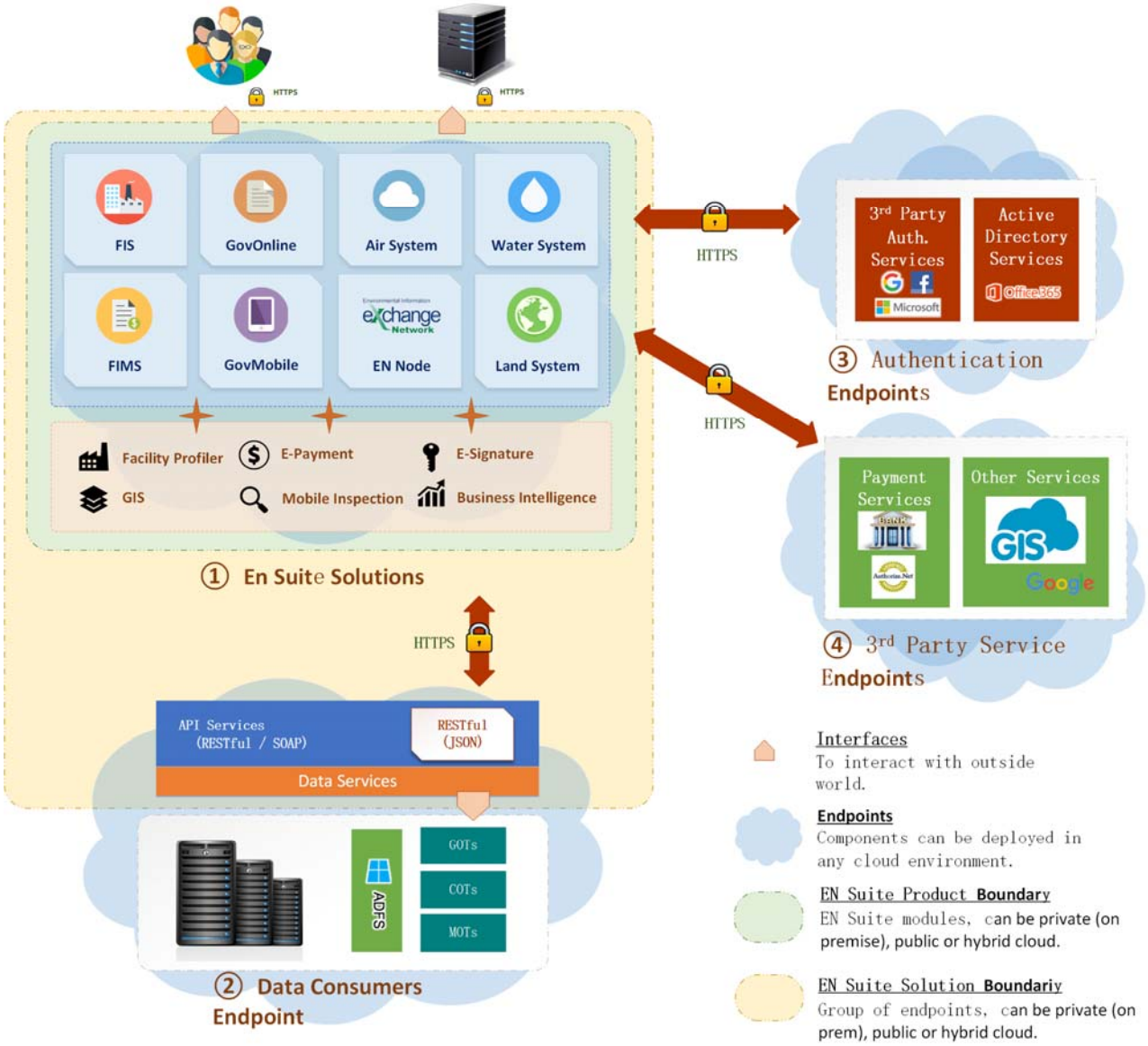
Check-out: check out a document to have the exclusive right to make changes. Other others could still view the document.

Check-in: check in a document to update the server version with changes. The new version will be available for other users to view. It also releases the change lock indicator to allow another user to check out the document.

2.5 System Architecture

2.5.1 Business Architecture

High-level EN Suite Business Architecture is presented below.



① **EN Suite Solutions:** Contains multiple Products/Modules to provide IT platform to support environmental compliance processes in air, water, land protection areas. The Suite use a common data warehouse to manage data and reuse common software features across all products/modules. EN Suite also provides a Portal to allow the regulated community to interact with the authority in a secure and CROMERR compliant environment. The authority, the regulated entity, other contributing authorities, and general public will use the EN Suite to collaborate work and streamline environmental management processes.

② **Data Consumers Endpoint:** Data Consumers who are authorized to use the EPermit will interact with the EN Suite using Web APIs. EN Suite offers APIs to support bi-directional data exchange and system integrations with external data systems.

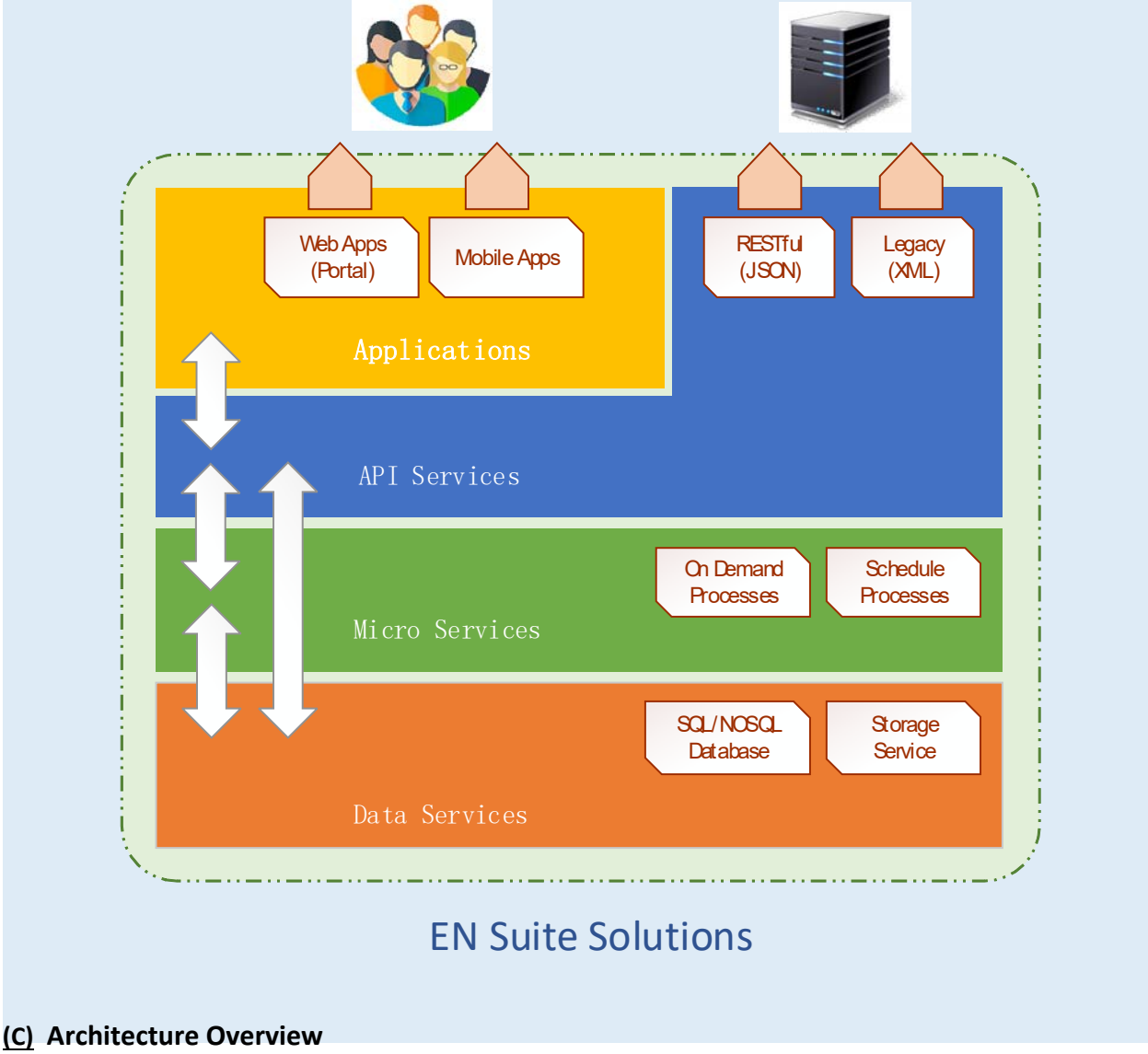
③ **Authentication Endpoint:**
Components can be deployed in any cloud architecture by accessing API Services vendors provided

④ **3rd Party Service Endpoints:**

Components can be deployed in any cloud architecture by accessing API Services 3rd party vendors provided

2.5.2 Technical Architecture

Continuing from the Business Architecture diagram, we zoom in the "EN Suite Solutions" **(Please refer to ① EN Suite Solutions** above**)** to display its technical architecture with a diagram below.



(C) Architecture Overview

The technical architecture is N-Tiered design and services-oriented under SOA (Service-Oriented Architecture) general guidelines, including Applications (UI Portal, Mobile Apps), API Services, Micro Services (Processes), and Data Services (data storage and scripting).

- **N-Tier Architecture**: the Solution design has been carefully partitioned to manage data flows in n-tier system architecture, Primarily, there are 4 tiers:
  - **Presentation Tier**: for menus, data entry screens, online data validation, and reports.
  - **Business Tier**: for calculation, business logics, workflow routing, compliance evaluation, etc. Business functions are all implemented in services-oriented and modular fashion.

- **Data Tier**: provides a common interface for the business tier functions to interact with the physical databases to support data query, data update and delete. The data tier is independent to database platform and can interface with different versions of Oracle and SQL Server databases.
- **Service Agent**: provides web APIs for external systems to interact with the database. Technologies used include RESTful and SOAP services. The Service Agent will support mobile devices; GIS map integration, finance payment and invoice transaction, Exchange Network data flows, etc.

(D) Application Development Tools, and Compatibility

- Development Tools: Angular 9 or up, .NET Core 2.0 or up, .NET
- Accessibility Compliance
  - Section 508 (Government Employees or Members of public with disabilities)
  - ADA Compliance (Americans with Disabilities Act) - a broader application of accessibility standards to all influence commercial and social practices
- Browsers Compatibility: Microsoft Edge, Google Chrome, Firefox, Safari
- Platforms Compatibility: iOS, Android, Windows
- Technologies: OOP/AOP, SOA, Web Services, Dependency Inversion
- Security Compliance: SSL/TLS (https), SSAE-16 (SOC Type 2) – Financial Data, HIPPA – Health data

(E) Web API

- **Overview:** The EN Suite offers APIs (API - Public APIs and Private APIs) to support data/system interfaces. The public APIs enables new way to engage and connect with the customers through web and mobile app. With private APIs, it can offer internal developers a set of new tools that can help to streamline operations and server customers better. EN Suite fulfil the following Business and Technical requirements.
  - Alignment and Usefulness
  - Engagement and Usability
  - Scalability and Extensibility
  - Manageability and Sustainability
- **Alignment and Usefulness:** The following tools are used to facilitate stakeholders communications
  - Microsoft SharePoint contains team collaboration groupware, including: Project scheduling (integrated with Outlook and Project), social collaboration, shared mailboxes, and project related document storage and collaboration
  - Microsoft Team Foundation Server (TFS): source code management, reporting, requirement management, project management, automated builds, lab management, testing and release management capacities.
- **Engagement and Usability:** promote team work to achieve comprehensive nature and maintainability of all APIs
  - Microsoft Visual Studio is used as our integrated development environment (IDE). Visual Studio uses Microsoft software development platforms such as Windows API, Windows Forms, Windows Presentation Foundation, Windows Store and Microsoft Silverlight.
  - Microsoft Team Foundation Server (TFS) is used as a back-end configuration server to manage source codes, build automation tools, a debugger, a version control system, class browser, object browser and a class hierarch diagram.
- **Scalability and Extensibility:** all APIs were designed to evolve and add functionality independently from the default applications required by EN Suite. As the API evolves, all existing applications should continue to function without modifications. All functionality should also be discoverable, so that customers' applications can fully utilize it. We adopt the Hypermedia API design style and

it is a task-based approach. It focused on URI, HTTP and RESTful standards. The Hypermedia approach is Web-centric: the hyperlinks provide ways to navigate workflow and template input to request information.

- **Manageability and Sustainability:** EN Suite API development environment consists of two major components
  - A repository - with SOPs, coding/documentation standards to simplify the process of APIs development, testing and roll-out
  - API Gateway - Delivers the needed security, caching and orchestration functionalities to deploy a core API architecture
  - Developer Portal - Provides a customizable interface, through which developers can access the APIs as well as documentation, community forums and other useful contents.

(F) Micro Services

Process specific logics are maintained in the micro services tier. For example: **Data Calculation**, **Data Validation**, and **Environmental Compliance** processes. Processes could be implemented as.

- **On-demand Process:** the service is standing by until a request has been made. This is for those services that do not require routine scheduling job.
- **Schedule Process:** the service is in a routine running manner. Users can plan and configure the way they would like services to serve and the date/time that services would run.

(G) Storage Services

- **Development Tools:** SQL Server, Oracle, or Office 365
- **Reporting Services:** SQL SSRS, Power BI, Tableau or Crystal
- **Data Architecture**
  - ETL / SSIS extracts data from legacy databases and external data.
  - The databases are stored either on the cloud and/or on premise, they are in various format such as relational, JSON, XML, etc.
  - Meta data is used to maintain and manage the data warehouse.
  - SSAS – Analysis component is consisting of cubes and views extracted from data warehouse to enhance performance and security.
  - Analytics applications or excel PIVOT can extract data to perform analytical analysis.
  - Business Intelligence (BI) or mining tools (built-in or 3rd-Party based) are used to generate reports, graphs and charts.

2.6 External System Interfaces

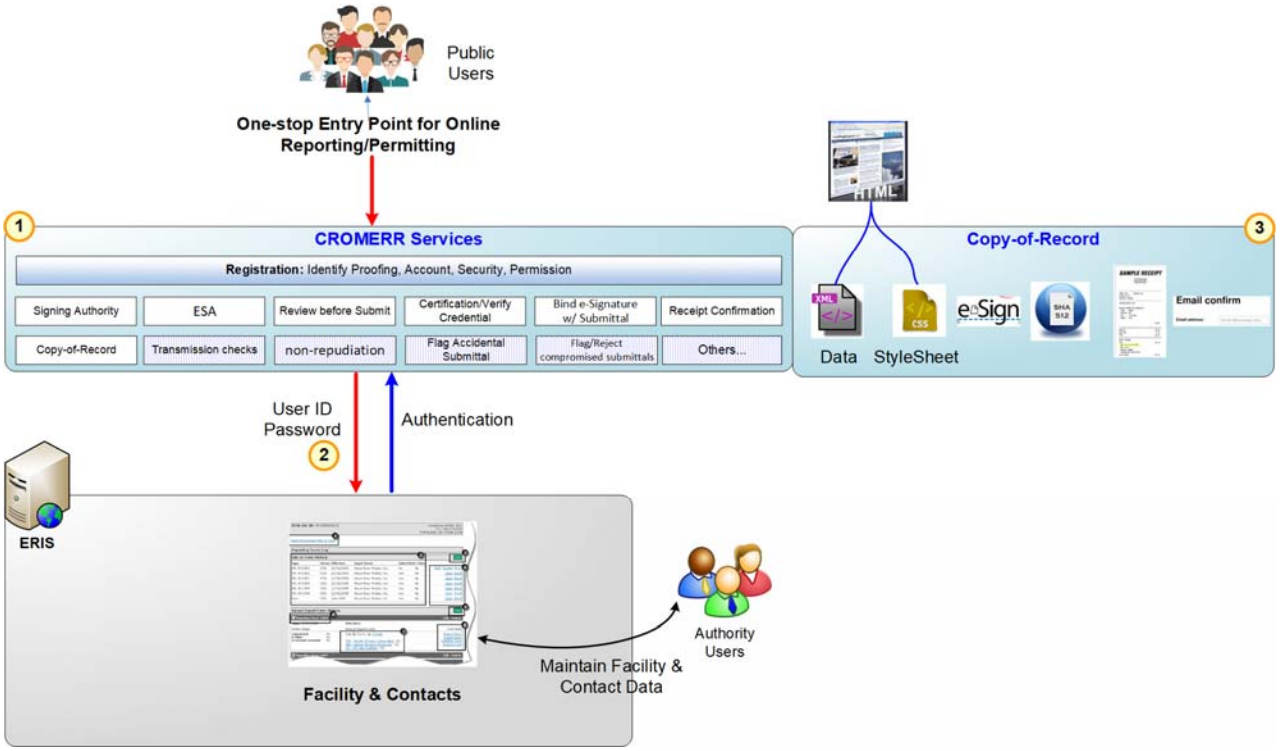
EN Suite architecture will support different levels of interfaces with existing DEP systems. enfoTech will meet external system interface requirements requested in the Bid solicitation. They are:

- ERIS interface: for Facility and Contact data, and Responsible Officer (RO) authentication
- wvQASIS interface: for invoicing and payment receipt management
- ApplicationXtender interface: for document management
- ESRI GIS interface: for data layer sharing to improve geospatial data analysis capability
- SAP interface: for data import/export to contribute data to the enterprise data warehouse
- CDX interface: for electronically sending data to USEPA

This section illustrates two potential integration options (other options are also possible and the details will need to be ironed out with the DEP)

(A) Epermit to ERIS Interface

The integration will use ERIS System to maintain the Regulated Facility and Contacts, use Epermit to maintain Copy-of-Record of all online submittals. The following diagram illustrates a conceptual approach for data integration.



ID	Business Process	Required Technical Work
	CROMERR Service Portal ▪ One-stop entry point for online reporting and permitting ▪ All user accounts from existing DEP ERIS system will be migrated to EN Suite (Registration) ▪ Existing users will need to go through simple steps in EN Suite to establish security credential (Signature Process & Identity proofing) ▪ After user logs in EN Suite Public Portal, the System will provide a list of "Online Services" to choose from.	▪ Migrate user accounts from ERIS ▪ Require ROs to login EN Suite to establish their new security credential
2	Web-Service Integration with the Existing ERIS System ▪ ERIS will be the central Facility & Contact system maintained by DEP ▪ Build an interface to exchange Facility and Contact data between EN Suite and ERIS to keep the data synchronized	▪ Build an interface via API or data exchange
3	Certify and Submit (Submission Process) ▪ The user will use the CROMERR Service Portal's "Certification Page" to certify and submit ▪ Upon successful submission, the CROMERR Service Portal will issue o Submission receipt to the submittal o Email confirmation to the submittal Signature Validation: ▪ CROMERR Services will authenticate submittal's identity and validate his/her security credentials ▪ Validation results are stored in CROMERR Service database Copy-of-Record (COR) ▪ EN Suite will produce a human readable COR ▪ CROMERR Service will maintain a record identifier to link the submission to the COR at the DEP database	▪ EN Suite COTS features

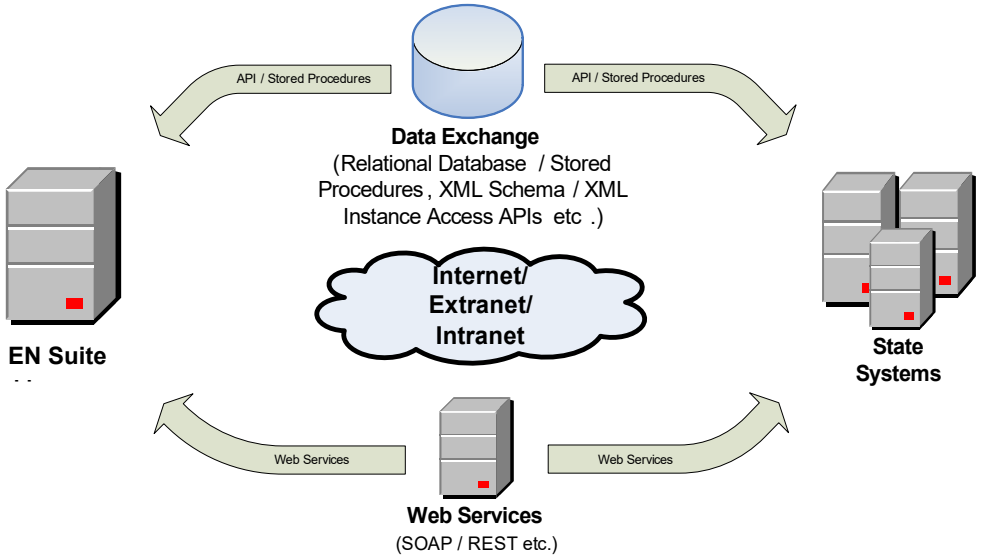
ID	Business Process	Required Technical Work
	Non-repudiation ▪ EN Suite will be responsible to offer non-repudiation feature as the Copy-of-record is maintained there Signature Validation: ▪ CROMERR Services will authenticate submittal's identity and validate his/her security credentials ▪ Validation results are stored in CROMERR Service database	

(B) Other Options for System Interface (wvOasis, ApplicationXtender, SAP, ESRI)

The Solution offers three mechanisms to support external system interfaces.

1. **Web APIs** (Open Protocol, SOAP, RESTful)
2. **Table-to-Table Data Exchange** (with staging tables and APIs)
3. **EDI** (external data file transfer)

A diagram below illustrates a high-level architecture for data/system interfaces.



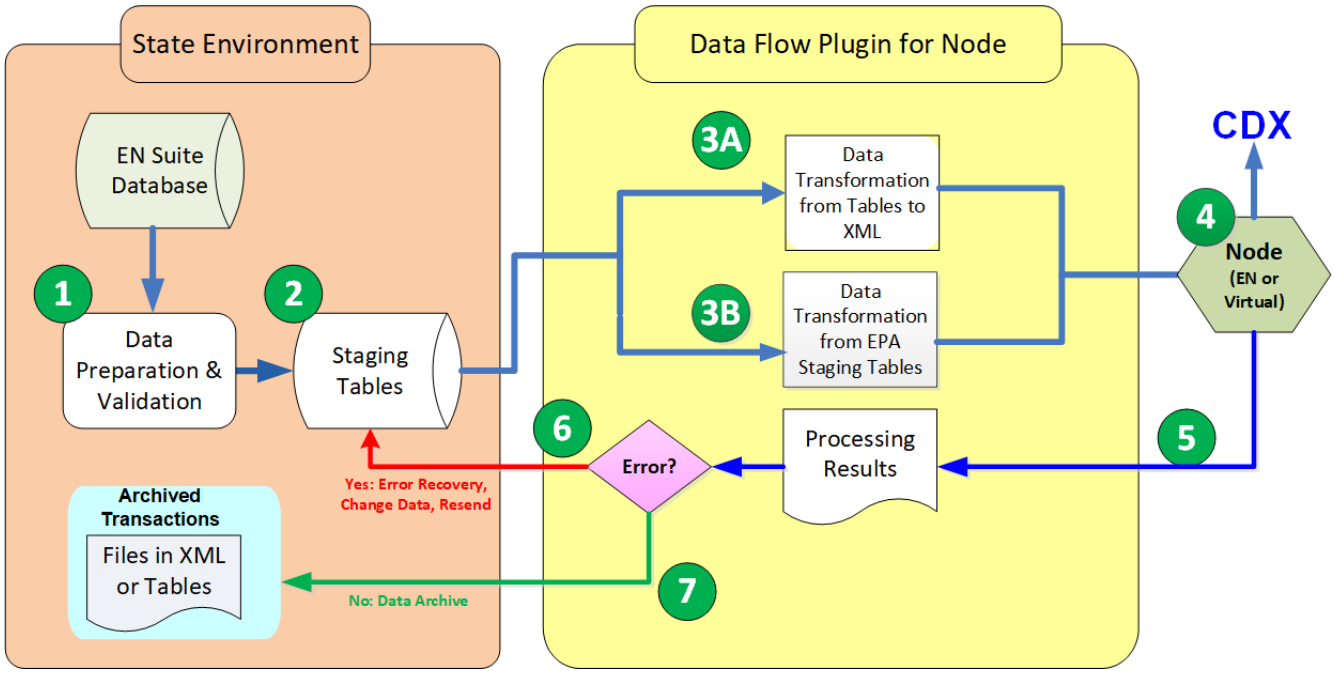
enfoTech will explore interface options and work with the DEP to select the best interface option for each external system during the "Requirement Verification and Gap Analysis" stage. If required, enfoTech will also create a testing environment at enfoTech server environment that mimics the actual system environment. Simulation of actual operation for thorough testing is essential for system interface. enfoTech will perform testing to ensure no problems prior to releasing the interface package(s) to DEP.

2.7 Data Flows to EPA and Other Data Consumers

enfoTech proposes to utilize EN resources and protocols to establish data flows from the EN Suite database to EPA national data systems. Our recommendations include:

- **Node software**: uses EN Node (provided by enfoTech) or Virtual Node (provided by USEPA) to manage data flows, transaction log, error recovery, and send/update/replace data
- **Data and File Format for Data Flows**: uses database stored procedures to extract data, transform data if necessary, output data to XML files required by the data flow schema.
- **Data Extraction/Transformation**: publish data using EN Suite Web APIs to extract data and submit data to EPA via CDX.

A schematic diagram to illustrate data flows to USEPA is provided below:



Legends:

1. EN Suite will query data from EN Suite that meet the reporting criteria for data flow to EPA's CDX.
2. EN Suite will perform data validation to ensure that the dataset will meet EPA's reporting criteria.
3A. For EPA dataflow that only supports data exchange in XML file format, EN Suite will transform the data into EPA's data flow schema in XML format.
3B. For EPA dataflow that will support data exchange in staging tables, EN Suite will transform the data into EPA's staging tables.
4. The Node (either EN Node or Virtual Node) will invoke data exchange processes to send data to EPA via CDX.
5. EPA CDX returns data processing results.
6. If CDX's data processing results show errors, the EN Suite will alert the Authority user to start error recovery, including data change and resent.
7. If CDX's data processing results show successful transaction, the EN Suite will send an alert to the Authority user and archive the submission dataset.

3. Qualifications, Experience, Project Reference

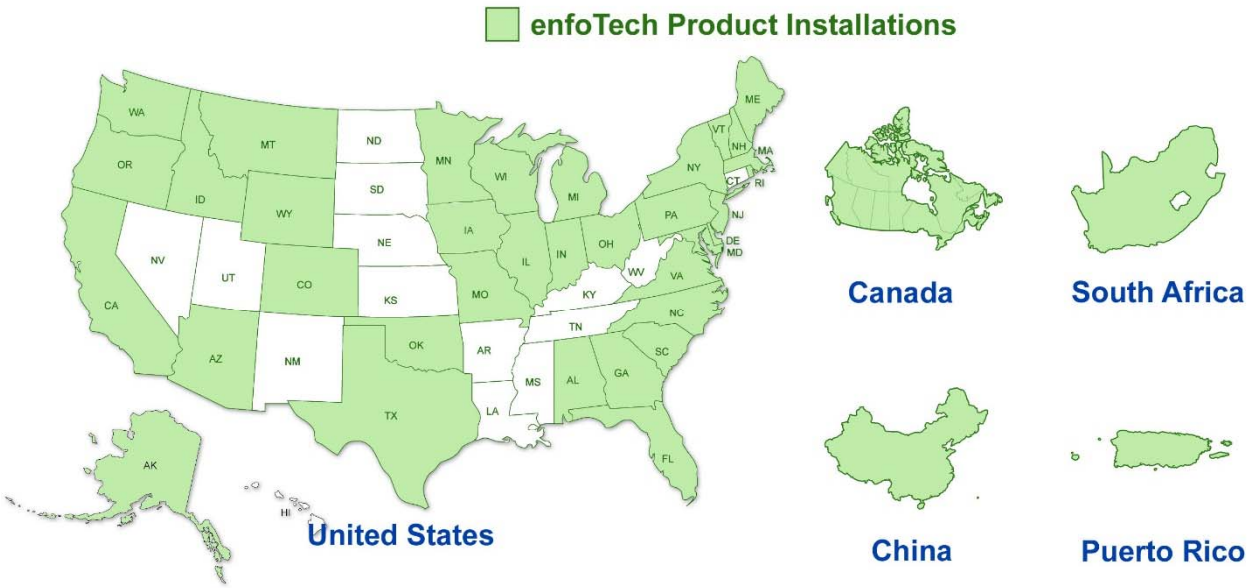
3.1 enfoTech Overview

enfoTech is a privately owned C-corporation. The company was incorporated in the state of New Jersey on December 21, 1994. The Company has a very strong financial standing and a prosperous business/financial outlook. enfoTech is certified by the state of West Virginia as a small minority-owned business. (Federal EIN: 223364641, D&B #: 015926413). Please see a certificate in Proposal section 7.3.

enfoTech is a technology-oriented company that develops enterprise-wide environmental compliance software and provides related consulting services. Our development strategy is business-process focused, workflow driven, and compliance assurance demonstration. We offer a well-defined core data model and a suite of flexible and extensible software modules to deliver a final Solution that will meet the unique requirements of each client. With this strategy in mind, we diligently produce software that offers a framework for easy configuration to address program-specific data collection and compliance management while at the same time offering cross-functional solutions for data integration using XML and Web Services technologies. Our business focus includes workflow automation, electronic data collection, and compliance management. To achieve this goal, enfoTech works closely with our customers to develop compliance management solutions that revolutionize the workplace.

enfoTech's corporate focus has been on environmental permitting, compliance reporting, and code enforcement since 1994. We have successfully implemented over 200 large-scale IT projects for regulatory agencies domestically and internationally.

Our products and project implementations cover the following regions:



Since 2002, enfoTech has continuously participated in EPA's National Environmental Information Exchange and has been one of key contributors to develop core technologies for the EN community to facilitate electronic data exchange among agencies, data publishing, data discovery, and data analysis.

We specialize in business process analysis, requirement definition, data modeling, system development, deployment, and outreach programs. enfoTech is a Capability Maturity Model Integration (CMMI) Level 3

candidate corporation. We have expertise in facilitating discussions with a large group of users with diverse background to reach consensus on requirements, business process improvements, system configurations, and implementations. We are also experienced in providing training and support to our clients for a smooth roll-out of new IT systems. We are not aware that New Jersey has a preference program for instate vendor.

3.2 Government IT Project Experiences

enfoTech has provided IT solutions to government agencies for the past 26 years. We serve the following market sectors and focus on environmental solutions.

(A) Federal government (Date: 2/2000 to Present):

- Exchange Network (USEPA, ECOS, and Jointed Integrated Project Teams)
  - Develop or/and participate in technical teams to develop core technologies and open protocols
    - Environmental Data Standards
    - Environmental Core Reference Model
    - Data Flow XML schema development
    - Data Flow Configuration Documents
    - RESTful guidelines
    - Node Specifications
- Multi-states EN Project Implementations
    - EN Node
    - Exchange Network Browser
    - Homeland Security Data Exchange
    - Drinking water lab test data exchange
    - Ambient water quality data exchange
    - Emergency Response Registry for Spills
    - Large Aquatic Ecosystem Data Exchange
    - Mercury content product data exchange
- Implement EN Data Flows (~ 70 data flow projects): (1) FRS (Facility Registry System); (2) AQS (Air Quality System); (3) AQDE (Air Quality Data Exchange); (4) EIS/NEI (Air Emission Inventory); (5) ICIS-NPDES; (6) ICIS-AFS; (7) WQX (Water Quality Data eXchange); (8) SDWIS; (9) RCRA Info; (10) UIC (Underground Injection Controls); (11) TRI (Toxic Release Inventory); (12) EPHTN (Env. Public Health Tracking Network); (13) eDWR (Lab-to-State Drinking Water Reporting); (14) DCM: Drive a Clean Machine; (15) ODPX: Ocean Data Partnership Exchange; (17) NCTCOG: North Central Texas Council of Govt. ; (18) Open Dump: Tribal Inventory of Open Dumps; (19) Mercury: Mercury content product data flow; (20) Radioactive Wastes; (21) Radon; (22) Environmental Incidents; (23) EMTS EPA Moderated Transaction Service
- Implement Online Permitting

(B) State government (Date: 12/1994 to Present):

- Implement State-wide Environmental Databases
  - Facility Identification & Permit System
  - NPDES Electronic permitting and compliance reporting
  - Ambient Water Quality Monitoring & Assessment System
  - Ambient air quality monitoring and assessment system
  - Land Protection Waste Management System
  - Compliant Management System
- Implement State-wide Online Permitting Systems

- Air Permits (Title V, PSD, NSR, SIP, Minor Mod., Administrative Amendment)
- Water Permits (NPDES Major Municipal, Major Industrial, NOI, NEC, Drinking Water Facility Construction, etc.)
- Waste Permits (waste handlers)
- Lab certifications

- Implement State-wide Compliance Reporting Systems
  - NPDES compliance reporting (DMR, Nutrient Trading, Storm Water)
  - Annual Air Emission Reporting and Fee Calculation and Invoicing
  - Drinking water lab test reporting
  - Ambient water quality monitoring
  - Volunteer water quality testing
  - Private well testing
- Mobile for inspection, field sampling, survey, notice of violation, temporary permits, etc.
- GIS for site identification, property boundary line/coordinates, data search by area (point-radius or bonding box), geospatial data analyses, zoom-in/zoom-out data layers, etc.

(C)Local government (Date: 1994 to present)

- Industrial Pretreatment System
- Online permitting & Online compliance reporting
- e-Inspection
- Biosolid management, disposal and compliance assurance
- Fat, Oil, and Grease compliance management

3.3 Environmental IT Experiences

enfoTech has provided end-to-end enterprise-wide environmental IT solutions to states and the federal government since 1994. Our past experiences encompass air, water, waste environmental medias and include database, online permitting, compliance reporting, and mobile capability. A high-level summary is presented below:

Project Nature	Air Quality	Water Protection	Waste Management
Exchange Network Core Technologies & Multi-media applications	▪ **Node 1.1 $ 2.0 specification**: Consultant on the Node 1.1 & 2.0 specifications ▪ **Node 1.1 & 2.0 software**: Pioneered the Node 1.1 & 2.0 software ▪ **EN Core Reference Model (CRM):** Prime consultant to develop CRM ▪ **EN Data Standards**: Prime consultant to develop Environmental Sampling Analysis and Reporting (ESAR) standards ▪ **EN XML schema & FCD**: Prime consultant to develop XML schema and FCD for 7 data flows: DMR, DWR, EI, ST, AQDE, WQDE, OD. Contribute to FRS & RCRA Info. ▪ **SOA security**: XML gateway assessment, design, and implementation ▪ **EN Browser**: Prime consultant to develop EN Browser ▪ **EN Financial**: Prime consultant to develop Return-On-Investment (ROI) model ▪ **FRS Data flow** ▪ **EPHTN** (Env. Public Health Tracking Network)		
Exchange Network Data Flows	▪ AQS ▪ AQDE ▪ EIS/NEI ▪ ICIS-AFS ▪ DCM (Drive a Clean Machine) ▪ Radon ▪ EMTS	▪ ICIS-NPDES ▪ WQX ▪ SDWIS ▪ eDWR (Lab-to-State Drinking Water) ▪ ODPX (Ocean Data Partnership Exchange)	▪ RCRA Info ▪ RCRA C/E ▪ UIC ▪ Open Dump ▪ Mercury (Mercury content product) ▪ Radioactive Wastes Env. Incidents ▪ TRI
State-wide	▪ **Facility Identification System**: Central repository for Facility Identification, Permit, and Contact data		

Project Nature	Air Quality	Water Protection	Waste Management
Multi-media Systems	▪ **Compliant Management**: complaint intake, assessment, assignment, inspection, follow-up, notification, workflow, satisfaction survey for all environmental medias.		
State-wide Compliance Database	▪ Air Emission Inventory & Fee Management ▪ Online air emission calculation & reporting ▪ Online air permitting ▪ Air quality data management ▪ AQS real time public interface ▪ GIS interface ▪ Real time AQS monitoring equipment interface	▪ NPDES compliance system ▪ Aquatic Hydraulic permit & compliance system ▪ Online compliance reporting (DMR, sludge, nutrient trading, etc.) ▪ Online permitting for wastewater, groundwater, drinking water permits ▪ Ambient water quality data management & assessment ▪ Industrial pretreatment ▪ Mobile inspection & sampling ▪ GIS interface ▪ LIMS interface	▪ Land Protection compliance system ▪ Online waste disposal compliance reporting ▪ Online permitting for waste haulers ▪ Mobile inspection & sampling ▪ GIS interface

3.4 Environmental Data Exchange Experiences

enfoTech actively participates in the Exchange Network (National Environmental Information Exchange Network) projects since 2001. We contribute our expertise to support many important "cornerstone" projects that establish standards, policies, and guidelines to benefit Exchange Network partners.

3.4.1 Exchange Network Core Technologies Development

We contribute to the following key EN technologies that are relevant to the DAQ project:

(A) General NEIEN Contributions and Experiences:

- Contributor to the Exchange Network Node specifications
- Consultant to develop the EN Node adopted by Exchange Network
- Prime consultant to develop Core Reference Model and Shared Schema Components for use to develop all Exchange Network XML schema
- Prime Consultant to develop EN Browser tool
- Key consultant to pilot EPA's Exchange Network Discover Service (ENDS) registration and to enhance the registration and discover processes for the EN partners
- Technical consultant to the Exchange Network "Network Technical Board (NTB)" to provide technical research, document review, standard development, and support to the EN Governance body
- Contributing reviewer to the Exchange Network REST specifications.

(B) Exchange Network Core Technologies Experiences

enfoTech is one of the leading solution providers for EN related projects. Examples of our work include:

- Node 1.1 specification: Consultant on developing the Node 1.1 specifications
- Node 1.1 software: Pioneered the Node 1.1 software for New Hampshire and Delaware
- EN Core Reference Model (CRM): Prime consultant on developing the EN Core Reference Model and Shared Schema Components (SSCs) that EN partners use as the basis for all the XML schema development for all data flows
- EN Data Standards: Prime consultant to the EPA to develop various data standards including the Environmental Sampling Analysis and Reporting (ESAR) standards

- EN XML schema development: Prime consultant for developing the XML schema for major data flows including those for Discharge Monitoring Report (DMR), Drinking Water Report (DWR), Environmental Incident (EI), Tier II Reporting, Storage Tank reporting, Air Quality Data Exchange (AQDE), Water Quality Data Exchange (WQDE), Water Quality (WQX), Open Dump, Underground Injection Control (UIC), etc. and participants to Facility Registry System (FRS), Resource Conservation and Recovery Act (RCRA), etc.
- SOA security: XML gateway assessment, design, and implementation
- Exchange Network Discovery Service (ENDS): the ENDS consists of two major parts: (1) Data Registry and (2) Data Browser
  - Data Registry: Participating consultant for the ENDS Data Registry development
  - Data Browser: Prime consultant for the ENDS Data Browser development
- EN Financial Support
  - ROI Model: Prime consultant for developing an EN Return-On-Investment (ROI) model for quantifying the benefits of EN projects. The ROI model has been used by the states to justify EN project requests, estimate data flow implementation costs, and request funding
  - EN Financial Baseline: Prime consultant for developing a Costing Model for data flow implementations
- Future EN Technology Development
  - Node 2.0 specification: Participant in the Node 2.0 specification development
  - Node 2.0 software: To offer the Node 2.0 software in accordance with the Node 2.0 specification
  - E-Enterprise: RESTful specifications, services registry, etc.

3.4.2 Exchange Network Challenge Grant Experiences

enfoTech has served as the prime consultant for multiple EN Challenge Grant projects. We are familiar with the challenges from the challenge grants and have experiences to facilitate a team with a diverse background (program, IT, EPA) to document existing processes, perform best business practice analyses, develop new processes, implement new IT solutions to support new business processes, training, and project outreach. Our project experiences are listed below:

EN Challenge Grant Project	Objectives	Lead Agency
1. Node 1.0 Challenge Grant	Develop Node 1.0 software to support states to flow environmental data from states' internal databases to EPA's CDX.	Delaware NREC
2. E-DMR Challenge Grant	Develop an electronic reporting mechanism to collect wastewater Discharge Monitoring Report (DMR) from facility to states and from states to EPA.	Michigan DEQ
3. E-DWR Challenge Grant	Develop best business practices, templates, schema, and tools to collect drinking water test reports (DWR) from laboratories, water systems, to states and from states to EPA.	New Hampshire DES
4. Homeland Security Challenge Grant	Develop best business practices, templates, schema, and tools to integrate environmental data to assist states to support emergency responses.	New Hampshire DES
5. WQDE Data Sharing Challenge Grant	Develop best business practices, templates, schema, and tools to allow DEP, Fishery, Marine, Volunteer to electronic report, validate, and share ambient water quality monitoring data.	New Jersey DEP
6. Regional AQS Data Sharing Challenge Grant	Develop best business practices, templates, schema, and tools to allow states to share ambient air quality monitoring data, submit	New Jersey DEP

EN Challenge Grant Project	Objectives	Lead Agency
	to EPA, and to support law enforcement personnel to respond to emergency responses.	
7. Node 2.0 Challenge Grant	Develop Node 2.0 software to support states to publish and share environmental data with EN partners. EN Node 2.0 was adopted by EN as a standard Node tool.	ECOS
8. EN Browser	Develop EN Browser software to support EN partners to discover and consume environmental data published in the Exchange Network	New Jersey DEP
9. Great Lake Spill Response Challenge Grant	Develop best business practices, templates, schema, and tools to support Great Lakes states to obtain critical resources to respond to oil spills	Michigan DEQ
10. Large Aquatic Ecosystem System Challenge Grant	Develop best business practices, templates, schema, and tools to support Great Lakes states to share water quality, fish tissues, sediment, climate changes, environmental assessments data	Michigan DEQ

3.4.3 Exchange Network Data Flow Experiences

enfoTech has successfully completed **23** types of Exchange Network data flows. They are listed in a Table below:

enfoTech Experiences on Exchange Network Data Flows	
FRS: Facility Registry System AQS: Air Quality System AQDE: Air Quality Data Exchange ICIS-NPDES: ICIS for NPDES ICIA-Air: ICIS Air for air emission data ICIS-AFS: ICIS for AFS WQX: Water Quality Data eXchange SDWIS: State-to-EPA Drinking Water Reporting RCRA: Resource Conservation & Recovery Act UIC: Underground Injection Controls EIS/NEI: Air Emission Inventory Reporting TRI: Toxic Release Inventory EPHTN: Env. Public Health Tracking Network	Others: ▪ eDWR: Lab-to-State Drinking Water Reporting ▪ DCM: Drive a Clean Machine ▪ ODPX: Ocean Data Partnership Exchange ▪ NCTCOG: North Central Texas Council of Govt. ▪ Open Dump: Tribal Inventory of Open Dumps ▪ Mercury: Mercury content product data flow ▪ R. Waste: Radioactive Wastes ▪ Radon: Radon Tests ▪ Incident: Environmental Incidents ▪ EMTS: EPA Moderated Transaction Service

3.5 Experiences with Other Environmental Agencies

3.5.1 State-wide Environmental IT Project Experiences

Since 1994, enfoTech has completed over 200 database management projects for Federal agencies, State Agencies, County and Local municipalities. Below is a partial list of example environmental data management system projects from the past 5 years:

No	Organization (Year)	Project
1	New Jersey DEP (2005 – 2014, Enhancement, Support)	Online Compliance Reporting System: A state-wide online compliance reporting system (E2) to collect monitoring data for drinking water, water quality, private well testing, lab certifications. System enhancements and maintenance continue to present.

No	Organization (Year)	Project
2	Alabama DEM (2007-2014, Enhancement, Support)	NPDES Compliance System: A state-wide NPDES Database system to manage wastewater facility's permits, inspections, monitoring, compliance, and enforcement data. System enhancements and maintenance continue to present.
3	Ohio EPA (2007 – 2014, Enhancement, Support)	Online Compliance Reporting System: A state-wide online compliance reporting system (E2) to collect monitoring data for wastewater DMR, drinking water testing, water quality credible monitoring data. System enhancements and maintenance continue to present.
4	Indiana DEM (2008 – 2014, Enhancement, Support)	Water Quality Data Management System: A state-wide ambient water quality database to manage projects, sample locations, sampling schedules, samples, lab results, field data, etc. Complete a WQX data flow to EPA's CDX. System enhancements and maintenance continue to present.
5	Alabama DEM (2008-2014, Enhancement, Support)	e-Permit System: A state-wide e-Permit system to process online applications for waste handlers, wastewater discharger Notice of Intent, construction storm water permits, sanitary sewer overflow. System enhancements and maintenance continue to present.
6	Michigan DEQ (2008 – 2014, Enhancement, Support)	Air Emission Reporting & Fee Management System: A state-wide air emission calculation and reporting system to manage point source air emissions, conduct report audits, calculate emission fees, and generate invoices. System enhancements and maintenance continue to present.
7	Massachusetts DEP (2009)	Air Quality Data Management System: A state-wide data system to manage air quality monitoring data, QA air quality data, calculate AQI index, flow AQS data to EPA, develop a website to share real-time air quality data with the public.
8	Rhode Island DOH (2009 – 2014, Enhancement, Support)	Online Compliance Reporting System: A state-wide online compliance reporting system (E2) to collect monitoring data for drinking water testing data. System enhancements and maintenance continue to present.
9	US Army Corp. of Engineers (2009-2010)	e-Permit System: A nation-wide e-Permit system to process online applications for 404 nationwide construction permits.
10	Oklahoma DEQ (2009-2014, Enhancement, Support)	NPDES Data Management System: A state-wide NPDES Database system to manage wastewater facility's permits, inspections, monitoring, compliance, and enforcement data. System enhancements and maintenance continue to present.
11	Oklahoma DEQ (2009-2014, Enhancement, Support)	Complaint Management System: A state-wide Complaint management database to manage complaint intake, resource assignment, inspections, responses, and notifications. A public data inquiry portal is also provided. System enhancements and maintenance continue to present.

No	Organization (Year)	Project
12	Oklahoma DEQ (2009-2014, Enhancement, Support)	Facility Identification System: A state-wide Facility Identification System to reconcile all facility IDs, Permit #s, and Contacts generated from subsystems.
13	Oklahoma DEQ (2010-2014, Enhancement, Support)	Land Protection Division Information System: A state-wide Land Protection Division compliance database to manage waste handlers, permits, inspections, compliance reports, and enforcement. System enhancements and maintenance continue to present.
14	Massachusetts DEP (2011-2012)	NPDES Compliance System: A state-wide NPDES Database system to manage wastewater facility's permits, inspections, monitoring, compliance, and enforcement data.
15	Rhode Island DEM (2011-2014)	NPDES Compliance System: A state-wide NPDES Database system to manage wastewater facility's permits, inspections, monitoring, compliance, and enforcement data. System enhancements and maintenance continue to present.
16	Texas CEQ (2012-2014)	e-Permit System: A state-wide e-Permit system to process online applications for natural gas vehicle grant application.
18	Texas CEQ (2012-2014, Enhancement, Support)	Online Compliance Reporting System: A state-wide online compliance reporting system (E2) to collect monitoring data for drinking water testing data.
19	South Africa Department of Environmental Affairs (2013 – 2014, Enhancement, Support)	Air Emission Reporting & Management System: A Nation-wide air emission calculation and reporting system to manage air emissions from 7 key source sectors: industrial point sources, transport (vehicle, railway, aviation, ports, and pipelines), residential burning, waste (wastewater treatment and landfill), agriculture & fishing, land use & forestry, and natural resources. System also automatic calculate greenhouse gas emissions. System supports EI report audits, calculate emission fees, and generate invoices. System enhancements and maintenance continue to present. Greenhouse Gas Emission Reporting & Carbon Tax System: A Nation-wide GHG emission calculation and reporting system to manage GHG emissions from all industrial sectors. System automatic calculates greenhouse gas emissions based on IPCC protocols and emission factors. System support report audits, simulate GHG emissions for different production output scenarios, and generate carbon taxes. System enhancements and maintenance continue to present.
20	Washington DFW (2013-2014, Enhancement, Support)	Permit Management System: A state-wide Permit system to process online applications, issue permits, and manage post permit activities for Division of Fish and Wildlife for Aquatic Protection permits. System enhancements and maintenance continue to present.

No	Organization (Year)	Project
21	Oklahoma DEQ (2014, Enhancement, Support)	Online Air Permitting System: A state-wide online e-Permit system to support air permit applications and integrates with the backend air database called TEAM. DEQ adopts GovOnline as the e-Permit portal. The Air Division is the 1st group to offer online permitting.
22	Georgia EPD (2014, Enhancement, Support)	Facility Identification System: A state-wide Facility Identification System to reconcile all facility IDs, Permit #s, and Contacts generated from subsystems.
23	Georgia EPD (2014, Enhancement, Support)	Online Submittal System: A state-wide online e-Permit system to support all environmental submittals (permit applications and compliance reporting).
24	Colorado DPHE (2016, Enhancement, Support)	Online Submittal System: A state-wide online e-Permit system to support all environmental submittals (permit applications and compliance reporting). Land protection system.
25	Iowa DNR (2018-2019, Enhancement, Support)	e-Application: A state-wide online e-Permit system to support all environmental submittals (permit applications and compliance reporting).

3.5.2 Recognition / Awards

enfoTech's dedication to environmental software solutions, coupled with past project successes, has translated into a number of prestigious awards being bestowed upon our customers by federal, state, and non-profit organizations. Below are some noteworthy examples:

- **"Director's Award"**: by Washington Department of Fish and Wildlife for delivering a new and improved Aquatic Protection Permitting System.
- **"Outstanding Performance Award"**: by Michigan Department of Environmental Quality for delivering a new and improved Michigan Air Emission Reporting System.
- **"Innovation Award"**: by ECOS for the NJDEP AQS Project. Leveraging the technology of the Exchange Network, and with strong collaboration between the states and the EPA Air Program, partners developed one common way to report to EPA data systems and share more data state to state.
- **"Denali Peak Performance" Award**: by Alaska Governor. Award to the Alaska Department of Environmental Conservation's Water Information Management for excellence in service to the State. Alaska's DEC uses the NPDES Management System (NMS) and E2 software programs.
- **"Commitment to Excellence" Award**: by AWWA for NJDEP implementing the E2 Electronic Drinking Water Reporting System, which accepts electronic submissions of drinking water data from laboratories and water systems, demonstrating a strong effort to improve the timeliness of data submittals and enhance data quality.
- **Michigan Excellence in Technology Award – Best Application Serving a Public Organization's Business Needs**: by Government Technology Magazine. Awarded for "*Michigan's Electronic Discharge*

Monitoring Report Data Exchange." Presented by Government Technology Magazine at the Michigan Digital Government Summit,

- **Certificate of Tribute**: by Michigan Governor Honor to the Michigan DEQ for their "*Exceptional contributions to the field of Information Technology.*" Presented at Michigan Digital Government Summit,
- **Chief Information Officer – Partners Award**: by USEPA, The Office of Environmental Information Annual Award for *"Toxic Release Inventory State Data Exchange Network Pilot Implementation."*
- **Certificate of Achievement – Promoting Efficiencies**: by USEPA. The National Environmental Information Exchange Network Award for "*Michigan's Electronic Discharge Monitoring Report Data Exchange."*
- **Recognition for Outstanding Work**: by USEPA. The National Environmental Information Exchange Network Award for "*Advancing the National Environmental Information Exchange Network*."

3.6 Project References

Reference #1: Michigan Department of Environmental Quality (Installed Model)

Total Contract Cost: $ 6,210,000 for implementation & Services

Engagement Period: started in 8/2001 and continues with enhancement, maintenance and support currently

Business Needs: DEQ Air Programs regulates sources of air pollutants to minimize adverse impact on human health and the environment. DEQ partners with enfoTech to implement a state-wide online air emission reporting system. DEQ Water Quality Programs provide regulatory oversight for all public water supplies, issue permits to regulate the discharge of industrial and municipal wastewaters. DEQ partners with enfoTech to develop a state-wide online permitting, inspection, compliance and enforcement system.

Services Delivered: enfoTech successfully completed the following projects for DEQ:

- Online environmental e-Permitting System: State-wide Online permit system for Air, Water, Waste
- Online compliance reporting systems: Online Air Emission Reporting System; DMR reporting system; Online Drinking Water Test Results reporting system;
- State-wide Environmental Compliance Database: NPDES permit and compliance system; Groundwater compliance management system; Aquatic Nuisance Control management; Drinking water data query system; NPDES Public Inquiry system; Dry Cleaning Compliance & Inspection

Project Results:

- **Online e-Permit and Compliance Reporting**
  - Saves DEQ resources and money to manually track and enter data
  - Achieved 80% of 1,200 facilities submit compliance reports online since 2005
  - Reduces the Facility's compliance costs by offering a streamlined report submission method, readily available computer tools, reduced wait times, and eliminates paper & associated costs.
  - Improves accuracy of compliance data by eliminating potential errors that otherwise would be introduced through manual and/or redundant data entry.
  - Improve accuracy of reporting compliance to EPA and save time and cost
- **Online Air Emission Reporting**
  - MAERS was rolled into production in 10/2009 to collect emission data for 2009 reporting year. For the 2009 reporting year, 70 % of the 1740 facilities used MAERS to submit their emission reports

before the deadline. For the 2010 reporting year, the percentage increased to 92%. For 2012 reporting year, 96% reporting were completed via MAERS. DEQ uses MAERS to calculate, invoice, and track payments for ~ $ 10 MM each year of air emission fees.

Relevance to the EPermit Project

- Use EN Suite as the base to support online permitting and compliance reporting
- Online licensing for new, renewal, amend, and terminate licenses
- Enterprise environmental data management for permit application, permit generation, inspection, compliance evaluation, violation tracking, enforcement management, data export, reporting, data analysis, document management and search
- Manage permit application review workflow based on submittal type
- Manage permit obligations: including compliance reports, extension, termination, on-hold, complete
- Manage Inspection scheduling, results and mobile inspection
- Track inspection violations and associated enforcement actions
- Document management and search
- Public Inquiry module to allow general public to search data
- GIS interface to show data on map with drill-down capability
- Integrate with state databases through secured web-service APIs
- Flow data to USEPA via CDX
- End-to-end project implementation services to include: Planning, Management, Requirement Verification, Design, Configuration, Testing, UAT support, training, Go-live, and system maintenance and support

Reference Contacts: Mike Beaulac (please see section 3.6.1 for reference in writing). Mr. Beaulac has retired in May 2020. enfoTech presents Amie Hartman as the new contact.
Contact Name: Amie Hartman
Contact Title: Air Quality Division MAERS Coordinator
Contact Phone Number: 517-285-6700
Contact Email Address: HartmanA4@michigan.gov

Reference #2: Georgia DNR, Environmental Protection Division

Total Contract Cost: ~ $ 5,000,000 for implementation

Engagement Period: started in 1/2013 and continues with enhancement, maintenance and support currently

Business Needs: Georgia EPD envisions an integrated system in which State staff and the public will be able to use a variety of common mechanisms to access the State Entity's information resources. The data will originate from many different sources, as it does today, but it will be presented in a standardized, easy-to-access, and easy-to-understand manner. EPD partners with enfoTech to implement (1) a state-wide Facility Information System, (2) an Online Permitting System, (3) a Land data system, (4) a Financial Data System to automate permitting process.

Systems Delivered:

- State-wide Facility Information Management System
- State-wide online permitting for air, water and land protection permits for new, renewal, amend, and terminate licenses
- State-wide land protection data system for permit application, permit generation, inspection, compliance evaluation, violation tracking, enforcement management, data export, reporting, data analysis (Hazardous Waste, Solid Waste, Waste Tire, Underground Storage Tank, Underground Injection Control, Site Remediation, Volunteer Cleanup, Waste Tire, Surface Mining, Lead-based paint removal, Asbestos remediation, etc.)

- State-wide accounting, invoicing and financial data systems
- Manage permit application review workflow based on submittal type
- Manage permit obligations: including compliance reports, extension, termination, on-hold, complete
- Manage Inspection scheduling, results and mobile inspection
- Track inspection violations and associated enforcement actions
- Document management and search
- Public Inquiry module to allow general public to search data
- GIS interface to show data on map with drill-down capability
- Flow data to USEPA via CDX
- End-to-end project implementation services to include: Planning, Management, Requirement Verification, Design, Configuration, Testing, UAT support, training, Go-live, and system maintenance and support

Relevance to the EPermit Project

- Use EN Suite (GovOnline) as the base to support online permitting and compliance reporting
- Online licensing for new, renewal, amend, and terminate licenses
- Use EN Suite (Land System) as the base for land protection programs (Hazardous Waste, Solid Waste, Waste Tire, Underground Storage Tank, Underground Injection Control, Site Remediation, Volunteer Cleanup, Waste Tire, Surface Mining, Lead-based paint removal, Asbestos remediation, etc.)
- Enterprise environmental data management for permit application, permit generation, inspection, compliance evaluation, violation tracking, enforcement management, data export, reporting, data analysis, document management and search
- Mobile computing for inspection
- Public Inquiry module to allow general public to search data
- GIS interface to show data on map with drill-down capability
- Integrate with state databases through secured web-service APIs
- Flow data to USEPA via CDX
- End-to-end project implementation services to include: Planning, Management, Requirement Verification, Design, Configuration, Testing, UAT support, training, Go-live, and system maintenance and support

Reference Contacts: Angela Ivester (please see section 3.6.2 for reference in writing). Ms. Ivester has moved on to another state position (Deputy Director of Operations (OIT) at Georgia Department of Corrections) in 2019.

Reference #3: Colorado Department of Health and Environment

Total Contract Cost: ~ $ 1,400,000.

Engagement Period: started in 3/2016 and continues with enhancement, maintenance and support currently

Business Needs: CDPHE requires a state-wide Portal that provides a platform to support all regulatory processes for air, water, and land protection divisions. The Portal shall offer the following features:

A. Regulated Entity: Allow each regulated community to interact with the CDPHE Environmental programs via a secure Portal to;

- Apply and pay for required permits/licenses and register their facilities electronically.
- Allow each regulated community to upload required documentation online.
- Allow each regulated community to update and/or modify their information on file with CDPHE.

B. Internal staff: Improved processes and customer self direct access to records will result in greater programmatic effectiveness and greater capacity to devote to other work priorities that achieve the mission of the organization.

- Access the applications and required documentation submitted through the web portal by the regulated community.
- Generate required documentation (permits/licenses etc.) based in the submitted applications and documentation.
- Manage business processes to comply with regulatory requirements for Permit and facilities.

Systems Delivered: Implement a State-wide web-based System to manage grant and loan for during water and wastewater construction projects. enfoTech uses GovOnline, FIS, and Land System as the base systems and tailor the system to support the grant/loan the entire life cycle of business processes from pre-qualification, application, funding agreement, to design, construction, inspection, payments to closure. The System offers two portals: (1) Public portal for external users, and (2) Agency Portal for internal users. The System supports variety of users from water supply, power authority, municipality, consultants, CDPHE grant/loan unit, CDPHE engineering unit, Finance, etc. enfoTech provides full implementation services. The System is hosted at enfoTech Data Center.

Relevance to the EPermit Project

- Use EN Suite (GovOnline) as the base to support online permitting and compliance reporting
- Online licensing for new, renewal, amend, and terminate licenses
- Use EN Suite (Land System) as the base for land protection programs (Asbestos)
- Enterprise environmental data management for permit application, permit generation, inspection, compliance evaluation, data export, reporting, data analysis, document management and search
- Public Inquiry module to allow general public to search data
- GIS interface to show data on map with drill-down capability
- Integrate with state databases through secured web-service APIs
- Flow data to USEPA via CDX
- End-to-end project implementation services to include: Planning, Management, Requirement Verification, Design, Configuration, Testing, UAT support, training, Go-live, and system maintenance and support

Reference Contacts: Erick Worker (please see section 3.6.3 for reference in writing).

Contact Name: Erick Worker
Contact Title: Project Manager
Contact Phone Number: 303-692-3594
Contact Email Address: erick.worker@state.co.us

3.6.1 Reference Check #1

Proposer Name:	enfoTech & Consulting, Inc.
Reference Entity:	Michigan DEQ
Reference Contact Name:	Michael Beaulac
Contact Telephone Number:	517-284-6701
Contact Email Address:	beaulacm@michigan.gov

1. How satisfied are you with the Proposer's overall quality of services provided and your overall relationship with the Proposer?

   Excellent! Remote and face-to-face communication has been both professional, effortless and continuous. Project management was always conducted in a logical and coordinated manner until all parties agreed on each phase of the project life cycle. All software development "issues" were tracked and resolved within projected timeframes agreed by the client. Product delivery as always on-time and within budget.

2. How satisfied are you with the Proposer's delivery of service?

   Very satisfied! Final deliverables often included value added enhancements provided at no cost.

3. How satisfied are you with the Proposer's responsiveness to customer service issues and special requests (e.g., reported problems, changes, billing, etc.)?

   Very satisfied! Responsiveness was often immediate and issues resolved in both a professional and timely manner.

4. If you were to add/use Proposer's services again, how satisfied would you likely be?

   Based on our nearly 18 years of history with enfoTech's services, I would anticipate that our satisfaction would be extremely high. We've always felt that we were in excellent hands.

5. How satisfied are you with the following aspect(s) of Proposer's solution and services?

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A. Software

Very satisfied! enfoTech is a cutting, if not bleeding edge software developer that is typically ahead of whatever versions of operating systems used by the State f Michigan. As such, they often build systems for us ahead of our current technology in anticipation of our migration to it on an enterprise level. This helps ensure greater application longevity and reduces maintenance costs.

B. Hardware

Very satisfied! enfoTech conforms to whatever hardware requirements are specified by our Department of Technology, Management and Budget (DTMB) and professional program staff requires. They also offer their own perspectives on potentially more efficient hardware configurations for our consideration.

C. Installation and Implementation

Very easy to work with! All installation and implementation is conducted according to DTMB and professional program staff system launch requirements, protocols and timeframes.

D. Training

Excellent! Training is always a specified, detailed deliverable for each contract and often includes professional staff, IT staff and members of the regulated community. All training is provided by enfoTech project staff via a combination of online tutorials, online and face-to-face workshops and system prompts, depending on the complexity of the application and specific task. Training can also be an iterative process, including pilot training to determine the effectiveness of the approach depending on the target audience.

E. Maintenance/Ongoing Services

Always excellent! Maintenance and ongoing services are typically specified as part of multiyear (up to five years) contract agreements tied to product(s) delivery. Responsiveness to maintenance issues is also tied to contract time frames (i.e., weeks, 24 hours, overnight, etc.) depending on the complexity of the maintenance issue to be resolved. We have never had a problem with enfoTech completing any maintenance issues.

F. License/Subscription Agreement

The State of Michigan has never had a problem with licensing and/or subscription issues with enfoTech. These are issues that are "spelled out" in all contracts and must be agreed to by both parties prior to project initiation.

G. Information Gathering

Information gathering, or the capturing of business requirements, is a key step in the project planning phase and must be completed to our satisfaction prior to approval of the next phase in the project life cycle. As such, enfoTech has always done a stellar job working with headquarters, field staff and the regulated community acquiring all needed business requirements needed prior to development, etc.

H. Data Migration

As with any new system development and/or upgrades, data is typically migrated from the old to the new. This is also typically a specified deliverable in any contract with enfoTech. They have always been successful in their delivery of this product.

I. Solution Configuration

Not only is enfoTech on the cutting/bleeding edge of technological solutions, but the company has a number of staff intimately familiar with 40CFR and state environmental regulations that form many of the business requirements for certain applications. Their system solutions reflect that dual knowledge. As a result, many of their deliverables to the State of Michigan (and EPA and elsewhere) have become regional and national models that other customers have endorsed and embraced. We have been privileged to be on the receiving end of these products.

J. Storage

This has never been an issue for us with enfoTech. Storage has been either handled internally or via off-site storage, depending on the need.

K. Operational Staff Costs

Operational staff costs for enfoTech delivered systems and applications have historically (and intentionally) been designed to be typically less than either the system or process being replaced. The development of a pro-forma to determine operational resource needs is usually a requirement of the contract and tied to the business requirements.

L. Consulting Services

We have utilized enfoTech as a marketing agent for some of our (proprietary) deliverables in anticipation of other customers acquiring licensing agreements with the State of Michigan. This has proven beneficial for increasing funding levels for our annual maintenance of those same deliverables.

We have also utilized enfoTech as an ad hoc consultant for many potential programmatic "problems seeking solutions" without charge from the company. They have always been available to provide their perspectives, regardless of the potential for a future contract.

6. How satisfied were you with the Proposer's ability to manage to the agreed upon timeline?

   Project and deliverable deadlines were always met. Very often those timelines had hard delivery dates due to Federal reporting requirements that could not be modified. enfoTech has always delivered.

7. How satisfied were you with the Proposer's ability to manage to the agreed upon scope of work?

   enfoTech has always delivered the agreed upon scope of work and then some! Many of our deliverables included value-added enhancements that were not originally envisioned in (or included as part of) the original scope of work/requirements documents. Very often, these enhancements were provided without additional cost.

8. How satisfied were you with the Proposer's ability to manage to the agreed upon cost?

   All deliverables were provided to the agreed upon costs (see #7 above).

3.6.2 Reference Check #2

Proposer Name:	enfoTech & Consulting Inc.
Reference Entity:	Georgia State DNR, Environmental Protection Division
Reference Contact Name:	Angela Ivester, IT Director
Contact Telephone Number:	404-463-0077
Contact Email Address:	Angela.Ivester@dnr.state.ga.us

1. How satisfied are you with the Proposer's overall quality of services provided and your overall relationship with the Proposer?

   Very satisfied

2. How satisfied are you with the Proposer's delivery of service?

   Very satisfied

3. How satisfied are you with the Proposer's responsiveness to customer service issues and special requests (e.g., reported problems, changes, billing, etc.)?

   Very satisfied

4. If you were to add/use Proposer's services again, how satisfied would you likely be?

   Very satisfied

5. How satisfied are you with the following aspect(s) of Proposer's solution and services?

   A. Software

   Very satisfied

   B. Hardware

   Very satisfied

   C. Installation and Implementation

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Very satisfied

D. Training

Very satisfied

E. Maintenance/Ongoing Services

Very satisfied

F. License/Subscription Agreement

Very satisfied

G. Information Gathering

Very satisfied

H. Data Migration

EPD handled more than half of the data migration ourselves however enfoTech partnered with us to make the migration successful. Very satisfied with the enfoTech work with data migration.

I. Solution Configuration

Very satisfied

J. Storage

Very satisfied

K. Operational Staff Costs

Very satisfied

L. Consulting Services

Very satisfied

6. How satisfied were you with the Proposer's ability to manage to the agreed upon timeline?

Very satisfied

7. How satisfied were you with the Proposer's ability to manage to the agreed upon scope of work?

Very satisfied

8. How satisfied were you with the Proposer's ability to manage to the agreed upon cost?

Very satisifed

3.6.3 Reference Check #3

Proposer Name:	enfoTech & Consulting Inc.
Reference Entity:	Colorado Department of Public Health & Environment
Reference Contact Name:	Erick Worker, Project Manager
Contact Telephone Number:	303.692.3594
Contact Email Address:	erick.worker@state.co.us

1. How satisfied are you with the Proposer's overall quality of services provided and your overall relationship with the Proposer?

   Overall quality of service: very satisfied. Per the specifications and requirements provided by CDPHE, enfoTech has developed and delivered the requested solution along with customization providing for project management capabilities. At every junction enfoTech has been responsive to requests for system enhancements or modifications and always responded quickly to resolve system glitches or bugs.

   Relationship: CDPHE has a very good relationship with enfoTech. Through the years, enfoTech has demonstrated a professional and positive, can-do attitude towards the wants and needs expressed by CDPHE. Individual staff members are friendly and professional and they make working through service requests or issues a positive experience.

2. How satisfied are you with the Proposer's delivery of service?

   CDPHE is satisfied. enfoTech takes the interpretation and understanding of a client's needs seriously, and is driven to bring the needed services to fulfilment in a timely manner.

3. How satisfied are you with the Proposer's responsiveness to customer service issues and special requests (e.g., reported problems, changes, billing, etc.)?

   As expressed above, CDPHE is satisfied with enfoTech's responsiveness to needs, requests for enhancements, and resolution of issues.

4. If you were to add/use Proposer's services again, how satisfied would you likely be?

   Satisfaction, based on prior experiences, is anticipated.

5. How satisfied are you with the following aspect(s) of Proposer's solution and services?
   A. Software: Satisfied.
   B. Hardware: NA.

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C. Installation and Implementation: Satisfied.

D. Training: Fairly satisfied: while enfoTech remains at the ready to provide assistance or training at a moment's notice; during the UAT phase, CDPHE would have benefited from more frequent, in person hands-on training. Alternatively, a prolonged visit of two or three days would have been beneficial.

E. Maintenance/Ongoing Services: Satisfied.

F. License/Subscription Agreement: Satisfied

G. Information Gathering: Satisfied. More details or a better explanation of this process could have been provided.

H. Data Migration: Satisfied.

I. Solution Configuration: Fairly satisfied. The CEOS solution appears to be scalable based on enfoTech's ability to take the COTS version and bring the complicated State Revolving Fund programs, with its numerous workflows to fruition.

J. Storage: NA.

K. Operational Staff Costs: Satisfied

L. Consulting Services: Satisfied

6. How satisfied were you with the Proposer's ability to manage to the agreed upon timeline?

   Satisfied.

7. How satisfied were you with the Proposer's ability to manage to the agreed upon scope of work?

   Satisfied.

8. How satisfied were you with the Proposer's ability to manage to the agreed upon cost?

   Satisfied.

4. Key Persons and their Resumes

The proposed project team members are highly qualified for the Project. Their environmental domain knowledge, technical skills, and project experiences are highly relevant to the Project. The table below provides a high-level cross-reference of the proposed project Key personnel skills/experience with the Project requirements. Detailed resumes for each key project personnel are provided in Appendix.

Qualifications Required by the Project	Charlie Tsai	Sony Su	Pei Wang	John Fisher	Tracy Ji	Alex Li	Dan Sun	Helen Pan	Nicki Chang	Roger Yang	Ben Chang
Years of Experience	22	19	3	6	3	17	24	20	19	29	14
Degree	MS	MS	MS	PhD	MS	MS	MS	MS	MS	MS	MS
Major	CIS	ChE	DA	PHY	Env.	CIS	EE	CIS	CIS	CIS	EM
Project Role	PM	APM	BA	BA	BA	SA	SA	SA	DBA	DBA	DBA
1. Knowledge of environmental business processes for air, water, land and IT project experiences	√	√	√	√	√	√	√	√	√	√	√
2. Environmental Regulatory Domain & Business Process Knowledge	√	√	√	√	√	√	√	√	√	√	√
3. Expert in environmental data models, data dictionary, and data migration tools	√	√	√	√	√	√	√	√	√	√	√
4. Specialize in requirement verification, training, end-users support, documentation	√	√	√	√	√		√		√	√	
5. Specialized in large-scale IT design, development, implementation	√	√	√	√	√	√	√	√	√	√	√
6. Experience in system life cycle QA procedures projects	√	√	√	√	√	√	√	√	√	√	√
7. Experience in web-services APIs, XML for system/data integrations	√	√	√	√	√	√	√	√	√	√	√

The proposed team consists of professionals who specialize in delivering enterprise-wide environmental database systems. They all have IT project experiences for all environmental programs for all media and are well versed in environmental domain knowledge and leading-edge computer technologies, which are essential qualifications for the project. The **11 team members** (1 PhD, 10 Masters) will bring with them ~ 180 man-years of enterprise-wide environmental IT project experiences. The team is also well balanced with:

- 4 Business Professionals: to primarily work with end users for requirement verification, configuration design, system documentation, quality assurance, training, and support
- 4 System Professionals: to provide system architecture design, system development, and system integration. In addition, they will provide hardware infrastructure, security, and web standard compliance services.
- 3 Database Professionals: to provide database related tasks including data migration, stored procedures, and business object development. They will optimize system performance.

The team has the domain know-how and technical skills to accomplish the tasks being assigned to them for this project. Based on project needs, additional resources will be made available to effectively complete the project requirements.

A. enfoTech Key Project Staff

enfoTech presents the following personnel to support the project. The following Table provides abbreviated resumes for project staff.

Name / Role	Qualifications and Skills
Charlie Tsai Role: ▪ Project Manager	▪ A certified Project Management Professional (PMP) ▪ 22 years large scale state-wide environmental IT project experiences for states of Michigan, Texas, New Jersey, Oklahoma, Ohio, Missouri, Florida, Indiana, Idaho, Georgia, Maine, Rhode Island, South Carolina, Alabama, Alaska, and USEPA ▪ 19 years of system integration experiences using web services, ETL, data files. ▪ System Architect for EN Suite systems and GIS Tool ▪ Expert on Exchange Network standards, protocols, and data flows ▪ Excellent soft skills, communication, and task management ▪ Education: MS in Computer Information Science
Sony Su Role: ▪ Assistant Project Manager ▪ Requirement, Design, Testing, Training, Document	▪ 19 years large scale state-wide web-based environmental IT project experiences for states of Michigan, Massachusetts, Maine, New Hampshire, Florida, Ohio, Alabama, Rhode Island, Indiana, Oregon. ▪ 16 years project management experiences ▪ 16 years of environmental data systems with system integration experiences ▪ Design Lead for EN Suite software system ▪ Expert on EN Suite systems, GovMobile, GIS System tool ▪ Expert on Exchange Network standards, protocols, and data flows ▪ Excellent soft skills, communication, and task management ▪ Education: BS and MS in Chemical Engineering
Pei Wang Role: ▪ Assistant Project Manager ▪ Requirement, Design, Testing, Training & Documentation	▪ 3 years large scale state-wide environmental IT project experiences for states of Georgia, Colorado DPHE, Indiana, South Africa DEA, Oregon DEQ, etc. ▪ Assist Design Lead for EN Suite software system ▪ Expert on EN Suite systems, GovMobile, GIS System tool ▪ Expert on Exchange Network standards, protocols, and data flows ▪ Excellent soft skills, communication, and task management ▪ Education: BA in Mathematics, MS in Data Analytic
John Fisher Role: ▪ Business Analyst ▪ Requirement, Design, Testing, Training & Documentation	▪ 6 years large scale state-wide environmental IT project experiences for New Jersey DEP, Virginia DEQ, Arizona DEQ, Washington State, Phoenix, San Jose, etc. ▪ Expert on EN Suite systems, GovMobile, GIS System tool ▪ Expert on Exchange Network standards, protocols, and data flows ▪ Excellent soft skills, communication, and task management ▪ Education: PhD in Physics
Tracy Ji Role: ▪ Business Analyst ▪ Requirement,	▪ 3 years large scale state-wide environmental IT project experiences for South Africa DEA, Georgia EPD, Colorado DPHE, Oregon DEQ etc. ▪ Expert on EN Suite systems, GovMobile, GIS System tool ▪ Excellent soft skills, communication, and task management ▪ Education: MS in Environmental Engineering

Name / Role	Qualifications and Skills
Design, Testing, Training & Documentation	
Dan Sun Role: ▪ Solution Architect	▪ 24 years large scale state-wide environmental IT project experiences for states of Georgia, Colorado, Virginia, Michigan, Texas, Oklahoma, Ohio, Missouri, Florida, Alabama, Alaska, and USEPA ▪ 22 years of system integration experiences using web services, ETL, data files. ▪ Lead System Architect for EN Suite systems, GovMobile ▪ Expert on Exchange Network standards, protocols, and data flows ▪ Excellent soft skills, communication, and task management ▪ Education: MS in Electrical Engineering
Helen Pan Role: ▪ Lead Developer	▪ 20 years large scale state-wide environmental IT project experiences involving air emission inventory reporting, air quality monitoring, online reporting, air permitting, NPDES permitting and data management, Hydraulic Permit for Watershed protection, Land Protection System, Compliant Management System. ▪ Expert and lead developer on EN Suite systems, GovMobile ▪ Expert on Exchange Network standards, protocols, and data flows ▪ Resident expert on ESRI ArcGIS, Arc IMS, Google Map API, Bing Map APIs, shape files, GML, and EPermit ▪ Education: MS in Computer Information Science
Alex Li Role: ▪ Lead Developer	▪ 17 years large scale state-wide environmental IT project experiences involving air emission inventory reporting, air quality monitoring, online reporting, air permitting, NPDES permitting and data management, Land Protection System, Compliant Management System. ▪ Expert and lead developer on EN Suite systems, GovMobile ▪ Expert on Exchange Network standards, protocols, and data flows ▪ Education: MS in Computer Information Science
Roger Yang Role: ▪ Data Migration ▪ Database related work ▪ Database performance tuning	▪ 29 years large scale state-wide environmental IT project experiences involving all environmental programs for all media ▪ Database architect for EN Suite data warehouse ▪ Specialized in system integration experiences using web services, ETL, data files. ▪ Specialized in DB script development, data migration, database performance tuning ▪ Expert on database performance tuning
Nicki Chang Role: ▪ Data Migration ▪ Database scripting, SP, Triggers	▪ 19 years large scale state-wide environmental IT project experiences involving all environmental programs for all media ▪ Database architect for EN Suite data warehouse ▪ Specialized in system integration experiences using web services, ETL, data files. ▪ Specialized in DB script, data migration, database performance tuning ▪ Expert on database performance tuning
Ben Chang Role: ▪ Data Migration ▪ Database scripting, SP, Triggers	▪ 14 years large scale state-wide environmental IT project experiences involving all environmental programs for all media ▪ Database architect for EN Suite data warehouse ▪ Specialized in system integration experiences using web services, ETL, data files. ▪ Specialized in DB scripts, data migration, database performance tuning ▪ Expert on database performance tuning

All project personnel are enfoTech's permanent employees. Key project personnel are senior managers at enfoTech with professional resources at their disposal. The DEP shall not experience any resource constraint throughout the contract.

(B) Resource Contingency Plan

enfoTech is a process-driven corporation. Our SOPs requires that all project work be recorded at our Microsoft Team Foundation Servers (TFS) for tracking and quality assurance. Life-cycle materials for each system function will be recorded in the TFS, including the requirements, design, rationale, coding, testing, and documentation. The TFS maintain bi-directional traceability between the requirement and the final system function. In a team work environment, the TFS tracks all work revisions, comments, and supervisor approval. Our CMMi level 3 process-oriented SOPs will minimize any negative impact that might potentially be caused by personnel's changes.

In addition, enfoTech also prepares a contingency plan to maintain project continuity in the unforeseeable event when an employee leaves the Company or take a long leave of absence.

Backup Resource	Project Role(s)	Education	Experiences
Cindy Yang	Sr. Developer	MS, Computer Information Science	▪ 22 years in state-wide environmental database projects
Li Soong	Sr. Developer	MS, Computer Information Science	▪ 22 years in state-wide environmental database projects
Chaofa Chung	Sr. Developer	PhD, Computer Information Science	▪ 14 years in state-wide environmental database projects
Zack Li	Business Analyst	MS, Mechanical Engineering	▪ 4 years in state-wide environmental database projects
Jacky Tseng	Security & Hosting	MS, Computer Information Science	▪ 23 years in state-wide environmental database projects
Gang Yao	Security & Hosting	MS, Computer Information Science	▪ 20 years in state-wide environmental database projects

enfoTech developers offer at least 12 years of development experiences. Ample senior developer resources are available and will be added to the Team based on project needs.

4.1 Project Manager

Charlie Tsai, PMP (Project Manager)

Education: BS in Business Management, MS in Computer Information Science

Project Responsibility: Charlie is an enfoTech Director responsible for environmental system implementations. He will serve as the project manager to lead the project effort and coordinate development resources to complete system deliverables. He will also be monitoring development deliverables, tracking progress and will provide status reports. He will be responsible for ensuring that all deliverables are completed with good quality and on time.

Experience: Charlie has his Project Management Professional (PMP) certification and has 22 years of experience in managing large-scale implementations and complex IT systems development. He has extensive experience working with environmental permitting, monitoring, inspection, C/E and is a resident expert in the project life cycle development. He has managed large scale projects of over $ 100 million in size.

He offers expert working knowledge of SOA oriented implementation, XML implementation protocols, and data security. Charlie is an expert in the latest Web service development toolkits for Angular, .NET and J2EE and is experienced in the development and implementation of XML technologies (JASON, XML schema and XML style sheets).

Charlie will bring the following valuable assets to the project:

- Over 22 years of environmental IT projects at state agencies focus on online reporting, e-Permitting, and data management
- Over 14 years of project experiences on Exchange Network standards/guidelines, protocols, Node, data flow implementations, EN Browser, ENDS, SOA services, RESTful services, and e-Enterprise
- Expert knowledge of environmental permitting, monitoring, inspection, C/E which will be instrumental to design and delivery of the System
- Familiar with environmental e-Permitting and mobile inspection processes and related IT projects
- System architecture and implementation of open standards such as SOA, JASON, XML, GML, KML, Shape file technologies
- Technical expertise on work flow foundation, windows presentation foundation, Angular, .NET framework, XAML, XML gateway
- Resident expert on system development quality assurance based on software engineering institute's CMMI-3 model
- Extensive working experience in SQL Server database, C#, C++, C, VC++(MFC, ATL), VB, VBA, Java, VBScript, JavaScript, XML, HTML, ASP
- Excellent project facilitation skills, easy to work with, and results oriented

4.2 Assistant Project Manager

Sony Su (Assistant Project Manager)

Project Responsibility: Sony will serve as the enfoTech assistant team project manager, reporting to the DEP's Project Manager. Sony will be co-responsible for developing the project plan, outlining major milestones, breaking down work tasks, and work with DEP's PM to develop a master Plan with schedule to complete all project work. He will also be tracking the project progress and will provide status reports to the DEP project manager. Sony will work with Charlie Tsai to manage project tasks to ensure that project deliverables are completed with good quality, on time and within budget.

Experience: Sony has been a Director with enfoTech since 2001 and is the resident expert on permitting for all environmental media, inspection, monitoring, and compliance/enforcement systems. He has demonstrated his technical skills to deliver an integrated enterprise-wide IT system to address complex business issues. He pays great attention to details and is very easy to work with a large group of people with diverse background. Sony will bring the following valuable assets to the project:

- Working knowledge and familiarity with business processes required by all environmental programs (air, water, land protection)
- Comprehensive environmental domain knowledge for requirement gathering, business process analysis, data mining, and user documentation and training
- Expert knowledge for EN Suite product line
- Expert knowledge of system and data integrations
- Excellent project facilitation skills, easy to work with, and results oriented

Sony has excellent "soft" skills to facilitate large scale projects with members from diverse backgrounds and with different levels of IT knowledge. He is skilled in leading members with different levels of technical backgrounds to effectively deliver complex information systems that are easy to use. Sony has the talent to communicate well with senior managers for project updates, resource/cost management, scoping and

risk management; and also offers environmental domain knowledge to work with SMEs to facilitate business requirements gathering; plus technical skills to engage system/database design with web hosting and database teams. His project management and team facilitation skills have been highly endorsed by members of all projects in which he has been involved. Sony has 14 years of project management experience and has supervised up to 20 staff members with projects worth up to 10 million dollars. Sony's extensive environmental regulatory background and IT knowledge with a track record of proven experience to facilitate large-scale projects, especially for the state environmental IT and Exchange Network projects, involving diverse project members with different backgrounds. His project management and team facilitation skills have been highly endorsed by members of all projects he has been involved in.

4.3 Other Project Members

Abbreviated biography for other project members is provided below.

Dan Sun

Mr. Sun is an enfoTech Project Director responsible for the system architecture design and development of the enfoTech Application Framework (EAF), BPEL based Work flow foundation framework, Application programming interface, and the software library for all enfoTech product lines.

Mr. Sun has more than 14 years of large-scale IT system project experience on Angular, .NET and Java environment. Danwen serves as a Project Director at enfoTech to lead the technical development of major systems. He has been engaged in the development of Exchange Network core technologies (including Node, data flow implementation, security, e-reporting, etc.). Mr. Sun has expert working knowledge in SOA design and implementation using open standards such as WSDL/ SOAP/ XML, X.509/ SAML/ LDAP data security protocols.

Mr. Sun is an expert in the latest SOA/Web services development toolkits for Angular, .NET and J2EE, and is experienced in the development and implementation of XML schema and XML style sheets. He has the technical skills and experience for all aspects of the CMMI compliant Software Development Lifecycle. His field of expertise is in enterprise-wide web based, environmental system design, development, integration, and implementation. Mr. Sun directs both System Development and the Technological Innovation Groups at enfoTech.

Helen Pan

Ms. Pan is the lead developer to implement enterprise-wide systems for states of Georgia, Michigan, and Colorado, Oregon. She also successfully implemented NPDES systems for over 10 large water utilities to comply with pretreatment regulations. Helen is a key contributor to EN Suite and GovMobile. She leads technology innovation effort in Web API and electronic data flows. Helen has been with enfoTech for 15 years and will offer valuable environmental business process knowledge and project implementation experiences.

Alex Li

Mr. Li has been extensively involved in the design and implementation of enterprise-wide e-Government and environmental software. He has focused on the developments of online environmental permitting and mobile inspection systems. He is currently serving as the system development lead for EN Suite product line and GovMobile.

Mr. Li has hands-on experiences in n-tier IT applications design and development with strong integration focus using Angular, C#.NET, ASP.NET. .NET Core, and Java/JSP environments. He has 15 years of system

development experiences for a wide spectrum of applications such as web-based system, online electronic payment, online circulation subscription systems, and data reporting systems. Mr. Li has proven ability to effectively analyze and solve problems and is a highly adaptable continual self-learner.

Roger Yang

Mr. Yang leads the enfoTech database group to support all database related tasks, including:

- Establish & administer a database farm to manage Oracle and SQL Server databases
- Establish and administer a standard protocol, naming convention, and control procedure for database schema creation and changes
- Establish & administer a Team Foundation Server to manage database scripts, stored procedures, data migration scripts, system upgrades
- Establish & administer a standard protocol for database upgrades and QA/QC procedures
- Administer database backup & disaster recovery
- Establish & administer a secured database farm to manage client databases for technical support

Mr. Yang has 22 + years of experience in the data processing business and is involved in many enterprise-wide applications. He is a software architect specializing in a wide spectrum of software development including system design. He is a key contributor to all enfoTech products. Mr. Yang is also highly involved in the logical and physical database design and modeling. Roger has experience in managing large-scale and complex IT systems with up to a 300 million dollar budget. Mr. Yang brings a unique combination of all aspects of software development skills to projects by providing multiple tiers of design and development experience.

Ben Chang:

Mr. Chang is a senior member of enfoTech's database group. Ben contributes his extensive Oracle/SQL Server knowledge to many of enfoTech's projects. Ben's major responsibilities include:

- Data Modeling
- Database Physical Design
- Database Physical Implementation
- Database Performance Monitoring and Tuning
- Database Administration
- Database support

Moreover, Mr. Chang has more than 14 years of experience in production and quality control. He played a key role in transforming in-house inventory data into accessible information for customers and dealers. Mr. Chang has also developed and implemented an e-service website. Having expertise in time study and product life cycle implementation, Mr. Chang's knowledge helps enfoTech to maintain a superior system of database auditing and monitoring. He set up automated database backups and releases which greatly improves the quality and efficiency of the databases. He has redesigned how to generate XLM exchange data thus reducing run time and making troubleshooting easier. Ben has been actively involved in the EN Node and data flow implementations with multiple States and is familiar with most of environmental data flows. Ben contributed to various aspects of data flow development including FCD, data extraction, XML transformation, data parsing, and XSLT development.

Pei Wang

Ms. Wang is a Director at enfoTech. She leads functional development for EN Suite products. She serves as the implementation lead for various environmental system projects for states of Indiana, Georgia, Colorado, Texas, Oregon.

Ms Pei has helped several states develop cross-functional environmental compliance data exchange to the Exchange Network. She also has expertise in database design, business process analysis, and system design for enterprise-wide environmental information systems. Pei will leverage her technical and analytical skills into the design and implementation of all environmental IT projects she has engaged.

John Fisher

John is the functional manager for EN Suite for water quality, pretreatment, and water system product line and is instrumental to the product design, enhancements, development, and project implementations. John earned her PhD degree from University of Pennsylvania majoring in Physics. He has implemented Water Quality systems for two states and worked with over 8 large-scale water authorities to implement water databases required by NPDES programs. He is expert in on online reporting business processes. John has an extensive environmental regulatory background and IT expertise. His communication and team facilitation skills have been highly endorsed by members of all projects he has been involved in.

Tracy Ji

Tracy has enterprise-wide IT experiences with extensive environmental business process knowledge and IT skills which will be instrumental to the project success. Tracy has been the lead contributor to Georgia EPD and South Africa DEA project implementations. Tracy offers the following experiences relevant to the DEP project:

- A resident expert for the EN Suite and Financial Information Management.
- Enterprise-wide e-Reporting and e-Permitting Projects for Georgia, Colorado, South Africa
- System Integration Technology and project expertise

Nicki Chang

Ms. Chang is a senior member of enfoTech's database group. She contributes her extensive Oracle/SQL Server knowledge to many of state-wide environmental data systems. Her major responsibilities include:

- Data Modeling
- Database Physical Design
- Database Physical Implementation
- Database Performance Monitoring and Tuning
- Database Administration
- Database support

Nicki has 19 years of working experience on Oracle and SQL Server databases. She offers extensive insight to support daily database related issues and database management, as well as strong organization skills on database development, project execution, and technical support. Nicki has been actively involved in the EN Node and data flow implementations with multiple states and is familiar with all environmental data flows. She contributed to over 20 data flow development including FCD, data extraction, XML transformation, data parsing, and XSLT development.

4.4 Other References and Client List

In addition to references provided in Section 4.3, we present the additional clients who we have implemented Solution similar to the EPermit project in a table below.

No	Organization & Project (Year)	Contact
1	New Jersey DEP (2005 – 2018) Online Compliance Reporting System: A state-wide online compliance reporting system to collect monitoring data for drinking water, water quality, private well testing, lab certifications. System enhancements and maintenance continue to present.	Richard Hyjack NJDEP, Office of Information Management Resources 609-984-2207 Richard.Hyjack@dep.nj.gov
2	Ohio EPA (2007 – 2018) Online Compliance Reporting System: A state-wide online compliance reporting system to collect monitoring data for wastewater DMR, drinking water testing, water quality credible monitoring data. System enhancements and maintenance continue to present.	Tab Brewster Information Technology Supervisor, Ohio EPA 614-644-2764 Thomas.Brewster@epa.ohio.gov
3	Indiana DEM (2008 – 2018) Water Quality Data Management System: A state-wide ambient water quality database to manage projects, sample locations, sampling schedules, samples, lab results, field data, etc. Complete a WQX data flow to EPA's CDX. System enhancements and maintenance continue to present.	Joanna Wood Indiana DEM, Office of Water Quality 317-308-3060 JWOOD@idem.IN.gov
4	Oklahoma DEQ (2009-2018) Facility Profiler System: A state-wide Facility Profile system to reconcile and manage Facility IDs from all state databases. NPDES Data Management System: A state-wide NPDES Database system to manage wastewater facility's permits, inspections, monitoring, compliance, and enforcement data. Complaint Management System: A state-wide Complaint management database to manage complaint intake, resource assignment, inspections, responses, and notifications. A public data inquiry portal is also provided. Facility Identification System: A state-wide Facility Identification System to reconcile all facility IDs, Permit #s, and Contacts generated from subsystems. Land Protection Division Information System: A state-wide Land Protection Division compliance database to manage waste handlers, permits, inspections, compliance reports, and enforcement. Online Air Permitting System: A state-wide online e-Permit system to support air permit applications and integrates with the backend air database. System enhancements and maintenance continue to present.	Justin Bain OK Dept. of Environmental Quality, Information Systems (405) 522-4081 Justin.bain@omes.ok.gov

5 Project Implementation Plan (Responses to Bid Section 4.1.4: Contract/Project Management)

5.1 Project Strategy and Transition Management

Implementation Strategy

enfoTech has carefully reviewed project requirements and would like to propose a Solution that consists of a configurable COTS product (EN Suite) and end-to-end implementation services. The Project strategy includes the following:

1. **Product**: begin with enfoTech's "configurable" COTS product, EN Suite, as the base and conduct gap analysis, perform system configurations to tailor the Solution to meet project needs. EN Suite offers the following advantages to the project:
   - A web-based, n-tier, and services-oriented System and has been in production use at multiple regulatory authorities to support e-environmental since 2010
   - Meets majority of DEP's functional requirements straight from the box (~ 89%).
   - Meets DEP's IT standards
   - Meets EPA's CROMERR requirements
   - Modular design to support phase-in implementation
   - Extensive configuration options to tailor the System to meet DEP needs
2. **Services**: provide end-to-end implementation services to bring the System to live
   - Recommend to implement the EPermit system in two waves.
     - enfoTech proposes to perform system configuration in two waves, and perform 3 SCD workshops for environmental programs included in each wave with DEP. The wave-approach will provide DEP the opportunity to pilot a few environmental programs to get situated with the new EPermit paradigm, apply lessons learned to wave 2, make wave 1 process improvements concurrently with the wave 2 implementation, and achieve the maximize project return-on-investment.
     - Please review Proposal section 5.3.2 for additional details relating to the wave-approach
     - If the wave-approach is receptive to DEP, enfoTech will work with DEP to select environmental programs for each wave.
   - Project facilitation to bring the new System to production use
   - Requirement verification, system configuration design, system configurations, testing, and UAT
   - Facility multiple workshops with DEP SMEs to develop TO-BE business processes
   - Provide a library of existing forms and reports to serve as examples for DEP to evaluate, pick-and-choose, modify to meet project needs
   - Training and knowledge transfer to allow DEP to perform future system changes
   - System documentation
   - Technical support
3. **Additional Features (they are standard COTS features included for the Project)**
   - **Work Flow Management:** allows the DEP to manage work flows and tailor work flows for each online submittal type (i.e., task name, person, due date.) Based on the submittal type, a workflow could vary such as: Admin review for completeness, technical review, approval, issuance, etc.
   - **Form Engine & Data Validation:** allows DEP to expand data entry forms to include data elements and validation logics needed for each online submittal and improve data quality.
   - **Web-services Architecture**: supports system integrations with external systems for bi-directional data exchange. The architecture is loosely-coupled among systems and tightly-integrated for data sharing. It will support the RFP requirements and accommodate future needs after implementation.

Strategy to Manage Changes to Successfully Transition to New EPermit System

The project will revolutionize the data management practices for DEP. The paradigm will change from the existing paper procedures into integrated data Portals that will standard business processes, enforce business rules, establish data standards to improve data quality. The Epermit system will streamline regulatory compliance, improve work efficiency, enhance reporting and data analysis capability, integrate seamlessly with other DEP data systems to offer accurate and timely information for making informed decisions. For the past decade, enfoTech has worked with other state authorities to successfully transition their data management practices to EN Suite. Although challenges would vary among projects due to different project nature, we found them all achieve excellent results resulting from a good planning, proactive monitoring, and make timely adjustments to overcome all challenges. We offer the following draft recommendations to DEP for consideration.

During the Implementation Stage:

1. **Potential Culture Changes that Might Require Organization Support**
   - Challenges: the project might change staffs' data management practices and require some adjustments on their SOPs to create/manage the regulated entity records, collaborate with other environmental programs to avoid duplicate data, or use standard substance codes/names. It will require an organization support to succeed.
   - Recommendations: Establish a core project team with representatives from program areas and task the Team to: (1) stay focus on project objectives and provide overall project guidance; (2) bring end users' suggestions to the core team and provide regular progress updates back to end users; (2) establish SOPs for managing key environmental data (such as Site, Environmental Interest, substances, measurement units, etc.); (3) Establish procedures to manage change requests; (4) identify business process improvement opportunities for EPermit to implement and promote data standards, data reuse, and work collaboration.
   - Most importantly, the core project Team shall coordinate SMR's inputs to
     - Establish data standards and use them to guide system configurations
     - Standardize reference data and code values used for key environmental data such as Substances, Measurement Units, Monitor/Report Frequency, Violation Types, Enforcement Types, etc.
     - Establish standard protocols to create and maintain common environmental data such as Facility, Site, Address, Contact, Responsibility, etc.
     - Develop standard EPermit processes for "Regulated Services". For example, a permitting service could consist of the following permit types with its own distinct business process:
       - ✓ **Major/Minor permit**: a structure business process with multiple steps of review and might involve other authorities outside of DEP and public notification.
       - ✓ **General Permit**: a streamline process to process general permits, especial for construction Stormwater permits
       - ✓ **License**: to provide certification to professionals such as asbestos contractor, lead paint remover, wastewater plant operators, etc.
       - ✓ **Permit Renewal, Amendment, Revoke, Termination**

2. **Data Quality is the Corner Stone for Good Environmental Management and Informed Decision-making**
   - Challenges: Maintaining duplicate data will hinder the ability to effectively administer environmental compliance. Entering bad data will result in erroneous compliance evaluation and inaccurate environmental assessment. Tracking key environmental data inconsistently will negatively affect DEP's ability to manage environmental programs. The EPermit will provide a common platform to mitigate those issues, but good data quality is required for EPermit to become an effective business tool.

- Recommendations: (1) Charge the project Team to develop a SOP to establish SOPs and business logics to be used to maintain key environmental data in EPermit. Key data include "Regulated Entity", "Contacts (Responsible Official)", "Location", "Environmental Interests", "Substance", "Measurement Units", etc. (2) enfoTech will work closely with the DEP to migrate data from existing database at the early project stages. DEP will review their data in the new system and make comments. Data migrations will be iteratively and be continuously improved throughout the project. (3) After the data are migrated, EN Suite offers data Wizards to help the DEP to enforce data quality checks to eliminate duplicate data entry. (4) Adopt business practices to maintain common data and share the data across all environmental programs. (5) Establish data exchange mechanisms to send data captured by EPermit to external systems, implement data quality checks for importing data to EPermit and maintain consistent data quality among all data systems.

3. **Streamline TO-BE Business Processes through Data Sharing and Work Collaboration**
   - Challenges: The project, in some cases, will change current business processes. Process changes, even for good changes, will require clear communication and organizational endorsement to succeed.
   - Recommendations: During the iterative cycle among requirement verification and system configuration stages, enfoTech will work with DEP to identify opportunities for process improvements, present draft TO-BE process options with PRO-and-CON for evaluation. The project core Team shall communicate potential changes to end users at the early stages, listen to their comments, work through comments to reach consensus. Once agreed upon by the program areas, we will include them in the EPermit and document them in the internal SOPs.

4. **Best Practices and Up-to-date documentation/training tools will be critical to the long-term Project Success**
   - Challenges: Lack of EPermit understanding, changing regulatory requirements, process changes, and staff turnover are common change factors to large scale IT projects. Successful management of those changes will be essential to the long-term project success.
   - Recommendations: (1) Clear communication and continuous education will be built into the project work plan. (2) enfoTech will walk through every deliverable with DEP prior to turning the deliverable to DEP for review. (3) enfoTech will hold bi-weekly GoToMeeting with DEP to follow up action items, stay responsive to end user comments. (4) enfoTech will maintain a library of frequent asked questions with answers for future use. Maintaining up-to-date documentations with effective training programs will be the effective tools to minimize business disruption due to staff turnover.

At the Stage of Preparing the EPermit to Go-live:

5. **Pilot (User Acceptance Testing)**
   - enfoTech has included a pilot stage (UAT) to allow the DEP to expand testing group to include both internal staff and representatives from external organizations. enfoTech will deliver a UAT plan and provide support to ensure success Pilot. After a successful Pilot, the DEP will approve the System for production use.

6. **Training and Technology Transfer**
   - enfoTech has included a comprehensive training plan, multiple process-oriented training sessions, and system documentations to ensure a smooth transition to the new system. enfoTech will perform heavy lifting on all trainings. We request the DEP to provide comments on a draft training plan to ensure meeting training expectation. Please see Proposal section 9 for additional details.
   - enfoTech will deliver a Training database populated with data for various training scenarios. The Training database will be used for initial training and be kept active for remedial training after EPermit goes live.

After the System Goes live and is in the Maintenance Stage:

7. **Responsive System Maintenance & Support**

- enfoTech has included a comprehensive system maintenance and support plan. In addition, we have included a SharePoint project Team website, GoToMeeting, and operating procedures to track requests and monitor our services to ensure we are responsive to the DEP service requests.
- enfoTech will offer remedial training to the DEP through GoToMeeting sessions after the System goes live. Remedial trainings will be helpful in the initial months of production use to ensure a smooth transition.
- enfoTech PM will continue monitor our services and meet with the DEP PM to align our efforts with DEP's priority and incorporate DEP's feedback to improve our service delivery.

8. **An EPermit Steering Committee to Oversee Operation**
   - A Steering Committee shall be established and meet regularly to provide organization support and management to achieve high return on project investments after system goes live. The Committee shall prioritize new work requests and provide guidance to direct project focus for future phases.

5.2 Meet Functional Requirements (Responses to Bid Section 4.1.1: COTS Software Suite)

- enfoTech proposes a configurable COTS product, EN Suite, to meet bid requirements
- The EN Suite software shows a high degree of fit to meet majority of functional. A Table below presents a summary of all our responses to the bid requirements (RFP Section 4.1.1). EN Suite, the proposed solution, will meet 207 requirements (89%) with out-of-box features.

Response Code	Count	PCT (%)
4: Requirement will be met with COTS software Out-of-box features	207	89%
3: Requirement will be met with COTS software after configuration effort	25	11%
2: Requirement will be met with an extension customized for EPermit project	0	
1: Requirement will be met by integration 3rd party software to the COTS software	0	
0: Not available	0	

Response Code

4: Requirement will be met with COTS software Out-of-box features

3: Requirement will be met with COTS software after configuration effort

2: Requirement will be met with an extension customized for EPermit project

1: Requirement will be met by integration 3rd party software to the COTS software

0: Not available

enfoTech has also provided point-by-point response to each requirement in bid solicitation section 4.1.1. After a joint strategy session with DEP, we will work with DEP to prioritize the requirements and determine implementation schedule.

5.3 The Work Plan (Responses to Bid Section 4.1.2, Consulting Services)

enfoTech proposes to adopt the Agile system development model with a 6-stage work plan. The implementation is a full-service plan that shall include project facilitation, software configuration/ customization, installation, training, site visits, Webinars, and technical support. For this project, enfoTech proposes to perform the work both at DEP offices (for requirement verification, configuration design, system release walk through, and training) and at our NJ offices (for system configurations and post production maintenance). Sufficient onsite visits have been budgeted for requirement verification, multiple system walk-throughs, and training. In addition, we have included ample Webinars throughout this project to ensure that

we maintain a close and clear line of communication with the DEP project team members. Regular project status updates with the DEP management are also included.

In view of the pandemic, the onsite workshops' frequency and duration will be kept flexible due to constraint of staff working in the office. enfoTech understand the complexities of meeting during the pandemic and recognize the situation is, and will remain, unpredictable. We appreciate that meetings will require flexibility on everyone's part and are prepared to structure workshops remotely, in-person, or even a hybrid (some in-person participation and some remote) as state and local regulations permit. We will request DEP assistance in schedule coordination of participants to do our overall best to keep with the final schedule.

5.3.1 Stage 1: Project Start-up, Planning and Management

5.3.1.1 Technical Approach

Establish enfoTech's internal development and project management environments, develop the Project Plan, and conduct project kick-off meetings. Coordinate project, conduct weekly conference calls, follow up on issues and action items, develop and deliver monthly reports, and maintain schedule and project documents.

(1) Project Strategy Workshop

Upon receiving a notice-to-go, enfoTech proposes to hold a 3-Day project strategy workshop at the DEP office (or via video conference if the pandemic situation requires). The Workshop objectives shall include the following discussion:

- **Project Vision & Expected Results**: Confirm DEP's expectation on the EPermit project results, acceptance criteria, plan activities after system goes live, and develop project phases with DEP's inputs
- **Project Strategy**
  - enfoTech will present a draft implementation strategy to work with DEP to accomplish project work. The Strategy will include, at least, the following topics
    - ✓ EPermit Governance, Charter, Change Control Board, Responsibilities
    - ✓ EPermit guidelines for establishing
      - ❖ Standard reference data and code values used for key environmental data such as Substances, Measurement Units, Monitor/Report Frequency, Violation Types, Enforcement Types, etc.
      - ❖ Standard protocols to create and maintain common environmental data such as Facility, Site, Address, Contact, Responsibility, etc.
      - ❖ Standard EPermit processes to support DEP's 4 areas and 5 programs
  - DEP will provide comments and modify/add sections to the strategy as necessary
  - Both parties will reach a consensus on the project strategy
  - Capture action items and establish follow-up to complete all action items
- **Project Procedures**
  - enfoTech will present project procedures with DEP. Procedures will include the following topics
    - ✓ Project Management (members, role/responsibilities, project team website, schedule, communication, scope, and risk)
    - ✓ Methods to be used to conduct gap analysis
    - ✓ For each DEP business process, provide standard procedures to:
      - Document TO-BE processes and requirements
      - Document TO-BE data capturing forms, workflow, and issuance templates
      - Document TO-BE outputs
      - If needed, explore the need to "migrate certain DEP data to EPermit" or "build an interface" in order jump-start the EPermit for the process.

- ✓ System configuration guidelines
- ✓ DEP resources and review procedures to perform functional review of interim EPermit releases and data migration
- ✓ DEP resources and procedures to confirm EPermit compliance with the West Virginia state IT standards
- ✓ Training Strategy
- ✓ Roll-out Strategy
- ✓ Methodology to size EPermit server and IT infrastructure based on preliminary capability
- ✓ Methodology to perform stress testing for the EPermit system
- ✓ EPermit environments (PROD, UAT, DEV, Training)

- DEP will provide comments and modify/add sections to the procedures as necessary
- Both parties will reach a consensus on the project procedures
- Capture action items and establish follow-up to complete all action items

- **Project Schedule and Milestones**
  - enfoTech will present a draft project schedule with phases, milestones, and dates
  - enfoTech will work with DEP to refine the schedule to accommodate DEP's availability

enfoTech will use the Project Strategy Workshop results as the reference to develop a Project Plan.

(2) Project Management Processes

1. Project Plan: After the Project Strategy Workshop, enfoTech will develop a draft Project Plan and submit to DEP for review. The draft Plan shall contain, at a minimum, the following topics: (1) Project overview, purpose and objectives; (2) Project scope; (3) Work products and deliverables, Deliverable acceptance criteria; (4) Work breakdown structure and schedule; (5) Relationship with other projects; (6) System development and project life cycle management; (7) Resource management; (8) Quality assurance procedures; (9) Configuration management; (10) Communication management; (11) Change management; (12) Risk management. enfoTech will walk through the Project Plan with DEP during a project Kickoff meeting. Incorporate DEP's comments and issue a version 1 Project Plan

2. Project Kickoff meeting: enfoTech will facilitate a Project kickoff meeting during the Project Strategy Workshop. The kickoff will introduce project procedures, Project Team Website, and schedule an onsite Requirement Verification workshop, and walk through the draft Project Plan with WBS and schedule.

3. Single Point of Contact: A single Point-of-Contact will be established to work with the DEP to facilitate communication between the DEP project manager and various enfoTech resources.

4. Conduct Bi-Weekly Conference Calls: enfoTech will host weekly project calls with DEP, establish call logistics, record meeting minutes and post them at the PTWS, follow up all action items from the calls.

5. Project Monitoring & Progress Reports: The enfoTech Project Manager will monitor project:
   - Monitor project progress, adjust the schedule accordingly, and keep the DEP PM up to date
   - Monitor risk and implement mitigation measures, if needed
   - Monitor project cost & Manage changes in accordance with procedures stated in the Project Plan

   enfoTech PM will host regular project GoToMeeting conference calls with the DEP's Project Manager (and other required members) to review project activities for the previous week, and outline accomplishments and tasks planned for the following week. In addition, monthly project reports will be submitted to the DEP for review. The status report will contain accomplishments, tasks planned for the next reporting period, and the overall project status.

6. Cost Management: Project scope and deliverables will be carefully tracked. The DEP's Project Manager must approve any potential out-of-scope items. enfoTech will submit monthly invoices

(including fees for approved deliverables and expenses) to the DEP for review and approval. A project spending tracking will be implemented to monitor spending against the deliverables.

7. Scope Management: Our project goal is to complete the Project within budget, on time, and meet/exceed project requirements. Any additional services (or cost items) will be communicated to the DEP's Project Manager prior to engagement of such services and costs.

(2) Project Management Tools

In addition to the standard face-to-face project review sessions and using Microsoft Project to manage milestones and schedules, enfoTech will configure SharePoint server and tailor it to use as a project repository. The following table lists the possible features available for the SharePoint site, and indicates those that will be enabled for this project:

Features	Description
1. Document Repository	Central storage of all project documents (unless restricted by limitation of the physical storage space of the project website, in which case the file will be provided on the enfoTech FTP site). Any documents managed on the project website will track of the document type, last modified user and last modified date/time.
2. Project Contact List	A listing of all project team members, their primary role on the project team, phone number, and email address.
3. Software Issue Tracking	A listing of any software bugs or enhancement requests identified during gap analysis, requirements gathering, or acceptance testing phases of the project.
4. Task Assignment Listing	In addition to tracking software bugs / enhancement requests, any project task assignment and/or action items along with assigned resource can be managed.
5. Discussion Forum	Allows project team members to report any questions or concerns in a general discussion forum. This allows core team members to promptly identify discussion items as issues and log them into the website with the appropriate priority and categorization specified. This does not preclude regular email communications amongst the project team.
6. Project Events	A calendar listing key project events such as training, acceptance testing, or other onsite visits.

Project team members will be responsible for logging into the website to view updates to information indicated in the table above. enfoTech will establish user accounts for the DEP project members to allow the members to access the Team web site to share information and to monitor project progress

Conference Call Bridge: Periodically, conference calls will be held which will include Project Team members. A conference call bridge will be set up for each of these calls, hosted by enfoTech.

Web Conferencing Tool: Web conferencing capabilities will be available for project conference calls. This will allow all project team members to view presentations as they are being presented. enfoTech currently uses GoToMeeting.

(1) Project Roles and Responsibilities

enfoTech proposes the following general project roles and responsibilities for the project Team.

enfoTech Responsibilities

- enfoTech will provide a single point of contact for providing overall project facilitation services
- Create and host a Project Team Web site (SharePoint server) to serve as a central repository for project documents, shared technologies, and project updates.

- Develop a project plan, monitor progress, coordinate resources to complete all deliverables, and update the Plan accordingly.
- Throughout the project period, host project status conference calls, on bi-weekly basis, as necessary, for project members to discuss project-related issues and follow up on action items from project calls.
- enfoTech's project manager will submit monthly project reports to the DEP's project manager. The monthly project report shall include accomplishments, upcoming tasks, project schedule updates, action items, issues, and proposed resolutions for the issues.

DEP Responsibilities

- DEP will provide a single point of contact for (1) all project-related communications, (2) coordinate the attendance of representatives from applicable member agencies at project meetings, and compile and deliver consolidated comments on deliverables, and (3) provide overall direction during the execution of the project.
- DEP will provide subject matter experts (SME) and provide overall project requirements.
- Unless SaaS service is requested by the DEP, DEP will provide related hardware/software, hosting environment, and Internet capacity required to support the project. Secured VPN be provided.
- DEP will review deliverables and provide enfoTech with consolidated written comments on all of the draft deliverables within 10 business days of receipt for documents that are less than 100 pages, and within 15 business days of receipt for documents that are more than 100 pages. Feedback on System review should be completed within 15 days of delivery or time mutually agreed by both parties.

5.3.1.2 Stage 1 Deliverables

Deliverable	enfoTech's Responsibility	DEP's Responsibility
1.1 Project Kickoff and strategy workshop (3-Day)	▪ Prepare workshop agenda ▪ Kick-off the Project and facilitate workshop discussion to reach consensus with DEP on project strategy	▪ Comment on workshop agenda ▪ Coordinate subject matter experts to attend the workshop ▪ Follow up on action items
1.2 Solution hosted at enfoTech data centers	▪ Install EN Suite at enfoTech data centers ▪ Provide access instructions to DEP	▪ Verify installation
1.3 A web-based project team website (PTWS)	▪ Set up a project team website ▪ Create user accounts for project team members, introduce team members to the PTWS, its structure, alert setting options	▪ Set up alert on the relevant directories and issue lists ▪ Approve team website accessibility
1.4 A project plan document	▪ Issue draft project plan ▪ Revise project schedule based on project kickoff discussions ▪ Perform risk analysis based on known factors, timeline, and resource availability ▪ Develop scope management and acceptance criteria ▪ Finalize project plan	▪ Review project plan ▪ Approve project plan
1.5 Host Weekly GoToMeeting for project updates for 2 years (1 hr/call)	▪ Setup call logistics ▪ Prepare call agenda ▪ Issue meeting minutes	▪ Coordinate SMEs to participate ▪ Prepare projector and laptop for GoToMeeting conference calls ▪ Review meeting minutes
1.6 Up to 24 monthly project reports	▪ Prepare monthly project report	▪ Comment/approve monthly reports ▪ Process approved invoices

5.3.2 Stage 2: Requirements Verification and System Configuration Design (Agile Model)

5.3.2.1 Technical Approach

Verify user requirements, document gaps between EN Suite and project requirements, develop system configuration specifications, and develop a data migration plan. The Stage 2 will produce a set of baseline specifications, requirement matrix, and test plan to serve as the basis for the DEP to track progress, review interim work results, and accept deliverables.

(A) Requirements Verification Techniques

enfoTech has developed a set of requirement elicitation techniques, and has successfully applied these techniques in many projects that are similar to DEP's project scale and complexity. Our goal in interviewing DEP staff will be to verify the DEP's business processes; identifying how the **Solution** will support them as well as possible business process improvements. The methodologies we will use include the following techniques:

- **Document Analysis:** Document analysis includes reviewing material such as the DEP's existing system documentation or reporting forms, statements of work, existing guidelines, and procedures. Requirements coverage will be for all relevant sources within the project scope.
- **Requirements & Gap Analysis:** We propose to use the core **EN Suite** as the tool to facilitate the requirement verification, help the DEP to visualize how the end product will work, and map it to future business processes. We feel that using the COTS product(s) to perform the gap analysis will give end-users the advantage to validate their business processes during the early stages of the project, gaining users buy-in, maintain ownership of the desired functions, and will increase users' acceptance for the system. Requirements meetings will bring stakeholders together in a group setting facilitated by enfoTech to reach consensus on the business needs and/or customer/product requirements and produce a system configuration that all participants will support.
- **Use Cases and Workflow:** A use case is a statement of the user's goals and actions to reach that goal, described by a sequence of interactions between a system and an external actor. Actors are basically users of the system. The objective of the use-case approach is to describe all tasks that users will need to perform with the system. Use cases provide a context for the requirements by expressing sequences of events and a common language for end users and the software development team.
- **Hosting Infrastructure Assessment**: During the Requirement Verification meeting, enfoTech will review data volume and use pattern to properly size hosting requirements.
- **Prototyping:** Prototypes can make it easier to interpret the requirements' meaning and give useful feedback. Prototypes are especially useful in determining user interface requirements because they allow the users to see and interact with a dynamic representation of the system.
- **Requirement Matrices**: will be established with numbering and will serve as the basis to cross-reference user requirements with system functions throughout all project stages.
- **GoToMeeting Conference Calls:** enfoTech will capture all onsite discussion and follow up with action items via GoToMeeting calls to make sure all open issues are resolved.

(B) Requirements Verification Workshops (FRS)

enfoTech proposes to hold 3 workshops with DEP. Before each workshop, enfoTech will present a draft workshop agenda with discussion topics, materials used, tee up major requirement points, and the expected outcome. enfoTech will review the draft agenda with DEP, incorporate DEP's comments, and finalize the agenda to allow DEP to coordinate Subject Mater Experts (SMEs) to attend the workshop.

enfoTech will facility workshop discussions, follow up action items, and develop documentations to provide the baseline for EPermit system functional requirements, implementation strategy, and system

configuration specifications. One FRS document will be produced for each environmental program. The workshop activities and expected outputs are listed below.

Workshops for Functional Requirement Specifications (FRS) – 2 Workshops

ID	Workshop Activities	Expected Outputs
#1	**EPermit FRS Run #1 (4 Days)** ▪ Use EN Suite and existing forms and features to perform gap analysis against DEP business processes, explore TO-BE processes, and capture group decisions. Major topics include: o Process diagrams required by 5 programs o End-to-end data input and system output for all business process (Forms, Workflow, Issuance, User Group, Security) o Environmental Complaint intake and response TO-BE process o Mobile inspection, Compliance, Enforcements o External system interface ✓ ERIS interface ✓ wvQASIS interface ✓ ApplicationXtender interface ✓ ESRI GIS interface ✓ SAP interface ✓ CDX interface	▪ Gather sufficient info to allow enfoTech to develop a draft FRS version 1 ▪ **EPermit Functional Requirement Specifications (FRS) V. 1** to include: o User description and access security o Process flow diagrams required by 5 programs o Forms, Workflow, Issuance Inventory o Form requirements w/data validation o Workflow requirements for each business process o Issuances required for each business process o Inspection requirement o Compliance & Enforcement requirements o Renewal and Fee requirements o Reports o External system interfaces ▪ **EPermit System Hosting Plan V.1**
#2	**EPermit FRS Version 1 Walk through with DEP (1 Day)** ▪ Walk through FRS version 1 with DEP ▪ Walk through EPermit System Hosting Plan with DEP ▪ Orient DEP SMEs with knowledge to review draft FRS & the Hosting Plan	▪ DEP SMEs are equipped with knowledge to review draft FRS, Hosting Plan, and could provide comments
#3	**EPermit FRS Run #2 (4 Days)** ▪ Before the workshop, enfoTech will issue **FRS version 1.5** to incorporate DEP's comments made to version 1 ▪ Discuss DEP's major comments using FRS version 1.5 ▪ Explore options to address DEP's comments ▪ Discuss EPermit test plan ▪ Discuss EPermit training	▪ Reach consensus on major comments to allow enfoTech to develop FRS version 2 ▪ **EPermit FRS V.2** to include: o All DEP comments o Requirement Matrix ▪ **EPermit System Hosting Plan V.2**
	▪ **EPermit FRS V.3** o DEP will review FRS V.2 and provide additional comments o enfoTech will incorporate DEP's comments and issue FRS V.3 for DEP to approve o DEP approves FRS V.3 ▪ **EPermit System Hosting Plan V3** o DEP will review FRS V.2 and provide additional comments o enfoTech will incorporate DEP's comments and issue FRS V.3 for DEP to approve o DEP approves FRS V.3	

enfoTech will provide an existing library of forms that have been developed for other state Environmental Protection Agencies. Existing forms, and system features will be used as a Tool to

- Facilitate workshop discussion during the Requirement Verification stage,
- Perform Gap Analysis,
- Develop Functional Requirement Specific document (FRS)
- Facilitate workshop discussion during the System Configuration Workshop stage,
- Develop options for system configurations,

- Develop System Configuration Document (SCD)

Within the work scope as defined in the bid solicitation, enfoTech will document business processes for the WVDEP Division of Water and Waste Management (DWWM) to be supported by the EPermit system. We will perform gap analysis of DEP processes against the EN Suite core features to ensure that the EPermit, after configurations, will support DEP's regulatory processes. At the high-level, they will include the following:

- **Solid Waste permitting**
  - For Permit types A, B, C, D, F and associated permitting processes for Review, Issue, Investigate, Approve, QA Inspection
  - Permitting: New, Minor Modification, Major Modification,
- **Hazardous Waste permitting**
  - Permit types: RCRA Permits, Post-Closure for land disposal facilities, Corrective Action, and Emergency Permits and associated permitting processes for Review, Issue, Investigate, Approve
  - Hazardous Waste Notification Process
  - Hazardous Waste permit modification processes
  - Hazardous Waste Emergency Response Fund Fee
  - Document **30** submittal Solid Waste forms (data validation rules, attachment, fee) as listed in Bid Attachment B: Solid Waste Forms
- **Groundwater program (9 sub-programs)**
  - Support Nine (9) sub-programs
    1. Dust suppression
    2. Underground Injection Control (UIC)
    3. GW Monitoring wells
    4. GW Monitoring well driller certification
    5. GW Remediation
    6. GW Protection Plans
    7. GW Protection Fund and fee collection
    8. GW Inspections and Inspection Follow-up
    9. GW Quality standards & variances
  - Document **27** GW templates (data validation rules, attachment, fee) to be used for submittal, inspection, issuance as listed in Bid Attachment B: Groundwater Forms
- **Water Use Program**
  - Allow water users to self-enroll and self-report
  - Water use permit types
  - LQU Public Water supplier (PSC regulated water utilities)
  - LQU Oil and Gas Operator (fracking operations)
  - LQU Industrial/Commercial Water Survey (all other water use)
  - Water use monitoring reports
- **Water & Waste Mobile Inspection and Enforcement**
  - Water and waste inspection business processes
  - Document **8** Water and Waste templates (data validation rules, attachment, fee) to be used for inspection as listed in Bid Attachment B: Water & Waste Inspection Forms
- **Environmental Complaint Intake & Resolution**
- **Hazardous Waste Mobile Inspection and Enforcement**
  - Hazardous waste inspection business processes

- HW inspection requirements
- Document **23** Hazardous Waste templates (data validation rules, attachment, fee) to be used for inspection as listed in Bid Attachment B: Hazardous Waste Inspection Forms

- **Data & System Security Requirements**
- **Data query and reporting capability to assist DEP in responding to inquiry/information requests**
- **Interface with DEP existing systems to contribute to the DEP's enterprise data management goal**
  - ERIS interface: for Facility and Contact data, and Responsible Officer (RO) authentication
  - wvQASIS interface: for invoicing and payment receipt management
  - ApplicationXtender interface: for document management
  - ESRI GIS interface: for data layer sharing to improve geospatial data analysis capability
  - SAP interface: for data import/export to contribute data to the enterprise data warehouse
  - CDX interface: for electronically sending data to USEPA

(C) System Configuration Workshops (SCD) – 2 Waves

enfoTech proposes to perform system configuration in two waves, and perform 3 SCD workshops for environmental programs included in each wave with DEP. The wave-approach will provide DEP the opportunity to pilot a few environmental programs to get situated with the new EPermit paradigm, apply lessons learned to wave 2, make wave 1 process improvements concurrently with the wave 2 implementation, and achieve the maximize project return-on-investment. There will be 6 SCD workshops in total. Environmental programs for each wave are recommended in section C.1 and C.2 below, and are preliminary draft in nature. In DEP is receptive to the wave-approach, enfoTech will work with DEP to finalize the wave candidates and the implementation plan.

Before each workshop, enfoTech will present a draft workshop agenda with discussion topics, materials used, tee up major configuration decisions, and the expected outcome. enfoTech will review the draft agenda with DEP, incorporate DEP's comments, and finalize the agenda to allow DEP to coordinate Subject Mater Experts (SMEs) to attend the workshop.

enfoTech will facility workshop discussions, follow up action items, and develop SCD documents. One SCD document will be produced for each environmental program. The workshop activities and expected outputs are listed below.

(C.1) Wave 1: System Configurations Workshops for Wave 1 Environmental programs (SCD)

ID	Workshop Activities	Expected Outputs
#1	**EPermit Wave 1, SCD Run #1 (2 Days)** ▪ Use DEP approved FRS 3.0 as the base, explore/confirm configuration options required by the wave 1 programs ▪ Wave 1 environmental program (Preliminary suggestion, to be confirmed by DEP) **1. Environmental Complaint Intake** ▪ Improve complaint intake ▪ Track resolution progress 2. **Solid Waste & Hazardous Waste Management** ▪ Permitting (5 classes: A, B, C, D, E, F) ▪ Permit processes for New, Renewal, Minor Modification, Major Modification ▪ HW Handler notification, ▪ HW Emergency Fund and fee collection ▪ Configure **30** submittal Solid Waste forms as listed in Bid Attachment B: Solid Waste Forms	▪ Gather sufficient info to allow enfoTech to develop a draft SCD version 1 ▪ **EPermit Wave 1, SCD V. 1** to include: o General configurations o Form configurations o Workflow configurations o Issuance configurations o Manage Permits/Licenses/Notifications o Manage Inspections o Manage Violations o Manage Enforcements o Mobile inspection o External system interfaces

ID	Workshop Activities	Expected Outputs
	3. Waste Mobile Inspection and Enforcement ▪ Waste inspection business processes ▪ Configure **3** Waste templates to be used for inspection as listed in Bid Attachment B: Water & Waste Inspection Forms **4. Hazardous Waste Mobile Inspection and Enforcement** ▪ Hazardous waste inspection business processes ▪ HW inspection requirements (Configure **23** Hazardous Waste templates to be used for inspection as listed in Bid Attachment B: Hazardous Waste Inspection Forms)	
#2	**EPermit Wave 1, SCD Version 1 Walk through with DEP (1 Day)** ▪ Walk through SCD version 1 with DEP ▪ Orient DEP SMEs with knowledge to review draft SCD	▪ DEP SMEs are equipped with knowledge to review draft SCD and could provide comments
#3	**EPermit Wave 1, SCD Run #2 (2 Days)** ▪ Before the workshop, enfoTech will issue SCD version 2 to incorporate DEP's comments made to version 1 ▪ Discuss DEP's major comments using SCD version 2 ▪ Explore options to address DEP's comments	▪ Reach consensus on major comments to allow enfoTech to develop SCD version 2 ▪ **EPermit Wave 1, SCD V.2** to include: o All DEP comments
	▪ **EPermit Wave 1, SCD V.3** o DEP will review Wave 1, SCD V.3 and provide additional comments o enfoTech will incorporate DEP's comments and issue Wave 1, SCD Final for DEP to approve o DEP approves Wave 1, SCD V.3	

(C.2) Wave 2: System Configurations Workshops for Wave 2 Environmental programs (SCD)

ID	Workshop Activities	Expected Outputs
#4	**EPermit Wave 2, SCD Run #1 (2 Days)** ▪ Use DEP approved FRS 3.0 as the base, explore/confirm configuration options required by the wave 2 environmental programs ▪ Wave 2environmental program (Preliminary suggestion, to be confirmed by DEP) 1. **Groundwater** ▪ Support Nine (9) sub-programs 1. Dust suppression 2. Underground Injection Control (UIC) 3. GW Monitoring wells 4. GW Monitoring well driller certification 5. GW Remediation 6. GW Protection Plans 7. GW Protection Fund and fee collection 8. GW Inspections and Inspection Follow-up 9. GW Quality standards & variances ▪ Configure **27** GW templates to be used for submittal, inspection, issuance as listed in Bid Attachment B: Groundwater Forms 2. **Water Use** ▪ Enable ~ 400 LQU water users to self-enroll and self-report water use information required by DEP ▪ Support 3 application types and workflows o LQU Public Water supplier (PSC regulated water utilities)	▪ Gather sufficient info to allow enfoTech to develop a draft SCD version 1 ▪ **EPermit Wave 2, SCD V. 1** to include: o General configurations o Form configurations o Workflow configurations o Issuance configurations o Manage Permits/Licenses/Notifications o Manage Inspections o Manage Violations o Manage Enforcements o Mobile inspection o External system interfaces

ID	Workshop Activities	Expected Outputs
	o LQU Oil and Gas Operator (fracking operations) o LQU Industrial/Commercial Water Survey (all other water use) ▪ Support water use regulatory requirements ▪ Future Needs: support water withdrawal permits **3. Water Mobile Inspection and Enforcement** ▪ Water inspection business processes ▪ Configure **5** Water templates to be used for inspection as listed in Bid Attachment B: Water & Waste Inspection Forms	
#5	**EPermit Wave 2, SCD Version 1 Walk through with DEP (1 Day)** ▪ Walk through SCD version 1 with DEP ▪ Orient DEP SMEs with knowledge to review draft SCD	▪ DEP SMEs are equipped with knowledge to review draft SCD and could provide comments
#6	**EPermit Wave 2, SCD Run #2 (2 Days)** ▪ Before the workshop, enfoTech will issue SCD version 2 to incorporate DEP's comments made to version 1 ▪ Discuss DEP's major comments using SCD version 2 ▪ Explore options to address DEP's comments	▪ Reach consensus on major comments to allow enfoTech to develop SCD version 2 ▪ **EPermit Wave 2, SCD V.2** to include: ▪ All DEP comments
	▪ **EPermit Wave 2, SCD V.3** o DEP will review Wave 2, SCD V.3 and provide additional comments o enfoTech will incorporate DEP's comments and issue Wave 2, SCD V.3 final for DEP to approve o DEP approves Wave 2, SCD V.3	

(D)Workshop Activity Plan

(D.1) Before the Workshop: enfoTech will perform the following activities

- **Document Analysis:** review inputs, workflow, and final outputs for each of DEP business processes
- **Solution**: host the Solution with example data at the DEP server to facilitate requirement verification (or at enfoTech Data Center, if requested by DEP)
- **Agenda, Presentations, and Example Outputs**: work with DEP to develop an agenda to align topics with global "Functional Requirements", "Business Processes", "System Interfaces", and "non-functional" requirements. Prepare meeting presentations and compile example outputs.

(D.2) During the Workshop:

- **Workshop:** interview project stakeholders, develop TO-BE processes, simulate TO-BE processes in Solution, reviews form entry validation logic, "Dashboard", user/system security, and produce a Requirement Matrix and System Configuration Document.
- **Key requirements** to be discussed shall include:
  - o Technical Requirements, IT environment, server sizing
  - o Account Registration and CROMERR compliance
  - o Online Application, Wizard, data validation, and confirmation of receipt
  - o DEP workflow to process application and issue permits
  - o Permit life cycle management
  - o Permit fee calculation and payment tracking
  - o External System Integrations
  - o Data migration
  - o Standard reporting and ad-doc reports
  - o Identify process improvement opportunities & incorporate them in SCD

- **Infrastructure Assessment:** evaluate DEP's expected data volume and usage pattern in preparation for properly sizing hosting environment for the EPermit.

(D.3) After the Workshop: enfoTech will provide the following deliverables.

- **Follow up action items**: post action items at the PTWS, conduct web calls to follow up
- **A Functional Requirement Specification (FRS) document:** will be developed in modular documents. Each module will be for each environmental program and contain business processes, logical grouping of requirements and be easy to review and update. In general, each FRS module will include:
  - Core requirements and optional needs
  - Detailed description for requirements (end-to-end processes from application to permit issuance). Document all business processes with details from the starting point, work tasks and sequence, data captured, output, and the end point. Cross-functional data sharing and process interactions will also be documented.
  - Establish an enterprise-wide SOP to identify core data elements among all systems, procedures to maintain core data (Facility, Contacts, Location, Pollutant, Unit, Control equipment, etc.), and data sharing protocols
  - A requirement matrix that will include
    - Business processes
    - Functional Requirement: link all requirements to business process
    - Non-Functional Requirements
- **A System Configuration Document (SCD):** will be developed in modular documents. One SCD module will be developed for each FRS module (i.e., environmental program) to maintain tractability to relevant requirements and be easy to review, update, and cross referenced. In general, each SCD module will include:
  - Detailed system configuration descriptions to meet requirements
  - Detailed system customization specification to meet DEP specific requirements
  - Data exchange procedures from EPermit to external data systems
  - External system interfaces
- **A Data Migration Plan (DMP):** will be developed to migrate data from RCRAInfo to EPermit. In general, the DMP module will include:
  - Data migration scope
  - Source data identification
  - Data mapping from the source data to EN Suite database
  - Data translations
  - Data gap filling
- **System Hosting Plan**: will provide hardware/software requirements to support the EPermit hosting at the DEP data servers.

To achieve the maximum return-on-investment (ROI) for the DEP, enfoTech aims to configure the COTS **Solution** wherever possible to meet the DEP's business needs, keeping the final **Solution** in line with the core COTS product. Keeping the EPermit in line with the COTS product will offer the DEP future system upgrades at a very minimum cost.

5.3.2.2 Stage 2 Deliverables

Deliverable	enfoTech's Responsibility	DEP's Responsibility
(A) Requirement Verification and Gap Analysis Stage (for the entire project)		
2.1 EPermit FRS Run #1 (4 Days)	▪ Issue information request questionnaire to DEP to collect information for review before the workshop ▪ Prepare pre-workshop materials in accordance with the technical approach presented above ▪ Facilitate FRS workshop ▪ Capture meeting minutes ▪ Perform follow-up after the workshop	▪ Approve meeting agenda ▪ Coordinate SMEs to attend the workshop ▪ Provide information requested in questionnaire ▪ Engage in discussion to confirm business requirements
2.2 System Hosting Plan (Draft)	▪ Develop a draft with HW/SW requirements, required IT infrastructure, etc.	▪ Review and comment the draft Plan
2.3 EPermit FRS V. 1	▪ Develop draft FRS version 1 ▪ Issue FRS V 1 to DEP for comment	▪ Review FRS and provide comments
2.4 EPermit FRS Version 1 Walk through with DEP (1 Day)	▪ Walk through FRS version 1 with DEP ▪ Walk through EPermit System Hosting Plan with DEP ▪ Orient DEP SMEs with knowledge to review draft FRS & the Hosting Plan	▪ DEP SMEs are equipped with knowledge to review draft FRS, Hosting Plan, and could provide comments
2.5 EPermit FRS V 1.5	▪ Incorporate DEP's comments on FRS V1 ▪ Issue FRS V 1.5 in preparation for FRS Run #2	▪ Provide FRS comments
2.6 RCRAInfo Data migration Plan (Draft)	▪ Develop a draft DMP ▪ Issue DMP to DEP for comments	▪ Comment the DMP
2.7 EPermit FRS Run #2 (4 Days)	▪ Before the workshop, enfoTech will issue FRS version 1.5 to incorporate DEP's comments made to version 1 ▪ Discuss DEP's major comments using FRS version 1.5 ▪ Explore options to address DEP's comments ▪ Discuss EPermit test plan ▪ Discuss EPermit training	▪ Approve meeting agenda ▪ Coordinate SMEs to attend the workshop ▪ Provide comments for FRS V. 1.5 ▪ Reach consensus on outstanding FRS items
2.8 EPermit FRS V 2	▪ Incorporate DEP's comments from the FRS workshop run #2 ▪ Issue FRS V 2 to DEP	▪ Provide FRS comments
2.9 EPermit FRS V 3 (Final)	▪ Incorporate DEP's comments made on FRS version 2 ▪ Issue FRS V 3 to DEP for approval	▪ Review FRS V 3 ▪ Approve FRS
2.10 RCRAInfo Data migration Plan (Final)	▪ Enhance DMP based on DEP's comments ▪ Issue revised DMP to DEP for comments	▪ Review the DMP ▪ Approve the DMP
2.11 System Hosting Plan (Final)	▪ Update the Plan to include DEP's comments ▪ Issue a final hosting plan to DEP for approval	▪ Review revised Hosting Plan ▪ Approve Hosting Plan
(B) Wave 1, System Configuration Specification Stage		
2.12 **Wave 1:** EPermit SCD Run #1 (2 Days)	▪ Use DEP approved FRS 3.0 as the base, explore/confirm configuration options required by the wave 1 environmental programs	▪ Approve meeting agenda ▪ Coordinate SMEs to attend the workshop ▪ Based on the required business, suggest system configuration options

Deliverable	enfoTech's Responsibility	DEP's Responsibility
	▪ Wave 1 environmental program (Preliminary suggestion, to be confirmed by DEP) ▪ Prepare pre-workshop materials in accordance with the technical approach presented above ▪ Facilitate SCD workshop ▪ Capture meeting minutes ▪ Perform follow-up after the workshop	
2.13 **Wave 1:** EPermit SCD V. 1	▪ Develop draft SCD version 1 ▪ Issue SCD V 1 to DEP for comment	▪ Review SCD and provide comments
2.14 **Wave 1:** EPermit SCD V1 Walk through with DEP (1 Day)	▪ Walk through SCD version 1 with DEP ▪ Orient DEP SMEs with knowledge to review draft SCD	▪ DEP SMEs are equipped with knowledge to review draft SCD and could provide comments
2.15 **Wave 1:** EPermit SCD V 2	▪ Incorporate DEP's comments from the SCD ▪ Issue SCD V 2 to DEP before Wave 1 SCD Run #2 workshop	▪ Provide SCD comments
2.16 **Wave 1:** EPermit SCD Run #2 (2 Days)	▪ Before the workshop, enfoTech will issue SCD version 2 to incorporate DEP's comments made to version 1 ▪ Discuss DEP's major comments using SCD V2 ▪ Explore options to address DEP's comments	▪ Approve meeting agenda ▪ Coordinate SMEs to attend the workshop ▪ Reach consensus on outstanding SCD items
2.17 **Wave 1**: EPermit SCD V 3 (Final)	▪ Incorporate SCD workshop Run #2 decision ▪ Issue SCD V 3 to DEP for approval	▪ Review SCD V 3 ▪ Approve SCD
(C) Wave 2, System Configuration Specification Stage		
2.18 **Wave 2:** EPermit SCD Run #1 (2 Days)	▪ Use DEP approved FRS 3.0 as the base, explore/confirm configuration options required by the wave 1 environmental programs ▪ Wave 2 environmental program (Preliminary suggestion, to be confirmed by DEP) ▪ Prepare pre-workshop materials in accordance with the technical approach presented above ▪ Facilitate SCD workshop ▪ Capture meeting minutes ▪ Perform follow-up after the workshop	▪ Approve meeting agenda ▪ Coordinate SMEs to attend the workshop ▪ Based on the required business, suggest system configuration options ▪
2.19 **Wave 2:** EPermit SCD V. 1	▪ Develop draft SCD version 1 ▪ Issue SCD V 1 to DEP for comment	▪ Review SCD and provide comments
2.20 **Wave 2:** EPermit SCD V1 Walk through with DEP (1 Day)	▪ Walk through SCD version 1 with DEP ▪ Orient DEP SMEs with knowledge to review draft SCD	▪ DEP SMEs are equipped with knowledge to review draft SCD and could provide comments
2.21 **Wave 2:** EPermit SCD V 2	▪ Incorporate DEP's comments from the SCD ▪ Issue SCD V 2 to DEP before Wave 2 SCD Run #2 workshop	▪ Provide SCD comments
2.22 **Wave 2:** EPermit SCD Run #2 (2 Days)	▪ Before the workshop, enfoTech will issue SCD version 2 to incorporate DEP's comments made to version 1 ▪ Discuss DEP's major comments using SCD V2 ▪ Explore options to address DEP's comments	▪ Approve meeting agenda ▪ Coordinate SMEs to attend the workshop ▪ Reach consensus on outstanding SCD items

Deliverable	enfoTech's Responsibility	DEP's Responsibility
2.23 **Wave 2**: EPermit SCD V 3 (Final)	▪ Incorporate SCD workshop Run #2 decision ▪ Issue SCD V 3 to DEP for approval	▪ Review SCD V 3 Approve SCD

5.3.3 Stage 3: Iterative System Configurations and Improvements (Agile Model)

5.3.3.1 Technical Approach

enfoTech proposes to adopt the Agile development model to complete all system configurations and provide incremental system improvements through iterative system releases and reviews. That includes:

1. Build interface to ERIS at early stage and initiate the process for Facility/Contacts to enable the TO-BE business process
2. Incremental improvements will improve final data exchange quality and also allow DEP time to review EPermit configurations from the "Step #1" of each permitting process, right from the Release 1.
3. Users will have sufficient time to get familiar with the new system and be able to take advantage to the EPermit features upon system production
4. Minimize project risk and DEP work interruption during the Go-live transition

This Stage will include five (5) iterations for each wave. enfoTech will configure the EN Suite, tailor form, implement workflows, modify reports, perform internal testing, and establish data flows with external systems. Multiple interim releases will be provided to allow DEP opportunity to verify system features against requirements and make incremental improvements. All configurations will be completed by process and be managed holistically as a process-oriented repository to ensure ease-to-use and good quality for the final system.

(A) Iterative System Configurations and Improvements

"Agile" Approach: enfoTech will work closely with the DEP to deliver 5 major iterations of EPermit, plus many interim releases in between. There will be many interim system releases to show prototyping and incremental configuration results. In general, the scope of each major iteration is described in the table below. Actual release contents shall be based on the baseline version of FRS and SCD.

If DEP is receptive to the wave-approach, all configurations will be completed in **two waves**. The "5-iteration" approach will be performed for Wave 1 environmental programs, and repeated for Wave 2 busines units.

Itr.	Objectives	Major System Functions & Tasks
1	**Release #1** ▪ A platform for managing account registration meeting CROMERR requirements ▪ A central data repository to capture submittal o online permit application data, DEP review workflows, generate permit documents, etc. o online compliance reporting data, DEP review workflows ▪ Permitting life cycle management from the application, to review, to issuance. Renewal and termination will also be included. ▪ Include **GovOnline** for complaint intake and online submittals required by environmental programs ▪ Include **Land system** components	▪ Core functions to support permit life cycle management ▪ GovOnline with CROMERR and global functions to support wave 1 environmental program online submittal ▪ Online permitting capability: (1) Facility User Account Registration, (2) permit applications, (3) Dashboard, (4) DEP permit workflow, (5) Track DEP review comments, Generate permits, (6) Capture and track compliance reporting data ▪ Manage fee and payment ▪ Manage complaint intake and resolution
2	**Release #2**	▪ Enhance online submittal configurations

Itr.	Objectives	Major System Functions & Tasks
	▪ Enhancements to incorporate DEP's review comments on Release #1 ▪ Deliver configurations to support DEP internal processes such as inspection, compliance, enforcement ▪ Deliver additional external system interfaces ▪ Interface with ERIS for Facility and Contact data exchange ▪ Include **GovOnline** for complaint intake and online submittals required by environmental programs ▪ Include **Land system** components ▪ Include **GovMobile** to support mobile inspection	▪ Complete support DEP internal processes such as inspection, compliance, enforcement (end-to-end) ▪ Deliver additional external system interfaces ▪ Interface with ERIS for Facility and Contact data exchange
3	**Release #3** ▪ Enhancements to incorporate DEP's review comments on Release #2 ▪ Deliver additional external system interfaces ▪ Include **GovOnline** for complaint intake and online submittals required by environmental programs ▪ Include **Land system** components ▪ Include **GovMobile** to support mobile inspection	▪ Enhance online submittal configurations ▪ Enhance support of DEP internal processes such as inspection, compliance, enforcement (end-to-end) ▪ Complete and fully integrated EPermit ▪ Support DEP's review to approve the System for User Acceptance Testing
DEP verifies that Epermit is ready and approves the System for User Acceptance Testing (UAT)		
4	**UAT Release** ▪ Enhancements to incorporate DEP's review comments on Release #3 ▪ Include **GovOnline** for complaint intake and online submittals required by environmental programs ▪ Include **Land system** components ▪ Include **GovMobile** to support mobile inspection	▪ Provide user training ▪ Manage DEP comments and provide interim releases to resolve issues ▪ Support DEP to complete the UAT
5	**PROD Release** ▪ Provide a pre-production release for final review ▪ Final data migration ▪ Include **GovOnline** for complaint intake and online submittals required by environmental programs ▪ Include **Land system** components ▪ Include **GovMobile** to support mobile inspection ▪ System Go-live	▪ Address and close out UAT comments ▪ Support DEP to complete the final system review ▪ Make final system adjustments if necessary ▪ DEP approves the System for production use ▪ Provide post production support after go-live

Each system iteration will be business process oriented. System functions delivered in previous iterations will be refined multiple times in conjunction with new functions provided at later iterations to validate business processes and to achieve cross-functional data sharing and offer features to support cross-functional business process streamlining.

(B) Key Configuration Areas

B.1 Streamlined Online Reporting Presentation

- **Forms**: Create online form in modular fashion so that each section will capture data independently and also works cohesively with other sections to represent a complete application package.
- **Decision Tree**: incorporate a decision tree style for permit form, if applicable. Capture the essential data in early stage and use the data to automatically present Sections relevant to the project. In this case, the user will only need to complete the relevant sections, improve accuracy and data quality
- **Data Validation**: incorporate data validation rules in forms to improve data quality

- **Online Help**: integrate instructional text with each data entry field to provide users with proper help right at each of data entry spot.

B.2 Permit Documents

- **Permit Templates**: For each permit document/license type, use EN Suite's Word merge function to include a template with the boiler plate language and "book marks" to merge data from the EPermit database. The Template will be used by DEP staff to generate a "draft" permit. After a draft is generated, DEP staff could modify the permit to add additional terms/conditions required for each permit case. DEP Admin will be able to change the permit template to accommodate future changes.
- **Final Permit**: DEP staff could use the document "check-out" and "check-in" functions to modify the draft. Once a permit is approved, a PDF version could be generated by the System. After a permit is approved, the applicant will be automatically alerted and receive their permit in PDF format.
- **Data Exchange to ApplicatioonXtender system** for document management

(C)Data Initiation/Migration

Except migration RCRAInfo data is required, the Bid solicitation has confirmed that majority of DEP processes are recorded in paper and no data migration is anticipated.

enfoTech will not perform other data migration per bid requirements. However, if data loading to the EN Suite will provide values to jump start the system roll-out and is requested by DEP, enfoTech will work with DEP to load the data to EN Suite data as additional services with additional cost. All data loading services shall be scoped out separately with costs and presented to DEP for comment and approval. enfoTech will not engage in data migration/loading unless the service is requested and approved by DEP.

(D) Product Quality Assurance

enfoTech will perform internal peer-review of all document deliverables and complete internal testing of all software deliverables before delivering them to DEP for review. We utilize the Capability Maturity Model Integration (CMMI) level 3 quality assurance procedures to manage quality of all deliverables throughout the product development life cycle.

(D.1) System Testing by enfoTech:

DEP Reviews of interim system releases: enfoTech will perform internal testing before turning the interim releases to DEP for review. enfoTech will support DEP's reviews and address DEP comments. Our standard testing will include:

- **Unit testing**: to very functionality
- **Integration testing**: to validate that the Solution will support the intended business processes
- **Deployment Package testing**: to verify that the deployment package and database update scripts
- **Deployment testing**: after deploying the new release, enfoTech will perform additional testing to ensure that the release scripts are applied successfully

All testing will be based on the testing scenarios defined in the Test Plan approved by DEP. After passing enfoTech's internal testing, the EPermit will be turned over to DEP to begin Testing.

(D.2) Test Report:

enfoTech will produce a Test Report to document test results and to demonstrate that the System has met all testing scenarios specified in the Test Plan.

(A)Conduct System Walkthrough and Support DEP on Interim System Reviews

enfoTech will provide hand-holding with DEP for all system configuration iterations and provide full support to assist DEP to perform review of interim releases. Our support will include:

- Provide a Testing environment for the DEP to verify interim releases and provide comments.
- Provide system walk through to DEP on each interim system release.
- Provide a support hotline to answer questions, host ad-hoc GoToMeetings to support DEP's reviews
- Track DEP's comments, respond to issues, incorporate DEP's comments in next system releases
- If receptive to the DEP, expand the reviews to include representatives from the regulated community for online permitting

5.3.3.2 Data Migration (Only for RCRAInfo, Others are Optional Services)

enfoTech will migrate data from RCRAInfo to EPermit to seed the database to streamline inspection work. Data migration scope include:

- 3,000 active facilities
- 10,000 historic sites (in case DEP reactivate a site)
- Waste Handler Notification records with owner/operator information
- Compliance information from RCRAInfo

If other data migrations are requested by DEP after the requirement verification stage, enfoTech will present a change request to DEP for approval, and engage the work after DEP approves the change request.

enfoTech data migration work will meet two major objectives below:

- **Data Completeness and Accuracy**: There should be no discrepancy in the comparison between data sources and target destination. If there is any discrepancy, supporting documents will be provided. The migration accuracy should also include the integrity among all databases.
- **Migration Packages with Flexibility for Adjustments**: The migration should provide enough flexibility to adjust/exclude migration flow, steps, databases, tables, and columns.

Our data migration SOPs include the following techniques to systematically address different data sources that need to be migrated.

(A) Data Migration Strategy, Scope Management and Risk Prevention

- enfoTech will perform comprehensive gap analysis workshops with DEP subject matter experts to evaluate data migration needs.
- If required and the work scope is approved by DEP, enfoTech recommends to migrate DEP's data at the project onset and improve the migration scripts iteratively to achieve the best possible project results.
  - The data shall be migrated to EPermit for review at every EPermit system release if possible, even the migration is not fully completed.
  - We recommend the "Agile" implementation model. Including data with each EPermit interim release will provide DEP opportunities to better understand new functionality while perform multiple runs of verification on data migration accuracy and provide comments.
- enfoTech recommends the following procedures to manage data migration scope and minimize potential risks
  - enfoTech will provide technical training of the EN Suite databases and ER-diagrams to DEP IT staff
  - The Team (DEP and enfoTech) will share migration responsibility where feasible.
    - ✓ enfoTech will lead development of a data migration plan for each data source

- ✓ enfoTech will tee up work items for data reconciliation, data gap filling, and data transformation
- ✓ DEP IT will contribute subject matter expert to clean data, transform data, provide missing data gaps if possible, and convert the source data to a set of staging tables if feasible
- ✓ enfoTech will develop scripts to migrate DEP data from the staging tables or source database and move them to the new EPermit databases
- ✓ DEP program staff will verify the data using EPermit screens and provide feedback

o All migrate work shall be performed with database scripts, and be organized in such that they could be adjusted based on review comments

(B) Data Migration Plan

enfoTech will develop a data migration plan for each data source with the following contents

- Data Mapping
  - o Identify data source and tables
  - o Identify essential data that must be migrated and non-essential data that could be left behind
  - o Map data elements from the source database to the new database
  - o Document business rules to retain Facility ID used at the source database and logic to generate new Facility ID at the new database
  - o Identity the key values to merge data from the source databases
- Data Reconciliation and Data Cleansing
  - o Use existing facility data and business logic to reconcile Facility data from multiple data sources
  - o Use Lat./Long or Parcel ID to reconcile location data
  - o Use a set of agreed upon Environmental Interest codes and data transformation scripts to merge Facility data with multiple environmental interests
  - o Use a set of agreed upon Substance codes (or EPA's Substance Registry System codes) and data transformation scripts to merge substance data from multiple data sources
  - o Identify potential data issues for data cleansing before data migration
- Data Gap Filling
  - o Identify missing data that are required in the new EPermit database, but are not available from the source database
  - o Develop logics to fill missing data and close the data gap. For example, Facility IT naming convention, Permit # convention,
- Data Transformation
  - o Standardize code values for key data elements. For example,
    - ✓ Facility types, Environmental Interests
    - ✓ Substance code and names, Measurement units
    - ✓ Permit types, Inspection types, Sampling types
    - ✓ Violation codes, Enforcement types
  - o Establish mapping table to translate DEP existing codes to the standard code values used in EPermit
- Migration Analysis and Documentation Tools:
  - o Data modeling tools like ER Win or ER Studio will be used to modify existing EN Suite model to accommodate any changes from all identified sources.
  - o Data Migration Plan (Word)
    - o The ER-diagram of the target modules from the EN Suite data warehouse
    - o EN Suite Data Dictionary with data elements' description
    - o Role and responsibilities for all parties involved
    - o Every stage's delivery scopes & milestone dates.

- Every stage's verification with testing scenarios and verification procedure
- Business logics/rules for data cleansing, data transformation, and data gap filling
- Legacy systems' retirement procedures.

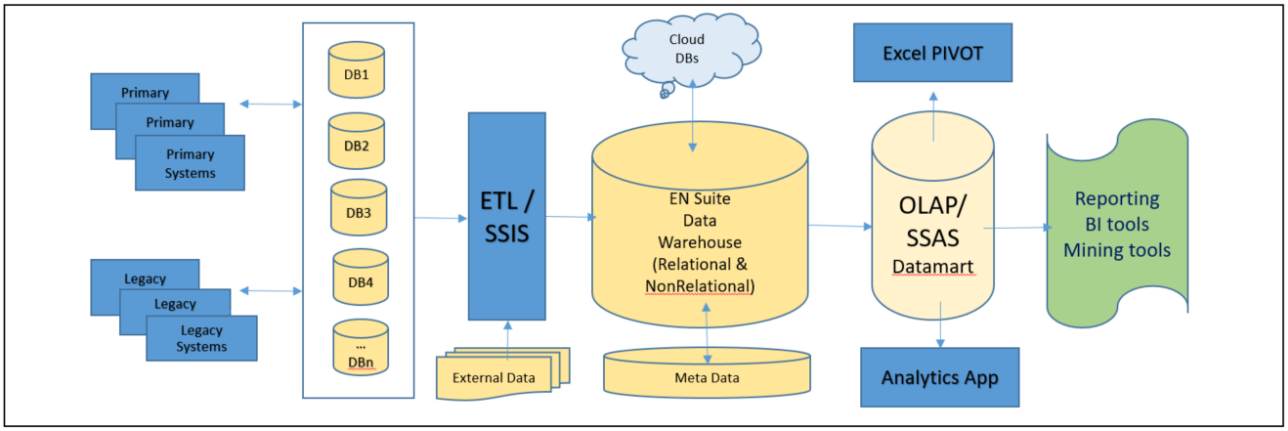
(C) Package Development & Testing

Migration Package Development

- **Completeness:** There should be no mismatched counts after the migration between sources and the target database. If there is any discrepancy, supporting documents with detail explanation will be provided. The migration accuracy would also include no broken data links and orphan data. To avoid any possible surprise, we suggest a signoff from SME at each migration stage.
- **Package development:** The "migration package" shall provide enough flexibility to exclude data or add new data elements. The business logics and cleansing rules defined in the data quality services (DQS) will be configurable and can be modified, executed at any given time.
- **Data Migration process and package management:** Using ETL (Extract, Transform and Load) tools like SSIS (SQL Server Integration Services) to define all control flows (to be run sequentially or in parallel) for all different data sources; under each control flow, clearly define the data flows using various utility tools like FTP, fuzzy lookup, Merge/Split/Union, loop … etc. SQL scripts, functions or procedures could be used and properly managed in the control flow if needed. The source files can be relational databases (RDMS), excel files, text files … and the EN Suite destination could be RDMS, XML, JSON or non-relational files like word, image … etc.
- **Re-runnable process:** The migration process will be re-runnable to allow package adjustments and offer incremental improvements after each script execution. The modified migration process with script flows can be reused and combined with other script flows to achieve complete and accurate results.

A high-level diagram to illustrate data migration process is presented below.

The EN Suite data warehouse diagram



Migration sequence is summarized below:

1. ETL / SSIS extracts data from all primary & legacy systems' databases and files.
2. EN Suite data warehouse is stored either on the cloud and/or on premise, the data source could be relational, JSON, XML … various format.
3. Meta data is kept up-to-date at the data warehouse.
4. SSAS – Analysis components are consistent of cubes and views or tables which were extracted from data warehouse for the purpose of enhancing performance and security.
5. Analytics applications or excel PIVOT can extract data to perform analytical analysis.

6. Business Intelligence (BI) or mining tools are used to generate reports, graphs and charts.

(D) Data Migration Testing

- Perform record counts to ensure consistent totals between the source and target database
- Verify business rules defined in DQS (Data Quality Services).
- Verify database objects: SSMA (SQL Server Migration Assistant) could also be used to compare all different objects such as primary/foreign keys, stored procedures, functions, triggers … etc. between source and destination.
- For internal unit testing, various migration reports with summary counts will be used to examine the accuracy of the migration. Based on previously defined various verification scenarios, any cross referenced mismatched total counts due to all different kinds of cross reference checks violations would be identified. Discrepancy reports with explanation would be provided and signed off is required. All internal testing will be performed iteratively until desired outcomes are achieved.
- Following migration documents will be provided and required to be signed off:
  - Migration reports with summary counts from internal testing.
  - Discrepancy reports with detail explanation from internal testing
  - Recommendations to resolve data migration issues

(E) DEP Verification, Feedback, and Script Adjustments

Once script development is complete and DEP preliminary verification is confirmed, the migration package will be deployed and verified in UAT (User Acceptance Test) environment. If DEP signs off the UAT testing, the production deployment package will be prepared and be ready for production turnover.

- Migration deployment packages with instruction will be provided for each deployment. Migration package could also be executed automatically based on pre-defined schedule.
- Configuration guide with default configuration for each deployment will be kept up-to-date
- For each deployment, all testing scenarios will be executed and verified, migration reports with all cross reference checked numbers will be examined and signed off. Exception reports and files with explanation under each deployment also be examined and require a sign-off from DEP
- Following migration documents will be provided:
  - Migration deployment packages (UAT, Production) with instruction.
  - Configuration guide (UAT, Production) with default configuration
  - Migration reports with all cross reference checked total counts
  - Discrepancy reports with detail explanation and recommendations to resolve data migration issues

(F) Final Migration and Cut-off to Production Use

After successful UAT verification of the data migration package, enfoTech will coordinate a schedule to perform final data migration and turn off the existing source database at client location.

As soon as the production deployment is successful and verifications are complete, all legacy systems could be retired. Monitoring of production system will begin.

- Each legacy system's detailed retirement procedures will be communicated to DEP
- Continuous system monitoring procedures will be used to provide one-way integration if DEP decides to keep the source system alive for a period of time.
- Following migration documents will be provided and required to be signed off:
  - Retirement report for all primary & legacy systems with instruction.
  - Continuous system support procedures

5.3.3.3 Stage 3 Deliverables

Deliverable	enfoTech's Responsibility	DEP's Responsibility
(A) Wave 1 Configurations		
3.1 **Wave 1:** EPermit Release #1	▪ Configure EN Suite based on the SCD approved by the DEP ▪ Perform internal QA	▪ Provide templates and data required for system configurations ▪
3.2 **Wave 1:** A System Walk-through for Release #1 (2-Day)	▪ Conduct a 2-day system walk-through with DEP to verify business processes vs. system configurations ▪ Capture DEP comments and record at the Team Website	▪ Review configuration results and provide comments at the Team Website ▪ Review data migration and provide comments at the Team Website
3.3 **Wave 1:** EPermit Release #2	▪ Configure EN Suite based on DEP's release 1 comments & the approved SCD ▪ Complete additional configurations planned in Release #2 ▪ Perform internal QA	▪ Provide templates and data required for system configurations
3.4 RCRAInfo Data Migration - draft	▪ Migrate data from RCRAInfo to EPermit ▪ Perform internal QA	▪ Provide and data required for data migration
3.5 **Wave 1:** A System Walk-through for Release #2 (1-Day)	▪ Conduct a 1-day system walk-through with DEP to verify business processes vs. system configurations ▪ Capture DEP comments and record at the Team Website	▪ Review configuration results and provide comments at the Team Website ▪ Review data migration and provide comments at the Team Website
3.6 **Wave 1:** EPermit Release #3	▪ Configure EN Suite based on DEP's release 2 comments & the approved SCD ▪ Complete additional configurations planned in Release #3 ▪ Perform internal QA	▪ Provide templates and data required for system configurations
3.7 RCRAInfo Data Migration - final	▪ Enhance data migration scripts for data from RCRAInfo to EPermit ▪ Perform internal QA	▪ Provide and data required for data migration
3.8 **Wave 1**: A System Walk-through for Release #3 (1-Day)	▪ Conduct a 1-day system walk-through with DEP to verify business processes vs. system configurations ▪ Capture DEP comments and record at the Team Website	▪ Review configuration results and provide comments at the Team Website ▪ Review data migration and provide comments at the Team Website
(B) Wave 2 Configurations		
3.9 **Wave 2:** EPermit Release #1	▪ Configure EN Suite based on the SCD approved by the DEP ▪ Perform internal QA	▪ Provide templates and data required for system configurations ▪
3.10 **Wave 2:** A System Walk-through for Release #1 (2-Day)	▪ Conduct a 2-day system walk-through with DEP to verify business processes vs. system configurations ▪ Capture DEP comments and record at the Team Website	▪ Review configuration results and provide comments at the Team Website ▪ Review data migration and provide comments at the Team Website
3.11 **Wave 2:** EPermit Release #2	▪ Configure EN Suite based on DEP's release 1 comments & the approved SCD ▪ Complete additional configurations planned in Release #2 ▪ Perform internal QA	▪ Provide templates and data required for system configurations ▪
3.12 **Wave 2:** A System Walk-through for Release #2 (1-Day)	▪ Conduct a 1-day system walk-through with DEP to verify business processes vs. system configurations	▪ Review configuration results and provide comments at the Team Website

Deliverable	enfoTech's Responsibility	DEP's Responsibility
	▪ Capture DEP comments and record at the Team Website	▪ Review data migration and provide comments at the Team Website
3.13 **Wave 2:** EPermit Release #3	▪ Configure EN Suite based on DEP's release 2 comments & the approved SCD ▪ Complete additional configurations planned in Release #3 ▪ Perform internal QA	▪ Provide templates and data required for system configurations ▪
3.14 **Wave 2**: A System Walk-through for Release #3 (1-Day)	▪ Conduct a 1-day system walk-through with DEP to verify business processes vs. system configurations ▪ Capture DEP comments and record at the Team Website	▪ Review configuration results and provide comments at the Team Website ▪ Review data migration and provide comments at the Team Website

5.3.4 Stage 4: UAT, Training, Documentation

5.3.4.1 Technical Approach

5.3.4.1.1 System Acceptance Testing

Each DEP environmental program shall have reviewed 3 system iterations, provide comments, and review incremental system enhancements before the project enters into the User Acceptance Testing stage (UAT). DEP must feel comfortable about system readiness and has approved the System to begin the UAT.

(A.1) System Readiness for UAT

After DEP approves the System for UAT, enfoTech will deliver a UAT version for DEP to conduct user acceptance testing. The UAT version will include:

- EPermit system UAT Release
- Populate DEP staff accounts with proper access privilege based on user's business group(s) and role
- Interface completed for
  - ERIS interface: for Facility and Contact data, and Responsible Officer (RO) authentication
  - wvQASIS interface: for invoicing and payment receipt management
  - ApplicationXtender interface: for document management
  - ESRI GIS interface: for data layer sharing to improve geospatial data analysis capability
  - SAP interface: for data import/export to contribute data to the enterprise data warehouse
  - CDX interface: for electronically sending data to USEPA
- Example public user accounts and test email addresses to verify notification functions
- Dashboard
- Test Plan to verify steps involved for the data life cycle for each submittal type
- Test Reports

(A.2) User Acceptance Testing (UAT)

enfoTech will provide support to the DEP to complete the UAT. Our support will include:

(A.2.1) Test Plan: will be process-driven with testing conditions based on the requirement matrix and SCD. The Test Plan will be modular and one Test Plan will be developed for each SCD. Test Plan will include:

- Testing environment (server, client computer, connection, etc.)
- Procedures to setup testing environment
- Business Processes and Test scenarios
- Test scenarios: includes (1) Business process, (2) Actors, (3) Screen flows, (4) Input data, (5) Expected results & reports, (6) Acceptance criteria
- Stress testing procedure, simulation, and acceptance criteria

- Test Execution: auto script testing vs. manual tests
- Test result documentation
- Procedures to report issues, track resolution, re-verification, and issue close-out

(A.2.2) Test Report: enfoTech will produce a Test Report to document test results and to demonstrate that the System has met all testing scenarios specified in the Test Plan.

(A.2.3) Prepare DEP for UAT (UAT Plan and Abbreviated UAT User Training)

- Work with the DEP to develop a Plan to perform system acceptance testing (UAT). The UAT plan will include the following contents: (1) UAT personnel, role, and responsibility, (2) UAT preparation, (3) Pre-UAT abbreviated user training, (4) System access to the UAT site, (5) Scope of UAT testing, (6) Procedure to submit UAT comments, (7) Test Plan, (8) Test Report
- Provide an abbreviated system training to the DEP's UAT persons prior to UAT
- Establish a procedure with resources to support DEP to successfully complete the UAT

(A.2.4) Support DEP to Complete the User Acceptance Testing

- Provide a hotline to respond to issues, answer questions, and ad-hoc GoToMeeting sessions to DEP
- Monitor issues reported on the SharePoint Project Team website
- Resolve issues and deliver system patches to DEP to resolve issues
- Establish weekly GoToMeeting calls to review UAT progress. Work with the DEP PM to determine the readiness and timing for system training.
- All major UAT comments shall be resolved before the System is used for end user training.

5.3.4.1.2 Training and Knowledge Transfer

We will provide necessary trainings to the DEP for effective utilization of the new system.

(A) Training Requirements

enfoTech will facilitate a GoToMeeting session with DEP to discuss training requirements and understand DEP's expectation and expected results. We will present previous training materials to DEP and obtain DEP's guidelines on training needs. enfoTech will develop a training program to meet DEP's training requirements.

(B) Training Plan

enfoTech will develop a Training Plan to recommend training classes, contents, and delivery methods. The Plan will provide steps to deliver trainings to the DEP for effective utilization of the new system. All trainings will be conducted onsite. enfoTech will submit a draft training plan to the DEP for comment prior to the training. A draft training plan might include the following contents:

1. Introduction
2. Strategy and Approach
   - Methodology
   - Audience
   - Types of Training
     - Identify all "environmental program" that will require training
     - Identify all "business processes" from each environmental program that will require training
     - Identify all "roles" for each business process that will require training
   - Trainer Role and Responsibilities
   - DEP role and responsibilities
   - Training delivery methods

3. Preparation for Training
   - Pre-requisite of user knowledge
   - Training facility, layout and equipment
   - Training guide with user guide and hand-on Practice
   - Training database with example user accounts, example data to demonstrate EPermit features
4. Training Courses - DEP User (Train-the-Trainer)
   - Modular training sessions based on the “environmental program” and “business processes” involved for each environmental program
   - Training modules shall incorporate user role in training
   - Example training modules shall include
     - EPermit operational concept and basic terminology (end user level)
     - System Overview (General core functions)
     - Online Permitting (public access)
     - DEP Review Work Flow and Permit Generation (DEP access)
     - Process permit applications received in paper
     - Permit fee and payment management
     - Manage permit life cycle and compliance data
     - Permit actions: New, Renewal, Amend, Revoke, Termination
     - Inspection: Scheduling, inspection report, follow-ups
     - Mobile inspection, sampling, and data search in the field
     - Compliance & enforcement tracking
     - Generate reports
     - Search data and export data for analysis
5. Training Courses – DEP Program Supervisor
   - Modular training sessions based on the “environmental program” and “business processes” involved for each environmental program
   - Training modules shall incorporate user role in training
   - Example training modules shall include
     - EPermit operational concept (supervisor level)
     - Establish program goals, monitor work activities, and balance resources
     - Modify permit templates
     - Modify workflow, tasks, assignments, task duration
     - Modify notification templates
     - Modify reference data and pick lists specific to the program area
     - Supervisor functions for permitting, inspection, compliance & enforcement tracking
     - Generate reports designed to monitor program activities
     - Search data and export data for analysis
6. Training Courses – DEP EPermit System Admin.
   - Modular training sessions based on the administrative features
   - Training modules shall incorporate user role in training
   - Example training modules shall include
     - EPermit operational concept (administrator level)
     - User Account management
     - System event log management, trouble-shooting, system alerts
     - Modify globally reference data and pick lists
     - Generate reports designed to monitor system performance
     - Tools to monitor and manage external system interfaces
     - EPermit database, ER-diagram, XML files
     - EPermit Web APIs

- EPermit ad-hoc reporting
- EPermit Data Analytic

7. Training Courses – Facility Responsible Officer (RO) and Consultant (Train-the-Trainer)
   - Modular training sessions for the RO role and Consultant role
   - Example training modules shall include
     - EPermit operational concept and basic terminology (end user level)
     - System Overview (General core functions)
     - Account registration and authorization (public access)
     - RO to manage access security for the consultants hired by the RO for the company
     - Transfer Facility's historical data and ownership from old RO to a new RO
     - Prepare and make a submittal, and make payment if required
     - Manage review progress on your submittal
     - Respond to DEP's review comments
     - Permit actions: New, Renewal, Amend, Revoke, Termination
     - Generate reports

(C) Training Delivery

Training courses will be business process oriented. enfoTech will deliver training to DEP in accordance with the Training Plan approved by DEP. Initial training will be delivered onsite at DEP offices.

Electronic training materials will be provided to DEP EPermit Administrator to allow DEP to reuse training materials, make changes, or add new training topics.

(D)Training Database and Online Tutorial

Training Database: enfoTech will deliver a training database that will pre-populate data with use cases and example data. The training database will be used for the user training and post-production refresher training. enfoTech will provide a database script to refresh the training database to allow the DEP to reset the database for each training session.

Online Tutorial: enfoTech will deliver an online tutorial video that will include basic training sessions for EPermit system. The Tutorial will be placed at the EPermit login page to allow new users to self-learn the system. An example of the Tutorial for Michigan State Air Emission Inventory System is available at:

http://www.enfotech.com/enfoWebApp/pages/Gallery/lib/swf/MAERS_Tutorial_Video_Final2.swf

5.3.4.1.3 Documentation

Documentation

The following documents will be delivered.

- **User Guide**
- **Online Help:** be included with the System.
- **Training Guide**: tailored to the DEP's workflows.
- **Admin Guide**: technical details and reference manual about the system for the System administrator
- **Technical Manuals:** Technical Reference Manuals (E-R diagrams and the Data Dictionary). This documentation will include external system interfaces.

All documentations will be delivered to the DEP in both the hard copy and electronic versions. System documentations will be updated if applicable when system upgrades are made. All system documentations pertinent to the EPermit operations will also be available online

5.3.4.2 Stage 4 Deliverables

Deliverable	enfoTech's Responsibility	DEP's Responsibility
(A) Wave 1 Implementation		
4.1 **Wave 1:** Test Plan	▪ Develop a test document with test scenarios based on the requirement matrix and SCD ▪ Incorporate DEP's comment and finalize the Test Plan	▪ Review and comment the Test Plan ▪ Insert DEP-specific test scenarios if required ▪ Approve final Test Plan
4.2 **Wave 1:** Test Report	▪ Complete internal testing and document test results ▪ Submit the Test Report to DEP to be used as a reference during the UAT	▪ Comment the Test Report ▪ Approve Test Plan
4.3 **Wave 1:** UAT Plan	▪ Develop a UAT plan to provide details to guide DEP to perform UAT	▪ Review and comment the UAT Plan
4.4 **Wave 1:** EPermit UAT Release	▪ Enhance EN Suite configurations to address DEP comments ▪ Perform internal QA	▪ Provide templates and data required for system configurations ▪
4.5 **Wave 1:** Abbreviated training to UAT users	▪ Conduct an abbreviated user training to prepare DEP for UAT ▪ Address DEP comments	▪ Attend the UAT training ▪ Arrange resources to conduct UAT
4.6 **Wave 1:** UAT Support	▪ Support DEP to complete the UAT ▪ Manage reported problems on the project team website ▪ Deliver system patches ▪ Resolve all major issues prior to system Go-Live	▪ Test EPermit based on the Test Plan ▪ Review data migration ▪ Report issues to the project team website ▪ Retest system patches ▪ Approve Systems for go-live
4.7 **Wave 1:** Training Plan	▪ Prepare training plan ▪ Finalize the training plan	▪ Review training plan ▪ Approve training plan
4.8 **Wave 1:** User Training for DEP users	• Deliver Training Guide • Deliver training	• Provide facility and equipment for training • Attend the training
4.9 **Wave 1:** Admin & IT Technical Training	• Deliver Training Guide • Deliver training	• Provide facility and equipment for training • Attend the training
4.10 **Wave 1:** System Documentations	▪ Deliver the following documentation with DEP comments	▪ Review documentation, provide comments, approve documentation
(B) Wave 2 Implementation		
4.11 **Wave 2:** Test Plan	▪ Develop a test document with test scenarios based on the requirement matrix and SCD ▪ Incorporate DEP's comment and finalize the Test Plan	▪ Review and comment the Test Plan ▪ Insert DEP-specific test scenarios if required ▪ Approve final Test Plan
4.12 **Wave 2:** Test Report	▪ Complete internal testing and document test results ▪ Submit the Test Report to DEP to be used as a reference during the UAT	▪ Comment the Test Report ▪ Approve Test Plan
4.13 **Wave 2:** UAT Plan	▪ Develop a UAT plan to provide details to guide DEP to perform UAT	▪ Review and comment the UAT Plan ▪
4.14 **Wave 2:** EPermit UAT Release	▪ Enhance EN Suite configurations to address DEP comments ▪ Perform internal QA	▪ Provide templates and data required for system configurations ▪
4.15 **Wave 2:** Abbreviated training to UAT users	▪ Conduct an abbreviated user training to prepare DEP for UAT ▪ Address DEP comments	▪ Attend the UAT training ▪ Arrange resources to conduct UAT

Deliverable	enfoTech's Responsibility	DEP's Responsibility
4.16 **Wave 2:** UAT Support	▪ Support DEP to complete the UAT ▪ Manage reported problems on the project team website ▪ Deliver system patches ▪ Resolve all major issues prior to system Go-Live	▪ Test EPermit based on the Test Plan ▪ Review data migration ▪ Report issues to the project team website ▪ Retest system patches ▪ Approve Systems for go-live
4.17 **Wave 2:** Training Plan	▪ Prepare training plan ▪ Finalize the training plan	▪ Review training plan ▪ Approve training plan
4.18 **Wave 2:** User Training for DEP users	• Deliver Training Guide ▪ Deliver training	• Provide facility and equipment for training ▪ Attend the training
4.19 **Wave 2:** Admin & IT Technical Training	• Deliver Training Guide ▪ Deliver training	• Provide facility and equipment for training ▪ Attend the training
4.20 **Wave 2:** System Documentations	▪ Deliver the following documentation with DEP comments	▪ Review documentation, provide comments, approve documentation
4.21 System Tutorial	▪ Develop draft Tutorial script ▪ Incorporates DEP's comments to finalize the script ▪ Produce Tutorial	▪ Comment to draft tutorial script ▪ Approve script ▪ Approve Tutorial
4.22 Training Database with training data	▪ Delivers a training database with training records	▪ Approves training database

5.3.5 Stage 5: Go-Live

5.3.5.1 Technical Approach

A good Go-live planning will be essential to achieve a smooth system transition and obtain positive user experience. The Go-Live (Transition) Plan shall consider a few factors including:

- DEP's Acceptance of the System functions after the UAT
- DEP's User readiness after user trainings
- Successful execution of the final data migration, if required by DEP
- DEP's successful verification of migrated data and pre-production release, if applicable
- DEP preparation of an outreach plan is ready to educate the regulated community to participate electronic submittal
- enfoTech provides technical resources during the system go-live to support initial roll-out

enfoTech will work with the DEP to develop a Go-Live plan which might include the following activities:

Go-Live Plan

1. **Organization Support**
   - **Experienced Staff (for internal staff)**: form a small group of SME to provide help for DEP users.
   - **Help Desk (for external users)**: establish a hotline to assist the regulated entity in using the new system. Based on our past experiences, majority of initial questions will be on account, access, and system navigation. We expect the demand for DEP support will gradually fade away after a few months
   - **Standard Operating Procedures (SOPs):** shall be developed by DEP core team to help DEP personnel to utilize EPermit processes, maintain core datasets for data sharing, and to render services to the regulated entity users
2. **Pre-Production System Deployment**
   - Successful conclusion of UAT and verification of meeting all project requirements

- Final data migration: verify all data are properly migrated (if required)
- DEP completes a "Landing Page" at the DEP website to introduce the EPermit Online Submittal Portal

3. **Outreach**
   - **Plan**: develop a plan to introduce the new system to the regulated community
   - **Webinar or Regional Training**

4. **Post Production Support**
   - Establish procedures to provide post production support
   - Provide system maintenance and updates after the System goes live

At least 5 days will be reserved for the DEP team members to browse through the EPermit system before opening the System to end-users for production use. After the System is in production, enfoTech will provide support under the system maintenance stage. An emergency deployment schedule will be implemented for any production show-stopping issues.

5.3.5.2 Stage 5 Deliverables

Deliverable	enfoTech's Responsibility	DEP's Responsibility
(A) Wave 1 Go-live		
5.1 **Wave 1:** Deliver Go-Live (transition) Plan	▪ Draft Go-Live Plan for DEP review ▪ Incorporate DEP comments and issue final Go-Live Plan	▪ Review and provide comments on the Go-Live Plan ▪ Approve Go-Live Plan
5.2 **Wave 1:** Deliver Production-ready System	▪ Activate external systems for data interfaces ▪ If required, import extraction files after data freeze to the data migration environment. Execute data migration package ▪ Deliver production-ready system	▪ Coordinate external systems for production data interface ▪ If required, freeze data entry into DEP system. Review migrated data in the Production environment ▪ Report issues to the PTWS
5.3 **Wave 1:** System Go-Live	▪ Support DEP for system Go-live	▪ Perform final verification prior to Go-live
(B) Wave 2 Go-live		
5.4 **Wave 2:** Deliver Go-Live (transition) Plan	▪ Draft Go-Live Plan for DEP review ▪ Incorporate DEP comments and issue final Go-Live Plan	▪ Review and provide comments on the Go-Live Plan ▪ Approve Go-Live Plan
5.5 **Wave 2:** Deliver Production-ready System	▪ Activate external systems for data interfaces ▪ If required, import extraction files after data freeze to the data migration environment. Execute data migration package ▪ Deliver production-ready system	▪ Coordinate external systems for production data interface ▪ If required, freeze data entry into DEP system. Review migrated data in the Production environment ▪ Report issues to the PTWS
5.6 **Wave 2:** System Go-Live	▪ Support DEP for system Go-live	▪ Perform final verification prior to Go-live

5.3.6 Stage 6: System Maintenance and Support

enfoTech will participate with DEP's IT Steering Committee to create a change management process and governance plan for updating and maintaining the System after Launch, per contract requirements.

After the EPermit goes live, enfoTech will provide system maintenance and technical support services via our annual support and maintenance program with fee.

(A)Technical Support

(1) Issue Tracking Website (Project Team website site):

enfoTech will expand the project team web site to manage issues reported after the Go-live. The project team web site will provide the following features:

- The Website will assign a unique Issue ID for each issue
- DEP shall report issues and service requests to the PTWS, and could monitor their issues till closure
  - Issue reporter could record issue description, input, output, and error messages, screen shots
  - Issue reporter will receive an email alert when the issue status is changed
  - Issue reporter will an email alert when the issue is resolved and ready for retest
  - Issue Reporter could change/monitor the issue until it is closed
- enfoTech Investigation of Reported Issues
  - enfoTech staff will automatically receive email alert when a new issue is reported at the website
  - If the issue is a bug, create a Work Item at the enfoTech MTFS server and assign resources to fix the bug. The MTFS work item will record the corresponding Issue ID from the Project Team Website to maintain one-to-one traceability. Each bug will be monitored by enfoTech PM until it is satisfactorily resolved and closed by DEP.
  - If the issue is data related, enfoTech will develop a database script to fix the data
  - If the issue is training related, provide proper operation instructions to the user
  - If the issue is an addition/change to the approved requirements, it will be handled through change request procedure
- Technical Procedures for Service Requests and Reported Issues – enfoTech will respond to DEP'S service requests and reported issues on the PTWS. Issues shall be worked on according to priority, which shall be set by both enfoTech and DEP during regular project team meetings:
  - Critical Priority: An issue classified as "critical" is a system exception error that prevents any user, public or agency, from accessing EPermit, and for which there are no known workarounds. Within 8 hours of being notified by DEP of a critical issue and receiving the details necessary to reproduce the issue, enfoTech shall send acknowledgement of the issue and indicate its agreement or disagreement as to the issue's critical status. Both parties will work together to reclassify the issue if enfoTech does not agree with the issue classification. If both parties agree that the issue is critical, enfoTech will provide and implement a solution/workaround satisfactory to DEP within 3 business days from the issue confirmation data, whichever is greater. If a temporary solution is provided, enfoTech will continue working on the issue until a permanent solution is implemented in the production system. If a resolution for a confirm critical issue cannot be delivered with the specified time period due to its complexity, enfoTech shall continue to work on the issue and keep DEP appraised of the progress.
  - High Priority: An issue classified as "high" priority is one that significantly effects user's ability to use EPermit and is not classified as "critical." Within 3 business days of being notified by DEP of a "high" priority issue and receiving the details necessary to reproduce the issue, enfoTech shall acknowledge the issue on PTWS. enfoTech will provide and implement a workaround satisfactory to DEP within 10 business days from the time that enfoTech first confirmed and can reproduce the issue.
  - Medium Priority: An issue classified as "medium" priority is one that effects user's ability to use EPermit and is not classified as "critical" or "high" priority. Within 5 business days of being notified by DEP of a "medium" priority issue and receiving the details necessary to reproduce the issue, enfoTech shall acknowledge the issue on PTWS. enfoTech will provide and implement a

workaround satisfactory to DEP within 30 business days from the time that enfoTech first confirmed and can reproduce the issue.

- Low Priority: An issue classified as "low" priority is one that is not classified as "critical", "high" or "medium" priority. Within 10 business days of being notified by DEP of a "low" priority issue and receiving the details necessary to reproduce the issue, the CONTACTOR shall acknowledge the issue on PTW. enfoTech will provide and implement a workaround satisfactory to DEP within 90 business days from the time that the enfoTech first confirmed and can reproduce the issue.

- enfoTech provides ad-hoc GoToMeeting with DEP (based on DEP PM request)
  - For technical support on emergency issue
  - For technical discussions on issues that cannot be properly conveyed at the PTWS
  - For other maintenance items deemed necessary by PMs from both parties
- If Manage interim system patches to DEP which will include:
  - What's new
  - Change the status of "Issues" to "Resolved & Return to DEP for Retest" at the Project Website
  - If the Issue successfully passes the Retest, the original Issue Reporter will change the status of Issue to "Resolved". If Retest fails, the status will be changed to "Return to enfoTech" for investigation for which enfoTech will repeat the Issue resolution process until the Issue is resolved.

(2) Support Hotline

enfoTech will maintain a support hotline staffed with technical persons to provide technical services to the DEP via phone, emails, ad-hoc GoToMeeting sessions, and documentations. In addition, the enfoTech PM will host routine conference calls with the DEP's PM, when necessary, to review progress on completing service requests.

(3) Remedial Training

The EPermit system will be a paradigm shift from the paper submission to online application with system integrations to exchange data with 4 external systems. If remedial training is needed for certain user groups or business processes, enfoTech will provide ad-hoc GoToMeeting sessions to help end users to ensure smooth transition to the new system.

(B) System Updates & Release

Services included in the Agreement shall include:

System updates: enfoTech will continue maintaining the Solution and all the customization and interface modules delivered to the DEP and provide new system updates to the DEP. In general, we will have two types of updates.

b. Regular updates: are on a 6-month release frequency. enfoTech maintains a master list of the enhancement items and prioritizes them based on the critical nature and popularity of the user requests. The regular updates will include all of the issues approved for the release.

All updates will be fully compatible with the external system interface modules developed for the DEP. enfoTech will take extra care at the time of design for the interface modules to ensure that the data exchanges are accomplished via a common data exchange file specification. As long as the data exchange file specifications remain the same, the interface should continue to function even if *System* has been upgraded to a newer version.

Updates will include: (1) a what's new document, (2) installation instructions, (3) database change scripts, (4) automatic system installation files, and (5) revised documentation. All updates will be delivered to the DEP via a secured FTP site.

c. **Emergency Patches**: provided on an "as needed" basis; enfoTech may issue certain emergency patches to address critical issues reported by the client.

System updates will not include enhancements. Enhancements shall be handled through a Change request procedure with additional fee.

5.3.7 Summary of Proposed Deliverables

enfoTech will provide the following deliverables to the DEP.

Deliverable	Type
Stage 1: Project Start-up, Planning and Management	
1.1 Project Kickoff and strategy workshop (3-Day)	Meeting
1.2 Solution hosted at DEP server (or enfoTech data centers)	Software
1.3 A web-based project team website (PTWS)	Software
1.4 A project plan document	Document
1.5 Host Weekly GoToMeeting for project updates for 2 years (1 hr/call)	Meeting
1.6 Up to 24 monthly project reports	Document
Stage 2: Requirements Verification & Configuration Design	
(A) Requirement Verification and Gap Analysis Stage (for the entire project)	
2.1 EPermit FRS Run #1 (4 Days)	Services
2.2 System Hosting Plan (Draft)	Document
2.3 EPermit FRS V.1	Document
2.4 EPermit FRS Version 1 Walk through with DEP (1 Day)	Services
2.5 EPermit FRS V 1.5	Document
2.6 RCRAInfo Data migration Plan (Draft)	Document
2.7 EPermit FRS Run #2 (4 Days)	Service
2.8 EPermit FRS V.2	Document
2.9 EPermit FRS V.3 (Final)	Document
2.10 RCRAInfo Data migration Plan (Final)	Document
2.11 System Hosting Plan (Final)	Document
(B) Wave 1, System Configuration Specification Stage	
2.12 **Wave 1:** EPermit SCD Run #1 (2 Days)	Service
2.13 **Wave 1:** EPermit SCD V.1	Document
2.14 **Wave 1:** EPermit SCD V.1 Walk through with DEP (1 Day)	Service
2.15 **Wave 1:** EPermit SCD V.2	Document
2.16 **Wave 1:** EPermit SCD Run #2 (2 Days)	Service
2.17 **Wave 1**: EPermit SCD V.3 (Final)	Document
(C) Wave 2, System Configuration Specification Stage	
2.18 **Wave 2:** EPermit SCD Run #1 (2 Days)	Service
2.19 **Wave 2:** EPermit SCD V.1	Document
2.20 **Wave 2:** EPermit SCD V.1 Walk through with DEP (1 Day)	Service
2.21 **Wave 2:** EPermit SCD V.2	Document
2.22 **Wave 2:** EPermit SCD Run #2 (2 Days)	Service
2.23 **Wave 2**: EPermit SCD V.3 (Final)	Document

Deliverable	Type
Stage 3: Iterative System Configuration & Improvements	
(A) Wave 1 Configurations	
3.1 **Wave 1:** EPermit Release #1	Software
3.2 **Wave 1:** A System Walk-through for Release #1 (2-Day)	Service
3.3 **Wave 1:** EPermit Release #2	Software
3.4 RCRAInfo Data Migration - draft	Service
3.5 **Wave 1:** A System Walk-through for Release #2 (1-Day)	Service
3.6 **Wave 1:** EPermit Release #3	Software
3.7 RCRAInfo Data Migration - Final	Service
3.8 **Wave 1**: A System Walk-through for Release #3 (1-Day)	Services
(B) Wave 2 Configurations	
3.9 **Wave 2:** EPermit Release #1	Software
3.10 **Wave 2:** A System Walk-through for Release #1 (2-Day)	Service
3.11 **Wave 2:** EPermit Release #2	Software
3.12 **Wave 2:** A System Walk-through for Release #2 (1-Day)	Service
3.13 **Wave 2:** EPermit Release #3	Software
3.14 **Wave 2**: A System Walk-through for Release #3 (1-Day)	Services
Stage 4: UAT, Training, Documentation	
(A) Wave 1 Implementation	
4.1 **Wave 1:** Test Plan	Document
4.2 **Wave 1:** Test Report	Document
4.3 **Wave 1:** UAT Plan	Document
4.4 **Wave 1:** EPermit UAT Release	Service
4.5 **Wave 1:** Abbreviated training to UAT users	Software & Service
4.6 **Wave 1:** UAT Support	Document
4.7 **Wave 1:** Training Plan	Service
4.8 **Wave 1:** User Training for DEP users	Service
4.9 **Wave 1:** Admin & IT Technical Training	Service
4.10 **Wave 1:** System Documentations	
(B) Wave 2 Implementation	
4.11 **Wave 2:** Test Plan	Document
4.12 **Wave 2:** Test Report	Document
4.13 **Wave 2:** UAT Plan	Document
4.14 **Wave 2:** EPermit UAT Release	Software
4.15 **Wave 2:** Abbreviated training to UAT users	Service
4.16 **Wave 2:** UAT Support	Service
4.17 **Wave 2:** Training Plan	Document
4.18 **Wave 2:** User Training for DEP users	Service
4.19 **Wave 2:** Admin & IT Technical Training	Service
4.20 **Wave 2:** System Documentations	Document
4.21 System Tutorial	Software
4.22 Training Database with training data	Software
Stage 5: Go-live	
(A) Wave 1 Go-live	
5.1 **Wave 1:** Deliver Go-Live (transition) Plan	Document
5.2 **Wave 1:** Deliver Production-ready System	Software

Deliverable	Type
5.3 **Wave 1:** System Go-Live	Service
(B) Wave 2 Go-live	
5.4 **Wave 2:** Deliver Go-Live (transition) Plan	Document
5.5 **Wave 2:** Deliver Production-ready System	Software
5.6 **Wave 2:** System Go-Live	Service
Stage 6: System Maintenance & Support	
6.1 Consulting service to DEP's IT Steering Committee to create a change management process and governance plan for updating and maintaining the System after Launch (80 hours)	Service
6.2 Technical support and maintenance (Renewable each year at DEP's discretion), Estimate hours: 720 hours/year.	Software, Document, Service

5.3.8 Project Schedule (draft)

Assuming 12/1/2020 as the project kickoff date, enfoTech estimates that the target Go-live date will be 4/12/2022 for Wave 1, and 9/23/2022 for Wave 2.

	Task Name	Duration	Start	Finish
1	West Virginia Epermit Project	781 days	Tue 12/1/20	Tue 11/28/23
2	Project Notice to Proceed	1 day	Tue 12/1/20	Tue 12/1/20
3	Stage 1: Project Start-up, Planning and Management	780 days	Wed 12/2/20	Tue 11/28/23
16	Stage 2: Requirements Verification (Discovery & Gap Analysis)	102 days	Tue 12/22/20	Wed 5/12/21
54	Wave 1 Implementation	254 days	Thu 4/22/21	Tue 4/12/22
55	Stage 2A: Configuration Design	105 days	Thu 4/22/21	Wed 9/15/21
79	Stage 3A: Iterative System Configuration & Improvements	83 days	Thu 9/16/21	Mon 1/10/22
105	Stage 4A: UAT, Training, Documentation	139 days	Thu 9/16/21	Tue 3/29/22
139	Stage 5A: Go-live	61 days	Tue 1/18/22	Tue 4/12/22
148	Wave 2 Implementation	252 days	Thu 10/7/21	Fri 9/23/22
149	Stage 2B: Configuration Design	83 days	Thu 10/7/21	Mon 1/31/22
173	Stage 3B: Iterative System Configuration & Improvements	118 days	Tue 2/1/22	Thu 7/14/22
192	Stage 4B: UAT, Training, Documentation	159 days	Tue 2/1/22	Fri 9/9/22
226	Stage 5B: Go-live	46 days	Fri 7/22/22	Fri 9/23/22

Preliminary draft wave implementation approach (subject to change and DEP's approval) includes the following:

- **Wave 1 environmental program (Preliminary suggestion, to be confirmed by DEP)**
  1. **Environmental Complaint Intake**
     - Improve complaint intake
     - Track resolution progress
  2. **Solid Waste & Hazardous Waste Management**
     - Permitting (5 classes: A, B, C, D, E, F)
     - Permit processes for New, Renewal, Minor Modification, Major Modification
     - HW Handler notification,
     - HW Emergency Fund and fee collection
     - Configure **30** submittal Solid Waste forms as listed in Bid Attachment B: Solid Waste Forms
  3. **Waste Mobile Inspection and Enforcement**
     - Waste inspection business processes
     - Configure **3** Waste templates to be used for inspection as listed in Bid Attachment B: Water & Waste Inspection Forms
  4. **Hazardous Waste Mobile Inspection and Enforcement**

- Hazardous waste inspection business processes
- HW inspection requirements (Configure **23** Hazardous Waste templates to be used for inspection as listed in Bid Attachment B: Hazardous Waste Inspection Forms)

- **Wave 2 environmental program (Preliminary suggestion, to be confirmed by DEP)**

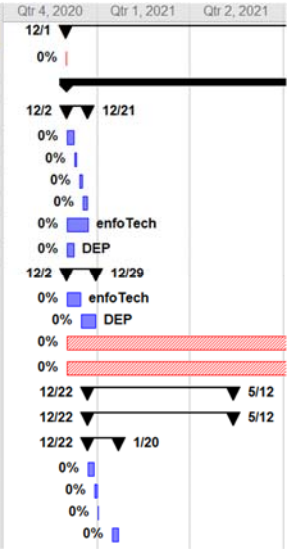
1. **Groundwater**
   - Support Nine (9) sub-programs
     1. Dust suppression
     2. Underground Injection Control (UIC)
     3. GW Monitoring wells
     4. GW Monitoring well driller certification
     5. GW Remediation
     6. GW Protection Plans
     7. GW Protection Fund and fee collection
     8. GW Inspections and Inspection Follow-up
     9. GW Quality standards & variances
   - Configure **27** GW templates to be used for submittal, inspection, issuance as listed in Bid Attachment B: Groundwater Forms

2. **Water Use**
   - Enable ~ 400 LQU water users to self-enroll and self-report water use information required by DEP
   - Support 3 application types and workflows
     - LQU Public Water supplier (PSC regulated water utilities)
     - LQU Oil and Gas Operator (fracking operations)
     - LQU Industrial/Commercial Water Survey (all other water use)
   - Support water use regulatory requirements
   - Future Needs: support water withdrawal permits

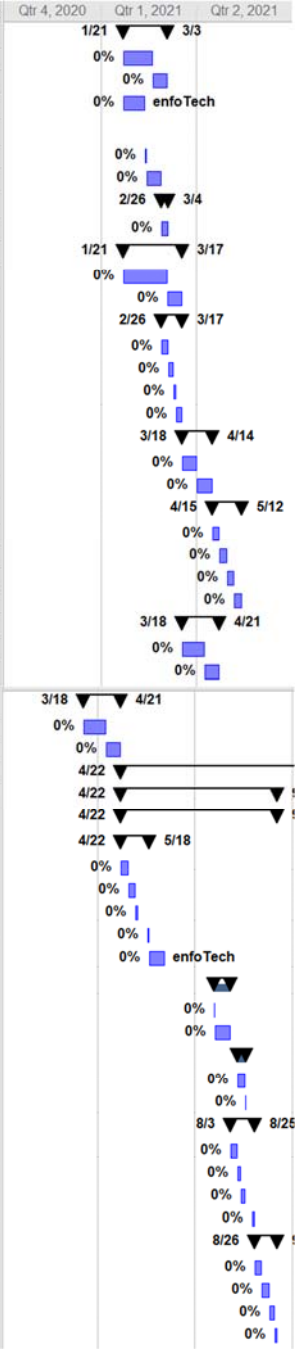
3. **Water Mobile Inspection and Enforcement**
   - Water inspection business processes
   - Configure **5** Water templates to be used for inspection as listed in Bid Attachment B: Water & Waste Inspection Forms

It is feasible that certain programs could go live with EPermit at much earlier date when the program approves that EPermit is ready for production use. The schedule has budget discovery, requirement verification, configuration design, multiple iterations of system walk-through, data migration reviews, training, and etc. For each iteration, the DEP shall have 15 days of review time. For planning purpose, enfoTech presents a draft schedule with WBS and major milestones. We will work with DEP to refine the schedule to accommodate DEP resources constraint, offer phase-in production strategy, or to extend the schedule if necessary.

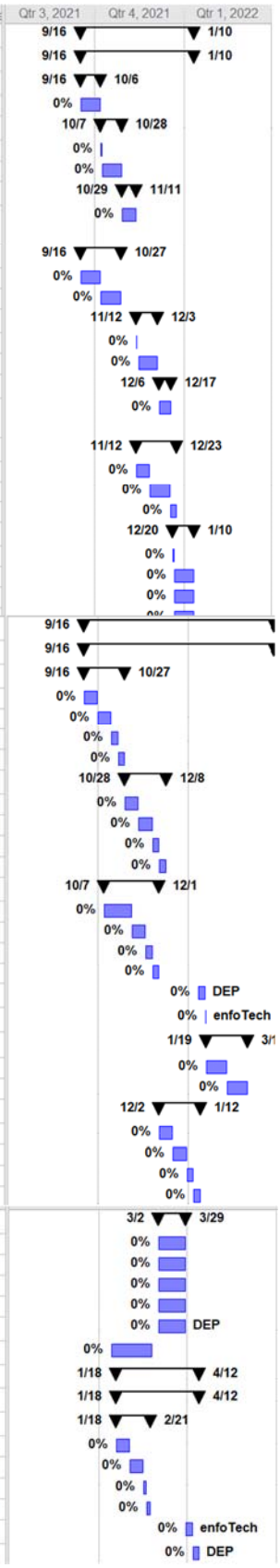
	Task Name	Duration	Start	Finish	Pred
1	**West Virginia Epermit Project**	**781 days**	**Tue 12/1/20**	**Tue 11/28/23**	
2	**Project Notice to Proceed**	**1 day**	**Tue 12/1/20**	**Tue 12/1/20**	
3	**Stage 1: Project Start-up, Planning and Management**	**780 days**	**Wed 12/2/20**	**Tue 11/28/23**	
4	**1.1 Project Kickoff and strategy workshop (3-Day)**	**14 days**	**Wed 12/2/20**	**Mon 12/21/20**	
5	enfoTech prepares and delivers a draft workshop agenda	5 days	Wed 12/2/20	Tue 12/8/20	2
6	DEP reviews and comments on the draft agenda	3 days	Wed 12/9/20	Fri 12/11/20	5
7	enfoTech revises based off DEP's comments, and issues a final agenda	3 days	Mon 12/14/20	Wed 12/16/20	6
8	enfoTech & DEP attends the 3-day workshop	3 days	Thu 12/17/20	Mon 12/21/20	7
9	1.2 Solution hosted at DEP server (or enfoTech data centers)	15 days	Wed 12/2/20	Tue 12/22/20	2
10	1.3 A web-based project team website (PTWS)	5 days	Wed 12/2/20	Tue 12/8/20	2
11	**1.4 A project plan document**	**20 days**	**Wed 12/2/20**	**Tue 12/29/20**	
12	Develop/deliver draft Project Plan and Schedule	10 days	Wed 12/2/20	Tue 12/15/20	2
13	Review and approve Project Plan and Schedule	10 days	Wed 12/16/20	Tue 12/29/20	12
14	1.5 Host Weekly GoToMeeting for project updates for 2 years (1 hr/call)	780 days	Wed 12/2/20	Tue 11/28/23	2
15	1.6 Up to 24 monthly project reports	780 days	Wed 12/2/20	Tue 11/28/23	2
16	**Stage 2: Requirements Verification (Discovery & Gap Analysis)**	**102 days**	**Tue 12/22/20**	**Wed 5/12/21**	
17	**(A) Requirement Verification and Gap Analysis Stage (for the entire pr**	**102 days**	**Tue 12/22/20**	**Wed 5/12/21**	
18	**2.1 EPermit FRS Run #1 (4 Days)**	**22 days**	**Tue 12/22/20**	**Wed 1/20/21**	
19	enfoTech prepares and delivers a draft workshop agenda	5 days	Tue 12/22/20	Mon 12/28/20	4
20	DEP reviews and comments on the draft agenda	3 days	Tue 12/29/20	Thu 12/31/20	19
21	enfoTech revises based off DEP's comments, and issues a final agenda	1 day	Fri 1/1/21	Fri 1/1/21	20
22	enfoTech & DEP attends the 4-day workshop	4 days	Fri 1/15/21	Wed 1/20/21	20FS



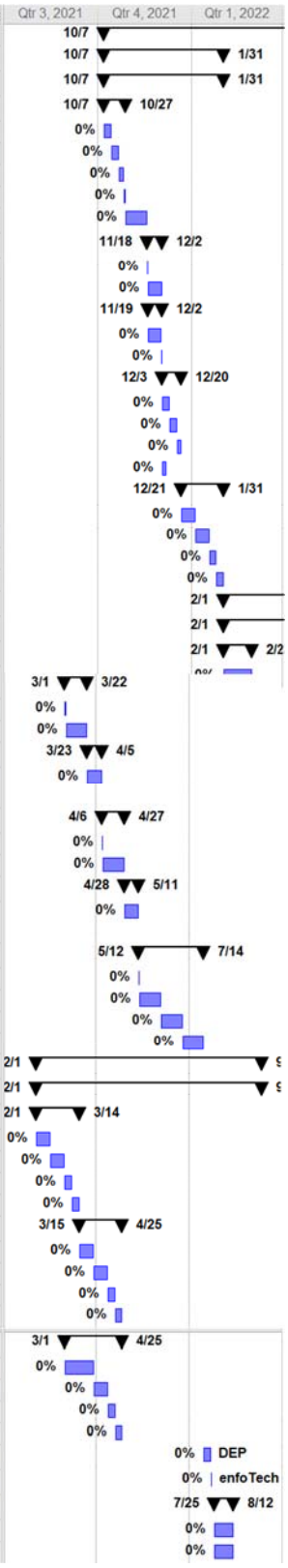
	Task Name	Duration	Start	Finish	Prede
23	**2.2 System Hosting Plan (Draft)**	**30 days**	**Thu 1/21/21**	**Wed 3/3/21**	
24	enfoTech issue the Plan	20 days	Thu 1/21/21	Wed 2/17/21	18
25	DEP provides comments	10 days	Thu 2/18/21	Wed 3/3/21	24
26	2.3 EPermit FRS V.1	15 days	Thu 1/21/21	Wed 2/10/21	18
27	**2.4 EPermit FRS Version 1 Walk through with DEP (1 Day)**	**11 days**	**Thu 2/11/21**	**Thu 2/25/21**	
28	DEP attends the walkthrough	1 day	Thu 2/11/21	Thu 2/11/21	26
29	DEP provides FRS V1 comments after the walk through session	10 days	Fri 2/12/21	Thu 2/25/21	28
30	2.5 EPermit FRS V 1.5	**5 days**	**Fri 2/26/21**	**Thu 3/4/21**	
31	enfoTech issues FRS V 1.5 before FRS Run #2 workshop	5 days	Fri 2/26/21	Thu 3/4/21	27
32	2.6 RCRAInfo Data migration Plan (Draft)	**40 days**	**Thu 1/21/21**	**Wed 3/17/21**	
33	enfoTech issue the Plan	30 days	Thu 1/21/21	Wed 3/3/21	18
34	DEP provides comments	10 days	Thu 3/4/21	Wed 3/17/21	33
35	**2.7 EPermit FRS Run #2 (4 Days)**	**14 days**	**Fri 2/26/21**	**Wed 3/17/21**	
36	enfoTech prepares and delivers a draft workshop agenda	5 days	Fri 2/26/21	Thu 3/4/21	27
37	DEP reviews and comments on the draft agenda	3 days	Fri 3/5/21	Tue 3/9/21	36
38	enfoTech revises based off DEP's comments, and issues a final agenda	2 days	Wed 3/10/21	Thu 3/11/21	37
39	enfoTech & DEP attends the 4-day workshop	4 days	Fri 3/12/21	Wed 3/17/21	38
40	**2.8 EPermit FRS V.2**	**20 days**	**Thu 3/18/21**	**Wed 4/14/21**	
41	enfoTech issue FRS V 2 to include FRS workshop Run #2 discussion	10 days	Thu 3/18/21	Wed 3/31/21	35
42	DEP provides comments	10 days	Thu 4/1/21	Wed 4/14/21	41
43	**2.9 EPermit FRS V.3 (Final)**	**20 days**	**Thu 4/15/21**	**Wed 5/12/21**	
44	enfoTech issue the version #3	5 days	Thu 4/15/21	Wed 4/21/21	40
45	DEP provides comments	5 days	Thu 4/22/21	Wed 4/28/21	44
46	enfoTech issues version 3 final for DEP approval	5 days	Thu 4/29/21	Wed 5/5/21	45
47	DEP approve FRS V3	5 days	Thu 5/6/21	Wed 5/12/21	46
48	**2.10 RCRAInfo Data migration Plan (Final)**	**25 days**	**Thu 3/18/21**	**Wed 4/21/21**	
49	enfoTech issue a revised DMP	15 days	Thu 3/18/21	Wed 4/7/21	32
50	DEP approves the DMP	10 days	Thu 4/8/21	Wed 4/21/21	49
51	2.11 System Hosting Plan (Final)	**25 days**	**Thu 3/18/21**	**Wed 4/21/21**	
52	enfoTech issues a revised Hosting Plan	15 days	Thu 3/18/21	Wed 4/7/21	32
53	DEP approves the Hosting Plan	10 days	Thu 4/8/21	Wed 4/21/21	52
54	**Wave 1 Implementation**	**254 days**	**Thu 4/22/21**	**Tue 4/12/22**	
55	**Stage 2A: Configuration Design**	**105 days**	**Thu 4/22/21**	**Wed 9/15/21**	
56	**(B) Wave 1, System Configuration Specification Stage**	**105 days**	**Thu 4/22/21**	**Wed 9/15/21**	
57	**2.12 Wave 1: EPermit SCD Run #1 (2 Days)**	**19 days**	**Thu 4/22/21**	**Tue 5/18/21**	
58	enfoTech prepares and delivers a draft workshop agenda	5 days	Thu 4/22/21	Wed 4/28/21	44
59	DEP reviews and comments on the draft agenda	5 days	Thu 4/29/21	Wed 5/5/21	58
60	enfoTech revises based off DEP's comments, and issues a final agenda	2 days	Thu 5/6/21	Fri 5/7/21	59
61	enfoTech & DEP attends the 2-day workshop	2 days	Mon 5/17/21	Tue 5/18/21	60FS
62	2.13 Wave 1: EPermit SCD V.1	10 days	Wed 5/19/21	Tue 6/1/21	57
63	**2.14 Wave 1: EPermit SCD V.1 Walk through with DEP (1 Day)**	**11 days**	**Mon 7/19/21**	**Mon 8/2/21**	
64	DEP attends the walkthrough	1 day	Mon 7/19/21	Mon 7/19/21	62
65	DEP provides SCD V.1 comments after the walk through session	10 days	Tue 7/20/21	Mon 8/2/21	64
66	2.15 Wave 1: EPermit SCD V.2	**6 days**	**Tue 8/10/21**	**Tue 8/17/21**	
67	enfoTech issues SCD V.2 to include DEP comments	5 days	Tue 8/10/21	Mon 8/16/21	63
68	SCD V.2 is ussed to DEP before SCD Run #2	1 day	Tue 8/17/21	Tue 8/17/21	67
69	**2.16 Wave 1: EPermit SCD Run #2 (2 Days)**	**17 days**	**Tue 8/3/21**	**Wed 8/25/21**	
70	enfoTech prepares and delivers a draft workshop agenda	5 days	Tue 8/3/21	Mon 8/9/21	65
71	DEP reviews and comments on the draft agenda	3 days	Tue 8/10/21	Thu 8/12/21	70
72	enfoTech revises based off DEP's comments, and issues a final agenda	2 days	Fri 8/13/21	Mon 8/16/21	71
73	enfoTech & DEP attends the 2-day workshop	2 days	Tue 8/24/21	Wed 8/25/21	72FS
74	**2.17 Wave 1: EPermit SCD V.3 (Final)**	**15 days**	**Thu 8/26/21**	**Wed 9/15/21**	
75	enfoTech issues SCD V.3	5 days	Thu 8/26/21	Wed 9/1/21	69
76	DEP provides comments	5 days	Thu 9/2/21	Wed 9/8/21	75
77	enfoTech issues SCD V.3 final for DEP approval	3 days	Thu 9/9/21	Mon 9/13/21	76
78	DEP approve FRS V3	2 days	Tue 9/14/21	Wed 9/15/21	77



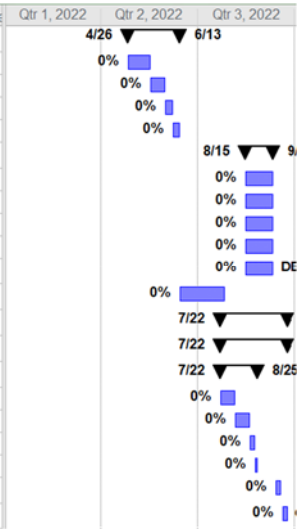
	Task Name	Duration	Start	Finish	Prede
79	**Stage 3A: Iterative System Configuration & Improvements**	**83 days**	**Thu 9/16/21**	**Mon 1/10/22**	
80	**(A) Wave 1 Configurations**	**83 days**	**Thu 9/16/21**	**Mon 1/10/22**	
81	**3.1 Wave 1: EPermit Release #1**	**15 days**	**Thu 9/16/21**	**Wed 10/6/21**	
82	enfoTech provides system configuration services, and delivers EDMS Re	15 days	Thu 9/16/21	Wed 10/6/21	74
83	**3.2 Wave 1: A System Walk-through for Release #1 (2-Day)**	**16 days**	**Thu 10/7/21**	**Thu 10/28/21**	
84	DEP attends the walkthrough	1 day	Thu 10/7/21	Thu 10/7/21	82
85	DEP reviews Release #1 after the walkthrough, provides comments	15 days	Fri 10/8/21	Thu 10/28/21	84
86	3.3 Wave 1: EPermit Release #2	**10 days**	**Fri 10/29/21**	**Thu 11/11/21**	
87	enfoTech provides services to address DEP comments, additional configurations, and delivers EDMS Release #2	10 days	Fri 10/29/21	Thu 11/11/21	83
88	**3.4 RCRAInfo Data Migration - draft**	**30 days**	**Thu 9/16/21**	**Wed 10/27/21**	
89	enfoTech migrates data and delivers results to DEP	15 days	Thu 9/16/21	Wed 10/6/21	74
90	DEP reviews and provides comments	15 days	Thu 10/7/21	Wed 10/27/21	89
91	**3.5 Wave 1: A System Walk-through for Release #2 (1-Day)**	**16 days**	**Fri 11/12/21**	**Fri 12/3/21**	
92	DEP attends the walkthrough	1 day	Fri 11/12/21	Fri 11/12/21	86
93	DEP provides review comments after the walkthrough	15 days	Mon 11/15/21	Fri 12/3/21	92
94	**3.6 Wave 1: EPermit Release #3**	**10 days**	**Mon 12/6/21**	**Fri 12/17/21**	
95	enfoTech provides services to address DEP comments, additional configurations, and delivers EDMS Release #3	10 days	Mon 12/6/21	Fri 12/17/21	93
96	3.7 RCRAInfo Data Migration - Final	**30 days**	**Fri 11/12/21**	**Thu 12/23/21**	
97	enfoTech revises data migration scripts and delivers results to DEP	10 days	Fri 11/12/21	Thu 11/25/21	86
98	DEP reviews and provides comments	15 days	Fri 11/26/21	Thu 12/16/21	97
99	enfoTech addresses DEP comments and DEP approves the data migrat	5 days	Fri 12/17/21	Thu 12/23/21	98
100	**3.8 Wave 1: A System Walk-through for Release #3 (1-Day)**	**16 days**	**Mon 12/20/21**	**Mon 1/10/22**	
101	DEP attends the walkthrough	1 day	Mon 12/20/21	Mon 12/20/21	94
102	DEP provides review comments after the walkthrough	15 days	Tue 12/21/21	Mon 1/10/22	101
103	enfoTech addresses DEP comments	15 days	Tue 12/21/21	Mon 1/10/22	101
105	**Stage 4A: UAT, Training, Documentation**	**139 days**	**Thu 9/16/21**	**Tue 3/29/22**	
106	**(A) Wave 1 Implementation**	**139 days**	**Thu 9/16/21**	**Tue 3/29/22**	
107	**4.1 Wave 1: Test Plan**	**30 days**	**Thu 9/16/21**	**Wed 10/27/21**	
108	enfoTech issues a draft Test Plan	10 days	Thu 9/16/21	Wed 9/29/21	74
109	DEP provides comments	10 days	Thu 9/30/21	Wed 10/13/21	108
110	enfoTech addresses DEP comments and issues a revision	5 days	Thu 10/14/21	Wed 10/20/21	109
111	DEP approves the Test Plan	5 days	Thu 10/21/21	Wed 10/27/21	110
112	4.2 Wave 1: Test Report	**30 days**	**Thu 10/28/21**	**Wed 12/8/21**	
113	enfoTech issues a Test Report	10 days	Thu 10/28/21	Wed 11/10/21	107
114	DEP provides comments	10 days	Thu 11/11/21	Wed 11/24/21	113
115	enfoTech addresses DEP comments and issues a revision	5 days	Thu 11/25/21	Wed 12/1/21	114
116	DEP approves the Test Report	5 days	Thu 12/2/21	Wed 12/8/21	115
117	**4.3 Wave 1: UAT Plan**	**40 days**	**Thu 10/7/21**	**Wed 12/1/21**	
118	enfoTech issues a draft UAT Plan	20 days	Thu 10/7/21	Wed 11/3/21	81
119	DEP provides comments	10 days	Thu 11/4/21	Wed 11/17/21	118
120	enfoTech addresses DEP comments and issues a revision	5 days	Thu 11/18/21	Wed 11/24/21	119
121	DEP approves the UAT Plan	5 days	Thu 11/25/21	Wed 12/1/21	120
122	4.4 Wave 1: EPermit UAT Release	5 days	Tue 1/11/22	Mon 1/17/22	104
123	4.5 Wave 1: Abbreviated training to UAT users	1 day	Tue 1/18/22	Tue 1/18/22	122
124	4.6 Wave 1: UAT Support	**30 days**	**Wed 1/19/22**	**Tue 3/1/22**	
125	DEP conducts UAT and provides comments	15 days	Wed 1/19/22	Tue 2/8/22	123
126	enfoTech addresses DEP comments	15 days	Wed 2/9/22	Tue 3/1/22	125
127	4.7 Wave 1: Training Plan	**30 days**	**Thu 12/2/21**	**Wed 1/12/22**	
128	enfoTech issues a draft Training Plan	10 days	Thu 12/2/21	Wed 12/15/21	117
129	DEP provides comments	10 days	Thu 12/16/21	Wed 12/29/21	128
130	enfoTech addresses DEP comments and issues a revision	5 days	Thu 12/30/21	Wed 1/5/22	129
131	DEP approves the Test Plan	5 days	Thu 1/6/22	Wed 1/12/22	130
132	**4.8 Wave 1: User Training for DEP users**	**20 days**	**Wed 3/2/22**	**Tue 3/29/22**	
133	Training Courses - DEP User (Train-the-Trainer)	20 days	Wed 3/2/22	Tue 3/29/22	124
134	Training Courses – DEP Program Supervisor	20 days	Wed 3/2/22	Tue 3/29/22	124
135	Training Courses – DEP EPermit System Admin	20 days	Wed 3/2/22	Tue 3/29/22	124
136	Training Courses – Facility Responsible Officer (RO) and Consultant (Tr	20 days	Wed 3/2/22	Tue 3/29/22	124
137	4.9 Wave 1: Admin & IT Technical Training	20 days	Wed 3/2/22	Tue 3/29/22	124
138	4.10 Wave 1: System Documentations	30 days	Thu 1/13/22	Wed 2/23/22	131
139	**Stage 5A: Go-live**	**61 days**	**Tue 1/18/22**	**Tue 4/12/22**	
140	**(A) Wave 1 Go-live**	**61 days**	**Tue 1/18/22**	**Tue 4/12/22**	
141	5.1 Wave 1: Deliver Go-Live (transition) Plan	**25 days**	**Tue 1/18/22**	**Mon 2/21/22**	
142	enfoTech issues a draft Go-live Plan	10 days	Tue 1/18/22	Mon 1/31/22	122
143	DEP provides comments	10 days	Tue 2/1/22	Mon 2/14/22	142
144	enfoTech addresses DEP comments and issues a revision	3 days	Tue 2/15/22	Thu 2/17/22	143
145	DEP approves the Go-live Plan	2 days	Fri 2/18/22	Mon 2/21/22	144
146	5.2 Wave 1: Deliver Production-ready System	5 days	Wed 3/30/22	Tue 4/5/22	106
147	5.3 Wave 1: System Go-Live	5 days	Wed 4/6/22	Tue 4/12/22	146



	Task Name	Duration	Start	Finish	Prede
148	**Wave 2 Implementation**	**252 days**	**Thu 10/7/21**	**Fri 9/23/22**	
149	**Stage 2B: Configuration Design**	**83 days**	**Thu 10/7/21**	**Mon 1/31/22**	
150	**(C) Wave 2, System Configuration Specification Stage**	**83 days**	**Thu 10/7/21**	**Mon 1/31/22**	
151	**2.18 Wave 2: EPermit SCD Run #1 (2 Days)**	**15 days**	**Thu 10/7/21**	**Wed 10/27/21**	
152	enfoTech prepares and delivers a draft workshop agenda	5 days	Thu 10/7/21	Wed 10/13/21	81
153	DEP reviews and comments on the draft agenda	5 days	Thu 10/14/21	Wed 10/20/21	152
154	enfoTech revises based off DEP's comments, and issues a final agenda	3 days	Thu 10/21/21	Mon 10/25/21	153
155	enfoTech & DEP attends the 2-day workshop	2 days	Tue 10/26/21	Wed 10/27/21	154
156	2.19 Wave 2: EPermit SCD V.1	15 days	Thu 10/28/21	Wed 11/17/21	155
157	**2.20 Wave 2: EPermit SCD V.1 Walk through with DEP (1 Day)**	**11 days**	**Thu 11/18/21**	**Thu 12/2/21**	
158	DEP attends the walkthrough	1 day	Thu 11/18/21	Thu 11/18/21	156
159	DEP provides SCD V.1 comments after the walk through session	10 days	Fri 11/19/21	Thu 12/2/21	158
160	**2.21 Wave 2: EPermit SCD V.2**	**10 days**	**Fri 11/19/21**	**Thu 12/2/21**	
161	enfoTech issues SCD V.2 to include DEP comments	9 days	Fri 11/19/21	Wed 12/1/21	158
162	SCD V.2 is ussed to DEP before SCD Run #2	1 day	Thu 12/2/21	Thu 12/2/21	161
163	**2.22 Wave 2: EPermit SCD Run #2 (2 Days)**	**12 days**	**Fri 12/3/21**	**Mon 12/20/21**	
164	enfoTech prepares and delivers a draft workshop agenda	5 days	Fri 12/3/21	Thu 12/9/21	159
165	DEP reviews and comments on the draft agenda	5 days	Fri 12/10/21	Thu 12/16/21	164
166	enfoTech revises based off DEP's comments, and issues a final agenda	2 days	Fri 12/17/21	Mon 12/20/21	165
167	enfoTech & DEP attends the 2-day workshop	2 days	Fri 12/3/21	Mon 12/6/21	162
168	**2.23 Wave 2: EPermit SCD V.3 (Final)**	**30 days**	**Tue 12/21/21**	**Mon 1/31/22**	
169	enfoTech issues SCD V.3	10 days	Tue 12/21/21	Mon 1/3/22	163
170	DEP provides comments	10 days	Tue 1/4/22	Mon 1/17/22	169
171	enfoTech issues SCD V.3 final for DEP approval	5 days	Tue 1/18/22	Mon 1/24/22	170
172	DEP approve FRS V3	5 days	Tue 1/25/22	Mon 1/31/22	171
173	**Stage 3B: Iterative System Configuration & Improvements**	**118 days**	**Tue 2/1/22**	**Thu 7/14/22**	
174	**(B) Wave 2 Configurations**	**118 days**	**Tue 2/1/22**	**Thu 7/14/22**	
175	**3.9 Wave 2: EPermit Release #1**	**20 days**	**Tue 2/1/22**	**Mon 2/28/22**	
177	3.10 Wave 2: A System Walk-through for Release #1 (2-Day)	**16 days**	**Tue 3/1/22**	**Tue 3/22/22**	
178	DEP attends the walkthrough	1 day	Tue 3/1/22	Tue 3/1/22	175
179	DEP reviews Release #1 after the walkthrough, provides comments	15 days	Wed 3/2/22	Tue 3/22/22	178
180	**3.11 Wave 2: EPermit Release #2**	**10 days**	**Wed 3/23/22**	**Tue 4/5/22**	
181	enfoTech provides services to address DEP comments, additional configurations, and delivers EDMS Release #2	10 days	Wed 3/23/22	Tue 4/5/22	177
182	**3.12 Wave 2: A System Walk-through for Release #2 (1-Day)**	**16 days**	**Wed 4/6/22**	**Wed 4/27/22**	
183	DEP attends the walkthrough	1 day	Wed 4/6/22	Wed 4/6/22	180
184	DEP provides review comments after the walkthrough	15 days	Thu 4/7/22	Wed 4/27/22	183
185	**3.13 Wave 2: EPermit Release #3**	**10 days**	**Thu 4/28/22**	**Wed 5/11/22**	
186	enfoTech provides services to address DEP comments, additional configurations, and delivers EDMS Release #3	10 days	Thu 4/28/22	Wed 5/11/22	182
187	3.14 Wave 2: A System Walk-through for Release #3 (1-Day)	**46 days**	**Thu 5/12/22**	**Thu 7/14/22**	
188	DEP attends the walkthrough	1 day	Thu 5/12/22	Thu 5/12/22	185
189	DEP provides review comments after the walkthrough	15 days	Fri 5/13/22	Thu 6/2/22	188
190	enfoTech addresses DEP comments	15 days	Fri 6/3/22	Thu 6/23/22	189
191	DEP approves the System to begin UAT	15 days	Fri 6/24/22	Thu 7/14/22	190
192	**Stage 4B: UAT, Training, Documentation**	**159 days**	**Tue 2/1/22**	**Fri 9/9/22**	
193	**(B) Wave 2 Implementation**	**159 days**	**Tue 2/1/22**	**Fri 9/9/22**	
194	**4.11 Wave 2: Test Plan**	**30 days**	**Tue 2/1/22**	**Mon 3/14/22**	
195	enfoTech issues a draft Test Plan	10 days	Tue 2/1/22	Mon 2/14/22	168
196	DEP provides comments	10 days	Tue 2/15/22	Mon 2/28/22	195
197	enfoTech addresses DEP comments and issues a revision	5 days	Tue 3/1/22	Mon 3/7/22	196
198	DEP approves the Test Plan	5 days	Tue 3/8/22	Mon 3/14/22	197
199	4.12 Wave 2: Test Report	**30 days**	**Tue 3/15/22**	**Mon 4/25/22**	
200	enfoTech issues a Test Report	10 days	Tue 3/15/22	Mon 3/28/22	194
201	DEP provides comments	10 days	Tue 3/29/22	Mon 4/11/22	200
202	enfoTech addresses DEP comments and issues a revision	5 days	Tue 4/12/22	Mon 4/18/22	201
203	DEP approves the Test Report	5 days	Tue 4/19/22	Mon 4/25/22	202
204	**4.13 Wave 2: UAT Plan**	**40 days**	**Tue 3/1/22**	**Mon 4/25/22**	
205	enfoTech issues a draft UAT Plan	20 days	Tue 3/1/22	Mon 3/28/22	175
206	DEP provides comments	10 days	Tue 3/29/22	Mon 4/11/22	205
207	enfoTech addresses DEP comments and issues a revision	5 days	Tue 4/12/22	Mon 4/18/22	206
208	DEP approves the UAT Plan	5 days	Tue 4/19/22	Mon 4/25/22	207
209	4.14 Wave 2: EPermit UAT Release	5 days	Fri 7/15/22	Thu 7/21/22	191
210	4.15 Wave 2: Abbreviated training to UAT users	1 day	Fri 7/22/22	Fri 7/22/22	209
211	**4.16 Wave 2: UAT Support**	**15 days**	**Mon 7/25/22**	**Fri 8/12/22**	
212	DEP conducts UAT and provides comments	15 days	Mon 7/25/22	Fri 8/12/22	210
213	enfoTech addresses DEP comments	15 days	Mon 7/25/22	Fri 8/12/22	210



	Task Name	Duration	Start	Finish	Prede
214	4.17 Wave 2: Training Plan	**35 days**	**Tue 4/26/22**	**Mon 6/13/22**	
215	enfoTech issues a draft Training Plan	15 days	Tue 4/26/22	Mon 5/16/22	204
216	DEP provides comments	10 days	Tue 5/17/22	Mon 5/30/22	215
217	enfoTech addresses DEP comments and issues a revision	5 days	Tue 5/31/22	Mon 6/6/22	216
218	DEP approves the Test Plan	5 days	Tue 6/7/22	Mon 6/13/22	217
219	**4.18 Wave 2: User Training for DEP users**	**20 days**	**Mon 8/15/22**	**Fri 9/9/22**	
220	Training Courses - DEP User (Train-the-Trainer)	20 days	Mon 8/15/22	Fri 9/9/22	211
221	Training Courses – DEP Program Supervisor	20 days	Mon 8/15/22	Fri 9/9/22	211
222	Training Courses – DEP EPermit System Admin	20 days	Mon 8/15/22	Fri 9/9/22	211
223	Training Courses – Facility Responsible Officer (RO) and Consultant (Tr	20 days	Mon 8/15/22	Fri 9/9/22	211
224	4.19 Wave 2: Admin & IT Technical Training	20 days	Mon 8/15/22	Fri 9/9/22	211
225	4.20 Wave 2: System Documentations	30 days	Tue 6/14/22	Mon 7/25/22	218
226	**Stage 5B: Go-live**	**46 days**	**Fri 7/22/22**	**Fri 9/23/22**	
227	**(B) Wave 2 Go-live**	**46 days**	**Fri 7/22/22**	**Fri 9/23/22**	
228	**5.4 Wave 2: Deliver Go-Live (transition) Plan**	**25 days**	**Fri 7/22/22**	**Thu 8/25/22**	
229	enfoTech issues a draft Go-live Plan	10 days	Fri 7/22/22	Thu 8/4/22	209
230	DEP provides comments	10 days	Fri 8/5/22	Thu 8/18/22	229
231	enfoTech addresses DEP comments and issues a revision	3 days	Fri 8/19/22	Tue 8/23/22	230
232	DEP approves the Go-live Plan	2 days	Wed 8/24/22	Thu 8/25/22	231
233	5.5 Wave 2: Deliver Production-ready System	5 days	Mon 9/12/22	Fri 9/16/22	193
234	5.6 Wave 2: System Go-Live	5 days	Mon 9/19/22	Fri 9/23/22	233



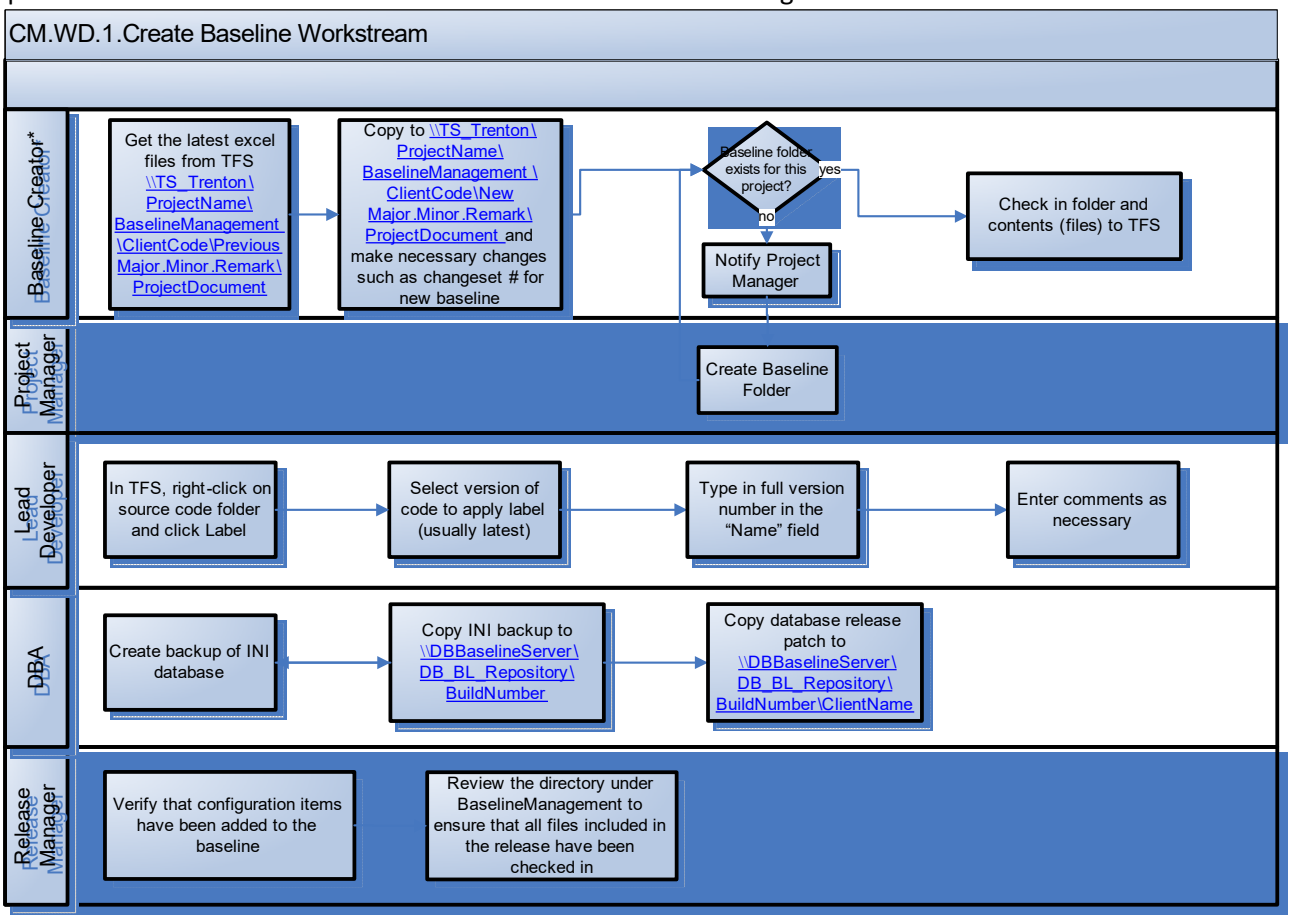
	Task Name	Duration	Start	Finish	P
235	**Stage 6: System Maintenance & Support**	**365 days**	**Wed 4/13/22**	**Tue 9/5/23**	
236	6.1 Consulting service to DEP's IT Steering Committee to create a change management process and governance plan for updating and maintaining the System after Launch (80 hours)	180 days	Wed 4/13/22	Tue 12/20/22	14
237	6.2 Technical support and maintenance (Renewable each year at DEP's discretion). Estimate hours: 720 hours/year.	365 days	Wed 4/13/22	Tue 9/5/23	14

5.4 Data and System Security Plan (Responses to Bid Section 4.1.3)

5.4.1 System Development Life Cycle (SDLC) Description

5.4.1.1 Baseline Management

A baseline represents a version of product release installed at the client location. enfoTech employs the best industry practices to maintain product baselines for bi-directional traceability between the requirements and final product features. Our baseline work stream is illustrated in a diagram below:



*Project Manager, Release Manager, Project Architect, Lead Developer, Developer, Business Analyst, Database Developer, etc – anyone who needs to baseline a work product

High-level activities include:

1. Document Baseline
2. Create a Work Item in Team Foundation Server to track a Baseline (version #)
3. Create Application Solution Baseline
4. Create Backup Database Baseline
5. Generate Baseline Report for audit trail and approval

5.4.1.2 Configuration Management

enfoTech uses Project Team Web Site (PTWS, for the DEP to report new requirements or issues) and Team Foundation Server (TFS – for our internal work-items) to store and manage all project related work-items throughout the entire project lifecycle, even after the system Go-live. Following are the highlights of our SOPs to track Configuration Management and maintain bi-directional "traceability".

- **Requirement and Issue Analysis:**
  Requests (i.e., new requirements or issues) will be created and managed under project team web site specific to each Client (created and hosted by enfoTech for DEP) and our internal TFS site. We adopt a

SOP to respond to client's request within time limit based on issue classification (Critical, High, Medium, Low). After analyzing client's requests, enfoTech will record our recommendations/plan of action on the PTWS. PTWS will automatically notify the requester of any update made to the request.

- **Iterative Design, Coding and Testing:**
  Work Item (WI) will be created at enfoTech internal TFS. Each WI will be referenced to the PTWS ID for bi-directional tractability. WIs could include design, development, testing, documentation, deployment, training and will include resource names, estimate time, and due date. Internal testing will include Test Plan, black-box testing, white-box testing, integration testing, and stress testing. We use automatic testing tools to maintain test scripts to automate testing whenever possible.

  This stage will be iterative and going back-and-forth among requirement, design, and coding. In some cases, we will need to go back to the Requirement and Design to streamline requirements and update use cases to refine the System and align with better business process and offer improvements. We keep the requirement and design current with coding and maintain bi-directional tractability in our TFS servers. Team collaborations, iterative improvements, and stable progress are our keys to project success.

- **User Acceptance Testing (UAT)**
  After the system successfully passing our internal testing, we will deliver the release to the client for UAT. enfoTech will conduct system walk-through meetings to orient the client with new release before the client start UAT. All UAT comments will be tracked at the PTWS and be resolved by enfoTech, prior to moving the System to user training and roll out.

- **Automated Production Deployment**
  As soon as the new code is pushed onto the designated area in our TFS system, the latest change is checked out on a central CI/CD server, the build process then starts and the production artifacts are created. The application will then be tested in a pre-production environment (usually, identical to the actual Production environment), if the tests are successful, the build is deployed to the production application server(s).

"No work-Item, No Work" is one of the many important SDLC principles we enforce at all levels of enfoTech. We believe that a highly traceable work-item based Configuration Management system will allow us to produce high-quality system and meet/exceed customer expectations.

5.4.1.3 Defect Management

(A) Mechanism for DEP To Report Defects and Track Resolution Progress

enfoTech will expand the project team web site to manage issues reported after the Go-live. The project team web site will provide the following features:

- The Website will assign a unique Issue ID for each issue
- DEP could report issues and monitor issues till closure
  - Issue reporter could record issue description, input, output, and error messages, screen shots
  - Issue reporter will receive an email alert when the issue status is changed
  - Issue reporter will an email alert when the issue is resolved and ready for retest
  - Issue Reporter could change/monitor the issue until it is closed
- enfoTech Investigation of Reported Issues
  - enfoTech staff will automatically receive email alert when a new issue is reported at the website
  - If the issue is a bug, create a Work Item at the enfoTech Microsoft TFS server and assign resources to fix the bug. The Microsoft TFS work item will record the corresponding Issue ID from the

Project Team Website to maintain one-to-one traceability. Each bug will be monitored by enfoTech PM until it is satisfactorily resolved and closed by DEP.
  - If the issue is data related, enfoTech will develop a database script to fix the data
  - If the issue is training related, provide proper operation instructions to the user
  - If the issue is an addition/change to the approved requirements, it will be handled through change request procedure
- enfoTech provides ad-hoc GoToMeeting with DEP (based on DEP PM request)
  - For technical support on emergency issue
  - For technical discussions on issues that cannot be properly conveyed at the PTWS
  - For other maintenance items deemed necessary by PMs from both parties
- If Manage interim system patches to DEP which will include:
  - What's new
  - Change the status of "Issues" to "Resolved & Return to DEP for Retest" at the Project Website
  - If the Issue successfully passes the Retest, the original Issue Reporter will change the status of Issue to "Resolved". If Retest fails, the status will be changed to "Return to enfoTech" for investigation for which enfoTech will repeat the Issue resolution process until the Issue is resolved.

(2) Support Hotline

enfoTech will maintain a support hotline staffed with technical persons to provide technical services to the DEP via phone, emails, ad-hoc GoToMeeting sessions, and documentations. In addition, the enfoTech PM will host routine conference calls with the DEP's PM, when necessary, to review progress on completing service requests.

(3) Remedial Training

The EPermit system will be a paradigm shift from the paper submission to online application with system integrations to exchange data with 4 external systems. If remedial training is needed for certain user groups or business processes, enfoTech will provide ad-hoc GoToMeeting sessions to help end users to ensure smooth transition to the new system.

(B) enfoTech SOPs to Resolve Defects

enfoTech has implemented a comprehensive Capability Maturity Model Implementation (CMMI-Level 3) compatible mechanism for all projects. We have utilized all of the CMMI-Level 3 compatible procedures, project tracking forms, and collaboration processes for all our projects. We strive to achieve the following objectives:

- Standard processes for developing and maintaining software across enfoTech are documented, including both software engineering and management processes, and these processes are integrated and coherent
- Standard processes are referred to throughout enfoTech's standard software process
- Standard processes established at enfoTech are used (and changed, as appropriate) to help the managers and technical staff perform effective software engineering practices at enfoTech

enfoTech implemented the following QA procedures for all product development and project implementations:

(A) Peer Review of Requirement Spec. & System Design

Quality assurance begins with accurate requirements and proper system design through clear communication. Each customer/product requirement and corresponding system design will be peer reviewed to verify accuracy of contents and to validate that proper implementation techniques are used. This is essential to avoid redo. High-level activities include:

- **Identify "Peer Review" team**
- **Peer Review the Customer Requirements & Scenarios:** The Review team will review the draft Customer Requirements to ensure that they are necessary and sufficient.
- **Modify Customer Requirements Specification Based on Peer Review**
- **Internal Approval of Customer Requirements**
- **Protection of Customer's Data:** Data provided by our customers for the purpose of project implementation shall be treated confidentially
- **Obtain Customer Signoff**

5.4.1.4 Change Management

For each product change, our product development Team will track the request in the Microsoft Team Foundation Server (TFS) from the requirement, design, programming, test, to final release. A product release (version) might include multiple change requests. Our change request management involves the following activities:

- Create a Change Request (CR):
  - CR Submitter reviews the proposal of change request from either Project Website or internal needs to determine if change request should be made. Create a work item for the change request.
  - The CR reviewer should perform an impact analysis and identify all of the baselines that will be affected by this change, and then link the change request work item to the identified baseline(s)
- Client to review the change request:
  - The CR Reviewer reviews by going through questionnaires on Approval Review tab in Team System Work Item form. The reviewer will input his/her review comment and recommend a cause of action to PM and Solution Architect.
  - Each CR must be signed off by both the Project Manager and the Solution Architect together
  - Each CR Reviewer will need to consult the Change Control Board (CCB) if there are concerns about technical approaches, or any questions that may require subject matter expert input
- Decision for Approval or Rejection
  - Once the CR has been approved, the CR Reviewer will turn the work item into "Active", create TASK work item(s), and assign to people who are doing the changes.
  - For those baselines such as schedule, plan, requirements, designs, etc, that may take effect of this change should get updated if applicable. For database development tasks, follow the naming convention identified in the Database Change Management Standards.
  - If the CR has been rejected by any reasons, the work item will be assigned back to Submitter with the reason(s) (Exit the work stream)
- Completion for change request
  - Once all related work items have resolved, the change request work item should be resolved. Tester shall close the change request work item once it passes testing.

5.4.1.5 Release Management

The release management is to ensure the delivery package includes all expected items and meet the expectation as addressed in the contract. There are 2 major steps, "Release Preparation" and "Release Deployment". High-level activities include:

1. **Collect Release Package**

   Collect the following items: (1) Application release candidate, (2) Database patch/dump file release guide, (3) Installation/Patch guide, (4) Administration guide (if required), (5) What's New document, (6) User Training materials (if user training is required), (7) Online Help / User Guide (if required)

2. **Test Release Package in UAT (lab) environment**

   Once the release package is ready, both the technology solution for the release and the supporting process documentation are tested in a lab environment (UAT staging server).
   This is a test to ensure the mechanism delivers the designed release successfully and that the technical elements of the release all work.

3. **Place a Copy of Release Package into Team System and Update Baseline**

4. **Provide Advance Communication of Release to the Client**

   Information communicated to users, support staff, and others during the release preparation process often includes release plans and dates, details of where to find and sign up for training courses (if appropriate).

5. **Release Readiness Review**

   The Release Readiness Review is the final management checkpoint and approval step before the release team begins deployment. It should include the following topics: (1) The operability of the release, (2) The supportability of the release, (3) The readiness of the target production environment

6. **Deploy the Release**

7. **Review Deployed Release**

   The release manager confirms that the release is working correctly and the deployment process concludes with the completion of the change review process.

Because the software process is well defined, management has good insight into technical progress on all projects. enfoTech's software process can be summarized as standard and consistent because both software engineering and management activities are stable and repeatable. Within established product lines, cost, schedule, and functionality are under control, and software quality is tracked. This process capability is based on a common, corporate-wide understanding of the activities, roles, and responsibilities in a defined software process. A Quality Assurance Plan is not a document *per se*, but a business process. In other words, the Quality Assurance plan is a process that is integrated into business practice throughout enfoTech to ensure that work output meets certain standard acceptance criteria. enfoTech utilizes Microsoft Team Foundation Server as one of the tools to support our Quality Assurance Plan.

5.4.2 System Security Testing

enfoTech will comply with bid requirements and provide:

- Integrate Security Assessment requirements in the System Requirement Documents and System Configuration Documents
- Include security requirement in each system configuration work item for developers to ensure adhere to security requirements
- Perform security testing as part of unit testing
- Perform security testing in integration testing to be performed for each system release
- Mitigate issues resulting from the security testing

5.4.3 Section 508 Compliance

enfoTech will comply with Section 508 of Americans with Disability Act (ADA) requirements and provide a system scanning report to demonstrate compliance.

6 Cost

6.1 Bid Cost Forms

Purchasing Divison 2019 Washington Street East Post Office Box 50130 Charleston, WV 25305-0130	State of West Virginia Request for Quotation 34 — Service - Prof

Proc Folder: 711714

Doc Description: Addendum No.02 Electronic E-Permitting System Project

Proc Type: Central Contract - Fixed Amt

Date Issued	Solicitation Closes	Solicitation No	Version
2020-07-20	2020-07-28 13:30:00	CRFQ 0313 DEP2000000041	3

BID RECEIVING LOCATION

BID CLERK
DEPARTMENT OF ADMINISTRATION
PURCHASING DIVISION
2019 WASHINGTON ST E
CHARLESTON WV 25305
US

VENDOR

Vendor Name, Address and Telephone Number:

enfoTech & Consulting, Inc.
1368 How Lane, North Brunswick, NJ 08902
732-839-1688

FOR INFORMATION CONTACT THE BUYER

Guy Nisbet
(304) 558-2596
guy.l.nisbet@wv.gov

Signature X [signature] FEIN # 22-3364641 DATE 7/24/2020

All offers subject to all terms and conditions contained in this solicitation

Page : 1 FORM ID : WV-PRC-CRFQ-001

ADDITIONAL INFORMATION:

Addendum

Addendum No.02 issued to publish and distribute the attached information to the vendor community.

****

Request for Quotation
(Electronic e-Permitting System Project)

In accordance with WV Code 5A-3, The West Virginia Purchasing Division is soliciting bids on behalf of the West Virginia Department of Environmental Protection (WVDEP) to establish a contract for an electronic e-Permitting System per the bid requirements, specifications , terms and conditions that are apart of this solicitation and incorporated herein by reference as attached hereto.

INVOICE TO	SHIP TO
ENVIRONMENTAL PROTECTION OFFICE OF ADMINISTRATION 601 57TH ST SE CHARLESTON WV25304 US	ENVIRONMENTAL PROTECTION 601 57TH ST CHARLESTON WV 25304 US

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
1	Electronic EPermitting System			$1,299,730	$1,299,730

Comm Code	Manufacturer	Specification	Model #
43232802			

Extended Description :
Electronic EPermitting System

INVOICE TO	SHIP TO
ENVIRONMENTAL PROTECTION OFFICE OF ADMINISTRATION 601 57TH ST SE CHARLESTON WV25304 US	ENVIRONMENTAL PROTECTION 601 57TH ST CHARLESTON WV 25304 US

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
2	Post-Launch Maintenance Period			$108,000	$108,000

Comm Code	Manufacturer	Specification	Model #
81112201			

Extended Description :
Post-Launch Maintenance Period - 12 Month Post-Launch Maintenance Period after the last features have been deployed. Hours are estimated at 60 hours per month for 12 months for a total of 720 hours. Vendor will only bill for actual hours used.

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INVOICE TO	SHIP TO
ENVIRONMENTAL PROTECTION OFFICE OF ADMINISTRATION 601 57TH ST SE CHARLESTON WV25304 US	ENVIRONMENTAL PROTECTION 601 57TH ST CHARLESTON WV 25304 US

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
3	nViro Software Suite Enterprise Licensing or equal	1.00000	EA	$180,000	$180,000

Comm Code	Manufacturer	Specification	Model #
43230000			

Extended Description :

nViro Software Suite Enterprise Licensing or equal
This includes the license and maintenance & support for the first year.

INVOICE TO	SHIP TO
ENVIRONMENTAL PROTECTION OFFICE OF ADMINISTRATION 601 57TH ST SE CHARLESTON WV25304 US	ENVIRONMENTAL PROTECTION 601 57TH ST CHARLESTON WV 25304 US

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
4	Software Support renewal for yr 2			$40,960	$40,960

Comm Code	Manufacturer	Specification	Model #
81112200			

Extended Description :

Software Support renewal for yr 2

INVOICE TO	SHIP TO
ENVIRONMENTAL PROTECTION OFFICE OF ADMINISTRATION 601 57TH ST SE CHARLESTON WV25304 US	ENVIRONMENTAL PROTECTION 601 57TH ST CHARLESTON WV 25304 US

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
5	Software Support renewal for yr 3			$40,960	$40,960

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Comm Code	Manufacturer	Specification	Model #
81112200			

Extended Description :
Software Support renewal for yr 3

INVOICE TO	SHIP TO
ENVIRONMENTAL PROTECTION OFFICE OF ADMINISTRATION 601 57TH ST SE CHARLESTON WV25304 US	ENVIRONMENTAL PROTECTION 601 57TH ST CHARLESTON WV 25304 US

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
6	Software Support renewal for yr 4			$40,960	$40,960

Comm Code	Manufacturer	Specification	Model #
81112200			

Extended Description :
Software Support renewal for yr 4

INVOICE TO	SHIP TO
ENVIRONMENTAL PROTECTION OFFICE OF ADMINISTRATION 601 57TH ST SE CHARLESTON WV25304 US	ENVIRONMENTAL PROTECTION 601 57TH ST CHARLESTON WV 25304 US

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
7	Software Support renewal for yr 5			$40,960	$40,960

Comm Code	Manufacturer	Specification	Model #
81112200			

Extended Description :
Software Support renewal for yr 5

	Document Phase	Document Description	Page 5
DEP2000000041	Final	Addendum No.02 Electronic E-Permitting System Project	of 5

ADDITIONAL TERMS AND CONDITIONS

See attached document(s) for additional Terms and Conditions

6.2 Cost Breakdown by Deliverables

Total Bid Cost: $ 1,751,570.

(1) Electronic Epermitting System

Products & Services	Cost
Stage 1: Project Start-up, Planning and Management	
1.1 Project Kickoff and strategy workshop (3-Day)	$31,760
1.2 Solution hosted at DEP server (or enfoTech data centers)	$1,980
1.3 A web-based project team website (PTWS)	$1,490
1.4 A project plan document	$3,600
1.5 Host Weekly GoToMeeting for project updates for 2 years (1 hr/call)	$58,000
1.6 Up to 24 monthly project reports	$5,310
Stage 2: Requirements Verification & Configuration Design	
(A) Requirement Verification and Gap Analysis Stage (for the entire project)	
2.1 EPermit FRS Run #1 (4 Days)	$20,200
2.2 System Hosting Plan (Draft)	$2,720
2.3 EPermit FRS V.1	$28,200
2.4 EPermit FRS Version 1 Walk through with DEP (1 Day)	$8,800
2.5 EPermit FRS V 1.5	$8,540
2.6 RCRAInfo Data migration Plan (Draft)	$4,160
2.7 EPermit FRS Run #2 (4 Days)	$20,200
2.8 EPermit FRS V.2	$20,500
2.9 EPermit FRS V.3 (Final)	$10,500
2.10 RCRAInfo Data migration Plan (Final)	$4,160
2.11 System Hosting Plan (Final)	$2,720
(B) Wave 1, System Configuration Specification Stage	
2.12 **Wave 1:** EPermit SCD Run #1 (2 Days)	$15,320
2.13 **Wave 1:** EPermit SCD V.1	$39,210
2.14 **Wave 1:** EPermit SCD V.1 Walk through with DEP (1 Day)	$8,800
2.15 **Wave 1:** EPermit SCD V.2	$21,060
2.16 **Wave 1:** EPermit SCD Run #2 (2 Days)	$12,600
2.17 **Wave 1**: EPermit SCD V.3 (Final)	$7,700
(C) Wave 2, System Configuration Specification Stage	
2.18 **Wave 2:** EPermit SCD Run #1 (2 Days)	$15,320
2.19 **Wave 2:** EPermit SCD V.1	$39,210

Products & Services	Cost
2.20 **Wave 2:** EPermit SCD V.1 Walk through with DEP (1 Day)	$8,800
2.21 **Wave 2:** EPermit SCD V.2	$21,060
2.22 **Wave 2:** EPermit SCD Run #2 (2 Days)	$12,600
2.23 **Wave 2**: EPermit SCD V.3 (Final)	$7,700
Stage 3: Iterative System Configuration & Improvements	
(A) Wave 1 Configurations	
3.1 **Wave 1:** EPermit Release #1	$90,842
3.2 **Wave 1:** A System Walk-through for Release #1 (2-Day)	$12,600
3.3 **Wave 1:** EPermit Release #2	$61,803
3.4 RCRAInfo Data Migration - draft	$7,480
3.5 **Wave 1:** A System Walk-through for Release #2 (1-Day)	$8,800
3.6 **Wave 1:** EPermit Release #3	$57,603
3.7 RCRAInfo Data Migration - Final	$7,480
3.8 **Wave 1**: A System Walk-through for Release #3 (1-Day)	$8,800
(B) Wave 2 Configurations	
3.9 **Wave 2:** EPermit Release #1	$90,842
3.10 **Wave 2:** A System Walk-through for Release #1 (2-Day)	$12,600
3.11 **Wave 2:** EPermit Release #2	$61,803
3.12 **Wave 2:** A System Walk-through for Release #2 (1-Day)	$8,800
3.13 **Wave 2:** EPermit Release #3	$57,603
3.14 **Wave 2**: A System Walk-through for Release #3 (1-Day)	$8,800
Stage 4: UAT, Training, Documentation	
(A) Wave 1 Implementation	
4.1 **Wave 1:** Test Plan	$9,520
4.2 **Wave 1:** Test Report	$8,120
4.3 **Wave 1:** UAT Plan	$2,960
4.4 **Wave 1:** EPermit UAT Release	$25,936
4.5 **Wave 1:** Abbreviated training to UAT users	$3,800
4.6 **Wave 1:** UAT Support	$14,500
4.7 **Wave 1:** Training Plan	$2,960
4.8 **Wave 1:** User Training for DEP users	$22,880
4.9 **Wave 1:** Admin & IT Technical Training	$1,120
4.10 **Wave 1:** System Documentations	$14,320
(B) Wave 2 Implementation	
4.11 **Wave 2:** Test Plan	$9,520

Products & Services	Cost
4.12 **Wave 2:** Test Report	$8,120
4.13 **Wave 2:** UAT Plan	$2,960
4.14 **Wave 2:** EPermit UAT Release	$25,936
4.15 **Wave 2:** Abbreviated training to UAT users	$3,800
4.16 **Wave 2:** UAT Support	$14,500
4.17 **Wave 2:** Training Agenda	$2,960
4.18 **Wave 2:** User Training for DEP users	$22,880
4.19 **Wave 2:** Admin & IT Technical Training	$1,120
4.20 **Wave 2:** System Documentations	$14,320
4.21 System Tutorial	$3,720
4.22 Training Database with training data	$4,760
Stage 5: Go-live	
(A) Wave 1 Go-live	
5.1 **Wave 1:** Deliver Go-Live (transition) Plan	$2,880
5.2 **Wave 1:** Deliver Production-ready System	$59,731
5.3 **Wave 1:** System Go-Live	$7,860
(B) Wave 2 Go-live	
5.4 **Wave 2:** Deliver Go-Live (transition) Plan	$2,880
5.5 **Wave 2:** Deliver Production-ready System	$59,731
5.6 **Wave 2:** System Go-Live	$7,860
Total:	**$1,299,730**

(2) Post Launch Maintenance Period

Products & Services	Cost
12 months post launch maintenance period. Hours are estimated at 720 hours. Will only bill for actual hours used.	**$ 108,000**

Hourly Rates by Labor Category

LABOR CATEGORY	WORK RESPONSIBILITY	HOURLY RATE
1. Principal Consultant	Provide expert advisory of project strategy, system architecture, IT governance, best business practices, and contractual support services	$180
2.Project Manager	Primary contact for the project. Responsible for overall project oversight including adherence to project budget and schedule. Responsible for assuring project deliverables satisfy project objectives and requirements.	$165

LABOR CATEGORY	WORK RESPONSIBILITY	HOURLY RATE
3. Solution Architect	Provide oversight of all technical deliverables of the project. Provide oversight of technical architecture in accordance with project requirements. Develop system architecture to implement requirements.	$165
4. Business Analyst	Support business process analysis, functional requirement specification, and system configuration specification. Perform system testing and coordinate resources to resolve testing issues. Develop user documentation; provide user training and system support.	$145
5. System Developer	Provide system development for all technical deliverables of the project.	$145
6. Database Developer	Support database design, database programming including data migration script development, database triggers, Stored Procedure development. Maintain database dictionary, RI relations, and database maintenance, performance tuning.	$150

(3) EN Suite Software License

Products & Services	Cost
EN Suite Software License	**$ 180,000**

(4) Software Support Renewal for year 2

Products & Services	Cost
Software Support Renewal for year 2	**$ 40,960**

(5) Software Support Renewal for year 3

Products & Services	Cost
Software Support Renewal for year 3	**$ 40,960**

(6) Software Support Renewal for year 4

Products & Services	Cost
Software Support Renewal for year 4	**$ 40,960**

(7) Software Support Renewal for year 5

Products & Services	Cost
Software Support Renewal for year 5	**$ 40,960**

6.3 Payment Schedule

- All costs are net to enfoTech and exclude all applicable taxes.
- enfoTech proposes a deliverable-based payment schedule. Payments should be tied to the costs listed in the "Cost" column for each deliverable.

- EN Suite license fee is payable upon the software installation package is delivered to DEP (or temporarily hosted at enfoTech data center to facilitate requirement verification stage.)
- Annual software support fee shall be paid in full prior to the service year begins.
- enfoTech payment standards are 30-day net from the invoice date.

7 Appendix

7.1 Responses to RFP Functional Requirements

Response Code

4: Requirement will be met with COTS software Out-of-box features

3: Requirement will be met with COTS software after configuration effort

2: Requirement will be met with an extension customized for EPermit project

1: Requirement will be met by integration 3rd party software to the COTS software

0: Not available

enfoTech uses the above codes to respond to solicitation's functional requirements (Section 4.1.1). A Table below presents a summary of all our responses. EN Suite, the proposed solution, shows high degree of fit and will meet a total of 207 requirements (89%) with out-of-box features.

Response Code	Count	PCT (%)
4: Requirement will be met with COTS software Out-of-box features	207	89%
3: Requirement will be met with COTS software after configuration effort	25	11%
2: Requirement will be met with an extension customized for EPermit project	0	
1: Requirement will be met by integration 3rd party software to the COTS software	0	
0: Not available	0	

Detailed responses to each RFP requirements are presented below.

RFP Requirement	Code	Comment
The vendor must provide an existing commercial off the shelf (COTS) customizable software. The goal is to start with an existing system that can be configured to the specific needs and workflows matching WVDEP's business processes.	4	
1. Designed to Comply with USEPA Data Protocols		
1.1 The system must provide full support for NPDES Discharge Monitoring Reports based upon feature and limit specification in a NPDES Permit. The system must support the automatic identification of exceedances and determination of violations-for instance, with stored business logic then will flag limits.	4	
1.2 The vendor will define and develop the business processes for transmitting NPDES compliance and violation data to the EPA as part of the scope of the inspection and compliance lifecycle for environmental permits for the system.	4	
1.3 It is a requirement that the vendor and the system transmit data in accordance to the EPA's requirements. All data structures used by the system must be designed to follow the major EPA data flows currently supported.	4	
2. Online Application and Information Submission		
2.1 The system must have an online form and content management tools that support non-technical WVDEP program staff with building,	4	enfoTech will provide training to DEP

RFP Requirement	Code	Comment
editing, testing, publishing and managing online forms to collect submitted data from regulated entities, the general public, or other interested parties.		
2.2 For the public or industry end user, completing an online form must have a clear interface or step-by-step process. For instance, the applicant will answer a series of questions that will build an application packet, consisting of all the forms and attachments needed to complete their package. As applicants work on the online permit application, the system provides form validation and a progress indicator to show whether all the required form elements have been completed. Data is automatically validated and saved. Users may exit and return later to complete applications.	4	
2.2.1 Online forms must meet the following requirements:		
2.2.1.1 WVDEP-user designed forms must provide validation of data via:		
2.2.1.1.1 Control field validation rules (required, optional, length, numerical range checks).	4	
2.2.1.1.2 Configuration of valid values for selection (dropdown lists, checkboxes, radio buttons).	4	
2.2.1.1.3 Address, phone number, e-mail, fax validation and standardization.	4	
2.2.1.1.4 Calendar date pickers.	4	
2.2.1.2 Forms must provide the ability to add one or more attachments via attachment controls.	4	
2.2.1.3 Forms must provide the ability to specify locations via map controls.	4	
2.2.1.4 WVDEP user designed forms must be configured to pre-populate data from the System (like site, permit data) or from previously entered form data.	4	
2.2.1.5 WVDEP-user designed forms must be configured to show or hide form sections or entry controls based upon logic or data entered in other control fields.	4	
2.2.1.6 Regulated community users must be able to save form data entry progress for continued entry and submission later.	4	
2.2.1.7 The system must include an online form designer that allows authorized users to build their own forms without programmer support.	4	enfoTech will provide training to DEP
2.2.1.8 The system's form designer must allow WVDEP users to turn sections on and off based on answers to other questions using conditional sections and allow end-users to upload attachments.	4	
2.2.1.9 The system's form control types must include instructions, text single line, text paragraph, number, data, time, email, URL, phone, name, single select and multi-select with filters, tables, check boxes, radio buttons, maps, attachments, calculations, contact and address.	4	

RFP Requirement	Code	Comment
2.2.1.10 The system's form designer must allow WVDEP users or end users to create repeating sections to allow for capture of multiple sets of the same data.	4	
2.2.2 Submission and Review Management: The system must provide centralized management of all types of applicant submissions: applications, service requests, complaints, public comment, documentation, photos, maps, data submissions, incident reporting and compliance reports.	4	
2.2.2.1 Submissions received electronically can be configured to be held in an inbox. From the inbox, designated WVDEP users may assign the submissions to a workgroup or staff member.	4	
2.2.2.2 Submissions of paper forms may be entered into the system by internal WVDEP staff so that the data flows into electronic submission processing.	4	
2.2.2.3 Submissions received electronically may be automatically assigned to designated workgroups or users. Automatic assignment is configurable by form type and or region.	4	
2.2.2.4 When a submission is assigned, the internal WVDEP users are notified of the assignment.	4	
2.2.2.5 WVDEP submission reviewers may put applications on hold for various reasons. A hold status will pause any processing due date clock. The clock is re-started and the due date is re-calculated when the submission is taken off hold.	4	
2.2.2.6 WVDEP staff may lock a submission for review, provide detailed comments on specific form questions and answers, route to applicant for review, make corrections and resubmissions with notifications and workflow to support seamless iterative, round-trip review and feedback process.	4	
2.2.2.7 Each submission record has a detail page providing key information related to the submission as a primary assigned workgroup and processor, status, configurable due dates and linkages to related records.	4	
2.2.2.8 Extensions of processing time must be supported.	4	
2.2.2.9 The system will allow the comparison of the original submission instance with subsequent revisions and it will track which users made which changes, forming an audit trail.	4	
2.2.2.10 The system will support validation checks to determine the completeness of the package.	4	
2.2.2.11 WVDEP must be able to include comments for why the submission was approved or not satisfactory.	4	
2.2.2.12 Identification of contracts and roles related to their submissions will be managed by the system (See: RP Integration).	3	Will interface with ERIS
2.2.2.13 Site inspections must be scheduled within the system and linked to the submission		

RFP Requirement	Code	Comment
2.2.2.14 Submissions must support all WVDEP document management requirements (See: AX integration).	3	Will interface with ERIS
2.2.2.15 The system must be able to set up reminders to WVDEP and industry applicants about approaching and missed deadlines; and must be managed by the system on various time schedules unique from program to program.	4	
2.2.3 Public Notice and Comment Collection: The system must support public inquiry and viewing for any applications or permits that WVDEP staff has placed on public notices. Search criteria will be determined by the vendor and WVDEP staff.	4	
2.2.3.1 Public notices must be capable of being scheduled by WVDEP staff. When scheduling a public notice, WVDEP users must be able to select one or more documents to be included or attached to the public notice.	4	
2.2.3.2 Public Notice activities must be able to be defined and tracked for applications and permits.	4	
2.2.3.3 A search feature or screen must support public inquiry to the list of all active public notices.	4	
2.2.3.4 If the public searches a specific public notice to view details, both the notice and its associated documents must be able to be downloaded for review.	4	
2.2.3.5 The Public must be able to submit responses to the public notice. Responses include comments, as well as the ability to attach documents (including photos or maps) related to the comment.	4	
2.2.3.6 Public responses will be given a unique identifier by the system so they can be tracked and associated with the item in question.	4	
2.2.3.7 The system will allow WVDEP staff to access and review all responses and comments submitted by the public.	4	
2.2.3.8 The system will allow WVDEP staff to respond to some or all the responses via the system.	4	
2.2.3.9 Public notice responses received outside the System (e.g., via mail) can be added to the system so that all responses are stored in a single location.	4	
3 Environmental Permit Writing and Authorization, and Workflow Management		
3.1 WVDEP has hundreds of regulatory program areas. Therefore, it is seeking a system with workflow management dashboards that facilitate the permitting, compliance and enforcement activity processes.	4	
3.2 Online applications or forms must be accepted into and managed within the system. Facility/Site, contact and organization management are managed within the system to support every program established within the system. WVDEP has a master database of Responsible Party information that identifies both	4	

RFP Requirement	Code	Comment
individuals and companies that are regulated in West Virginia. The names are mapped to the Secretary of State's business entity names, where possible. It is a requirement that the system use WVDEP's Responsible Party data for users applying for permits or other WVDEP services.		
3.3 Environmental Regulatory permits or authorizations, with their associated compliance schedules, must be generated and managed by the system. Associated permit documents are to be supported by, written in, generated are stored using information housed in the System.	4	
3.3.1 Permit features- WVDEP requires the ability to manage all aspects of permits, licenses and authorizations. The system must support the following:	4	
3.3.1.1 Permit types must be configurable within the system	4	
3.3.1.2 The system must allow the entry of detailed information related to the permit such as; permit number, version, permit type, permittee, status and issue date and closure date.	4	
3.3.1.3 Must specify reporting requirements for the permit and the schedule of reports.	4	
3.3.1.4 Must make schedules and reporting forms available to the permittee for electronic submission.	4	
3.3.1.5 Must perform validation checks, such as required contacts and effective duration, and determine if a permit can be issued to the regulated entity.	4	
3.3.1.6 Must specify permit compliance reporting schedules.	4	
3.3.1.7 Track status of reports that are submitted or not.	4	
3.3.1.8 The system must support features and limits by permit type-such as those needed for NPDES Permit Limits or Discharge Monitoring reports, such as: Specification of Site Feature Limits, Limit Sets (Monitoring Points) and Limits for MPDES Permits. Provides information needed for external user submission of Discharge Monitoring Reports, automatic identification of Limits exceedances and corresponding Violation determination.	4	
3.3.1.9 The system must allow the specification of location, facility or site feature that impacts permit.	4	
3.3.1.10 WVDEP staff must be able to relate or associate a permit to another permit.	4	
3.3.1.11 The system must support document management for permits and related documents in WVDEP's document repository (see: AX.)	3	Will interface with Application Xtender
3.3.1.12 The system must provide identification of Responsible Party or facility contacts and roles related to the permit must be stored in the System. (See: RP integration.)	3	

RFP Requirement	Code	Comment
3.3.2 Permit Development & Management- Once an application form is submitted, the applicant will receive a notification. Notifications must be configurable. Any documents submitted with the application are associated with the application and will be automatically stored in the WVDEP's AX module once the permit is complete. The system must allow the following;	4	
3.3.2.1 Changes to a submitted application can be made by selecting the appropriate record from the submission history in the applicant's portal. A new copy would be created and modified and resubmitted to the agency if necessary.	4	
3.3.2.2 Must allow DEP staff to define the point at which the application is locked and can no longer be modified by the applicant via the business logic associated to a permit.	4	
3.3.2.3 The system must support electronic submission of reports and other information in response to reporting requirements specified in a permit's compliance schedule.	4	
3.3.2.4 Compliance schedules must be automatically generated at time of permit creation based on the business logic established with WVDEP. These reporting requirements are available to the permittee though the System's Web portal. If there is an electronic form associated with the requirement, a link to the form will be available on the schedule.	3	Be configured based on WVDEP's business requirements
3.3.2.5 When an online permit application is submitted to WVDEP via the system, it will appear in an inbox for attention by a WVDEP supervisor. The supervisor can review the workload of different staff permit writers online via the system dashboard and then the supervisor may assign the task to one of the writers (using the system's routing and notification processes.)	4	
3.3.2.6 Each WVDEP staff user of the system must have a dashboard listing his or her tasks. New, incoming assignments appear in the task list and the user also receives a notification via email from the system, such as scheduled task reminders.	4	
3.3.2.7 When the permit writer begins processing the application, the system will track the progress. Each permit application type must have workflow templates assigned to it. Workflows may be created and customized.	4	
3.3.2.8 As the permit writer begins to process the application, the system will create and track tasks (as directed by the established workflow.) A writer or supervisor can assign workflow tasks to other WVDEP staff members and the assignment will appear on their task dashboards.	4	
4 Mobile Inspections and Enforcement Management		
4.1 WVDEP-EE/WW seeks a system that is a comprehensive compliance monitoring and enforcement management solution, facilitating	4	

RFP Requirement	Code	Comment
mobile inspection while allowing for supervisory review prior to completion of the report. The system must allow for tracking of inspection workflow, tracking for completion of tasks, and assignment of tasks to individuals.		
4.1.1 This system must include a mobile inspection tool that allows inspectors to perform an inspection using a tablet, even when there is no internet service or data connection.	4	
4.1.2 Contextual data about the facility or site will be prepopulated into the mobile inspection forms to support data entry in the field. For instance, the system must push previous inspection reports, results and permit data to the environmental field inspectors. Likewise, mobile inspection records must be synchronized back into the main system, following any necessary supervisory review and approval workflows, updating any integration points. The system must generate violation records for any issues as indicated by the inspectors.	4	Configuration required to push previous inspection reports, results and permit data to the environmental field inspectors
4.1.3 The mobile inspection system must allow inspectors to document their field observations using a variety of form controls; filterable lists, GPS coordinates, photographs, tables, drawings, signatures and repeating sections. The tablet-based mobile tool must collect inspection observations regardless of whether a data connection is available. Once a connection becomes available, data must be automatically synchronized to the main system's database.	4	
4.1.4 WVDEP requires the vendor to work with its subject matter experts (its field inspectors and supervisors) so that the various types of inspection workflows mirror the agency's business processes. For instance, inspection forms must be capable of automatically flagging potential violations based on inspector input while in the field. This function is not only limited to simple yes/no responses, but also allows numerical range, defined list values, dates and text values. Alternatively, violations can be flagged by the inspector based on his or her best professional judgement. The inspector may further refine and enhance the observations collected during the inspection in narrative or comment sections. When the inspection is deemed final, the mobile tool will synchronize the collected data. The system must be configured to manage WVDEP's post-inspection review lifecycle.	4	
4.1.5 The system will generate inspection reports including; observations, violations, photos and any other data automatically populated to the report. Inspectors and/or their supervisors may edit the resulting generated documents to customize the content to the conditions at hand.	4	

RFP Requirement		Code	Comment
4.1.6	Note: WVDEP's business process and requirements differ amongst DEP inspection types. Some inspection types do not provide draft inspections to the regulated entities until they are reviewed by a supervisor. Some inspection types print the inspection report and deliver on site. The resulting inspection reports, along with any other supporting documents submitted by the facility or collected while onsite, comprise the final inspection report, which must be archived in WVDEP's AX system.	4	
4.1.7	The mobile tool must support two-way communication and data integration with the main system.	4	
4.1.8	WVDEP requires that the vendor work with the subject matter experts to develop intuitive forms and workflows for the inspectors in the field. For instance, inspectors must be able to jump from form to form or from section to section based on the conditions at the site. Inspectors do not have to follow prescriptive inspection form steps or wizards if indicated by WVDEP.	4	
4.1.9	WVDEP requires that the mobile inspection tool include forms that allows authorized WVDEP users to design, maintain and publish inspection forms. The same form management capabilities from the main system must be available to manage inspection forms and form behavior for the mobile system. The forms must automatically generate violations based on question responses and allow inspectors to take and attach multiple photos into the inspection or inserted and related to specific questions.	4	Will provide training to WVDEP to build inspection forms
4.1.10	WVDEP requires that the mobile inspection tool features a work queue of all inspections currently assigned to the inspector-past, started/active and planned.	4	
4.1.11	The system must allow supervisors to manage and present a queue of unassigned inspections. Inspectors may self- assign or pull inspections from a queue of work.	4	
4.1.12	WVDEP requires that the mobile inspection tool to allow the inspector to generate the final inspection report in Microsoft Word, Portable Document Format (PDF), or Microsoft Excel formats using report templates.	4	
4.1.13	The system must be capable of performing Ad hoc inspections offline in instances where an unplanned inspection is required, such as emergency events or where the inspector happens upon a suspected violation.	4	
4.1.14	The inspection tool must allow different types of inspection forms to be assigned workgroups by the types of inspections the staff members perform (ex: solid waste v. construction.) As a result, all forms for the workgroup(s) to which an inspector belongs are	4	

RFP Requirement		Code	Comment
	automatically loaded and available online/offline to the inspectors of that workgroup.		
4.1.15	During the inspection, the inspector must be able to access the camera of the tablet device to take photos or upload photos from a different data source; cite violations either manually or automatically based on answers provided, including numerical ranges; add comments and recommendation comments; provide custom instructions and collect geospatial coordinates.	4	
4.1.16	WVDEP requires that data collected during the inspection is pushed back into the main system, updating inspection data, automatically creating violation records and any other integrated data are updated with data collected during the inspection.	4	
4.1.17	The system must support conducting and completing a mobile inspection on a tablet in the field and the mobile tool must synchronize the completed inspection data or report back to the main system. The mobile system must automatically detect data connections in order to synchronize data transmissions back to the main system. Pictures taken by an inspector should only be synchronized when the connection is sufficient to complete the transmission.	4	
4.1.18	WVDEP supervisors with authorization can review inspections. Once the review is complete, the supervisor can mark the inspection as complete. Doing so finalizes the inspection and formally records it into the main system.	4	
4.1.19	The system must support WVDEP staff generating a plan for future inspections by selecting sites, evaluation types, and designated workgroups or staff assignments.	4	
4.1.20	WVDEP requires the vendor to work with inspectors and subject matter experts to develop dynamically-populated Fact Sheets that pull information about the status of the permit, the outcome of the last inspection, any history of violations, or other information from the system and WVDEP databases. NOTE: This requirement may involve identifying integration with WVDEP's data warehouse, ERIS database, or AX-document repository to identify or extract any information that inspectors need to have with them in the field.	3	
4.1.21	WVDEP requires the vendor to work with its inspectors to document the inspection workflow steps needed to complete each of various types of evaluations and to customize these workflows into the system.	4	
4.1.22	Workflows defined by templates may be automatically added to the system and associated to an inspection type based upon system configuration.	4	

RFP Requirement	Code	Comment
4.1.23 The system must support a WVDEP inspector scheduling a follow-up evaluation while he or she is still in the field or upon returning to the office. The inspector or supervisor may select one or more violations for a follow up evaluation. Future follow-up evaluations must be linked to the current inspection record.	4	
4.1.24 The system must allow WVDEP users to select one or more violations for compliance or enforcement. A compliance action record must be created with link violations. The system can be configured to send notification to assigned staff and/or assigned workgroup supervisor.	4	
4.1.25 The system must integrate with WVDEP's AX document management system to store or link to identified inspection reports.	3	Will interface with Application Xtender
4.1.26 The system must perform validation checks to determine if an inspection is complete. It must store comments or details for why the record was completed and whether it was approved or not.	4	
4.1.27 The system must have the capability to perform Ad Hoc inspections in the field in situations where the RP is unknown or must be added in later.	4	
4.2 Compliance & Enforcement- WVDEP requires that the system allows its staff to manage and document identifies violations and related actions (formal or informal) taken to address them. The system must support the escalation and history of actions taken to address a violation.	4	
4.2.1 Compliance actions result from an inspection or evaluation to address one or more violation.	4	
4.2.2 Compliance actions must be able to be designated as confidential, allowing only specified users to view the information related to the action.	3	
4.2.3 The system must provide the ability to specify reporting schedules for a compliance action and allow status tracking and reporting.	4	
4.2.4 The system must support the ability for WVDEP enforcement staff to assess fines and define stipulations for related settlements. The assessed fees will be visible the Responsible Party's dashboard. NOTE: The regulated entity will be billed and must be able to pay the fines via the system's integration with wvOasis.	4	
4.2.5 The vendor will work with WVDEP to establish workflows that may be automatically added to manage compliance.	4	
4.2.6 The system will interface with WVDEP's document management system (AX) to store links or documents related to compliance actions.	3	Will interface with Application Xtender
5 Industry Compliance Schedules with wvOasis Integration		

RFP Requirement	Code	Comment
5.1 The system must include online portals (or dashboards) for the regulated industry community, the public and WVDEP staff to support business activities.	4	
5.2 WVDEP seeks a System to have a dashboard or portal that presents a one-stop access view for the regulated community to manage their interactions with the department and must include the following:	4	
5.2.1 Electronic permit application process.	4	
5.2.2 Electronic submission of compliance reports.	4	
5.2.3 Associated invoice and fee payments.	4	
5.2.4 Links to associated public comments or other documents.	4	
5.2.5 Schedules or reminders of upcoming due dates for both information and fees.	4	
5.2.6 Regulated users or the public must be able to view a list of all permits or inspections for a related site, facility or location.	4	
5.3 Custom Dashboards by Responsible Party	4	
The system dashboard must provide the following:		
5.3.1 All priority item (such as late or overdue items) needing to be addressed by the applicant.	4	
5.3.2 A list of outstanding invoices and total amount due.	4	
5.3.3 Upcoming items that the applicant or permittee must address, such as upcoming reports, renewals, missing information or requests for necessary corrections to applications.	4	
5.3.4 It is critical that the system must be able to be configured to automatically generate notifications and violations for late reports, and users can view a list of all violations assessed against the site account. The system must automatically track due dates and send reminders. Additionally, authorized external system users will receive notifications by email when the status of their submission is updated- for instance, if an application is put on hold awaiting additional application information.	4	
5.4 Responsible Party and wvOasis Accounts Receivable Integration. WVDEP requires the vendor to integrate with its Responsible Party (RP) authentication system and process. Authentication will be done outside of the system and passed into the system.	3	Will interface with ERIS
5.5 The new ePermitting System must communicate with both wvOasis and the RP database (housed in ERIS).	3	Will interface with ERIS
5.6 WVDEP envisions that if the authenticated responsible party creates an invoiceable event for, say, a Solid Waste application fee in the system, then the following will happen:		
5.6.1 The new ePermitting System will submit the data for the invoice to wvOasis, then wvOasis will generate the invoice and apply the invoice number.	3	Will interface with wvOasis

RFP Requirement	Code	Comment
5.6.2 If the RP is in good standing, wvOasis autogenerates the invoice number and sends the number back to the ePermitting system. wvOasis will issue the invoice and track the account receivables.	3	Will interface with wvOasis
5.6.3 If wvOasis checks and the RP is not in good standing, then it will send information back into the ePermitting system. The ePermitting System can be set up to hold permits until the RP pays any amounts it owes other WVDEP divisions or state agencies.	4	Will interface with wvOasis
5.6.4 Because the invoice will be issued by wvOasis with data from ePermitting System, the payment will be received in wvOasis and that data will be sent back to the ePermitting System to be associated with the proper permit.	3	Will interface with wvOasis
5.6.4.1 On the Finance side (wvOasis), the invoice is issued, paid and accounted for in the financial system.	3	Will interface with wvOasis
5.6.4.2 On the Program side (ePermitting), if they are not allowed to issue a permit when the RP is in default in paying for another type of fee then WVDEP staff must follow their statue.	4	
5.6.5 Because the collection process is handles through wvOasis, the audit trail built into wvOasis is the primary financial audit record. We must not duplicate it in the ePermitting System.	4	
5.6.6 The ePermitting system will hold changes and edits to the permit or application, however, interactions between the three systems, (responsible Party, wvOasis, ePermitting) will be auditable and allow for reconciliation.	4	
6 Geographic Information System (GIS) Mapping		
6.1 The system must include GIS mapping capabilities so that WVDEP staff and the public can view environmental data within the context of a geospatial platform.	4	
6.2 The system must include a map-based display of facilities, sites and areas of environmental interest and allow users to query data based on program filters.	4	
6.3 The system must allow users to zoom and pan on a map that instantly updates the filtered site list, or they can drill into sites of interest to review their background information, site features and compliance history.	4	
6.4 The system must support that documents related to a site could be made accessible to the public and associated to sites on the map.	4	
6.5 WVDEP staff must have the capability and control to expose only the data it wished to make available to the public.	4	
6.6 The system provides contextual and GIS mapping search capability.	4	
6.7 WVDEP requires the vendor to integrate with the state's ESRI ArcGIS services to support buffering and intersection analyses for selected layers on a map such as aerial imagery, congressional districts, other sites, sensitive resources, etc.	3	Will interface with ESRI for using additional GIS layers

RFP Requirement	Code	Comment
6.8 TAGIS is the internal WVDEP team who develops and analyzes GIS data. It has created and integrated database containing environmental, physical, demographic, and other information organized by geographical location. WVDEP TAGIS assets may include drone mapping, lidar data and other sophisticated, custom project related work. Therefore, it is a requirement that the vendor work with WVDEP to document how we can populate the System with our TAGIS data by importing and supporting common GIS formats such as CSV, ESRI, JSON, and KML.	3	EN Suite can consume other GIS data layers from other data, such as ESRI.
6.9 WVDEP requires a system that offers mobile-friendly, web-based GIS mapping and inquiry.	4	
6.10 The system must display maps of all sites and facilities made available (rules configured in database views).	4	
6.11 The system must allow users to apply various map layers and filters and drill in to see detail of those sites.	4	
6.12 The system must display relevant information for each site or facility, such as contacts, compliance actions, chemicals stored and so on.	4	
6.13 The system must allow additional layers to be added to maps from WVDEP TAGIS or other sources of GIS data.	4	
6.14 The system must include common search parameters in order to filter the results view.	4	
6.15 It is a requirement that documents associated with sites or facilities that have been published can be downloaded directly from map view- or linked to the map view for convenient public access.	4	
7 Comprehensive Environmental Program Reporting		
7.1 WVDEP users must be able to run pre-defined queries, apply selection/filtering criteria and download the search results from the system.	4	
7.2 The system must also be integrated with SQL Server Reporting Services to provide a consistent interface for running more complex formatting reports.	4	
7.3 Note: WVDEP has a separate and ongoing data warehouse project (SAP Business Intelligence). The purpose of the data warehouse project is to provide a bridge and comprehensive reporting between multiple siloed systems within the department. It is a requirement that the system vendor work with WVDEP to provide the following:		
7.3.1 Import data from the data warehouse.	3	EN Suite can import data from external data sources
7.3.2 Export data to the data warehouse.	3	EN Suite can export data to external data sources

RFP Requirement	Code	Comment
8 Easy System Controls for Non-Technical Users.		
8.1 WVDEP requires the COTS Online Environmental Regulatory Permitting System to be flexible. The system must allow the agency to adapt to a dynamic regulatory environment, such as new federal or state legislation requirements.	4	
8.2 The system must have content management tools to support the creation and maintenance of online forms. Non-technical WVDEP program staff must have tools to form-building and content management tools needed to build and configure new forms or modify existing ones to accept submitted data from regulated entities, the general public or other interested parties. The System must allow non-technical WVDEP users the ability to perform the following:	4	EN Suite offers extensive configuration options to allow WVDEP to manage system properties. enfoTech will provide training to DEP.
8.2.1 Create, edit, and publish electronic forms for applications and reports.	4	
8.2.2 Manage notification content, schedules and develop new notifications.	4	
8.2.3 Create and manage document templates and bind them to the system queries to auto-populate data in the document based on the content of the agency database.	4	
8.2.4 Create and manage workflow templates to standardize processing across the program and relate them to different program components such as; permit application types, inspection and enforcement documents.	4	
8.2.5 Create, edit, and publish inspection forms for tablet-based, offline field inspections.	4	
8.3 System Configuration Controls- WVDEP requires the system to have an administrative interface to configure and administer the application. The system must allow WVDEP staff to configure the following:	4	
8.3.1 User Management of user information, email and notification preferences, workgroups and user security groups. Note: WVDEP users have wv.gov email addresses and Microsoft Active Directory (AD) network identifications. Therefore, it is a requirement that the System use AD Federated Services to support internal user management.	4	
8.3.2 Security Group Management to define and maintain custom groupings of security roles for internal user access. Users may be assigned to one or more security groups, granting them access to one or more functions in the system. Internal users with base user access have read-only access to all non-confidential system data, excluding administrative functions.	4	

RFP Requirement	Code	Comment
8.3.3 Form Management must support the creation of new online application, compliance schedules, complaint or program forms using a form designer. The tools must allow WVDEP staff to configure application processing deadlines, set assignment routing options by staff workgroups or geographically, set default workflow templates, toggle data entry and settings.	4	
8.3.4 Document Templates must be available within the system to allow authorized WVDEP staff to define documents, select data tag placeholders, support logic to show or hide data or fields, repeat data, and document templates. The system must support Microsoft Word formatting and the ability to preview and test document templates prior to activating them in the system.	4	
8.3.5 Notification Templates must be capable of being customized to have data tag placeholders for inclusion of the system data during notification generation.	4	
8.3.6 System Actions-WVDEP staff must have the ability to set specific custom rules for user notification generation, such as triggering events, filtering rules, templates, or recipient types.	4	
8.3.7 User Notifications- the administrative section must allow WVDEP staff to search all notifications sent by the system by recipient name, subject, and date range.	4	
8.3.8 Limit Set Templates- the system must allow WVDEP staff to define sets of standard limit sets that may be copied to permits during permit definition. NOTE: these limits are a requirement of NPDES Discharge Monitoring Reporting.	4	
8.3.9 Permit Categories and Types- the system will allow authorized WVDEP staff to control permit behavior, including issuance validation rules, default effective/expire dates, status change behavior, default compliance schedules to include on new permits, permit numbering schemes and other features.	4	
8.3.10 System Announcements- the system administration will allow WVDEP users to create system-level announcements that appear to users when they log in to the system.	4	
8.4 Notification and Event Controls- the system must allow users to perform the following:		
8.4.1 Administrator-defined notification templates must be available to send emails or notices on different trigger conditions, filter criteria, and recipients.	4	
8.4.2 Users must be able to view and acknowledge notifications.	4	
8.4.3 Notices must be capable of being emailed to system users depending on the user preferences.	4	
8.4. All notifications must be logged and displayed in the system, no matter if they are sent by email or via the application.	4	
8.4.5 All notifications are fully searchable by authorized users.	4	

RFP Requirement	Code	Comment
8.4.6 External System users must be able to receive notifications or reminders of upcoming reports based on the schedule specified in a permit or compliance action.	4	
8.4.7 The system must include a way to track interactions or events, such as phone calls, meetings, correspondences for the entity/components.	4	
8.4.8 The system must allow WVDEP staff to enter and track various events, such as phone calls, receipt of information or a request for additional information.	4	
8.4.9 The system must recall certain events to trigger notifications to applicants.	4	
8.5 Workflow Management Controls- the system must allow authorized WVDEP users the ability to create and assign workflows to any component within the system. WVDEP staff must be able to edit, customize and manage new or existing workflow templates. WVDEP must be able to associate workflow templates to the various permit types, inspection reports, informal/formal enforcement actions and any other functional program areas. The resulting tasks in workflows can have associated due date dependencies on other tasks. The system must allow other intermediate tasks to be manually created or adjusted as the situation demands. Here are the requires features of the workflow management:	4	
8.5.1 Provide definition of a named set and sequence of workflow tasks.	4	
8.5.2 Manage multiple workflow templates for activities such as submissions, permits, evaluations, or compliance actions.	4	
8.5.3 WVDEP supervisors or users may assign workflow tasks and due dates to work groups and users, and the system will send notifications to users upon task assignments.	4	
8.5.4 Assigned tasks appear in the individual staff member's task dashboard.	4	
8.5.5 Assigned users are granted permissions to the task and they may update the status and update the comments when working on tasks.	4	
8.5.6 Users update task statuses to complete when task has been finished, and the task status updates generate notifications to the WVDEP supervisor as specified. (This will help supervisors monitor the work of staff members in workgroups on their assignments).	4	
8.5.7 The system must provide WVDEP staff users the list of all tasks assigned to individuals or to workgroups, displaying due dates and late tasks, including the following:	4	
8.5.7.1 Providing task lists assigned to the user or workgroup. The task list may be searched.	4	
8.5.7.2 Dashboards with custom views.		

RFP Requirement	Code	Comment
8.6 Document Controls- The system must support standard document types associated with application or permits and must provide the items below:	4	
8.6.1 Must support the upload of common document types to the system.	4	
8.6.2 Documents must be managed in relation to associated applications, permits, inspections or enforcement actions.	4	
8.6.3 Provides confidentiality, if required, to limit access of documents to designated individuals or workgroups (in the case of trade secrets.) As a result, the system will mark documents as confidential and manage user to the documents.	4	
8.6.4 Can be configured to use WVDEP's antivirus software.	4	
8.6.5 Can be configured to limit file type and maximum size if necessary.	4	
8.6.6 Must allow document upload/download to the relevant entity in order to create audit trails.	4	
8.6.7 Must be able to create and manage document templates that can be associated to any document type.	4	
8.6.8 Provide online, in-browser editing of generated or uploaded Microsoft Word documents.	4	
8.6.9 Manage document status (such as daft or final) and publishing status. Document publishing automatically generates and stores a downloadable PDF and this will trigger the integration with WVDEP's document repository (AX) integration.	4	Will configure to interface with Application Xtender
8.6.10 The system must support bulk upload of data from Excel (.XLS, XLSX, or comma-separated values) providing upload validation and customized parsing and import of valid data. For instance, environmental sampling data must be able to be uploaded in the context of a single site or related to multiple sites.	4	
8.6.11 WVDEP requires the system have document templates to generate permits and other documents. The system must generate Microsoft Word documents and templates that can be edited within the application or outside of it, in Microsoft Office programs. The system must support the Microsoft Word formatting.	4	
8.6.12 Must allow regulated entity users must be able to view a list and access all documents published for the site or facility account. These documents must be capable of being downloaded.	4	
9 Seamless data integration with WVDEP systems- WVDEP requires that the system share, import and export data or reports with existing state and WVDEP systems listed below:		
9.1 Microsoft Active Directory	4	
9.1.1 WVDEP users of the system have Microsoft Active Directory network IDs. It is a requirement that the system use Active	4	

RFP Requirement	Code	Comment
Directory credentials to allow authorized users to access the system. Additional levels and permissions must be capable or being managed within the ePermitting System by WVDEP administrators.		
9.2 Responsible Party		
9.2.1 ERIS will be WVDEP's main system to create and updates Responsible Parties (RP) and the new system will need to interface with ERIS. The system will need to connect to WVDEP's Web Service to retrieve RP information based on different criteria. The system must be capable of the terms listed below:	3	Will interface with ERIS
9.2.1.1 The vendor will integrate with WVDEP's Responsible Party database to import contact, address, and other information.	3	Will interface with ERIS
9.2.1.2 New site or Responsible Party records must be automatically created for the system submissions that define a new location.	4	
9.2.1.3 If a submission is for an existing site, the submissions is linked to the existing site location and Responsible Party.	4	
9.2.1.4 Site and site contact information must be available for an external user to maintain.	4	
9.2.1.5 Site and site features must be maintainable in a site map. The site map must provide the ability for WVDEP staff to name and designate location information for each feature as a point, line, or polygon. Site location information is locked from external editing if it has been designated in a permit. Note: only authorized internal staff may edit location.	4	
9.3 SAP Business Intelligence Data Warehouse		
9.3.1 WVDEP is pulling all data across all systems into and SAP Business Intelligence data warehouse to support comprehensive reporting. Key data feeds from the programs housed in the ePermitting System must be identified and established. Likewise, the ePermitting System must be able to pull data from the WVDEP data warehouse. Points of integration will be identified during the project development.	3	Will interface with SAP with scope to be determined during the development.
9.4 ApplicationXtender		
9.4.1 The system must automatically file all required documents received through the system into ApplicationXtender (e.g. install/upgrade paperwork, registrations, approved inspections, test documents, closure reports, notices of violation, inspection of violations, registration forms, etc.) The System must automatically file approved registrations into Application/Xtender.	3	Will interface with Application Xtender
9.4.2 It is a requirement that the system interface with WVDEP document management system, Application/Xtender (AX). Either Portable Document Format (PDF) versions of the final documents stored in AX or links to the location of the documents in the	3	Will interface with Application Xtender

RFP Requirement	Code	Comment
system, must be managed and maintained with full audit compliance tracking and version control.		
10 Security, Privacy, and Federal Compliance- this section provides requirements for administrative access and creation of both internal and external user accounts. Each user will have an account. Different levels of access/security will be granted to users based upon their role. The System must allow the following:		
10.1 Generate user accounts for new external users automatically.	4	
10.2 Support authorizing WVDEP staff to have different levels to the system based upon roles. Each staff member must be provided with a user account.	4	
10.3 Facilitate registration information including; facility ID, name, address, county, coordinated, responsible party and associated contracts to be accessible by WVDEP personnel with only specified personnel capable of making changes to the registration data.	4	Will interface with ERIS
10.4 Provide user accounts with a login and password for both external customers and internal users. A registration form must be provided for new external customers. A request form must be provided for new internal users.	4	
10.5 Offer security clearance and validation to ensure that the applicant is verified through WVDEP Responsible Party and CROMERR processes. (WVDEP can authenticate users outside the system and then use a token to pass them.)	3	Will interface with WVDEP process
10.6 Allow external customers limited access to predefined areas.	4	
10.7 Allow external customers to reset passwords themselves.	4	
10.8 Allow authorized personnel to reset passwords for users or remove users from the system.	4	
10.9 Limit access to screens, reports, applications, menus, fields, etc., to the appropriate internal staff as determined and assigned by WVDEP Management.	4	
10.10 Allow audit tail/time stamps for data input, modifications, reviews, and changes.	4	
10.11 Encrypt all transactions that involve financial or personal identifiable information- both in transit and at rest.	4	
10.12 The vendor must have a process for tracking, testing and implementing solutions to system bugs and deficiencies.	4	
10.13 The vendor must notify and consult with WVDEP when security risks or issues are identified.	4	
10.14 The vendor must have the capability and tools for detecting, reporting, and responding to security incidents so that risks are mitigated before substantial damage is done.	4	
10.15 During system implementation, the vendor must participate in web application firewall configuration, testing and reporting efforts in weekly meetings with WVDEP information technology staff.	4	

RFP Requirement	Code	Comment
10.16 The vendor must release security patched or upgrade mitigation services in response to security vulnerabilities identified in the WV Office of Technology monthly vulnerability scans within ninety (90) days of notice.	4	
10.17 The vendor must specify requirements for the installation of all software provided for installation prior to award. The vendor must supply the software for installation and installation assistance to DEP IT Staff. The vendor must provide updates as they are available or required to DEP IT Staff for installation with assistance to DEP IT Staff. The vendor must support deployment to a cloud service of DEP's choice and on site a DEP's Charleston office.	4	See Proposal section 11.4 for details
10.20 ADA Compliance for Online Form Submission- Public-Facing forms must comply with the Americans with Disabilities Act (ADA) Standards for Accessible Design and Section 508 of the Rehabilitation Act Amendments. These standards state that all electronic and information technology must be accessible to people with disabilities.	4	
10.21 Audit Compliance- WVDEP requires the system to keep the audit trail of changes in the system. All updates to relevant data fields must be captured and displayed on audit history screens. The audit changes show which fields have been updated, showing the new and previous values, along with the date and user who performed the update.	4	
10.22 NIST Data & System Security Requirements- Please refer to Exhibit C for a list of The National Institute of Standards and Technology (NIST) Best Practices for maintaining and building in security throughout the development lifecycle. As part of the quote, WVDEP requires the vendor to state how it complies with the standards to manage the project, included within the price.	4	
10.23 Performance Requirements- The system must accommodate a potential for thousands of external users. WVDEP anticipates that the usage will be intermittent with no more than one hundred (100) users at any given time. It must meet the following performance requirements:	4	
10.23.1 If the connection between the user and the system is broken prior to a registration or application being submitted, the system shall enable the user to recover any incomplete registration or application and continue working on it.	4	If connection is resume within parameters supported by EN Suite
10.23.2 At a minimum, ninety-five percent (95%) of applicants must be able to successfully submit registrations, applications, and/or reports without errors on their first attempt.	4	
10.23.3 Multiple users must be able to access the database at the same time to upload or download data from the database without significantly slowing down the system.	4	

RFP Requirement	Code	Comment
10.23.4 Multiple users shall be able to view but not update data at the same time in order to prevent data corruption.	4	
10.23.5 The system shall allow the ability to upload, download and save images and documents to allow storage and retrieval of relevant inspection documents in the system.	4	
10.23.6 The system shall display a confirmation message to users within an average of five (5) seconds and a maximum of ten (10) seconds after the user submits information to the system.	4	
10.23.7 Inspections, associated documents, and reports must upload and or download to and from the system within and average of five (5) seconds	4	
11. Vendor must provide an existing library of forms that have been developed for other state Environmental Protection Agencies	4	

7.2 Acknowledgement of All RFP Amendments

enfoTech acknowledges receipt of all Addendum issued for this Bid Solicitation.

ADDENDUM ACKNOWLEDGEMENT FORM
SOLICITATION NO.: DEP2000000041

Instructions: Please acknowledge receipt of all addenda issued with this solicitation by completing this addendum acknowledgment form. Check the box next to each addendum received and sign below. Failure to acknowledge addenda may result in bid disqualification.

Acknowledgment: I hereby acknowledge receipt of the following addenda and have made the necessary revisions to my proposal, plans and/or specification, etc.

Addendum Numbers Received:
(Check the box next to each addendum received)

[✓] Addendum No. 1	[ ] Addendum No. 6
[✓] Addendum No. 2	[ ] Addendum No. 7
[ ] Addendum No. 3	[ ] Addendum No. 8
[ ] Addendum No. 4	[ ] Addendum No. 9
[ ] Addendum No. 5	[ ] Addendum No. 10

I understand that failure to confirm the receipt of addenda may be cause for rejection of this bid. I further understand that any verbal representation made or assumed to be made during any oral discussion held between Vendor's representatives and any state personnel is not binding. Only the information issued in writing and added to the specifications by an official addendum is binding.

enfoTech & Consulting Inc.
Company

Authorized Signature

7/22/2020
Date

NOTE: This addendum acknowledgement should be submitted with the bid to expedite document processing.
Revised 6/8/2012

7.3 West Virginia State Certified Small, Women-Own Business

ALLAN L. MCVEY
CABINET SECRETARY

STATE OF WEST VIRGINIA
DEPARTMENT OF ADMINISTRATION
PURCHASING DIVISION
2019 WASHINGTON STREET, EAST
CHARLESTON, WEST VIRGINIA 25305-0130

W. MICHAEL SHEETS
DIRECTOR

June 23, 2020

enfoTech & Consulting
1368 How LN
N Brunswick, NJ 08902-1792

Mr. Jeng:

This is to notify you that your Small, Women-, and Minority-Owned Businesses (SWAM) Certification Application has been approved on the basis of your representations that the vendor named above meets the definition of a Small, Women-, and Minority-Owned Businesses as set forth in the ***West Virginia Code of State Rules*** 148-22-1 et seq. This certification becomes effective:

6/23/2020

And shall automatically expire without notice two years after the effective date unless revoked by the Purchasing Director or upon expiration pursuant to the ***West Virginia Code of State Rules*** 148-22-8. The type(s) of Small, Women-, and Minority-Owned Businesses (SWAM) Certification approved for your entity:

Minority Owned Business

To maintain certification without lapse, a certified business shall apply to renew its certification at least 60 days prior to the end of the two-year certification period. Complete renewal instructions, recertification forms, and a list of all SWAM Certified entities are available online at www.state.wv.us/admin/purchase/VendorReg.html.

If you have questions, please contact the West Virginia Purchasing Division at 304-558-2306.

Sincerely,

LuAnne Cottrill

Lu Anne Cottrill
Assisting Registration Coordinator

PHONE: (304) 558-2306
FAX: (304) 558-4115

WVPurchasing.gov

E.E.O./AFFIRMATIVE ACTION EMPLOYER

7.4 System Hosting Requirements (Draft)

7.4.1 Basic Scenario

- Minimum Hardware requirements
  - One Web Server
  - One Database Server
  - (Optional) One Application Server

- Minimum Software requirements
  - Microsoft Windows Server 2016 Standard Edition
  - Microsoft SQL Server 2017 Standard Edition
  - ASP.NET Core 2.2 or higher

- Network Requirements
  - Internet connection (20 mbps or higher) with SSL/TLS certificate (TLS v1.2 or up)

7.4.2 Load Balancing Scenario (Recommended for good performance)

The web servers can be configured and optimized with the hardware/software-based Load Balancer which provides high availability and scalability and speeds the performance of Internet sites through its ability to load-balance Internet traffic.

The web farm eliminates single points of failure when accessing the System from Internet sites by routing incoming requests to servers that can best respond, balancing the traffic across Web server. By allocating user requests across multiple servers, the Load Balancer relieves network traffic overload, reduces Web server burden, and improves the browsing experience for online users.

Recommendations for Load Balancing environment are listed below:

- Hardware requirements
  - Two Web Servers (with Network Load Balancing)
  - Two Database Servers (with Microsoft Cluster Service-MSCS - Active & Passive)
  - (Optional) Two Application Servers (with Application Load Balancing- Active & Passive)
- Software requirements
  - Microsoft Windows Server 2019 Datacenter Edition
  - Microsoft SQL Server 2017, Enterprise Edition
  - ASP.NET Core 2.2 or higher
- Network requirements
  - Internet connection (20 mbps or higher) with SSL/TLS certificate (TLS v1.2 or up)

7.4.3 Server HW/SW Requirements

Server hardware and software requirements are presented in subsequent sections. Both minimum and recommended options are provided for each server type.

7.4.3.1 Web Server Requirements

Web Server	Minimum / Recommended Requirements
Operating System	• Minimum: Microsoft Windows Server 2016, Standard Edition w/ Internet Information Server (IIS) 10.0 • Recommended: Microsoft Windows Server 2019 Datacenter Edition w/ Internet Information Server (IIS) 10.0
Processor	• Min: Dual Processors (2.4 GHz and up) • Recommend: Quad Processors (3+ GHz and up)
Memory	• Min: 24 GB • Recommend: 32+ GB *Note: Computers with more than 32 GB of RAM will require more disk space for paging, hibernation, and dump files.
Disk Space	• Min: 100 GB • Recommend: 200 GB or up
Software	ASP.NET Core 2.2 or higher
Security	Server Certificate / SSL/TLS (TLS v1.2 or up)

7.4.3.2 Application Server Requirements

Web Server	Minimum / Recommended Requirements
Operating System	• Minimum: Microsoft Windows Server 2016 Standard Edition w/ Internet Information Server (IIS) 10.0 • Recommended: Microsoft Windows Server 2019 Datacenter Edition w/ Internet Information Server (IIS) 10.0
Processor	• Min: Dual Processors (2.4 GHz and up) • Recommend: Quad Processors (3+ GHz and up)
Memory	• Min: 24 GB • Recommend: 32+ GB *Note: Computers with more than 32 GB of RAM will require more disk space for paging, hibernation, and dump files.
Disk Space	• Min: 100 GB • Recommend: 200 GB or up
Software	ASP.NET Core 2.2 or higher

7.4.3.3 Database Server Requirements

Database Server	Minimum / Recommended Requirements
Operating System	• Minimum: Microsoft Windows Server 2016, Standard Edition • Recommended: Microsoft Windows Server 2019, Datacenter Edition

Database Server	Minimum / Recommended Requirements
Processor	• Min: Dual Processors (2.4 GHz and up) • Recommend: Quad Processors (3+ GHz and up)
Memory	• Min: 48 GB • Recommend: 64+ GB *Note: Computers with more than 64 GB of RAM will require more disk space for paging, hibernation, and dump files.
Disk Space	• Min: 300 GB • Recommend: 600 GB or up
Database Software	• Min: Microsoft SQL Server 2017, Standard Edition • Recommend: Microsoft SQL Server 2017, Enterprise Edition or higher

7.4.4 Clients

7.4.4.1 Client Desktop and Mobile Devices

The only hardware requirement for a client is a desktop, a laptop, or a mobile device with internet connection. The systems will support Windows, iOS, Android operating systems.

7.4.4.2 Client Web Browser Support

One of following web browser software will be

- Web Brower:
  - Google Chrome
  - Microsoft Edge
  - Firefox
  - Safari
- Internet connection

7.4.5 System Security and Privacy

7.4.5.1 Secure Internet Communication/ SSL Server Certificate

SSL/TLS (to be provided by City or Organization) is required for EN Suite to establish a secure communication (confidentiality and integrity) between the Internet user and the EN Suite web server. When SSL/TLS is applied, the user uses HTTPS protocol and the server listens on port 443.

7.4.5.2 Anti-virus Protection

The EN Suite anti-virus protection mechanism will follow and use the existing Authority's security regulation and requirements (to be provided/maintained by the hosting organization).

7.4.6 Email Access

The appropriate email incoming and outgoing protocol ports need to be opened on the firewall for application email access from DMZ (Zone-1) - for EN Suite (EN Suite APP Servers).

For example:

Incoming default ports:

HTTP – port 80

HTTPS – port 443

Outgoing default ports:

SMTP – port 25

Secure SMTP (SSMTP) – port 465 or 587

7.5 Bid Form: Disclosure of Interested Parties to Contracts

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West Virginia Ethics Commission

Disclosure of Interested Parties to Contracts

(Required by *W. Va. Code* § 6D-1-2)

Name of Contracting Business Entity: enfotech & Consulting Inc. **Address:** 1368 How Lane, North Brunswick New Jersey, NJ 08902.

Name of Authorized Agent: Tony e Jeng **Address:** 1368 How Lane, North Brunswick, NJ 08902

Contract Number: DEP20000000041 **Contract Description:** Electronic EPermitting System project

Governmental agency awarding contract: West Virginia, Department of Environmental protection

☐ **Check here if this is a Supplemental Disclosure**

List the Names of Interested Parties to the contract which are known or reasonably anticipated by the contracting business entity for each category below *(attach additional pages if necessary)*:

1. **Subcontractors or other entities performing work or service under the Contract**
   ☑ Check here if none, otherwise list entity/individual names below.

2. **Any person or entity who owns 25% or more of contracting entity (not applicable to publicly traded entities)**
   ☑ Check here if none, otherwise list entity/individual names below.

3. **Any person or entity that facilitated, or negotiated the terms of, the applicable contract (excluding legal services related to the negotiation or drafting of the applicable contract)**
   ☑ Check here if none, otherwise list entity/individual names below.

Signature: Tony e Jeng Date Signed: 7/23/2020

Notary Verification

State of NEW JERSEY, County of MIDDLESEX:

I, TONY JENG, the authorized agent of the contracting business entity listed above, being duly sworn, acknowledge that the Disclosure herein is being made under oath and under the penalty of perjury.

Taken, sworn to and subscribed before me this 23 day of July

Helen Pan
Notary Public's Signature

HELEN PAN
Notary Public, State of New Jersey
Commission # 50074846
My Commission Expires
January 17, 2023

To be completed by State Agency:
Date Received by State Agency: _____
Date submitted to Ethics Commission: _____
Governmental agency submitting Disclosure: _____

Revised June 8, 2018

7.6 Bid Form: Purchasing Affidavit

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STATE OF WEST VIRGINIA
Purchasing Division

PURCHASING AFFIDAVIT

CONSTRUCTION CONTRACTS: Under W. Va. Code § 5-22-1(i), the contracting public entity shall not award a construction contract to any bidder that is known to be in default on any monetary obligation owed to the state or a political subdivision of the state, including, but not limited to, obligations related to payroll taxes, property taxes, sales and use taxes, fire service fees, or other fines or fees.

ALL CONTRACTS: Under W. Va. Code §5A-3-10a, no contract or renewal of any contract may be awarded by the state or any of its political subdivisions to any vendor or prospective vendor when the vendor or prospective vendor or a related party to the vendor or prospective vendor is a debtor and: (1) the debt owed is an amount greater than one thousand dollars in the aggregate; or (2) the debtor is in employer default.

EXCEPTION: The prohibition listed above does not apply where a vendor has contested any tax administered pursuant to chapter eleven of the W. Va. Code, workers' compensation premium, permit fee or environmental fee or assessment and the matter has not become final or where the vendor has entered into a payment plan or agreement and the vendor is not in default of any of the provisions of such plan or agreement.

DEFINITIONS:

"Debt" means any assessment, premium, penalty, fine, tax or other amount of money owed to the state or any of its political subdivisions because of a judgment, fine, permit violation, license assessment, defaulted workers' compensation premium, penalty or other assessment presently delinquent or due and required to be paid to the state or any of its political subdivisions, including any interest or additional penalties accrued thereon.

"Employer default" means having an outstanding balance or liability to the old fund or to the uninsured employers' fund or being in policy default, as defined in W. Va. Code § 23-2c-2, failure to maintain mandatory workers' compensation coverage, or failure to fully meet its obligations as a workers' compensation self-insured employer. An employer is not in employer default if it has entered into a repayment agreement with the Insurance Commissioner and remains in compliance with the obligations under the repayment agreement.

"Related party" means a party, whether an individual, corporation, partnership, association, limited liability company or any other form or business association or other entity whatsoever, related to any vendor by blood, marriage, ownership or contract through which the party has a relationship of ownership or other interest with the vendor so that the party will actually or by effect receive or control a portion of the benefit, profit or other consideration from performance of a vendor contract with the party receiving an amount that meets or exceed five percent of the total contract amount.

AFFIRMATION: By signing this form, the vendor's authorized signer affirms and acknowledges under penalty of law for false swearing (*W. Va. Code* §61-5-3) that: (1) for construction contracts, the vendor is not in default on any monetary obligation owed to the state or a political subdivision of the state, and (2) for all other contracts, that neither vendor nor any related party owe a debt as defined above and that neither vendor nor any related party are in employer default as defined above, unless the debt or employer default is permitted under the exception above.

WITNESS THE FOLLOWING SIGNATURE:

Vendor's Name: enfoTech & Consulting Inc.

Authorized Signature: _____ Date: 7/23/2020

State of NEW JERSEY

County of MIDDLESEX, to-wit:

Taken, subscribed, and sworn to before me this 23 day of July, 2020

My Commission expires January 17, 2023

HELEN PAN
Commission # 50074846
Notary Public, State of New Jersey
My Commission Expires
January 17, 2023

AFFIX SEAL HERE

NOTARY PUBLIC _____

Purchasing Affidavit (Revised 01/19/2018)

7.7 enfoTech Proposal Terms

enfoTech proposes the EN Suite and associated modules, commercial-off-the-shelf (COTS) products to meet the EPermit project needs. Therefore, enfoTech proposes some industrial standard terms for DEP to consider:

Data Ownership: DEP shall have the full ownership and right for all the data stored in the EN Suite system.

Product and Intellectual Property Ownership:

- enfoTech will continue to own the entire Title, design, source codes, intellectual properties, documentation, database schema, copyrights of the EN Suite system, associated modules and its derived products.
- enfoTech will grant West Virginia DEP a perpetual, irrevocable, nonexclusive, and nontransferable license under applicable copyrights and/or trade secrets to use enfoTech Software provided under the Contract issued by West Virginia state.

7.8 EN Suite Software License Agreement

This "License Agreement" governs the grant of a license by enfoTech and Consulting, Inc. (enfoTech), a New Jersey Corporation, ("Licensor"), and the agreement of the _Name of Entity_, ("Licensee") to the terms of use of the "Licensed Programs" identified below, including all documentation, products or services, and other related items associated with implementation. Licensor represents and warrants that the Licensed Programs and any other software provided by Licensor under this License Agreement are proprietary products of enfoTech that qualify as "trade secret information" and "nonpublic data" pursuant to US Copyright law and internal treaties. Licensor further represents and warrants that it owns or otherwise has the legal right to have, disclose and license the Licensed Programs to Licensee. enfoTech retains ownership of any modifications made to the Licensed Programs. enfoTech represents and warrants that it is not aware of any infringement or claim of infringement of any patent, copyright or trademark or of any misappropriation or claim of misappropriation of any trade secret or other proprietary right of any third party, relating to the Licensed Programs or any other software provided to Licensee under this License Agreement.

Subject to the payment of applicable license fees and compliance with the other terms, conditions and restrictions in this License Agreement, Licensee is granted a non-exclusive, non-transferable perpetual user license to use the Licensed Program(s).

LICENSED PROGRAM:

EN Suite modules _____

1. Term

This Agreement is effective when the Licensed Program is installed on the Licensee's server and shall remain in force until terminated. This Agreement may be discontinued by the Licensee at any time with thirty (30) days written notice. If the Licensee fails to comply with any of the terms and conditions of this Agreement the licensor shall notify the licensee of any non-compliance and the licensor and licensee shall agree upon a schedule to correct the non-compliance; if the licensee fails to correct the non-compliance as scheduled, the licensor may terminate this agreement with

thirty (30) days written notice. Licensee agrees upon such termination to destroy the Licensed Programs together with all copies, modifications and merged portions in any form.

2. Payment

Payment terms for the license are included in the Exhibit _____ to contract.

3. Copying of Licensed Program(s)

Any Licensed Programs which are provided by Licensor in machine readable form may be copied in whole or in part in machine readable form in sufficient number for use by the Licensee with the designated computer, to understand the contents of such machine readable material, for back-up purposes, or for archive purposes, provided, however, that no more than two (2) copies will be in existence under any license at any one time without prior written consent from Licensor. The original and any copies of the Licensed Programs, in whole or in part, which are made by the Licensee shall be the property of Licensor governed by this Agreement. Licensor does not own the media on which the Licensed Programs are recorded.

Licensee shall not create by de-compilation or otherwise, the source programs or any part thereof from the object program or from other information made available under this Agreement.

Licensee must reproduce and include the copyright notice of Licensor and any other person which has licensed Licensor to distribute software on any copy, in whole or in part, of the Licensed Programs.

4. Documentation

EN Suite documentation that includes User Guides, System Administrator Guides will be provided to the licensee. Electronic copies of all documentation will also be provided to the licensee. The licensee will be permitted to print copies, as needed, under the terms and conditions of enfoTech's copyright provisions, for internal use.

5. Confidentiality

Licensee shall not sell, transfer, publish, disclose, display or otherwise make available any Licensed programs or copies thereof to others. Licensee acknowledges that the Licensed Programs are proprietary to and constitute valuable trade secrets of Licensor and of any parties under whose license Licensor provides the Licensed Programs whether or not the Licensed Programs have been validly copyrighted or patented. Licensee agrees to secure and protect each program software product and copies thereof in a manner consistent with the maintenance of Licensor's rights therein and to take appropriate action by instruction or agreement with its employees to satisfy its obligations hereunder. Licensee shall notify Licensor immediately of any unauthorized possession, use or knowledge of the Licensed Programs or any portion thereof.

Violation of the foregoing provisions shall be the basis for immediate termination of this license. In addition, Licensor may seek injunctive relief in an appropriate judicial proceeding if Licensee violates the foregoing provisions, it being acknowledged that any such violation may cause irreparable harm to Licensor for which monetary damages might not provide an adequate remedy. Termination of the license and the right to seek injunctive relief shall be in addition to and not in lieu of any other legal or equitable remedies available to Licensor.

6. Limited Warranty

Licensor does not warrant that the operation of the Licensed Programs will be uninterrupted or error free. Licensor's obligations respecting the Licensed Programs are limited to the Service and Support provisions set forth in the Contract.

7. Limitations of Remedies

In no event will Licensor be liable for any damages, including any lost profits, or other incidental or consequential damages arising out of the use or performance of such Licensed Programs even if Licensor or an authorized Licensor dealer has been advised of the possibility of such damages.

Licensee agrees that Licensor's liability arising out of contract, negligence, strict liability in tort or warranty shall not exceed any amounts paid by Licensee for the particular Licensed Programs identified above.

8. Assignment; Binding Effect

Licensee shall not assign, license, sublicense, transfer, pledge, hypothecate or otherwise transfer this license or permit any other person to use the Licensed Programs without Licensor's prior written consent. Licensor may assign this Agreement without Licensee's consent. This Agreement shall be binding upon and inure to the benefit of the parties and their successors and permitted assigns.

9. General

(a) The Licensee understands the Agreement and agrees to be bound by its terms and further agrees that it is the complete and exclusive statement of the Agreement, which supersedes and merges all prior proposals, understandings and all other agreements, oral and written, between the Licensee and Licensor relating to this Agreement.

(b) This Agreement and performance hereunder shall be governed by and construed in accordance with the laws of the State of New Jersey, without regard to any provisions thereof governing conflicts of laws.

(c) The waiver or failure of either party to exercise in any respect any right provided for herein shall not be deemed a waiver of any further right hereunder.

(d) No action, regardless of form, arising out of this Agreement may be brought by Licensee more than one (1) year after the cause of action has arisen.

(e) Each provision of this Agreement shall be interpreted in such a manner as to be effective and valid under applicable law. If any provision of this Agreement is declared void, such provision shall be deemed severed from this Agreement, which shall otherwise remain in full force and effect.

7.9 EPermit Software Maintenance & Support Agreement

After the EPermit goes live, enfoTech will provide system maintenance and technical support services via our annual support and maintenance program with fee.

(A)Technical Support

(1) Issue Tracking Website (Project Team website site):

enfoTech will expand the project team web site to manage issues reported after the Go-live. The project team web site will provide the following features:

- The Website will assign a unique Issue ID for each issue
- DEP shall report issues and service requests to the PTWS, and could monitor their issues till closure
  - Issue reporter could record issue description, input, output, and error messages, screen shots
  - Issue reporter will receive an email alert when the issue status is changed
  - Issue reporter will an email alert when the issue is resolved and ready for retest
  - Issue Reporter could change/monitor the issue until it is closed
- enfoTech Investigation of Reported Issues
  - enfoTech staff will automatically receive email alert when a new issue is reported at the website
  - If the issue is a bug, create a Work Item at the enfoTech MTFS server and assign resources to fix the bug. The MTFS work item will record the corresponding Issue ID from the Project Team Website to maintain one-to-one traceability. Each bug will be monitored by enfoTech PM until it is satisfactorily resolved and closed by DEP.
  - If the issue is data related, enfoTech will develop a database script to fix the data
  - If the issue is training related, provide proper operation instructions to the user
  - If the issue is an addition/change to the approved requirements, it will be handled through change request procedure
- Technical Procedures for Service Requests and Reported Issues – enfoTech will respond to DEP'S service requests and reported issues on the PTWS. Issues shall be worked on according to priority, which shall be set by both enfoTech and DEP during regular project team meetings:
  - Critical Priority: An issue classified as "critical" is a system exception error that prevents any user, public or agency, from accessing EPermit, and for which there are no known workarounds. Within 8 hours of being notified by DEP of a critical issue and receiving the details necessary to reproduce the issue, enfoTech shall send acknowledgement of the issue and indicate its agreement or disagreement as to the issue's critical status. Both parties will work together to reclassify the issue if enfoTech does not agree with the issue classification. If both parties agree that the issue is critical, enfoTech will provide and implement a solution/workaround satisfactory to DEP within 3 business days from the issue confirmation data, whichever is greater. If a temporary solution is provided, enfoTech will continue working on the issue until a permanent solution is implemented in the production system. If a resolution for a confirm critical issue cannot be delivered with the specified time period due to its complexity, enfoTech shall continue to work on the issue and keep DEP appraised of the progress.
  - High Priority: An issue classified as "high" priority is one that significantly effects user's ability to use EPermit and is not classified as "critical." Within 3 business days of being notified by DEP of a "high" priority issue and receiving the details necessary to reproduce the issue, enfoTech shall acknowledge the issue on PTWS. enfoTech will provide and implement a workaround satisfactory to DEP within 10 business days from the time that enfoTech first confirmed and can reproduce the issue.

- Medium Priority: An issue classified as "medium" priority is one that effects user's ability to use EPermit and is not classified as "critical" or "high" priority. Within 5 business days of being notified by DEP of a "medium" priority issue and receiving the details necessary to reproduce the issue, enfoTech shall acknowledge the issue on PTWS. enfoTech will provide and implement a workaround satisfactory to DEP within 30 business days from the time that enfoTech first confirmed and can reproduce the issue.
- Low Priority: An issue classified as "low" priority is one that is not classified as "critical", "high" or "medium" priority. Within 10 business days of being notified by DEP of a "low" priority issue and receiving the details necessary to reproduce the issue, the CONTACTOR shall acknowledge the issue on PTW. enfoTech will provide and implement a workaround satisfactory to DEP within 90 business days from the time that the enfoTech first confirmed and can reproduce the issue.

- enfoTech provides ad-hoc GoToMeeting with DEP (based on DEP PM request)
  - For technical support on emergency issue
  - For technical discussions on issues that cannot be properly conveyed at the PTWS
  - For other maintenance items deemed necessary by PMs from both parties
- If Manage interim system patches to DEP which will include:
  - What's new
  - Change the status of "Issues" to "Resolved & Return to DEP for Retest" at the Project Website
  - If the Issue successfully passes the Retest, the original Issue Reporter will change the status of Issue to "Resolved". If Retest fails, the status will be changed to "Return to enfoTech" for investigation for which enfoTech will repeat the Issue resolution process until the Issue is resolved.

(2) Support Hotline

enfoTech will maintain a support hotline staffed with technical persons to provide technical services to the DEP via phone, emails, ad-hoc GoToMeeting sessions, and documentations. In addition, the enfoTech PM will host routine conference calls with the DEP's PM, when necessary, to review progress on completing service requests.

(3) Remedial Training

The EPermit system will be a paradigm shift from the paper submission to online application with system integrations to exchange data with 4 external systems. If remedial training is needed for certain user groups or business processes, enfoTech will provide ad-hoc GoToMeeting sessions to help end users to ensure smooth transition to the new system.

(B) System Updates & Release

Services included in the Agreement shall include:

System updates: enfoTech will continue maintaining the Solution and all the customization and interface modules delivered to the DEP and provide new system updates to the DEP. In general, we will have two types of updates.

a. Regular updates: are on a 6-month release frequency. enfoTech maintains a master list of the enhancement items and prioritizes them based on the critical nature and popularity of the user requests. The regular updates will include all of the issues approved for the release.

All updates will be fully compatible with the external system interface modules developed for the DEP. enfoTech will take extra care at the time of design for the interface modules to ensure that the data exchanges are accomplished via a common data exchange file specification. As long as the data

exchange file specifications remain the same, the interface should continue to function even if *System* has been upgraded to a newer version.

Updates will include: (1) a what's new document, (2) installation instructions, (3) database change scripts, (4) automatic system installation files, and (5) revised documentation. All updates will be delivered to the DEP via a secured FTP site.

b. Emergency Patches: provided on an "as needed" basis; enfoTech may issue certain emergency patches to address critical issues reported by the client.

System updates will not include enhancements. Enhancements shall be handled through a Change request procedure with additional fee.