

# E-Enterprise Facility Integration Summary of Phase II Accomplishments

STATE MDM PILOT WITH RHODE ISLAND DEPARTMENT OF  
ENVIRONMENTAL MANAGEMENT AND PHASE III PLANNING

MAY 8, 2018

# Facility Team: Component of E-Enterprise

E-Enterprise Leadership  
Council (EELC)

Management Board  
(MB)

Interoperability and  
Operations Team

## E-Enterprise Teams



### Facility Team

SPeCS for SIPS: State Plan Electronic Collection  
System for State Plan Submissions



E-Manifest for Hazardous Waste

Smart Mobile Tools for Field Inspectors

Advanced Monitoring Strategy and Implementation

E-Enterprise Community Inventory Platform



E-Enterprise Respectful Use of Data: ECHO



Shared Services



E-Enterprise Portal Governance & Maintenance

Assistance Gateway

Shared CROMERR Services (SCS) Implementation

Virtual Exchange Service Implementation



Combined Air Emissions Reporting (CAER)

Safe Drinking Water Information System Prime  
(SDWIS) Modernization



Identity Management Implementation

The Interoperable Watersheds Networks

# E-Enterprise Facility Team

- ❑ Purpose: To bridge disparate sources of facility data and develop a more comprehensive approach to:
  - ❑ Allow regulated facilities to streamline data collection and reporting requirement
  - ❑ Provide a shared facility ID approach to facilitate cross-program coordination and access to public information.
- ❑ Focus: collecting state, local, tribal, industry and EPA input into an approach for how these groups may:
  - ❑ Share facility identifiers
  - ❑ Correct facility data as it is being reported
  - ❑ Facilitate many of the functions envisioned by E-Enterprise.

# Facility Team Timeline

## ☐ Phase I

### ☐ Discovery and Analysis

- ☐ Focused on a thorough analysis of the current state of facility data management

☐ 2015 – April 2016

## ☐ Phase II

### ☐ Develop draft facility services

- ☐ Define requirements (user stories, business rules, data model) for development and testing of services

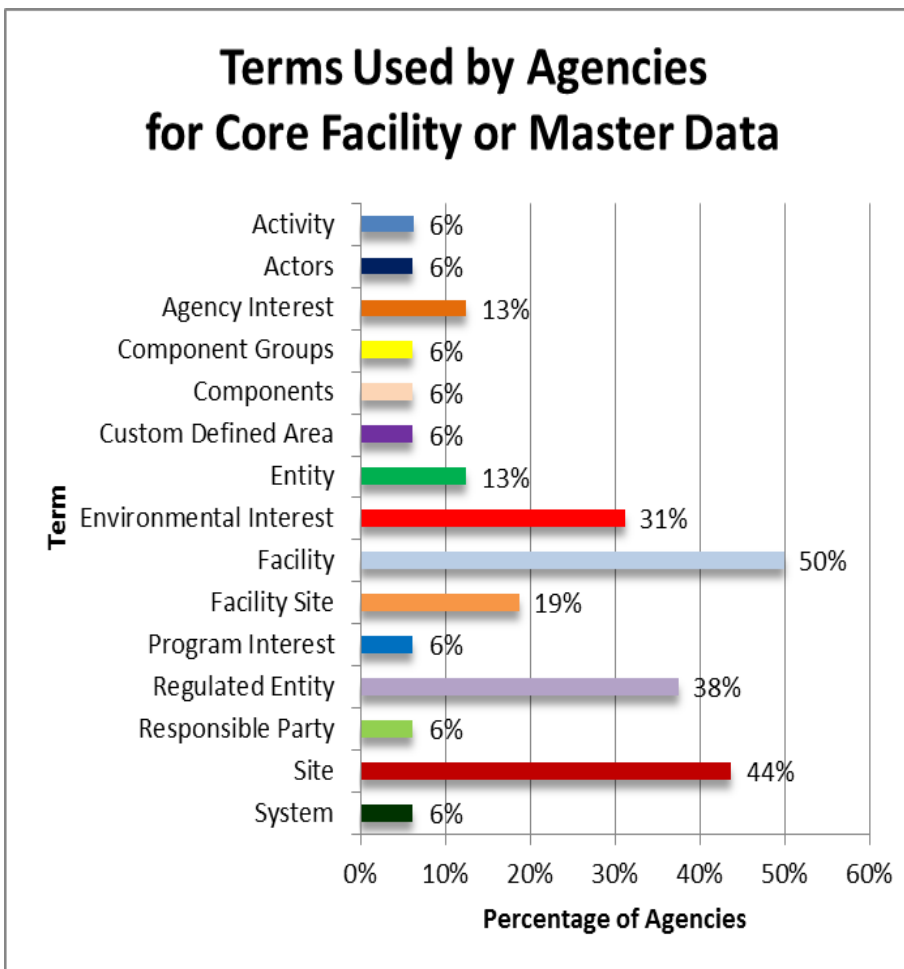
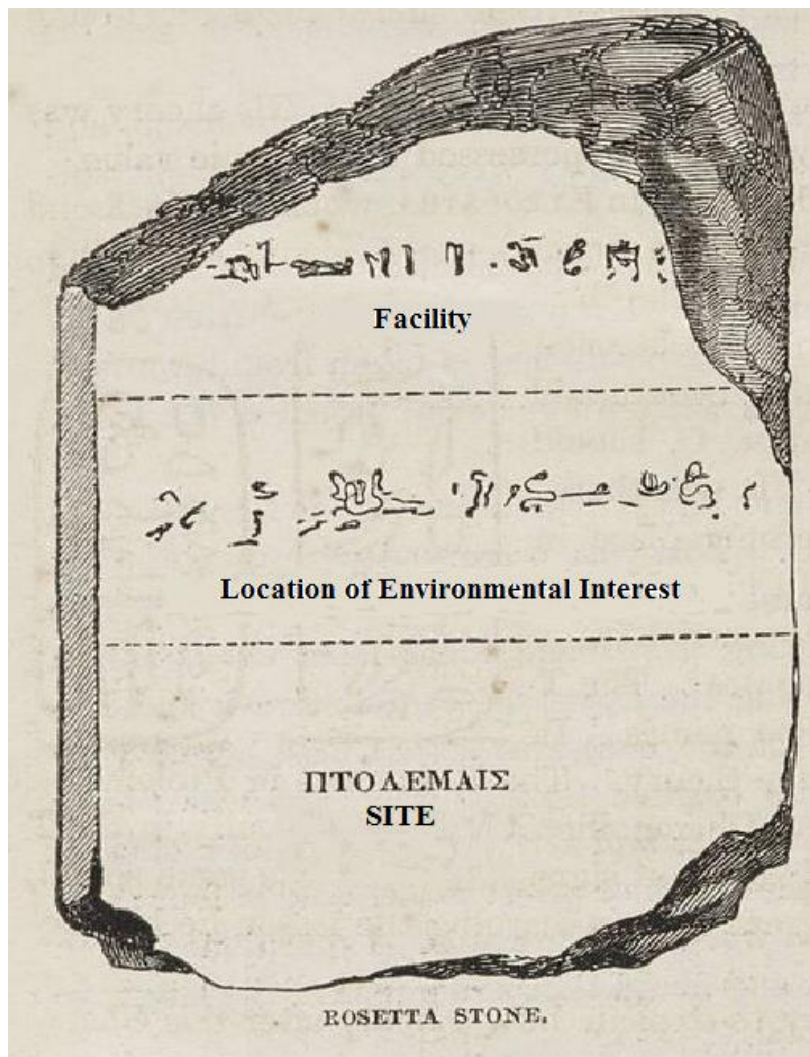
☐ July 2016 – May 2018

## ☐ Phase III

### ☐ Expand to other partners and CAER

☐ May 2018 – September 2019

# Developing a common understanding of facility information



From Phase 1 Discovery and Analysis

# Results of Phase II Workstreams

- ❑ Developed [User Stories](#) to document broad requirements and guide future pilot services development,
- ❑ Evaluated a shared data model to determine the best approach to share facility data,
- ❑ Examined the integration of work under the Facility Team with that of the Combined Air Emissions Reporting (CAER) E-Enterprise team,
- ❑ Documented [business rules](#) that will be critical to sharing facility data across the enterprise, and
- ❑ Successfully [piloted three web services](#) in a test environment and developed a Shared Facility Services [Implementation Guide](#).

*Work products in [SharePoint](#) and final documents will be on E-Enterprise [public website](#)*

# User Stories Work Stream

- ❑ Five high-level requirements for facility integration:
  - ❑ Streamline Data Operations
  - ❑ Increase Data Accuracy
  - ❑ Support Program Analyses
  - ❑ Support Data System Interoperability
  - ❑ Improve Public Understanding
- ❑ 43 user stories and linked each user story to potential users (e.g., public, state data steward, etc.)

# Data Model and API Work Stream

- ❑ Explored technical alternatives for conceptual facility data management as well as applied pilot work
- ❑ Scope of work completed through this work stream will be expanded in later phases as shared facility services are expanded and tested more fully
- ❑ Extended the Facility Registry Service (FRS) data model to meet evolving needs for more granular facility information.
  - ❑ This work resulted in the ability of FRS to manage sub-facility data.



# CAER Mapping

- ❑ Facility Team is collaborating with the E-Enterprise CAER team to complete a data gap analysis for FRS and four CAER programs
  - ❑ Program: National Emissions Inventory (NEI) – System: Emissions Inventory System (EIS)
  - ❑ Program: Toxics Release Inventory (TRI) – System: TRI Made Easy-Web (TRI-MEweb)
  - ❑ Program: Risk and Technology Review (RTR) – System: Compliance and Emissions Reporting Interface (CEDRI)
  - ❑ Program: Green House Gas Reporting Program (GHGRP) – System: Electronic Greenhouse Gas Reporting Tool (e-GGRT)
- ❑ Leveraging the work of the CAER sub-teams who are developing the detailed CAER reporting requirements and data mapping from the air programs' perspectives.

# Business Rules

❑ Using current systems' frameworks of facility data management, team reflected on the business rules necessary to integrate facility information across various existing systems.

❑ These business rules will continue to be refined in future phases and as facility integration shared services are developed:

❑ Facility Record Definition

❑ Data Ownership, Data Stewardship, and Collaborative Use

❑ Data Completeness

❑ Metadata

❑ Data Standardization

❑ Data Validation

❑ Creation of a New Facility Record

❑ Modification of a Facility Record/Hierarchy Decision Making

❑ Data Deletion/Removal History

❑ Upcoming Topics That Need to Be Addressed

# Facility Team Phase II - State MDM Pilot

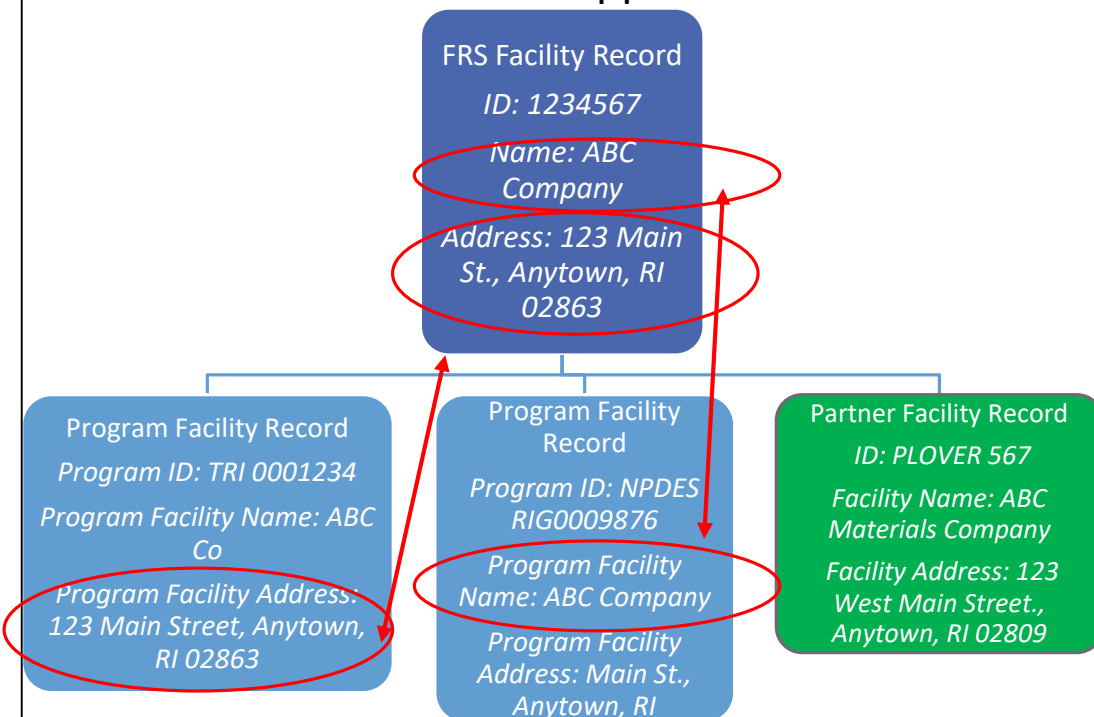
- ❑ EPA partnered with Rhode Island Department of Environmental Management (RIDEM)
- ❑ Pilot Goal - develop and implement shared facility services to enable:
  - ❑ State user performing master data management (MDM) functions in state system with actions reflected real-time in EPA's Facility Registry Service (FRS)
  - ❑ Changes made to FRS Record are reflected real-time in state's system
  - ❑ Real-time search of FRS records with seamless integration into a state website and state MDM system.

# Facility Team Phase II - State MDM Pilot

- ❑ In addition to ***sharing*** the management of facility information, the services enable ***updates made by RIDEM to be reflected in the FRS facility record.*** This represents a ***paradigm shift for EPA.***
  - ❑ This means that the FRS Facility Record will represent the Partner's Facility Record, rather than a combination of Facility data from EPA partner systems.
- ❑ **Three pilot services** were implemented in a **non-production environment** to enable full testing of the services and evaluating the impacts of partner updates to data on other users of FRS master facility records.
  - ❑ Submit to FRS
  - ❑ Submit to Partner
  - ❑ Query FRS

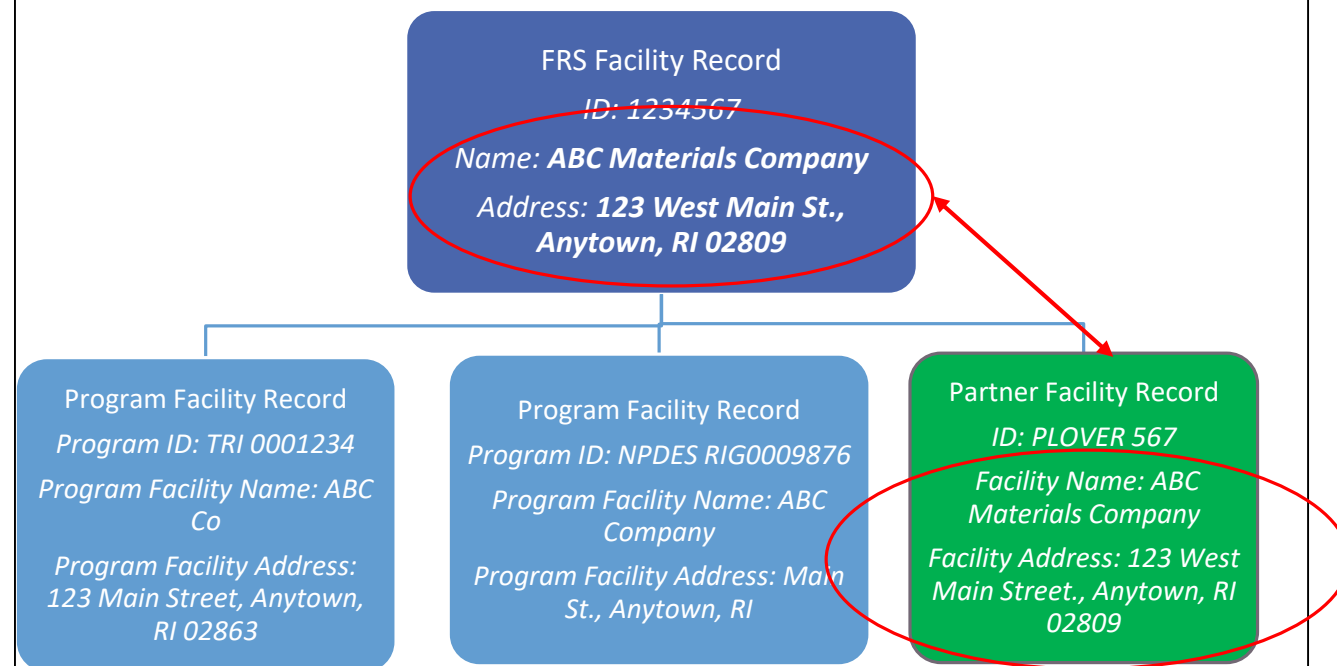
# Implementing Pilot Services Changes: How FRS Facility Attributes are Populated

## Pre-Pilot Approach



Partner Record attached to FRS Record but not used to populate attributes in FRS Facility Record

## Pilot API



Partner Record attached to FRS AND used to populate attributes in FRS Facility Record

# RIDEM Incorporated FRS Data Into Publicly-Available Site Search

**DEM** Map Search Search Tips About This Data Report Issues

## Enviro Site Search

Find sites that match one or more of the criteria below

**Name**

**Street Name**

**City**

**Program**

**Search**

Currently showing matching facility records from RIDEM. Click button to include EPA facility records.

**Add matching EPA facility records**

Found 158 matching facilities...

**COMPREHENSIVE HEALTHCARE**  
147 COUNTY RD  
BARRINGTON

**10 ELEANOR DRIVE**  
10 ELEANOR DR  
BARRINGTON

**100 ACRE COVE**

Users given the option to add matching EPA facility records.

If selected, results are displayed with “(EPA)” appended to the front of the name.

**DEM** Map Search Search Tips About This Data Report Issues

## Enviro Site Search

Find sites that match one or more of the criteria below

**Name**

**Street Name**

**City**

**Program**

**Search**

Found 187 EPA facilities and 158 RIDEM facilities...

**(EPA) CVS PHARMACY #0210**  
180 COUNTY RD  
BARRINGTON

**(EPA) AUBIN PATRICK**  
6 MAUDSLEY AVE  
BARRINGTON

**(EPA) BARRINGTON POWER EQUIPMENT**  
448 MAPLE AVE  
BARRINGTON

**(EPA) HARBOR ANIMAL HOSPITAL**

# Facility Services MVP in Phase II

- ❑ Submit services were basic profile fields in FRS registry
  - ❑ Fields documentation: <https://ofmext.epa.gov/facilityiptwebservices/>
- ❑ Will expand to more fields in Phase III
  - ❑ Likely candidates: geospatial, sub-facility, others?
- ❑ Services need testing in other partner systems
  - ❑ Recruiting partners now

# Phase III Priorities

- ☐ Additional testing of pilot services with other state/local/ tribal (SLT) partners
- ☐ Combined Air Emissions Reporting (CAER) Gap Analysis
- ☐ Facility Governance Framework
- ☐ Unified Facility “status” micro-service
- ☐ Move facility shared services to production (after additional testing)
- ☐ Leverage FRS’ Facility Linkage Application (FLA) to support SLT facility management



# Phase III Tasks

- ☐ Collaborate with an additional partner or partners to test expanded services in a non-production environment,
- ☐ Complete a comprehensive review of downstream user impacts,
- ☐ Move services to production for use and adoption by partners after sufficient testing and review is complete,
- ☐ Pilot the use of EPA's Facility Registry Service (FRS) tools to support MDM with a partner that does not have that capability in-house.
  - ☐ Will demonstrate that a partner that does not have a facility MDM system can take advantage of shared facility services.

# Unified Facility “Status”

- ❑ Shared Service - provision of a service by one part of an organization or group
- ❑ Microservice - where an application is a collection of loosely coupled services
- ❑ Systems – centralized, decentralized, distributed?
  - ❑ Field definitions vary by program systems

Facility Status Option Sets		
ICIS-Air	ECHO CAA (Air)	EIS
Planned Facility	Planned	
Under Construction	Under Construction	
Operating	Operating	Operating
		Operating but State/Local/Tribe Reporting Emissions in the Nonpoint Category
		Operating but State/Local/Tribe Not Reporting Emissions
Seasonal	Seasonal	
Temporarily closed	Temporarily closed	Temporarily Shutdown
Permanently Closed	Permanently Closed	Permanently Shutdown
	Yellow = Inactive	
	Green = Active	

# Call for Phase III Participants

- ☐ Rhode Island pilot work successfully demonstrated proof-of-concept for partnered or shared data stewardship and management
- ☐ We are expanding testing of these and additional services across more SLT partners, given the diversity of:
  - ☐ Individual SLT data management system platforms,
  - ☐ Governance protocols and business rules.
- ☐ Is testing within the scope of your existing/near future facility:
  - ☐ Information system plans?
  - ☐ Data quality initiatives?
  - ☐ Grant funding?
- ☐ Contact us if interested in participating!

# Benefits to E-Enterprise Partners

- ❑ Provides integrated, reconciled facility information that:
  - ❑ Facilitates cross-program coordination
  - ❑ Provides access to comprehensive facility data through coordinated facility ID
  - ❑ Reduces workload associated with data reconciliation
  - ❑ Decreases costs associated with synchronizing EPA and partner system data
  - ❑ Improves response time to public information requests.
  
- ❑ Furthers E-Enterprise objectives:
  - ❑ Leverages shared services
  - ❑ Supports reduction of regulatory reporting burden
  - ❑ Strengthens collaboration across EPA, state and tribal co-regulators
  - ❑ Supports CAER program objectives.

# Thank you!

- ❑ Rhode Island Department of Environmental Management facility services pilot team
- ❑ Work stream participants
  - ❑ State partners
  - ❑ ECOS
  - ❑ EPA program offices
- ❑ CAER team

# Questions?

## *Thank You!*

- [Facility page on the E-Enterprise SharePoint site](#)
- [Facility page on the E-Enterprise public website](#)
- **Sign up to our email list:** send us an email if you're interested to receive periodic updates on the progress of the Facility work

# Facility Team Co-Chairs

Susan Joan Smiley

Office of Environmental Information, EPA

[smiley.susan@epa.gov](mailto:smiley.susan@epa.gov)

Joshua Kalfas

Oklahoma Department of Environmental Quality

[joshua.kalfas@deq.ok.gov](mailto:joshua.kalfas@deq.ok.gov)

Ron Evans

Office of Air and Radiation, EPA

[evans.ron@epa.gov](mailto:evans.ron@epa.gov)

Ben Way

Wyoming Department of Environmental Quality

[ben.way@wyo.gov](mailto:ben.way@wyo.gov)