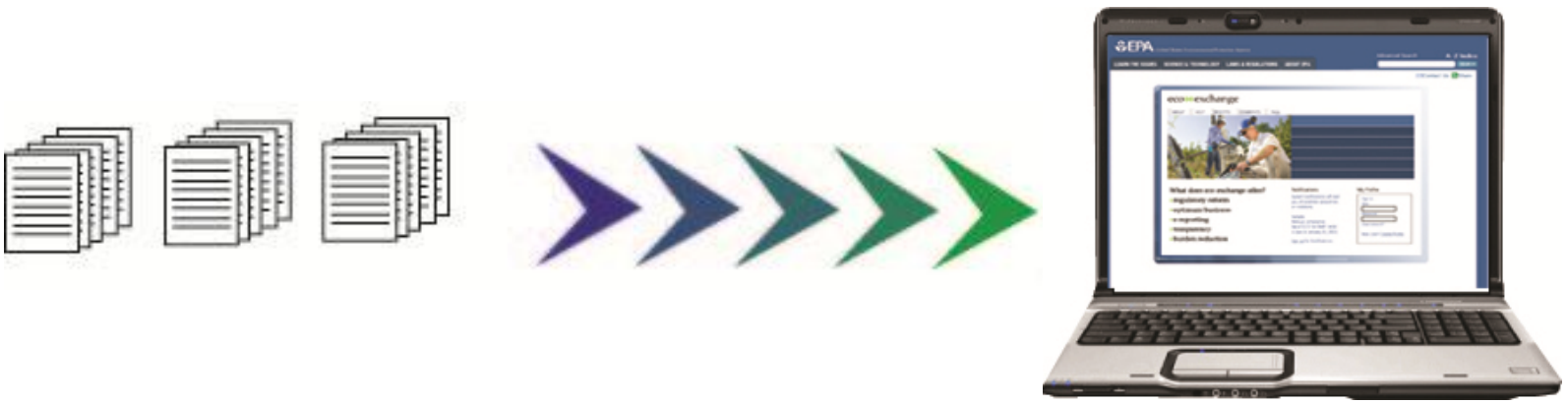
E-Enterprise for the Environment 101

Exchange Network National Meeting 2014

Andrew Battin, US EPA
David Hindin, US EPA
Chris Simmers, NH DES

E-Enterprise for the Environment

is a joint initiative of States and EPA to improve environmental outcomes and dramatically enhance service to the regulated community and the public by maximizing the use of advanced monitoring and information technologies, optimizing operations, and increasing transparency.



New business model

This is not just a big IT Project

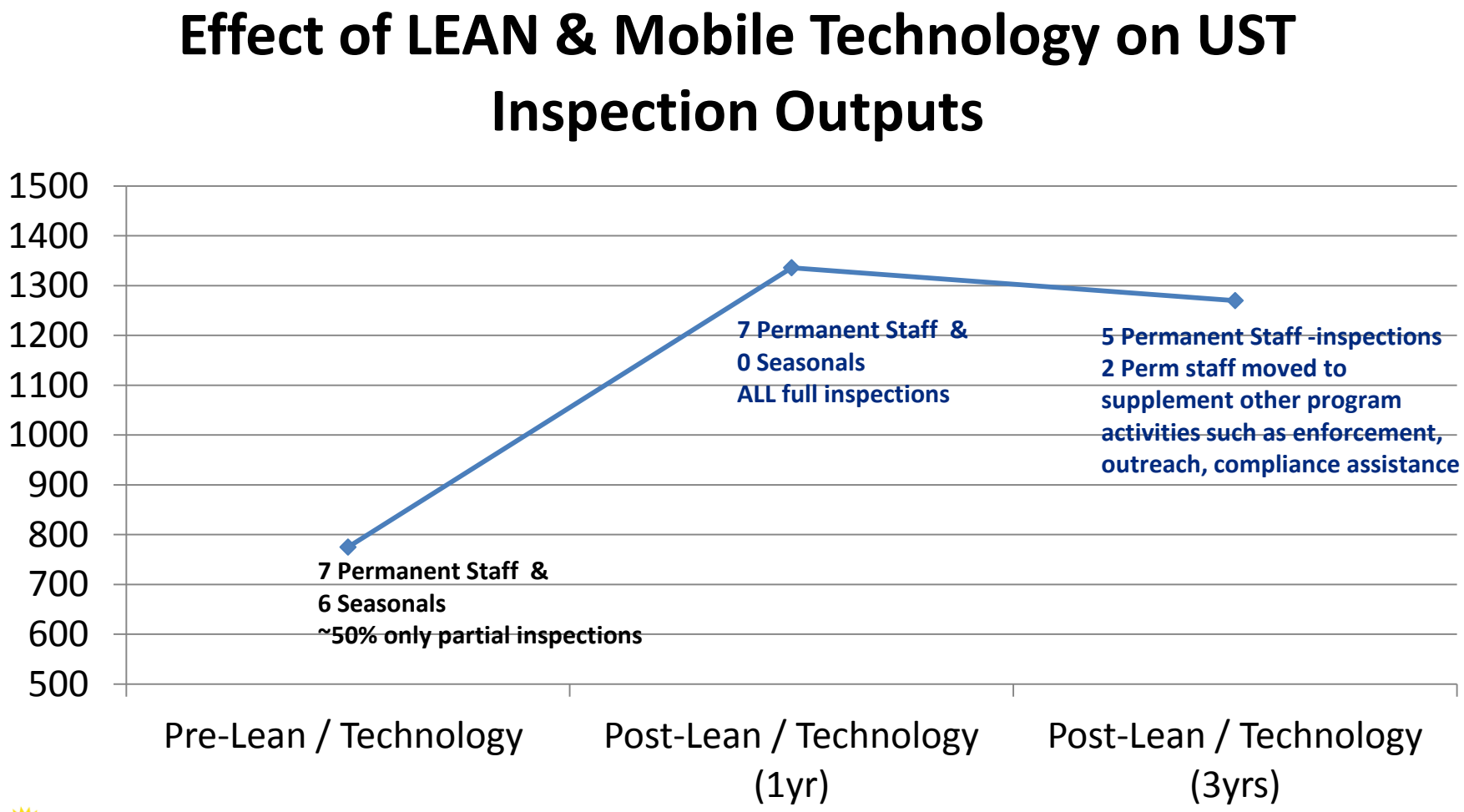
Advanced Monitoring

Information Technology & 2-Way Portal

Streamlined & Innovative Approaches

Example: Streamlining

LEAN/Technology Pilot at CT DEEP



Example: Innovative approaches – mandatory in-person training in NH

Hazardous Waste Coordinator Certification Training

Example: Advanced Monitoring: Infrared Camera

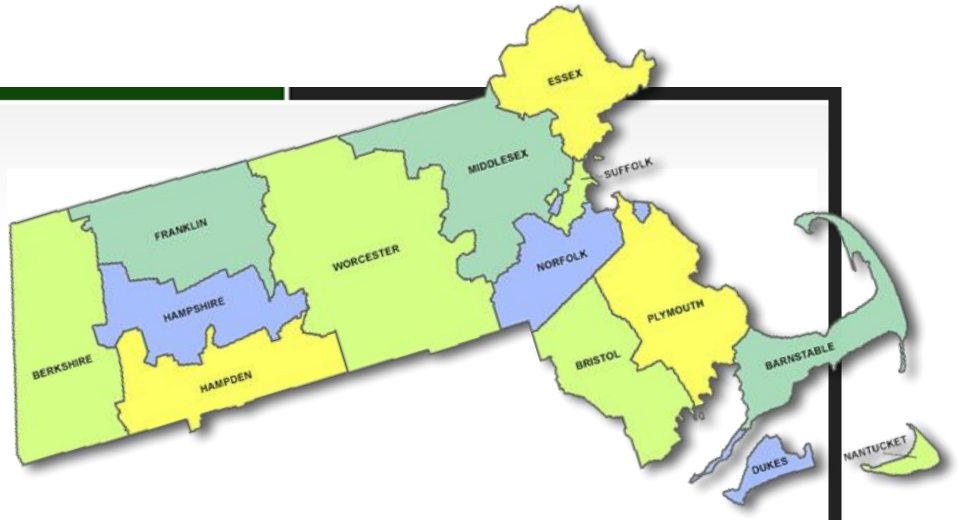
Insert FLIR Video Here

Example: State investments in information technology/2-way portals in MA

The Official Website of the Executive Office of Energy and Environmental Affairs

Energy and Environmental Affairs

Main Menu Go



Home > MassDEP > Service Center >Online Services >

Online Services

Search MassDEP Databases

- Access Fish Mercury Data
- Asbestos Project Lookup
- Current Air Quality in My Community - MassAir Online
- Drinking Water Public Health Orders
- File Viewer - Waste Site Reportable Releases

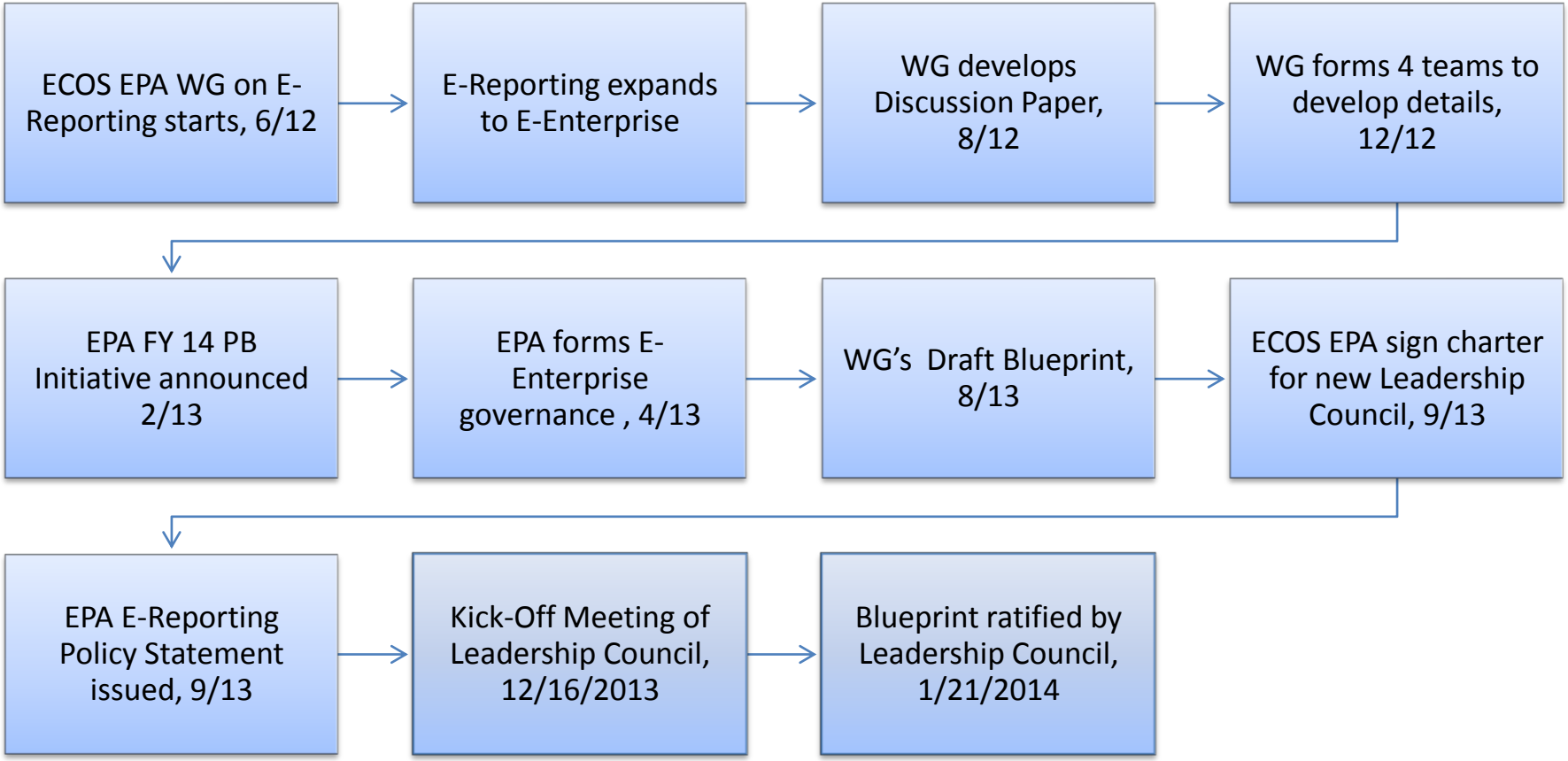
eDEP Online Filing

- Login or Create Your Account
- Forms Available for Filing in eDEP
- eDEP Instructions and Frequently Asked Questions
- Troubleshooting eDEP - quick fixes for common problems
- eDEP Contacts & Feedback

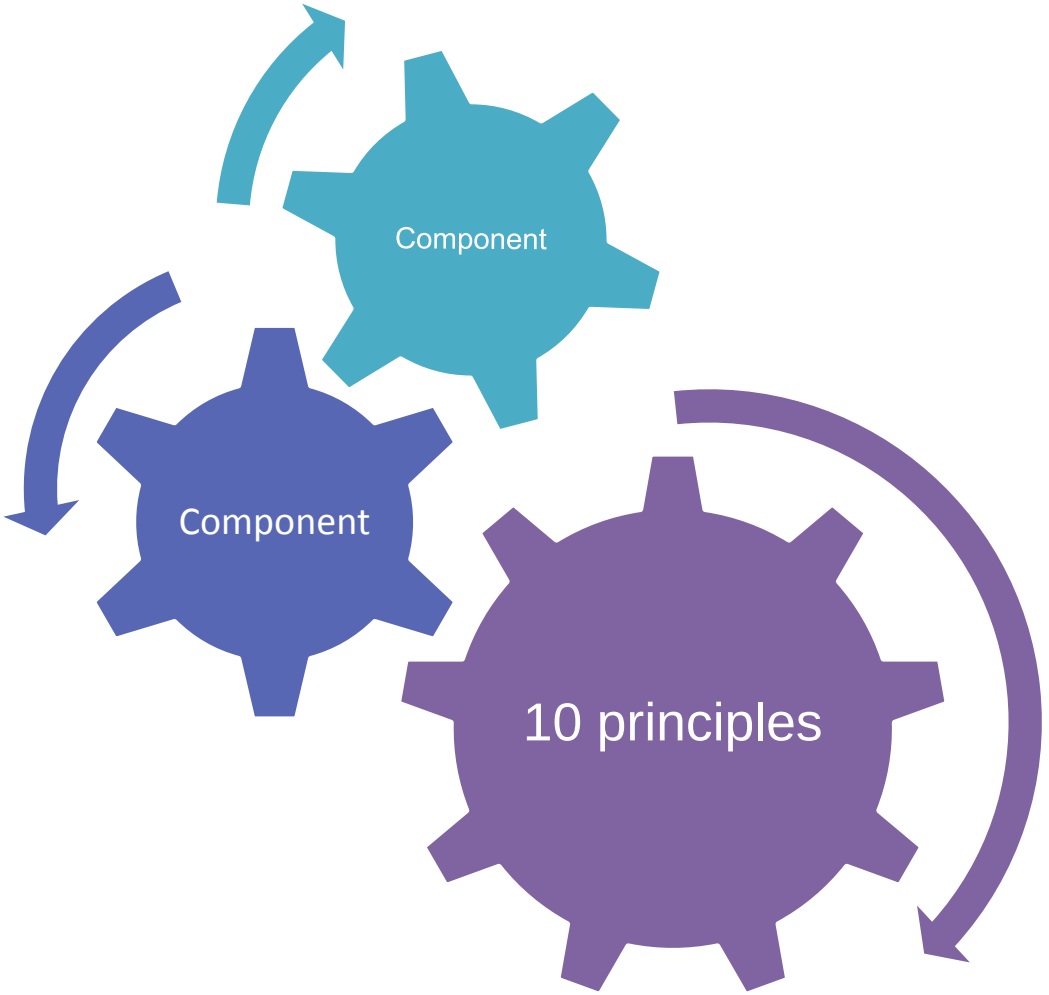
MassDEP Service Center

- A to Z Quick Links
- Service Center Index

E-Enterprise Time Line
(WG = ECOS EPA Working Group)

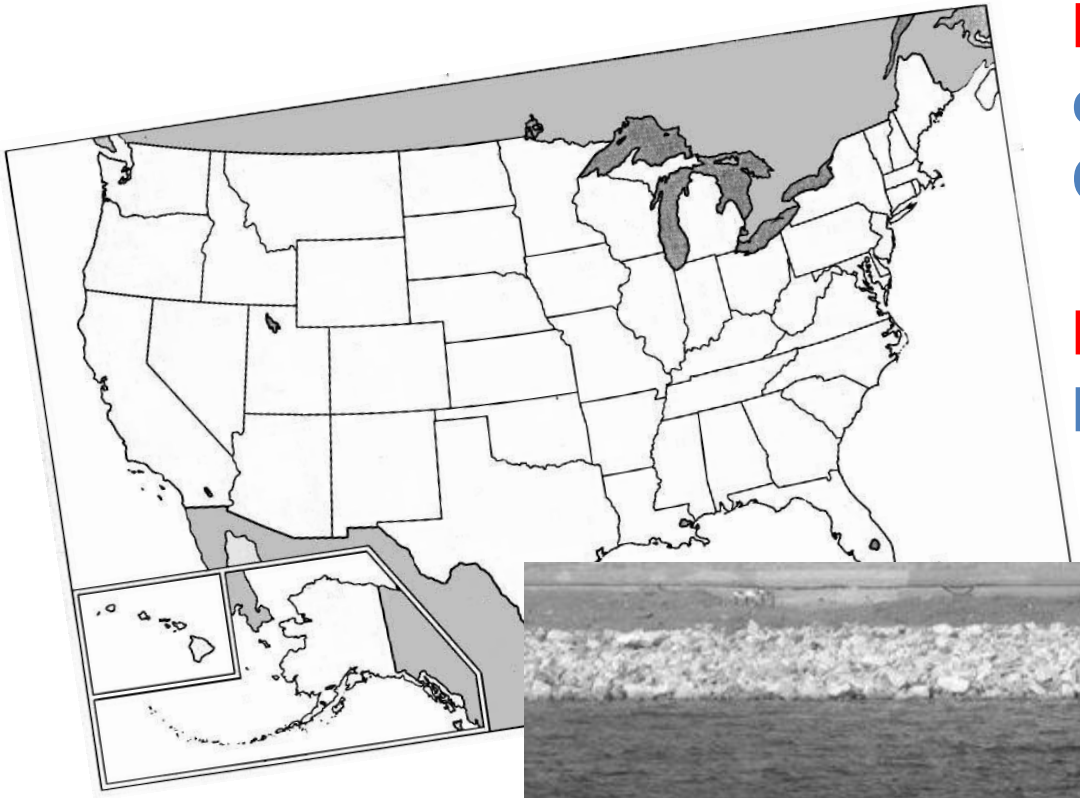


Questions?



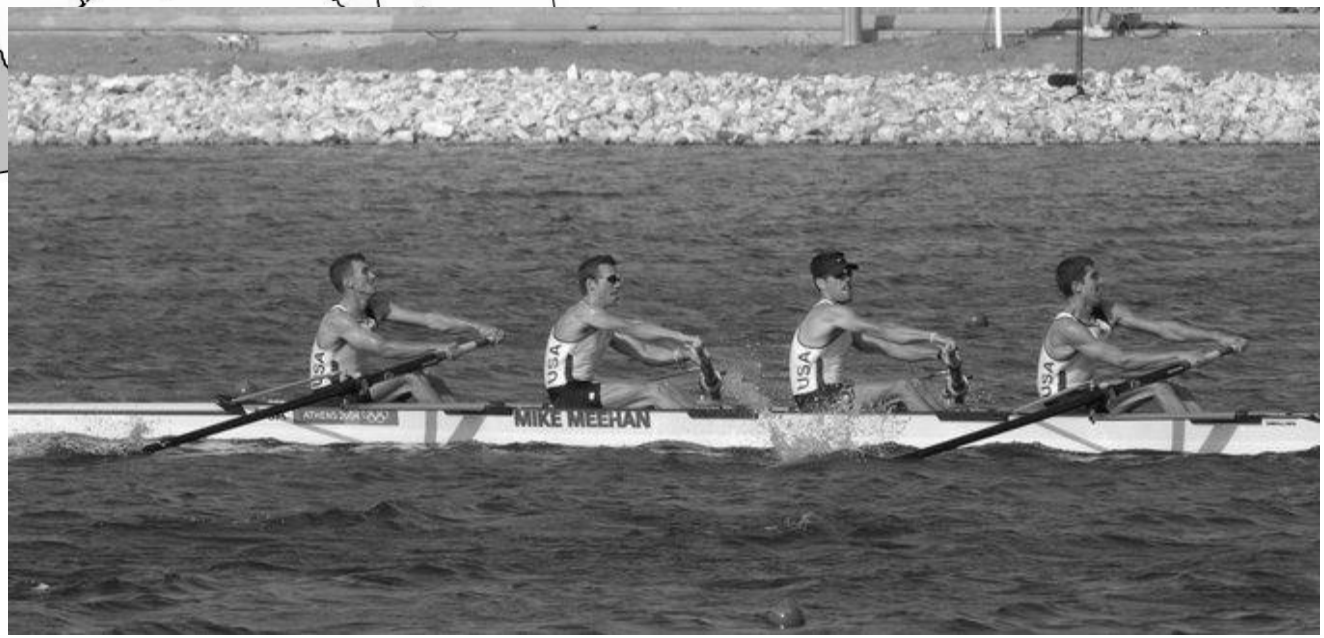
E-ENTERPRISE PRINCIPLES

DAVID HINDIN, EPA



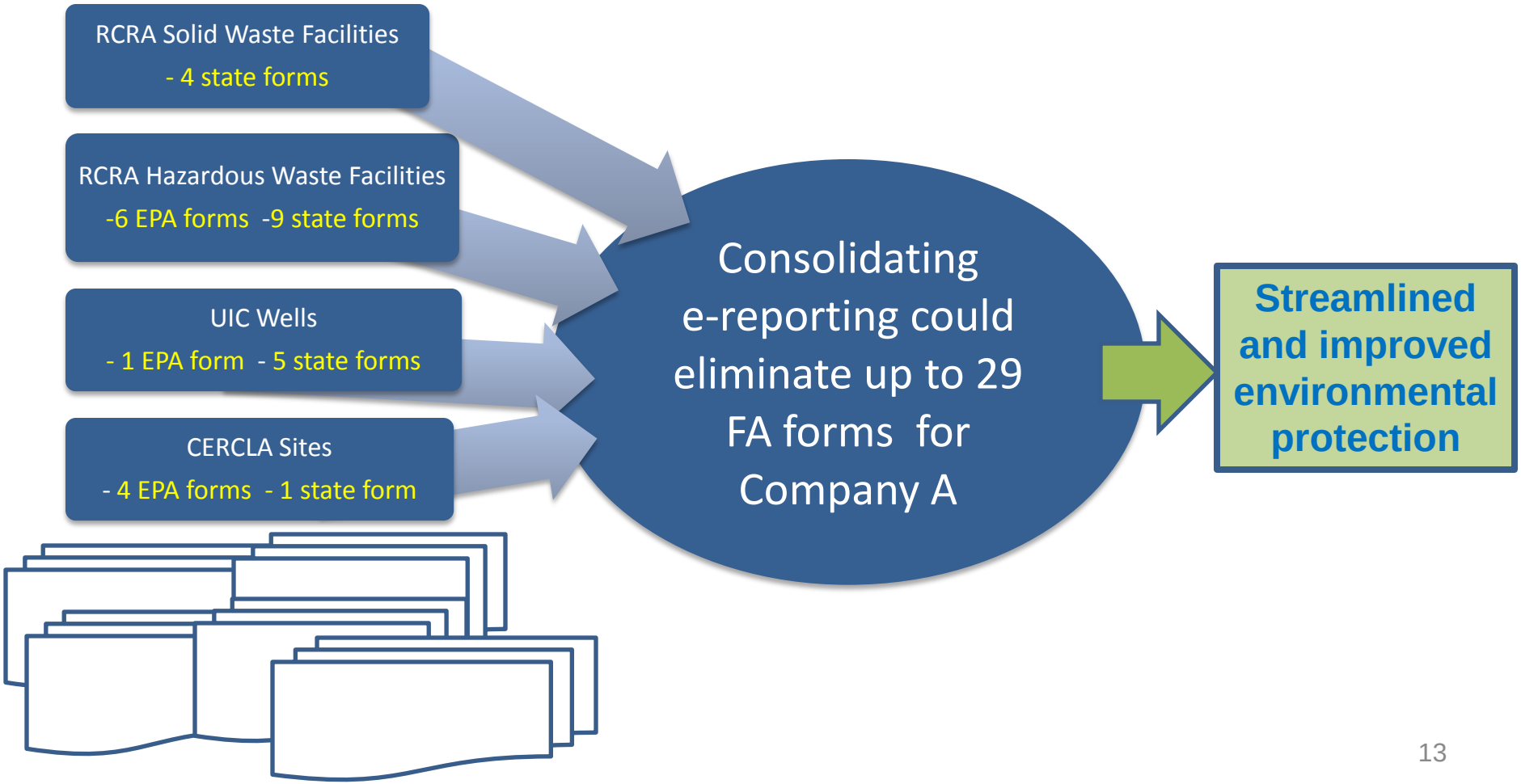
Principle #1: Partnership of Environmental Government Regulators

Principle #2: Honoring Delegated Authorities



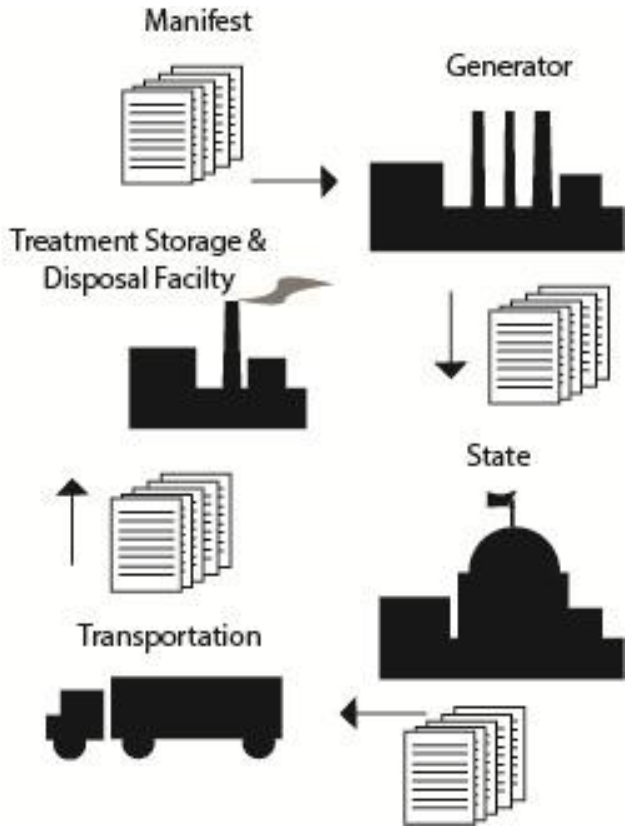
Principle #3: Modernize and Improve Environmental Regulations and Programs, and their Implementation

Example: Consolidate Financial Assurance (FA) submissions under four statutes into one program



Example: New Environmental Management Approaches (not just modernizing and streamlining)

Example: e-Manifest required regulatory reform to change typical hazardous waste manifest inefficiency.



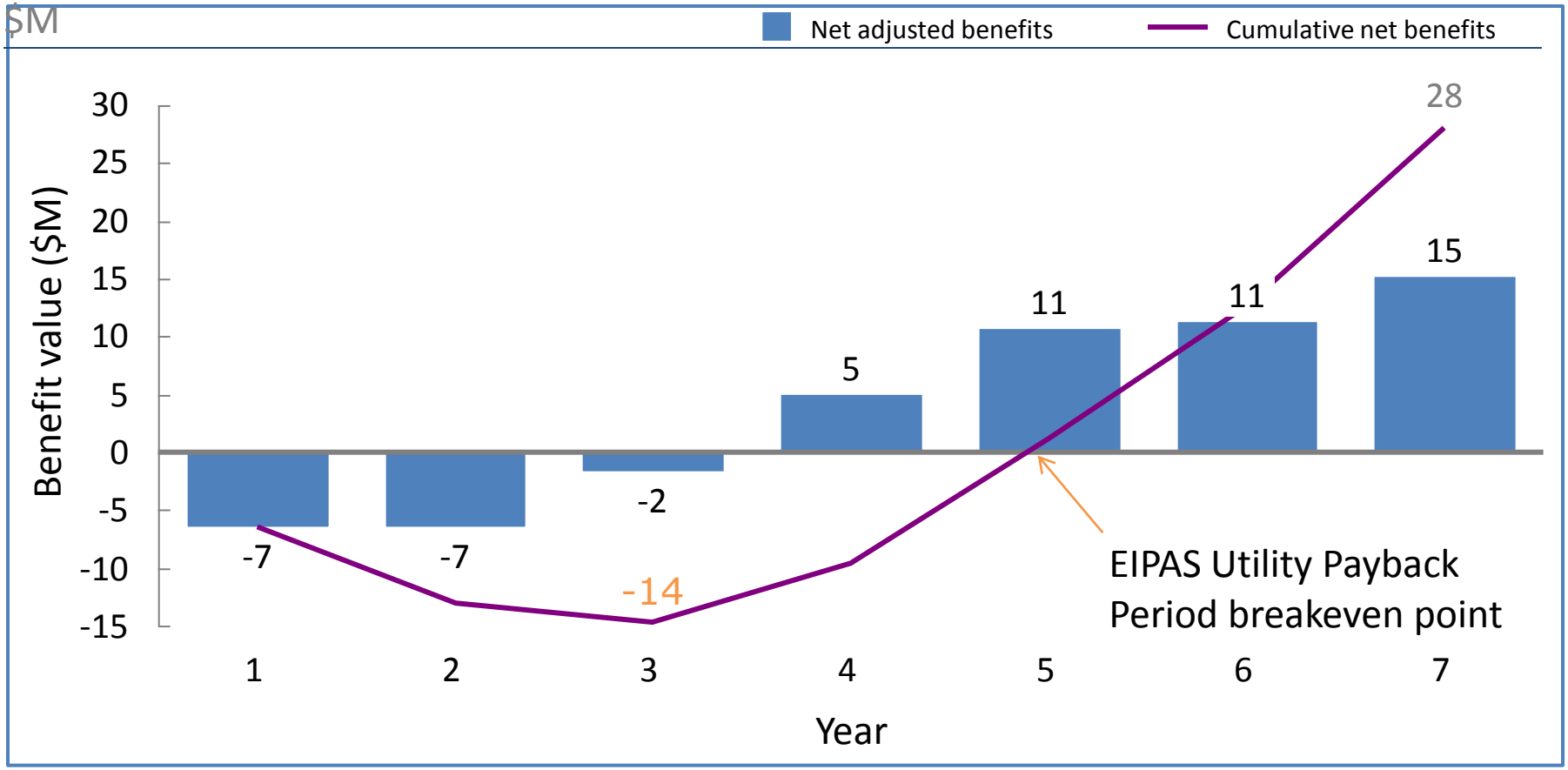
Replaced regulatory requirements for paper with electronic manifests on digital platform.

Projected $75 million cost savings (to regulated entities and regulators) and reduction in potentially 400,000-700,000 FTE hours.

Principle #4: Commitment to use Business Case to Prioritize Activities

Example: MA EIPAS cost-benefit analysis shows that the project has a Utility Payback Period of ~5 to 6 years[1].

EIPAS net benefits by year[2] with cumulative impact



[1] Payback period is 6 years with 0.25 benefit multiplier, 5 years with 0.35 multiplier; assumes 3% discount rate, figures shown assume average adjusted benefits using 0.25 to 0.35 benefit multipliers; includes revised one-time and O&M cost estimates

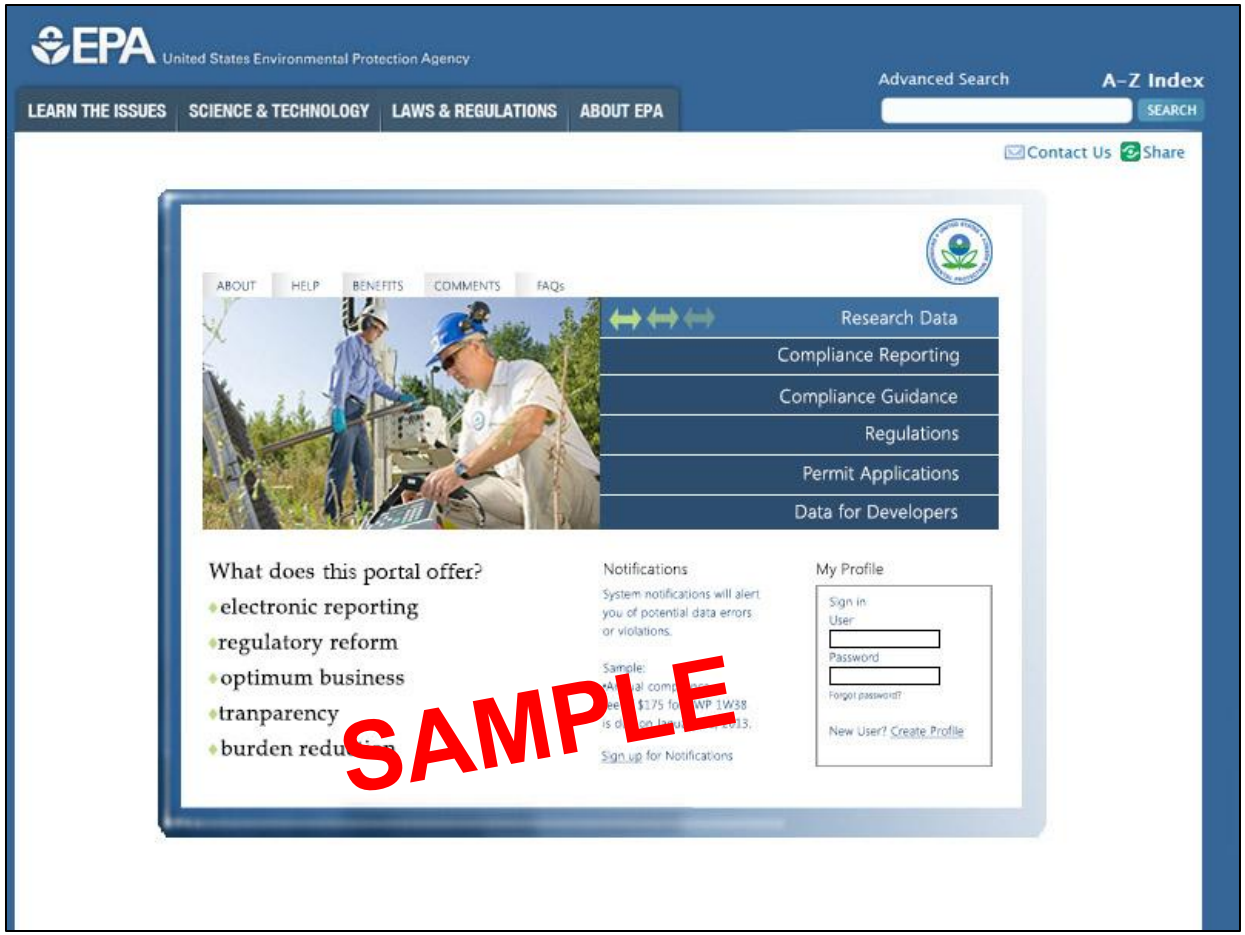
[2] Adjusted benefit estimates (average of 0.25 to 0.35 adjustment for non-financial and indirect), discounted at 3% per annum

SOURCE: Interviews with EIPAS team and EEA SMEs, expert interviews, McKinsey IT benchmarks, team analysis

Principle #5: Emphasizing User Perspective

Principle #6: Network of Services and Systems to Improve Two-way Business Transactions

- Public and regulatory portals
- Two-way transactions between agencies & regulated entities
- Better service and reduced burden
- User-friendly "smart" functionality



Principle #7:
Interoperability of Partner Systems and Partner Use of EPA Systems

Principle #8: E-Enterprise Open Data and Web Services

Principle #9: Advanced Monitoring Technologies and New Data Collection and Analysis Techniques

Current State

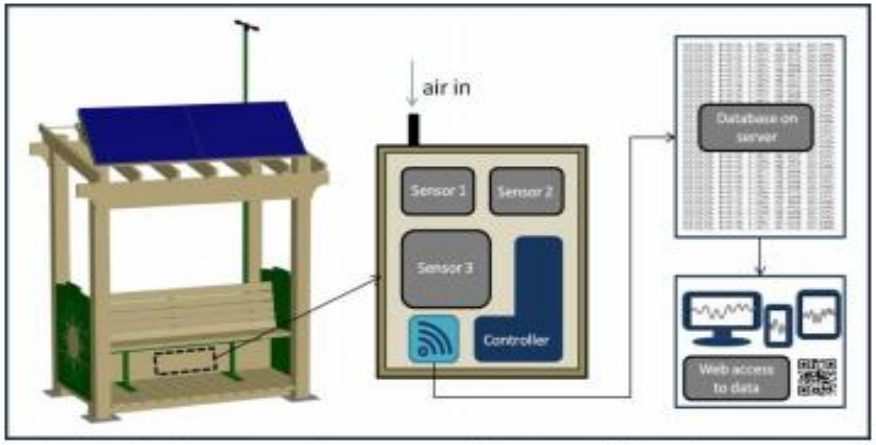
Future State

Example: National Inspection and Evidence Management System

Example: Advanced Monitoring, IT and Transparency

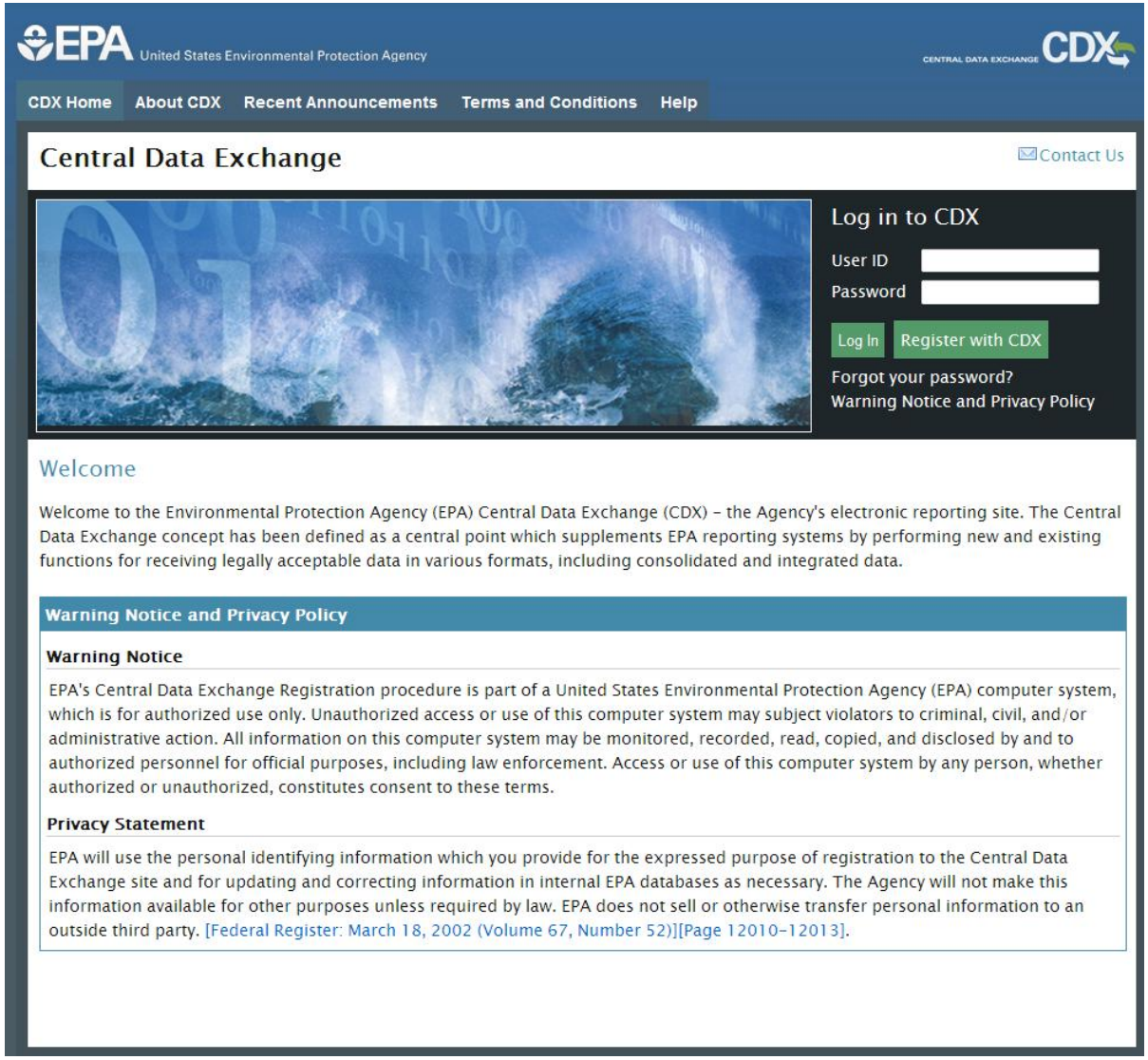
Village Green Project, Durham, NC

- Solar-Powered Air Monitoring in a park bench
- Sensors Monitor:
  - Ozone
  - Particle pollution
  - Black carbon
  - Wind speed & direction
  - Temperature
  - Relative Humidity
- Real Time Results
  - Uploaded to EPA Website
    - Village Green Project -
  - Viewable at the bench



Air-monitoring system incorporated into a park bench.

Principle #10: Shared Technical and Programmatic Infrastructure



IMPROVED SERVICE TO REGULATED COMMUNITY, PUBLIC, AND ENVIRONMENTAL AGENCIES

IMPROVED ENVIRONMENTAL OUTCOMES

E-Enterprise Customers

Regulated Community

Environmental Agencies

Public

Third Party Developers

E-ENTERPRISE IMPLEMENTATIONS

Increase Transparency

Streamline and Reduce Burden

Modernize Programs & Regulations

IT and Advanced Monitoring Solutions

JOINT GOVERNANCE

NEW ENVIRONMENTAL MANAGEMENT APPROACHES

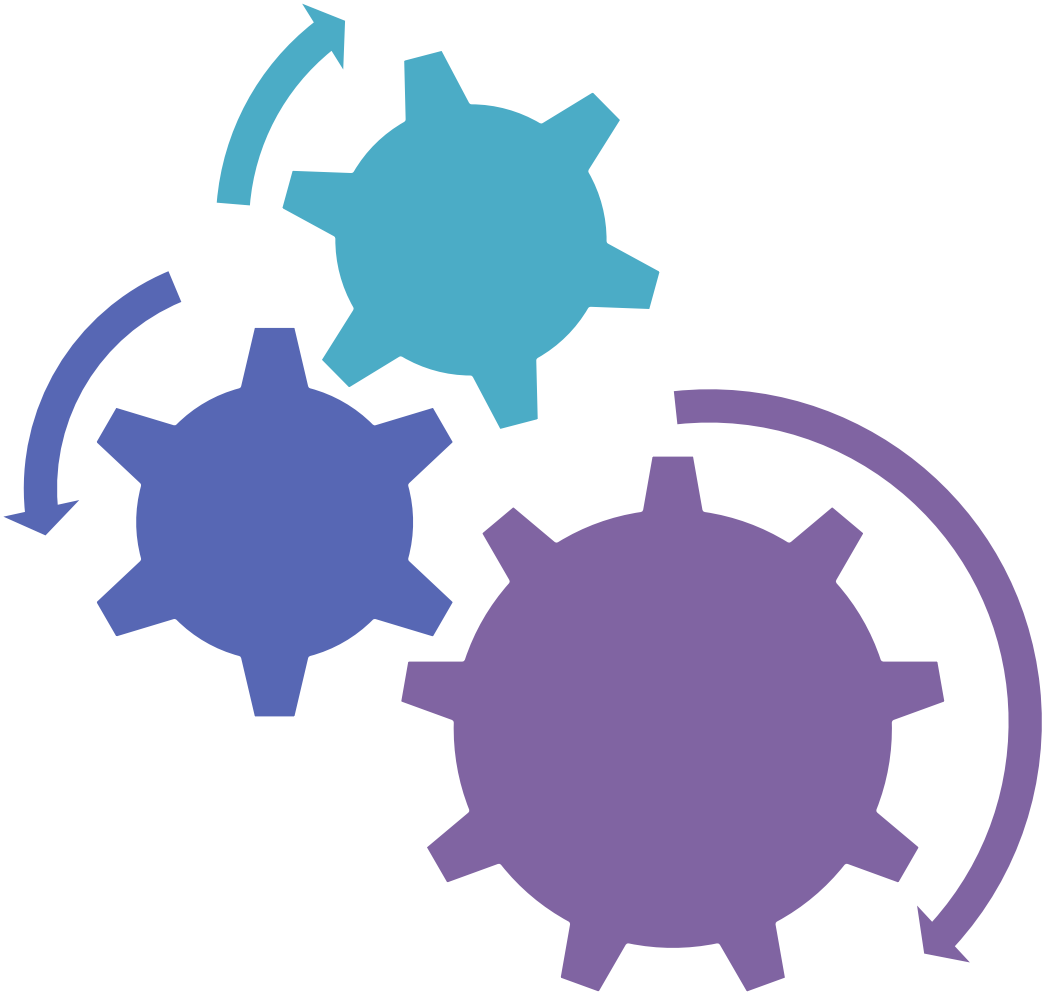
Stronger Evidence-Based Management

Innovative Compliance Approaches

Improved Environmental Choices by Informed Public

Automated Exceedance Detection/ Screening

Questions?



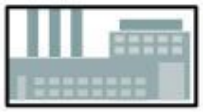
EXCHANGE NETWORK AND E-ENTERPRISE

ANDY BATTIN, EPA

E-Enterprise Component Architecture

Customers

DATA PROVIDERS AND CONSUMERS



Regulated Community

Environmental Agencies

Public

Developers and Apps

User Interface

E-Enterprise Portal

- Personalized interface and information resource
- Smart Forms
- Cross Program Integrated Access

Partner Access and Transaction Systems

- State e-Gov Portals
- Partner Applications

E-Enterprise Services and Infrastructure

Shared Technical and Programmatic Infrastructure

Programmatic Infrastructure

- Lean Training
- Economic Analysis
- IT Project Scoping

Technical Infrastructure

- Virtual Hosting
- Security Services
- User Registration and Identity Management Services

Open Data and Web Services

- Transport Services
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- Lookup Services

E-Enterprise Partner Projects

Partner Projects

Programmatic Development and/or Improvements

Systems Development and/or Improvements

E-Enterprise Program Components

Modernizing and Streamlining Programs and Regulations

- Application of business process improvement methodologies
- Development of New Environmental Management Approaches

Portfolio of Adv. Monitoring Technologies and Solutions

- Infrared camera to monitor flares
- Remote telemetry of WQ data

E-Enterprise Components

E-Enterprise Component Architecture

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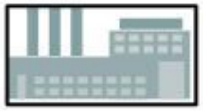

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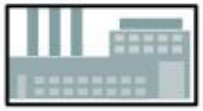

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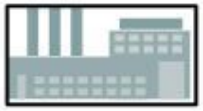

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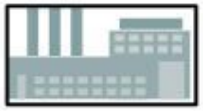

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E-Enterprise Program Components

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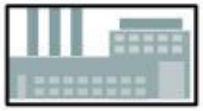

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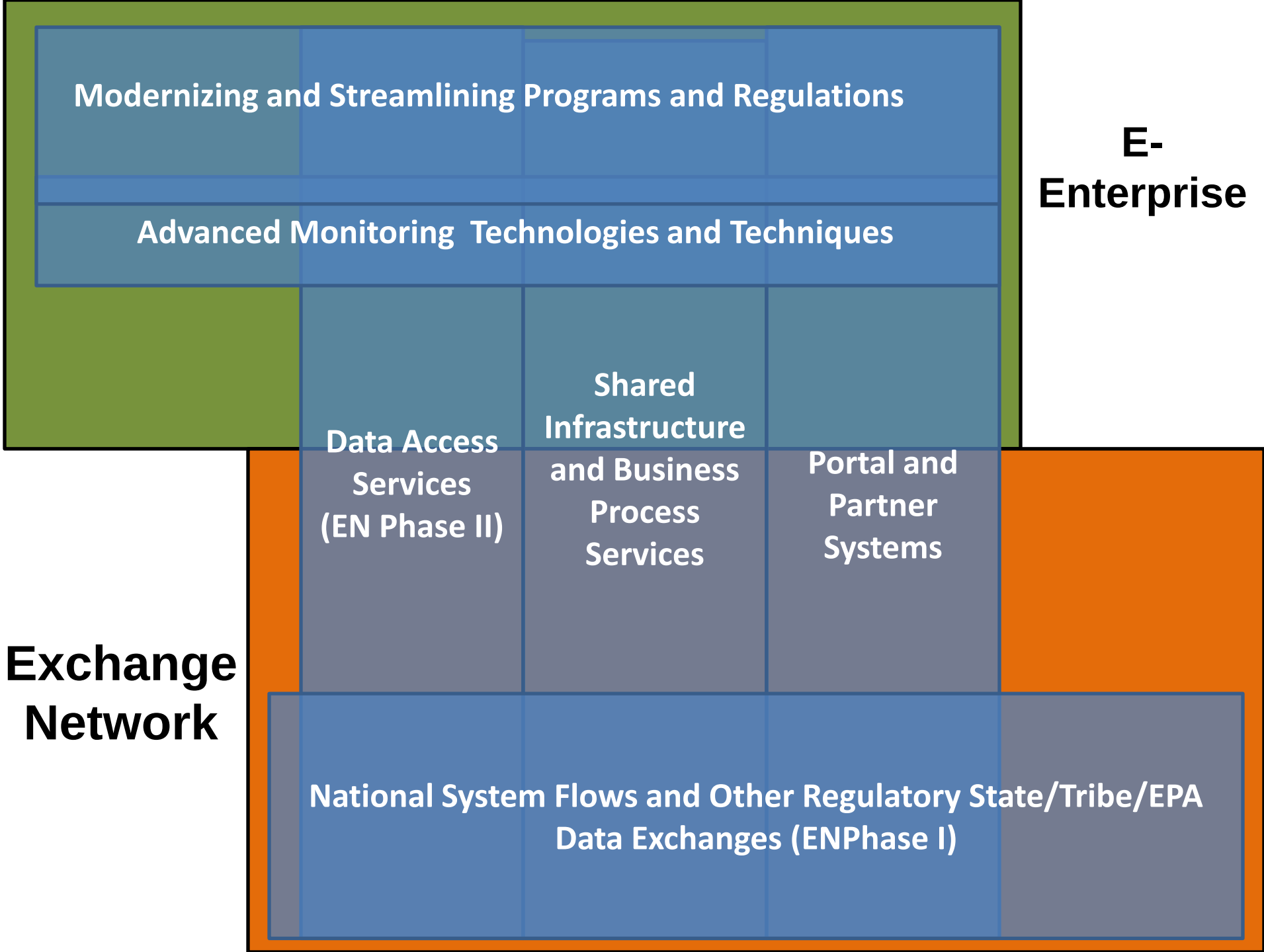
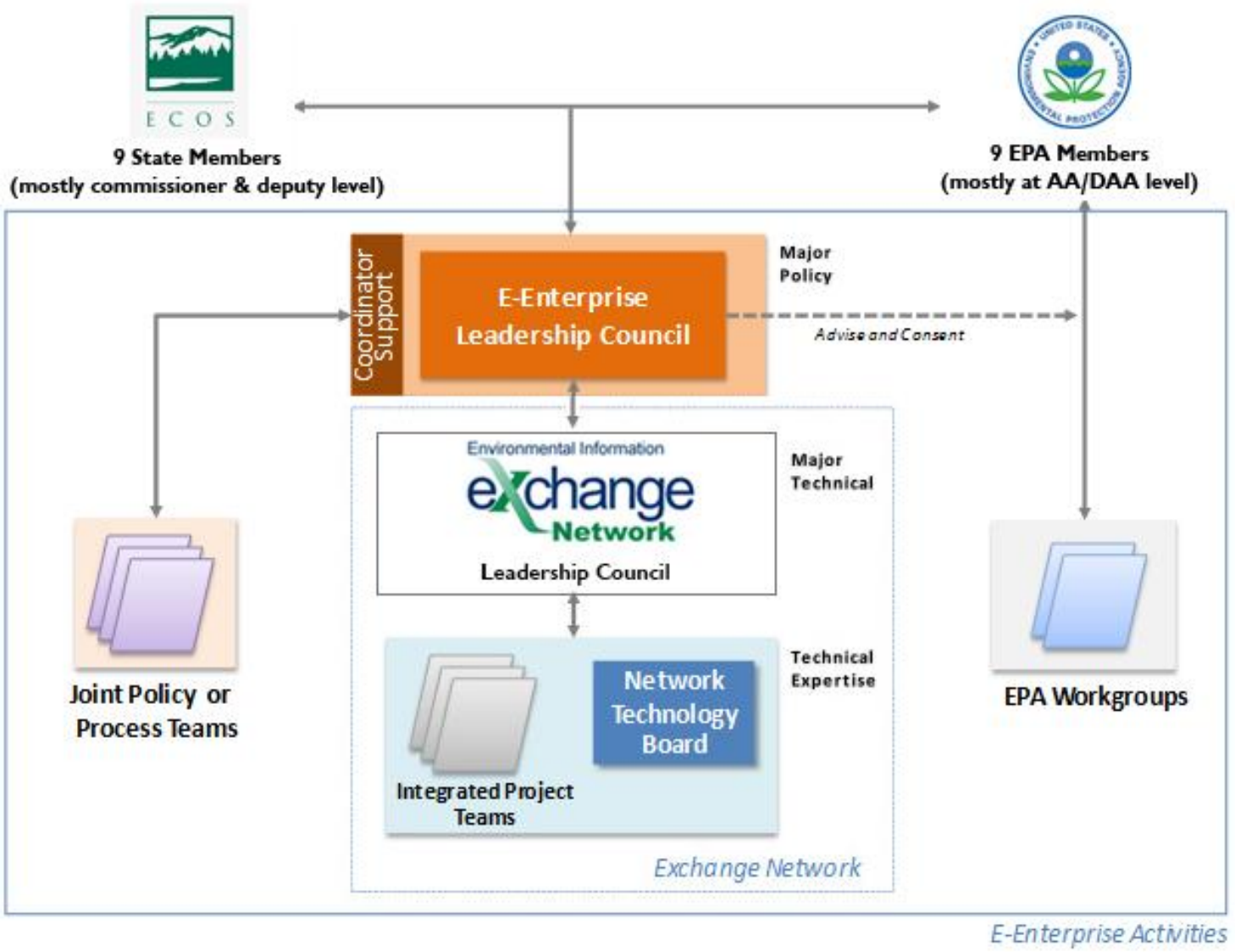

Modernizing and Streamlining Programs and Regulations
Advanced Monitoring Technologies and Techniques
E-Enterprise
Data Access Services (EN Phase II)
Shared Infrastructure and Business Process Services
Portal and Partner Systems
Exchange Network
National System Flows and Other Regulatory State/Tribe/EPA Data Exchanges (ENPhase I)

E-Enterprise Joint Governance (EPA & States)



E-Enterprise Leadership Council (EELC)
EPA and State Members
February 2014

State Members

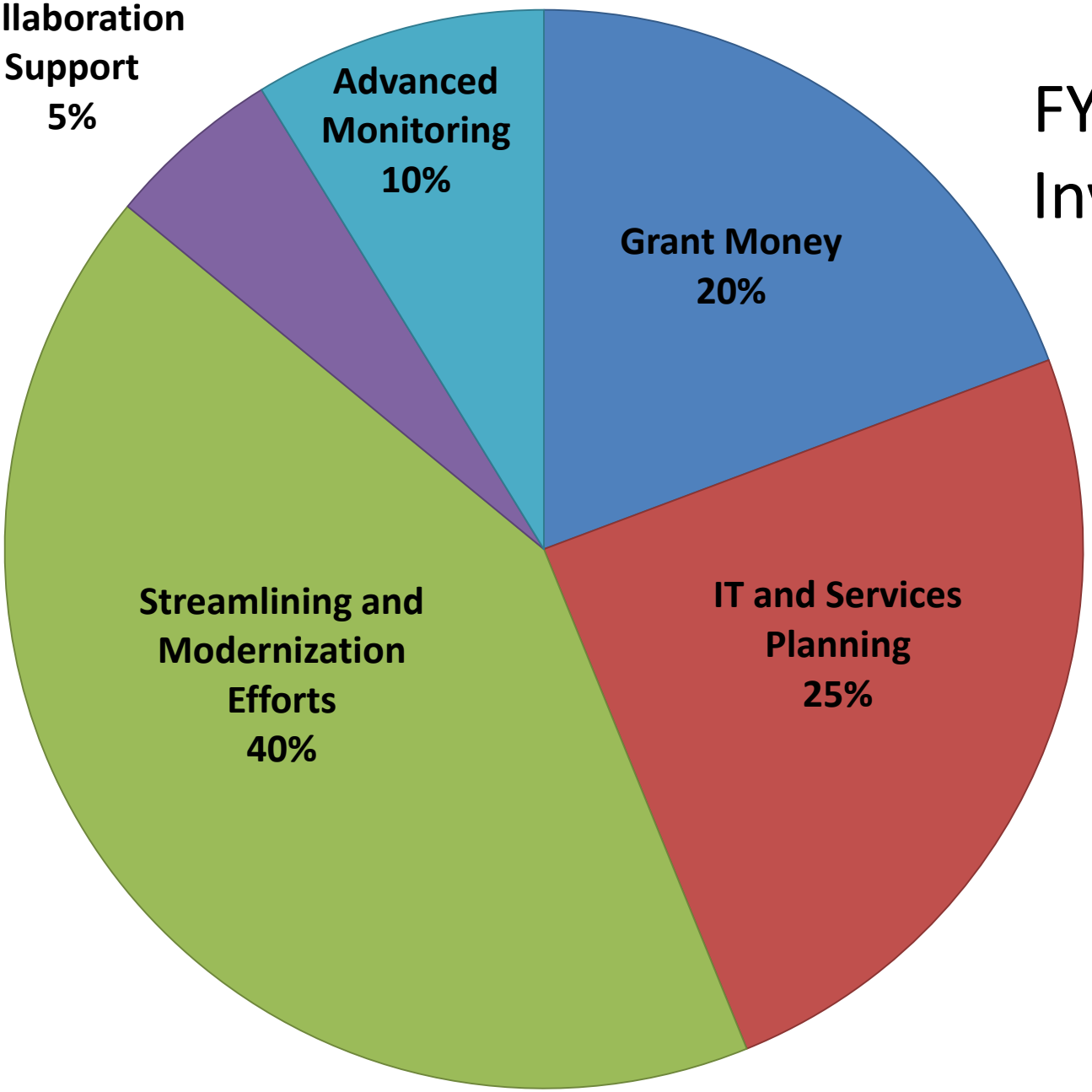
1. Tom Burack , New Hampshire, co-chair
2. Dick Pedersen, Oregon
3. Karen Bassett, Arkansas
4. Ken Kimmell, Massachusetts
5. Matt Moroney, Wisconsin
6. Henry Darwin, Arizona
7. Gary Gill, Hawaii
8. Tracy Stone-Manning, Montana
9. Andy Putnam, Colorado

EPA Members

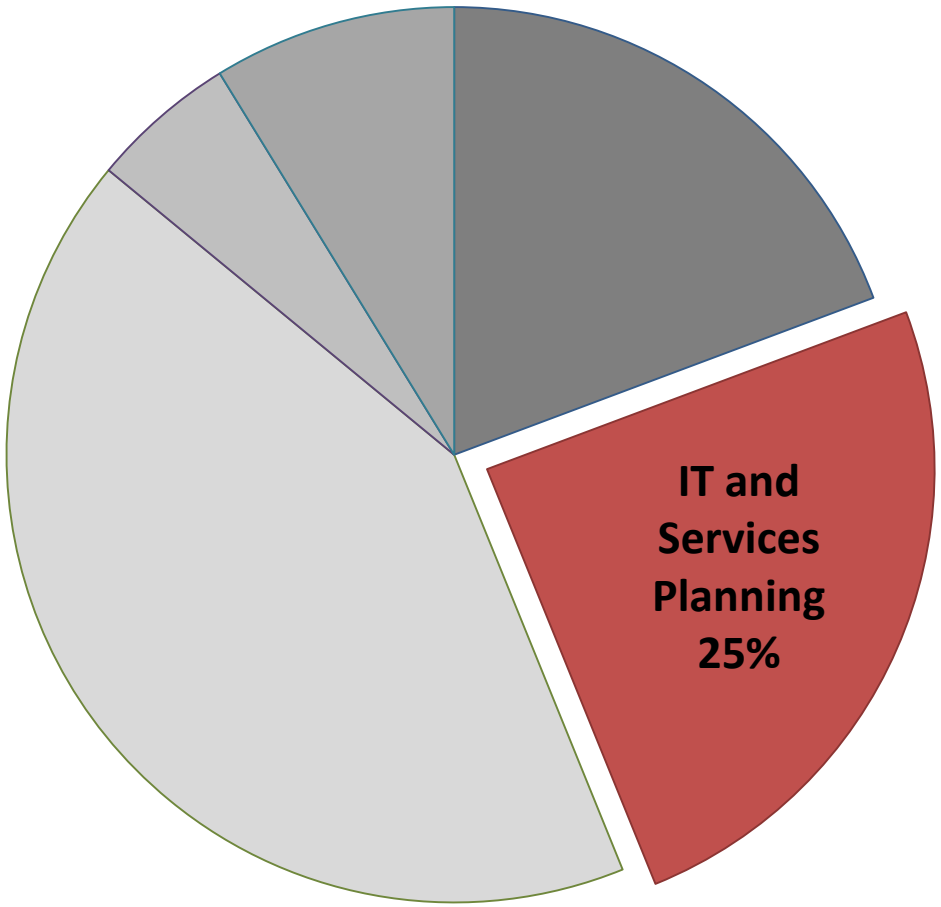
1. Bob Perciasepe, Deputy Administrator, co-chair
2. Steve Chester (DAA) , Office of Enforcement and Compliance Assurance
3. Betsy Shaw (DAA), Office of Air and Radiation
4. Mike Shapiro (DAA), Office of Water
5. Mathy Stanislaus (AA), Office of Solid Waste and Emergency Response
6. Louise Wise (DAA), Office of Chemical Safety and Pollution Prevention
7. Renee Wynn (Acting AA), Office of Environmental Information
8. Curt Spalding (RA), Region I
9. Bharat Mathur (DRA),Region V

As of February 2014

E-Enterprise FY2014 Proposed Investment Areas



Information and Shared Service Planning



- Development of E-Enterprise Architecture and Service Portfolio to automate functions, ensure interoperability and reduce redundancies

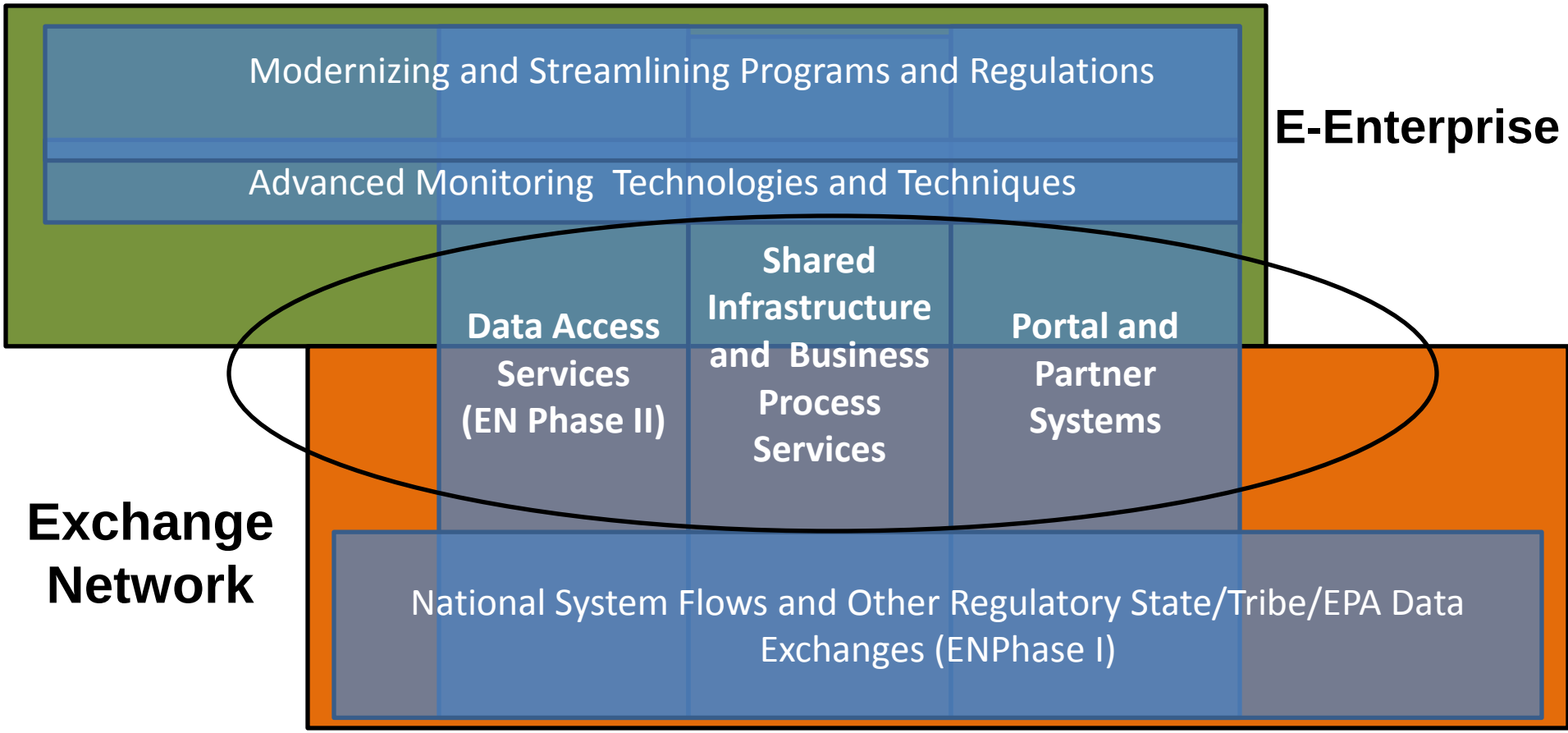
- Proof of concept for single sign-on for regulated facilities, interoperable for EPA/co-regulator systems

- Solicit user needs and develop design for regulatory and public portals

E-Enterprise Architecture Planning

•E-Enterprise and Exchange Network point of convergence. Exchange Network asked to support development.

• Key early step – broad to include states, tribes, and EPA to assure interoperability



Exchange Network and E-Enterprise Next Steps in Technical Planning

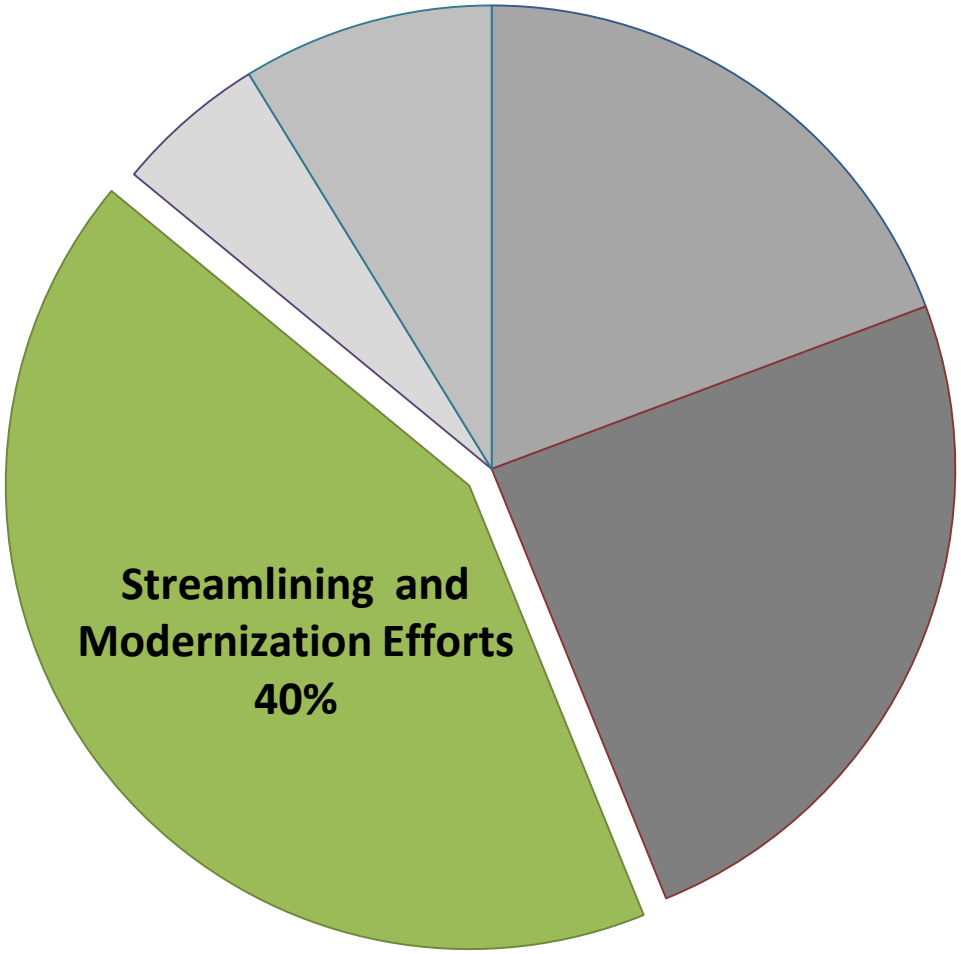
- ***E-Enterprise Solutions Architecture*:** This establishes and defines the E-Enterprise architecture, describes the technical requirements for building the architecture, and the mechanisms for interfacing with the architecture.

- ***Version 1.0 E-Enterprise Services Portfolio and Implementation Strategy*:** This identifies and describes the portfolio of E-Enterprise services, hosting options, and include state or other partner hosted services.

- ***A Concept of Operations for Federated Identify*:** This provides identification and documentation of critical use cases for federated identity, including interaction of identity store(s) options with EPA national systems, portal(s), and state systems.

- ***Concept of Operations for E-Enterprise Portal*:** This describes the high-level technical architecture and operation of the Portal(s), including functionality, interfaces to EPA and State programs and other systems, and proposed identity management services.

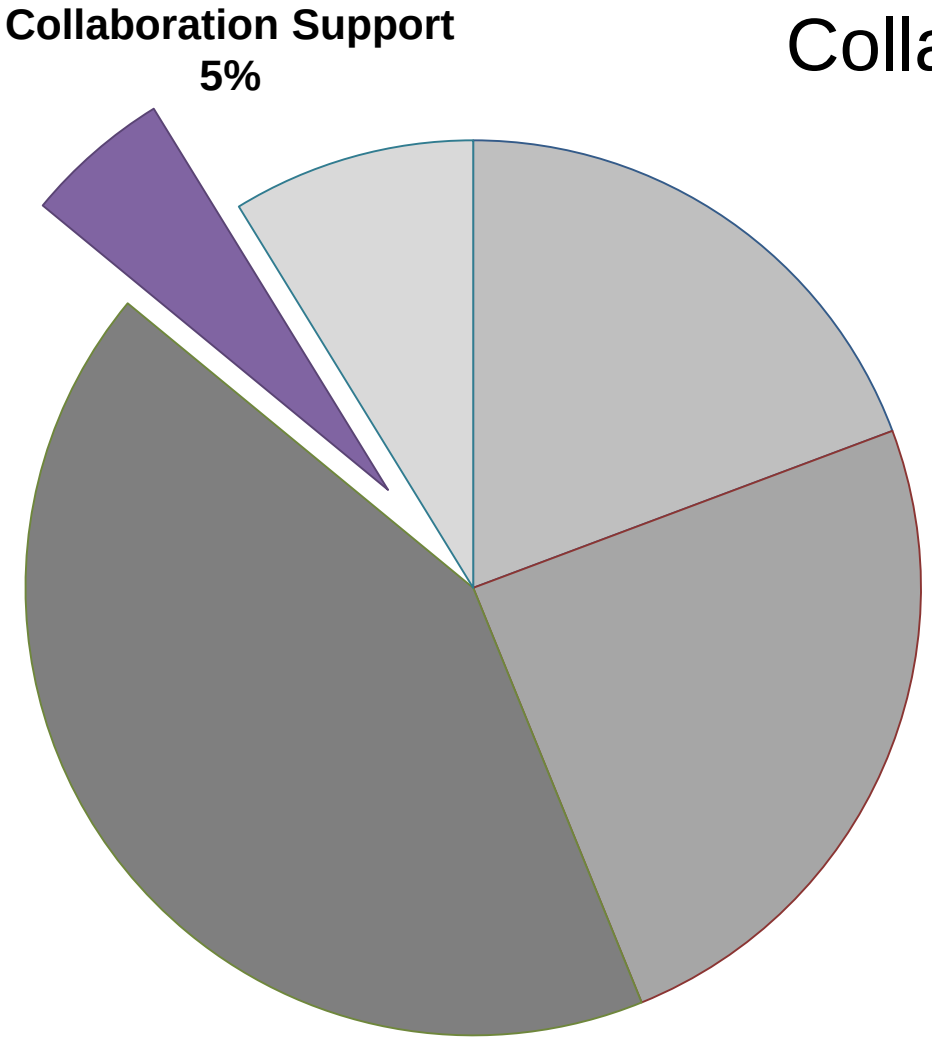
Current Modernization Efforts



- E-Manifest: overhauling hazardous waste tracking, moving from paper to digital system

- Air Facility System (AFS): modernizing national system for managing the Clean Air Act enforcement and compliance program for stationary sources

- SDWIS Prime: Modernizing the national systems for managing drinking water information



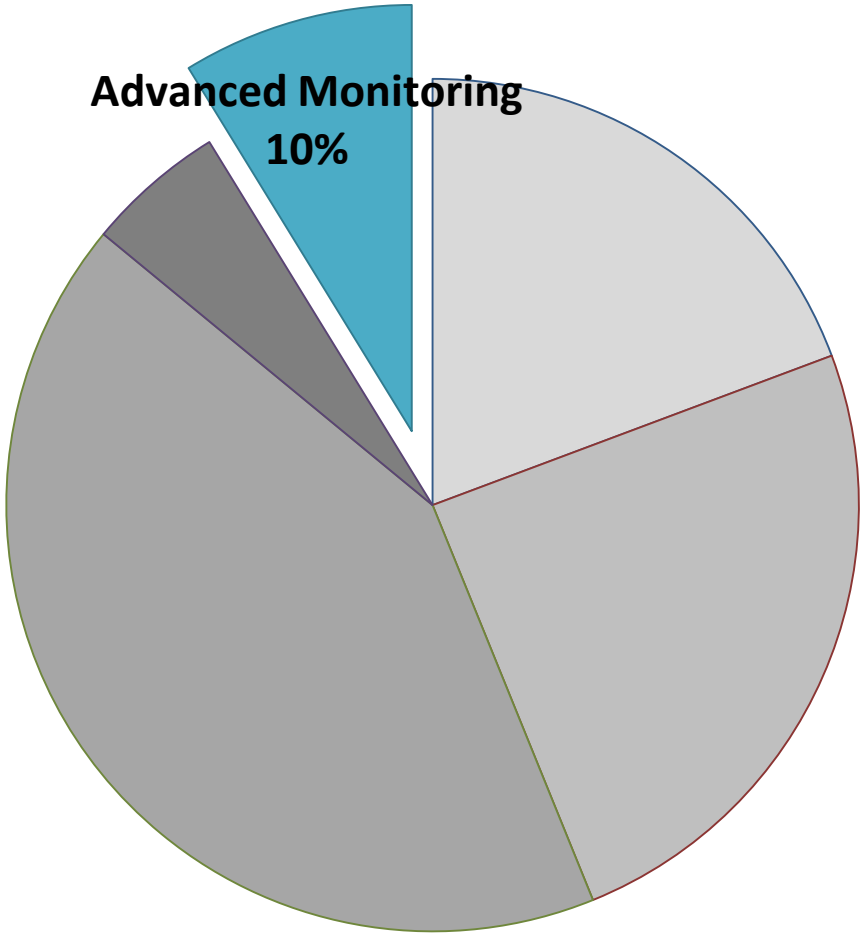
Collaboration Support

- E-Enterprise Support for EPA/State coordination body similar to ENLC

- Develop an integrated management plan to build out the E-Enterprise vision over time

- Resources to inventory projects jointly considered to be ready for modernization and begin evaluations of most promising

Advanced Monitoring

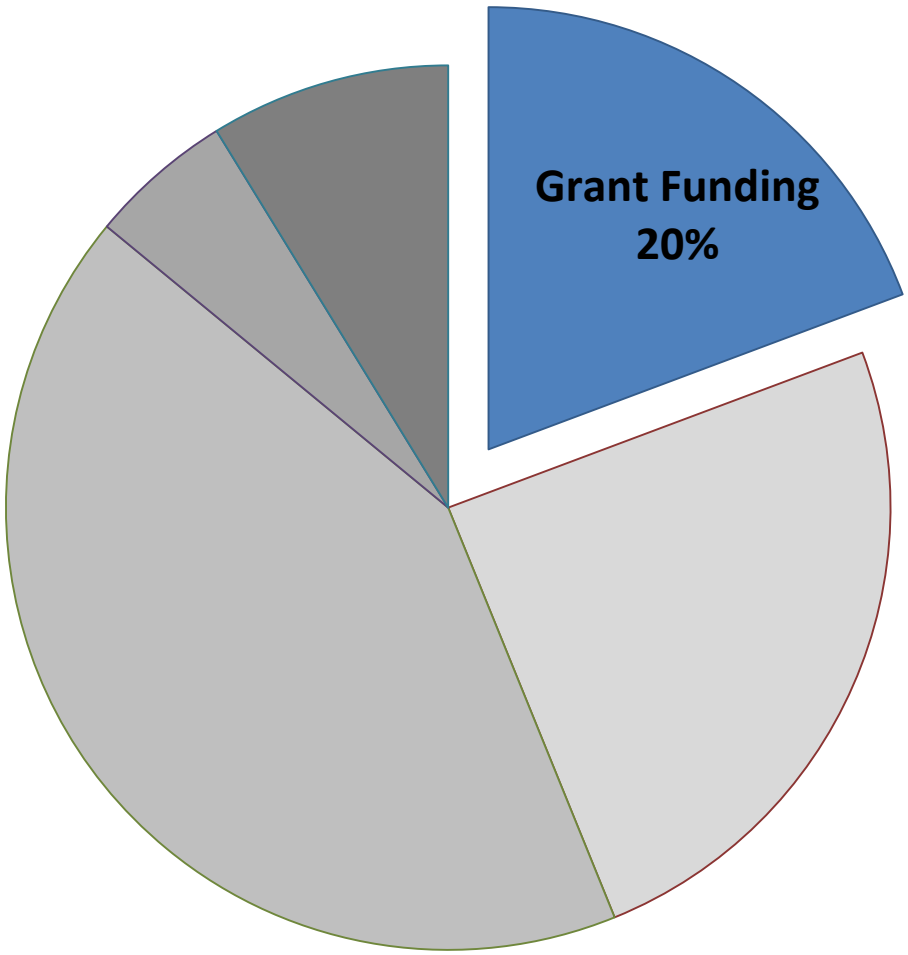


- Purchase of infrared cameras to detect VOC releases for state use

- Enhance current PM2.5 and Ozone park bench real time monitors to include more pollutants and more sites

- Build out existing data system to accept and report real time short interval (e.g., one minute) air monitor data

Grant Funding



- Money to support participation on E-Enterprise Governance

- Money available for grants – program details are not yet established

E-Enterprise on the Agenda

Today:

- **11:00 am** Panel Discussion: State Models in Business Process Improvement
- **1:30 pm** Session 7 – E-Manifest
- **1:30 pm** Session 9 – More from the Panelists on Business Process Improvement

Tomorrow:

- **10:15 am** Working Session on E-Enterprise Business Needs and Architecture Planning

Contacts

- David Hindin, EPA, 202.564.1300, hindin.david@epa.gov
- Andy Battin, EPA, 202.566.2140, battin.andrew@epa.gov
- Chris Simmers, NH, 603.271.2961, chris.simmers@doit.nh.gov
- Rob Willis, Ross Strategic, 206.792.4082, rwillis@rossstrategic.com

Questions?