



E-Enterprise for the Environment 101

Exchange Network National Meeting 2014



E C O S

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



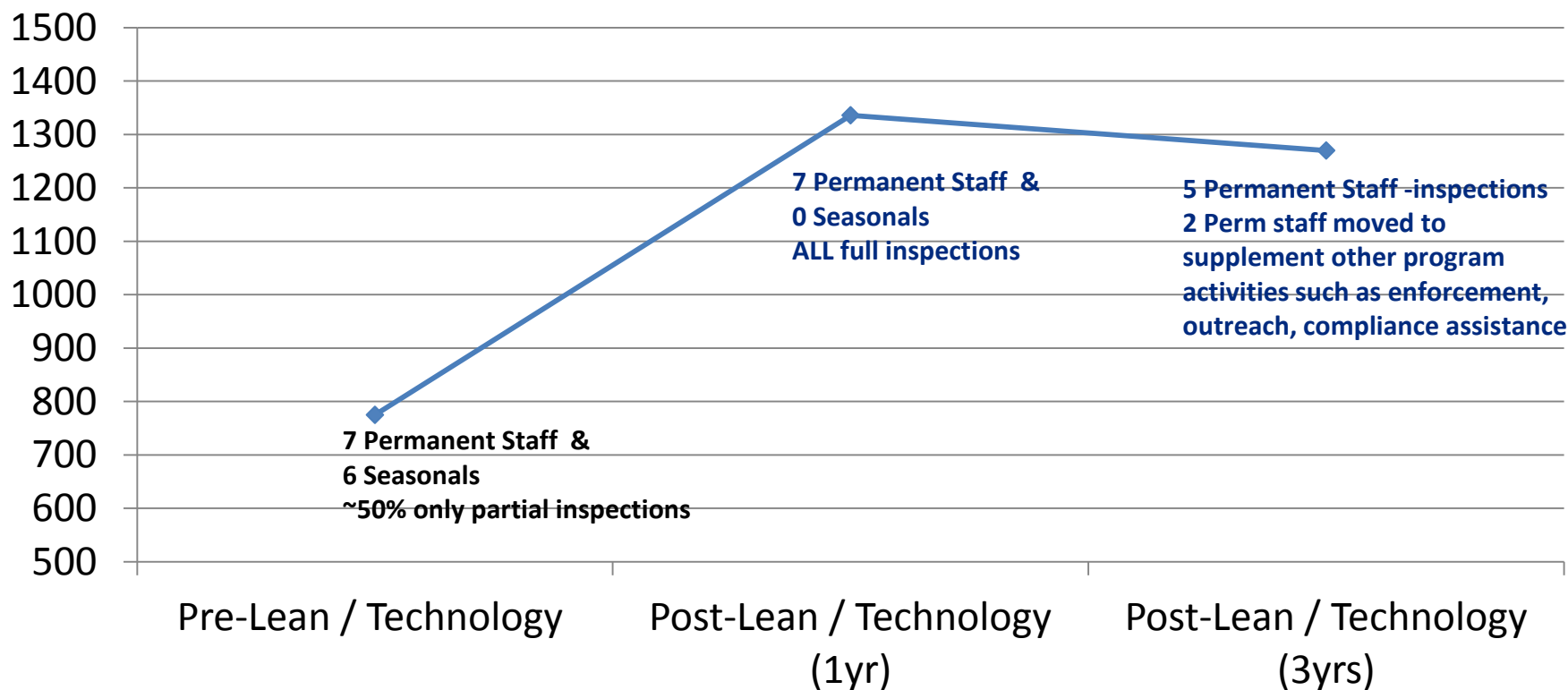
**Information Technology
& 2-Way Portal**

**Streamlined
& Innovative Approaches**

Example: Streamlining

LEAN/Technology Pilot at CT DEEP

Effect of LEAN & Mobile Technology on UST Inspection Outputs



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

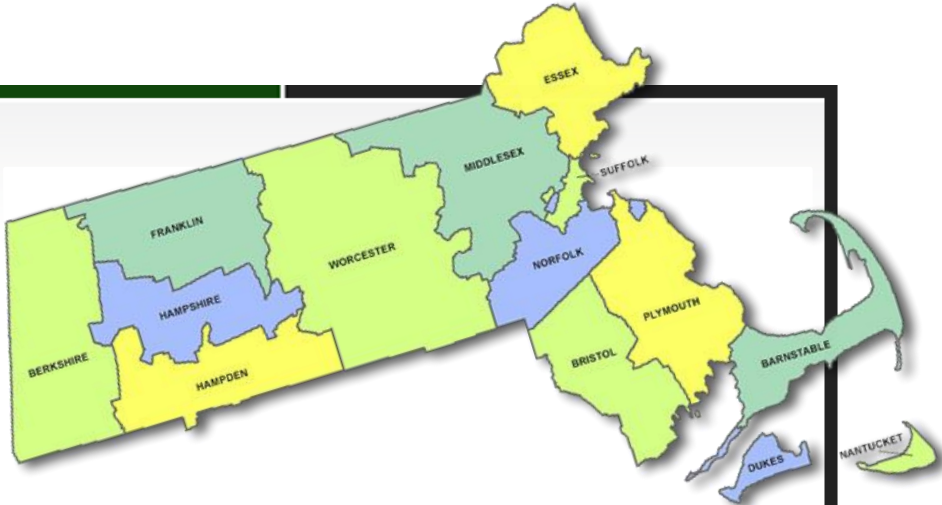
Hazardous Waste Coordinator Certification Training



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

[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

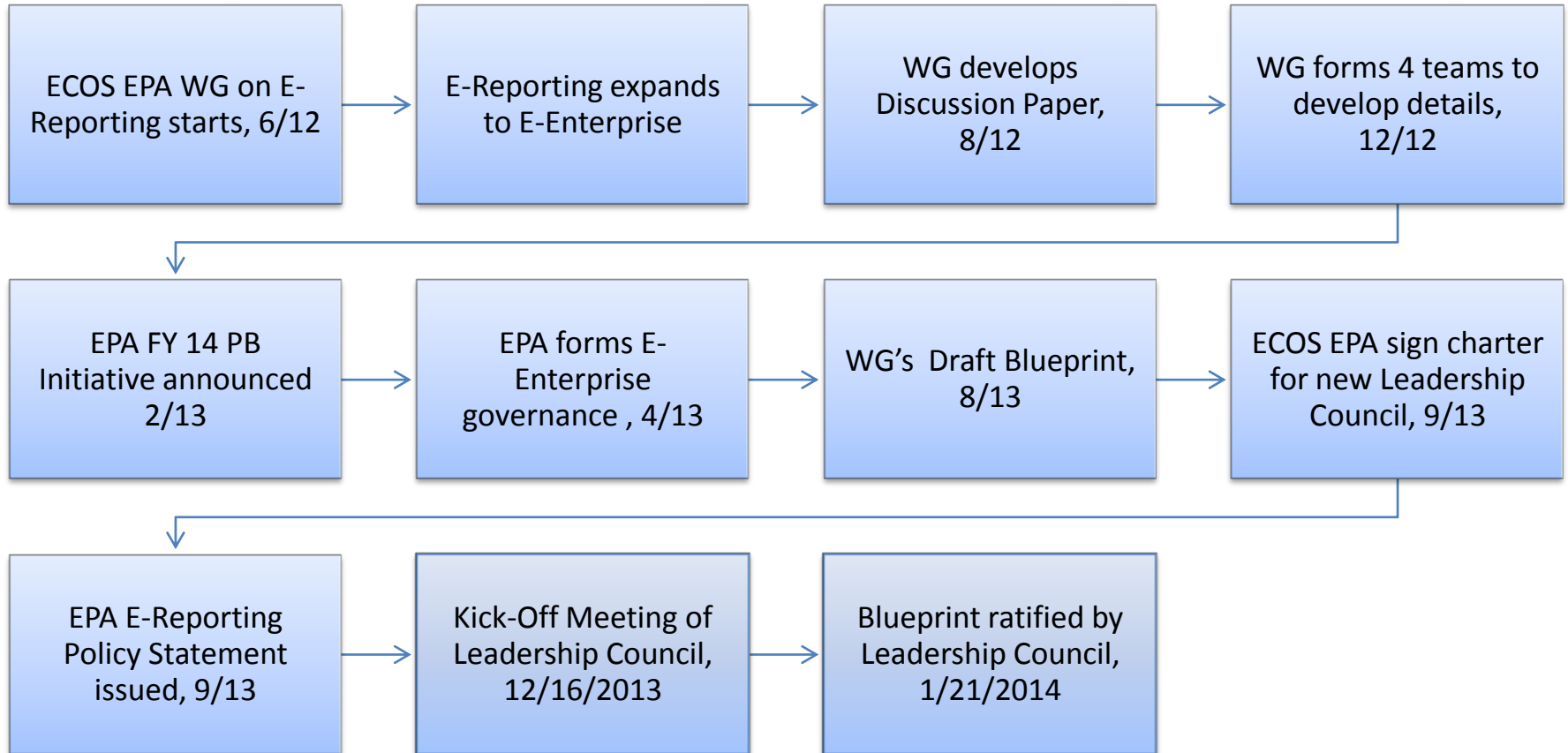
- [Login or Create Your Account](#)
- [Forms Available for Filing in eDEP](#)
- [eDEP Instructions and Frequently Asked Questions](#)
- [Troubleshooting eDEP - quick fixes for common problems](#)
- [eDEP Contacts & Feedback](#)

MassDEP Service Center

- [A to Z Quick Links](#)
- [Service Center Index](#)

E-Enterprise Time Line

(WG = ECOS EPA Working Group)

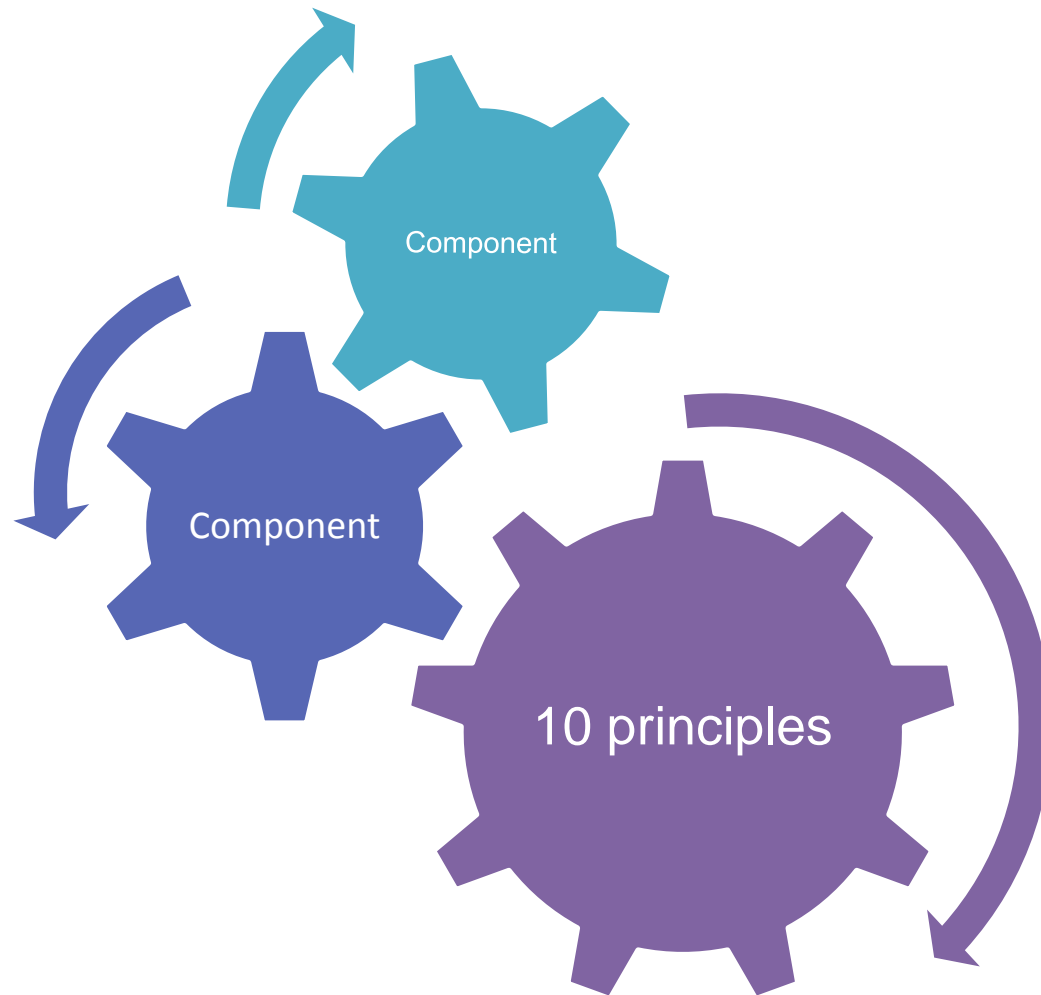




Questions?



E C O S

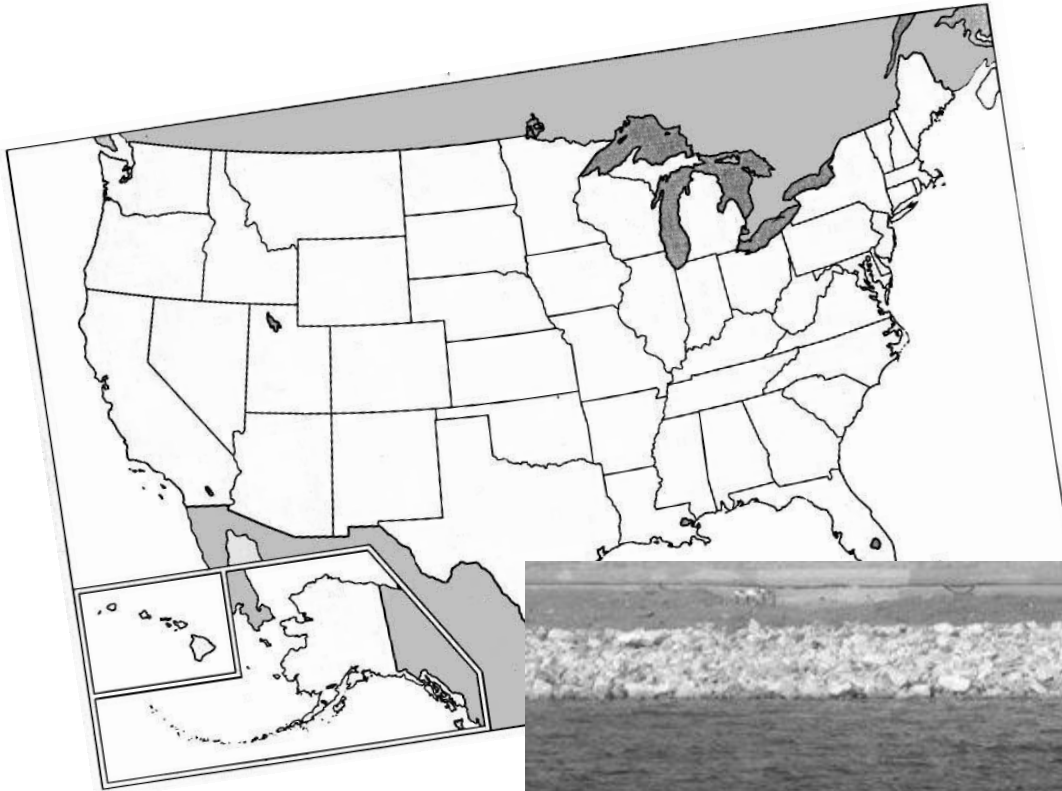


E-ENTERPRISE PRINCIPLES

DAVID HINDIN, EPA

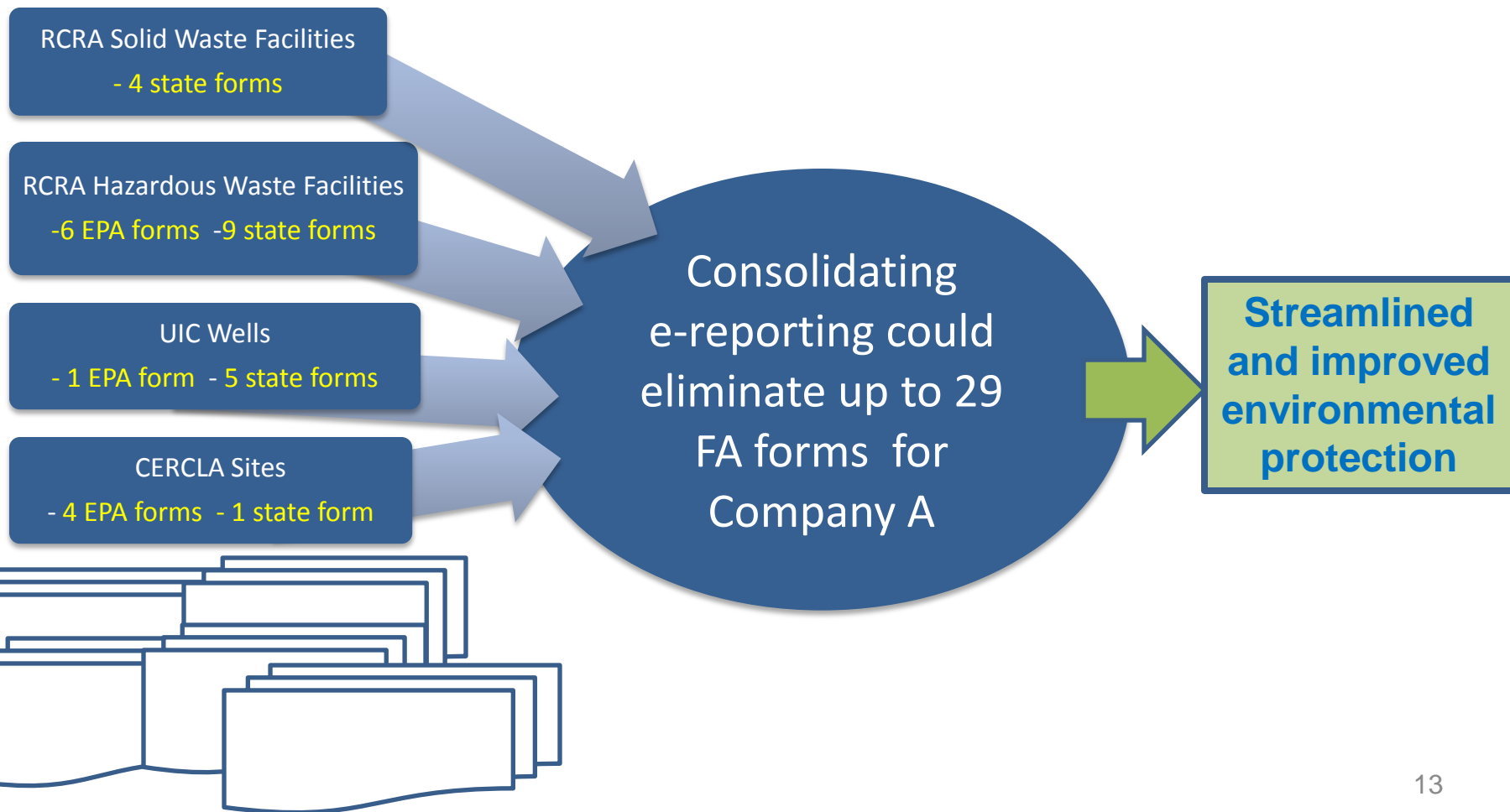
Principle #1: Partnership
of Environmental
Government Regulators

Principle #2: Honoring
Delegated Authorities



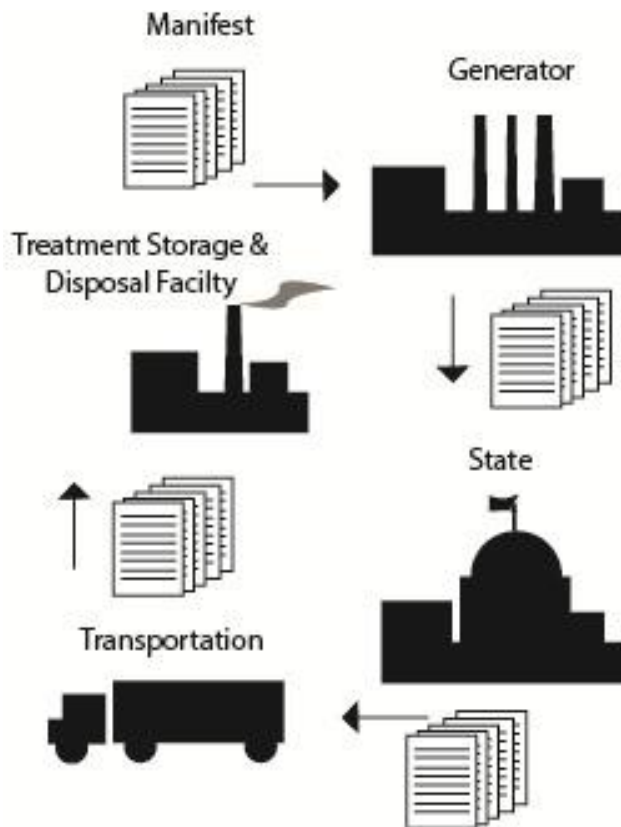
Principle #3: Modernize and Improve Environmental Regulations and Programs, and their Implementation

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.

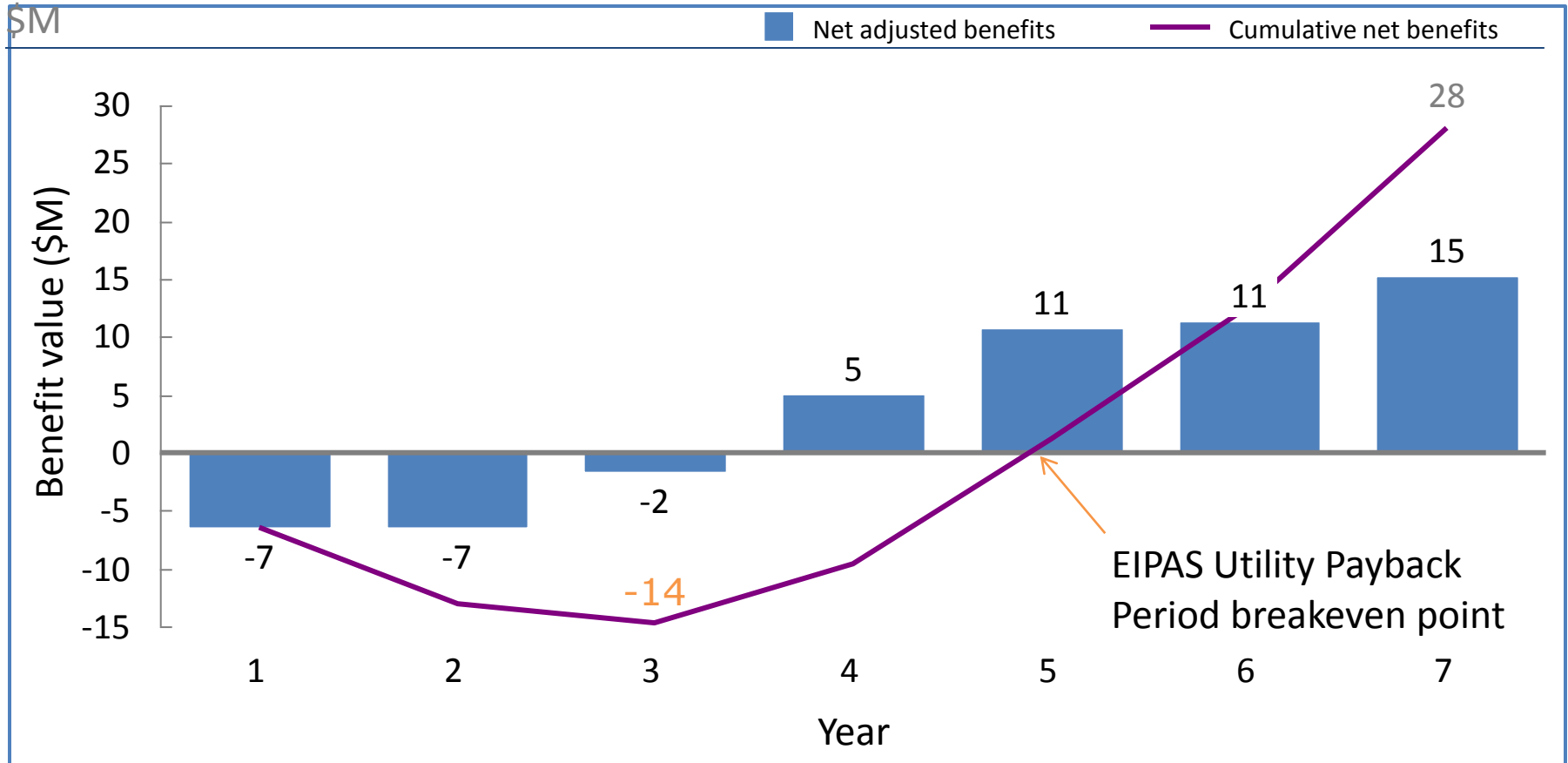
Projected \$75 million cost savings (to regulated entities and regulators) and reduction in potentially 400,000-700,000 FTE hours.



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 years¹.

EIPAS net benefits by year² 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

The screenshot displays the EPA website's user interface. At the top, the EPA logo and "United States Environmental Protection Agency" are visible. Navigation tabs include "LEARN THE ISSUES", "SCIENCE & TECHNOLOGY", "LAWS & REGULATIONS", and "ABOUT EPA". A search bar with "Advanced Search" and "A-Z Index" links is present. Below the navigation, there are links for "Contact Us" and "Share". The main content area features a photo of two workers in hard hats and safety gear. To the right of the photo is a vertical menu with the following items: "Research Data", "Compliance Reporting", "Compliance Guidance", "Regulations", "Permit Applications", and "Data for Developers". Below the photo, there is a section titled "What does this portal offer?" with a list of bullet points: "electronic reporting", "regulatory reform", "optimum business", "transparency", and "burden reduction". To the right of this list is a "Notifications" section with a brief description and a "Sign up for Notifications" link. Further right is a "My Profile" section with a sign-in form containing fields for "User" and "Password", a "Forgot password?" link, and a "New User? Create Profile" link. A large red "SAMPLE" watermark is overlaid on the bottom right of the screenshot.

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

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



The image shows a screenshot of the TurboTax website's sign-in interface. At the top left is the TurboTax logo, which includes a red checkmark. The main heading is "Sign In to Your 2012 Return". Below this are two input fields: "User ID" and "Password". Under the password field is a checkbox labeled "Remember me on this computer". To the right of the checkbox is a yellow padlock icon and a "Sign In" button. Below the button is a link that says "Can't access your account?". At the bottom of the page, it says "TurboTax an Intuit product" and "What other sites can use my Intuit sign in?".


TurboTax ✓

Sign In to Your 2012 Return

User ID

Password

Remember me on this computer

 **Sign In**

[Can't access your account?](#)

TurboTax ✓ an **Intuit** product

[What other sites can use my Intuit sign in?](#)

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

Current State



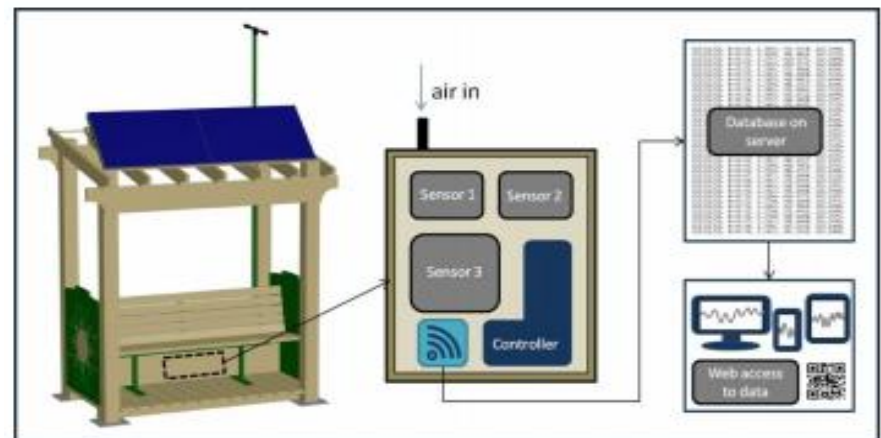
Future State



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

The screenshot shows the EPA Central Data Exchange (CDX) website. At the top, there is a blue header with the EPA logo and the text 'United States Environmental Protection Agency'. To the right of the header is the 'CENTRAL DATA EXCHANGE CDX' logo. Below the header is a navigation bar with links: 'CDX Home', 'About CDX', 'Recent Announcements', 'Terms and Conditions', and 'Help'. The main content area has a white background with a blue border. On the left, there is a large image of a blue wave with binary code overlaid. To the right of the image is a login section titled 'Log in to CDX'. It contains two input fields for 'User ID' and 'Password', and two buttons: 'Log In' and 'Register with CDX'. Below the login section are links for 'Forgot your password?' and 'Warning Notice and Privacy Policy'. The main content area has a 'Welcome' section with a blue heading. Below the heading is a paragraph of text: 'Welcome to the Environmental Protection Agency (EPA) Central Data Exchange (CDX) - the Agency's electronic reporting site. The Central Data Exchange concept has been defined as a central point which supplements EPA reporting systems by performing new and existing functions for receiving legally acceptable data in various formats, including consolidated and integrated data.' Below this is a section titled 'Warning Notice and Privacy Policy' with a blue background. It contains two sub-sections: 'Warning Notice' and 'Privacy Statement'. The 'Warning Notice' section contains text about the EPA's Central Data Exchange Registration procedure and its use as a computer system. The 'Privacy Statement' section contains text about the use of personal identifying information for registration and reporting purposes.

EPA United States Environmental Protection Agency

CENTRAL DATA EXCHANGE **CDX**

[CDX Home](#) [About CDX](#) [Recent Announcements](#) [Terms and Conditions](#) [Help](#)

Central Data Exchange

[Contact Us](#)

Welcome

Welcome to the Environmental Protection Agency (EPA) Central Data Exchange (CDX) - the Agency's electronic reporting site. The Central Data Exchange concept has been defined as a central point which supplements EPA reporting systems by performing new and existing functions for receiving legally acceptable data in various formats, including consolidated and integrated data.

Warning Notice and Privacy Policy

Warning Notice

EPA's Central Data Exchange Registration procedure is part of a United States Environmental Protection Agency (EPA) computer system, which is for authorized use only. Unauthorized access or use of this computer system may subject violators to criminal, civil, and/or administrative action. All information on this computer system may be monitored, recorded, read, copied, and disclosed by and to authorized personnel for official purposes, including law enforcement. Access or use of this computer system by any person, whether authorized or unauthorized, constitutes consent to these terms.

Privacy Statement

EPA will use the personal identifying information which you provide for the expressed purpose of registration to the Central Data Exchange site and for updating and correcting information in internal EPA databases as necessary. The Agency will not make this information available for other purposes unless required by law. EPA does not sell or otherwise transfer personal information to an outside third party. [\[Federal Register: March 18, 2002 \(Volume 67, Number 52\)\]\[Page 12010-12013\]](#).

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

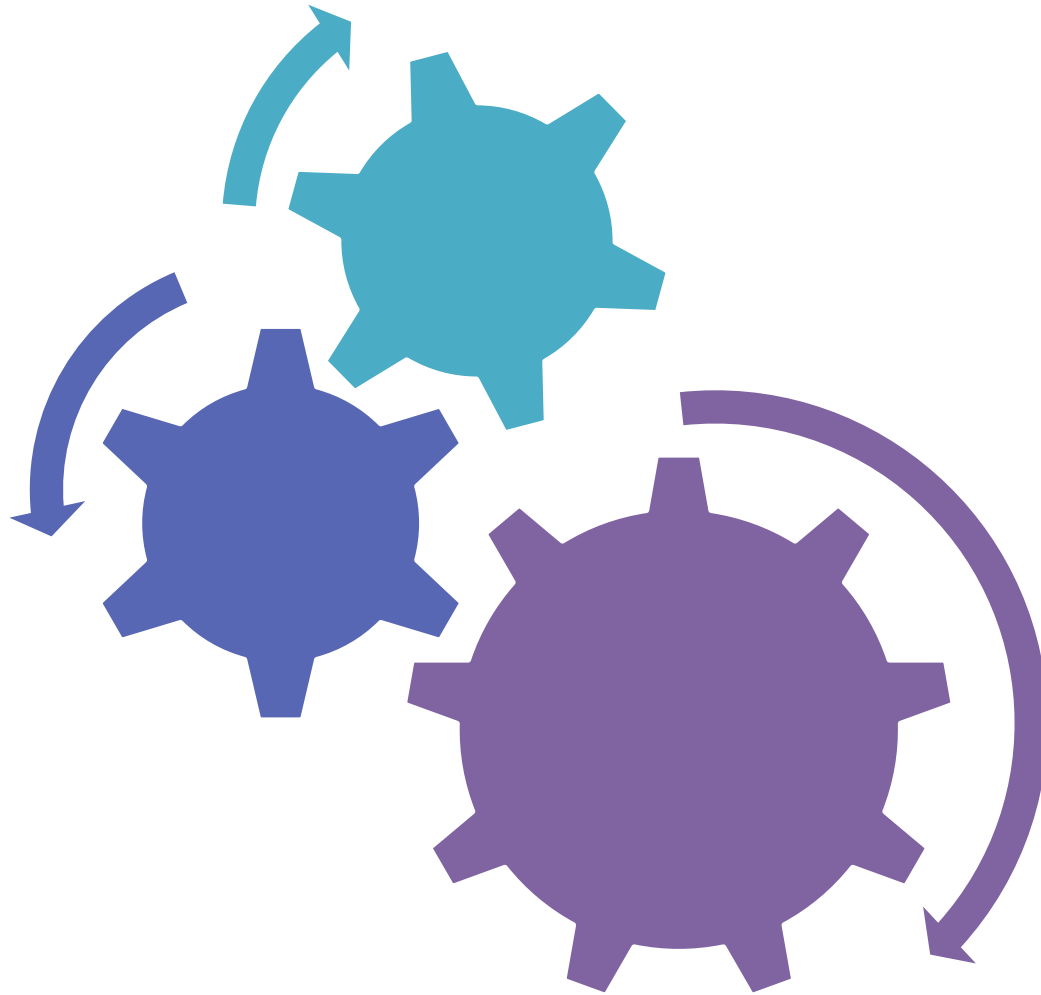
Automated Exceedance Detection/Screening



Questions?



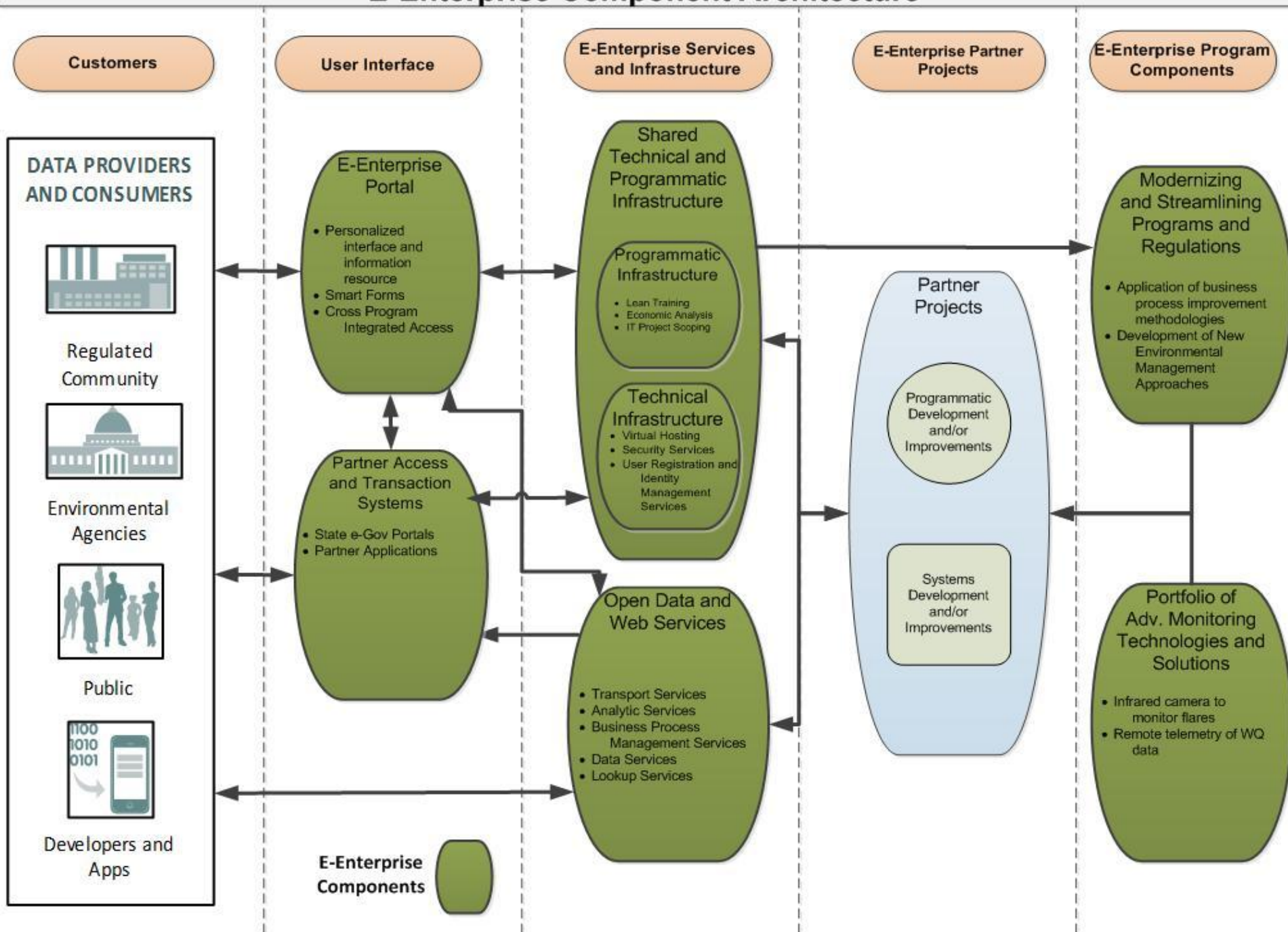
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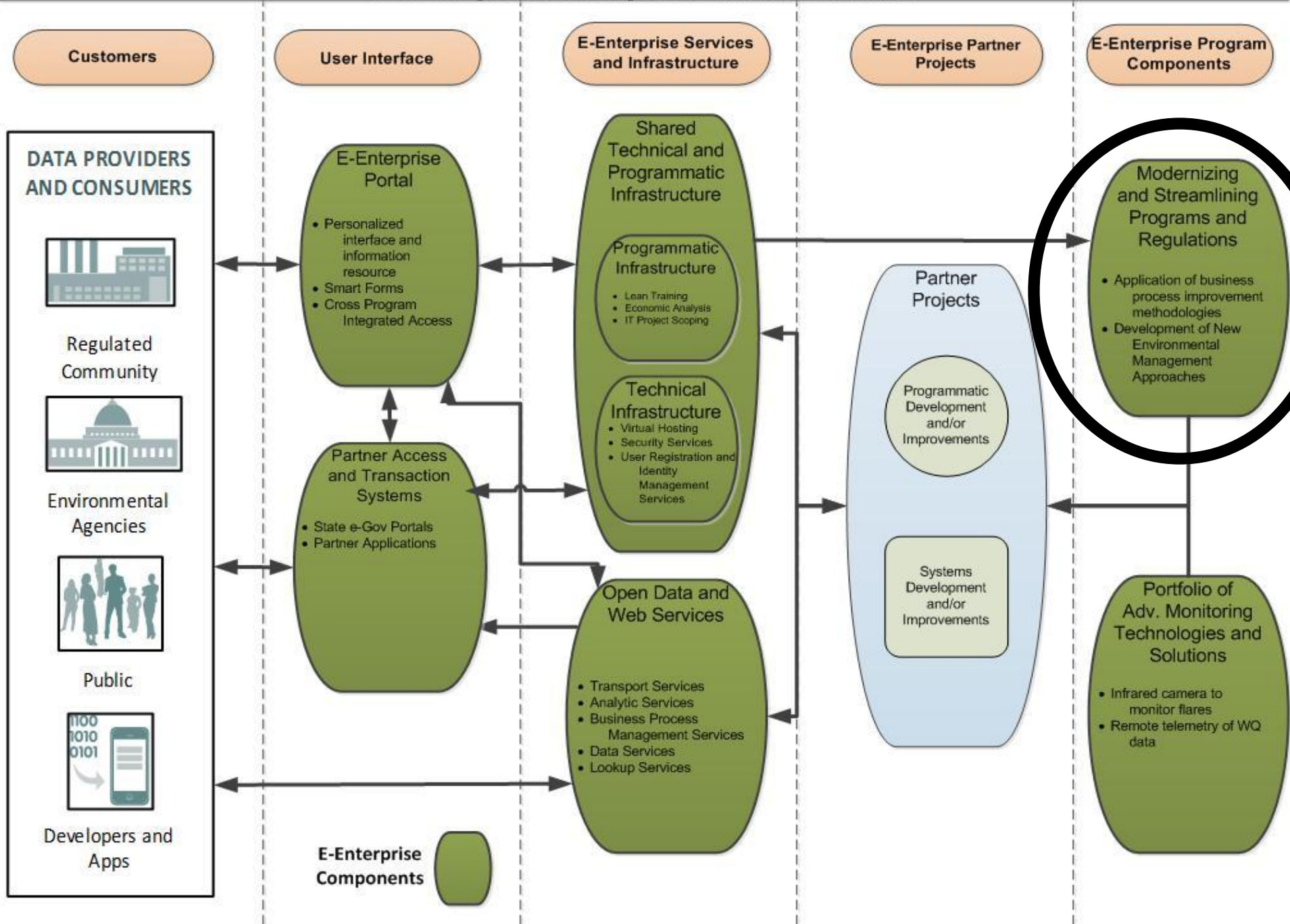
EXCHANGE NETWORK AND E-ENTERPRISE

ANDY BATTIN, EPA

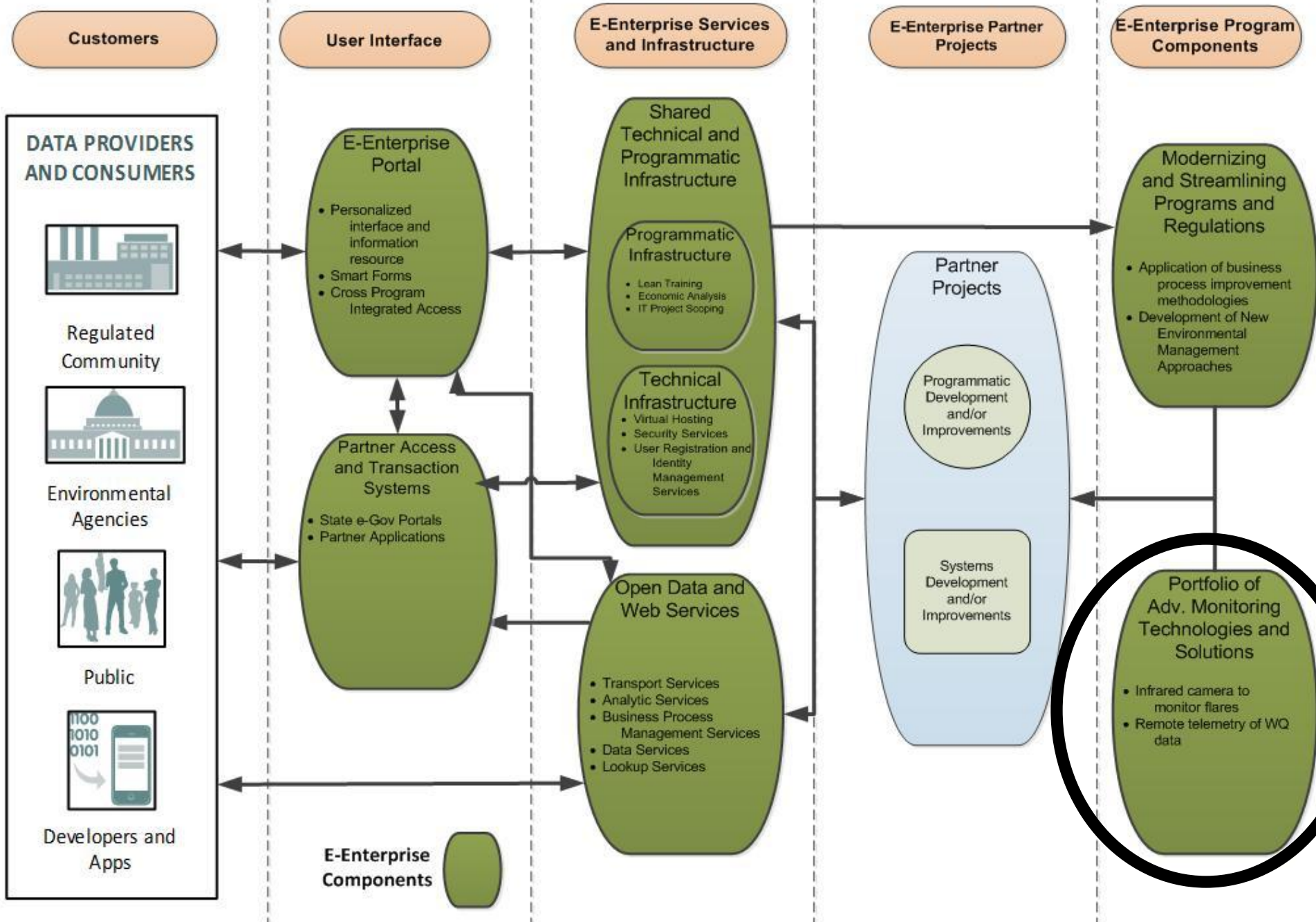
E-Enterprise Component Architecture



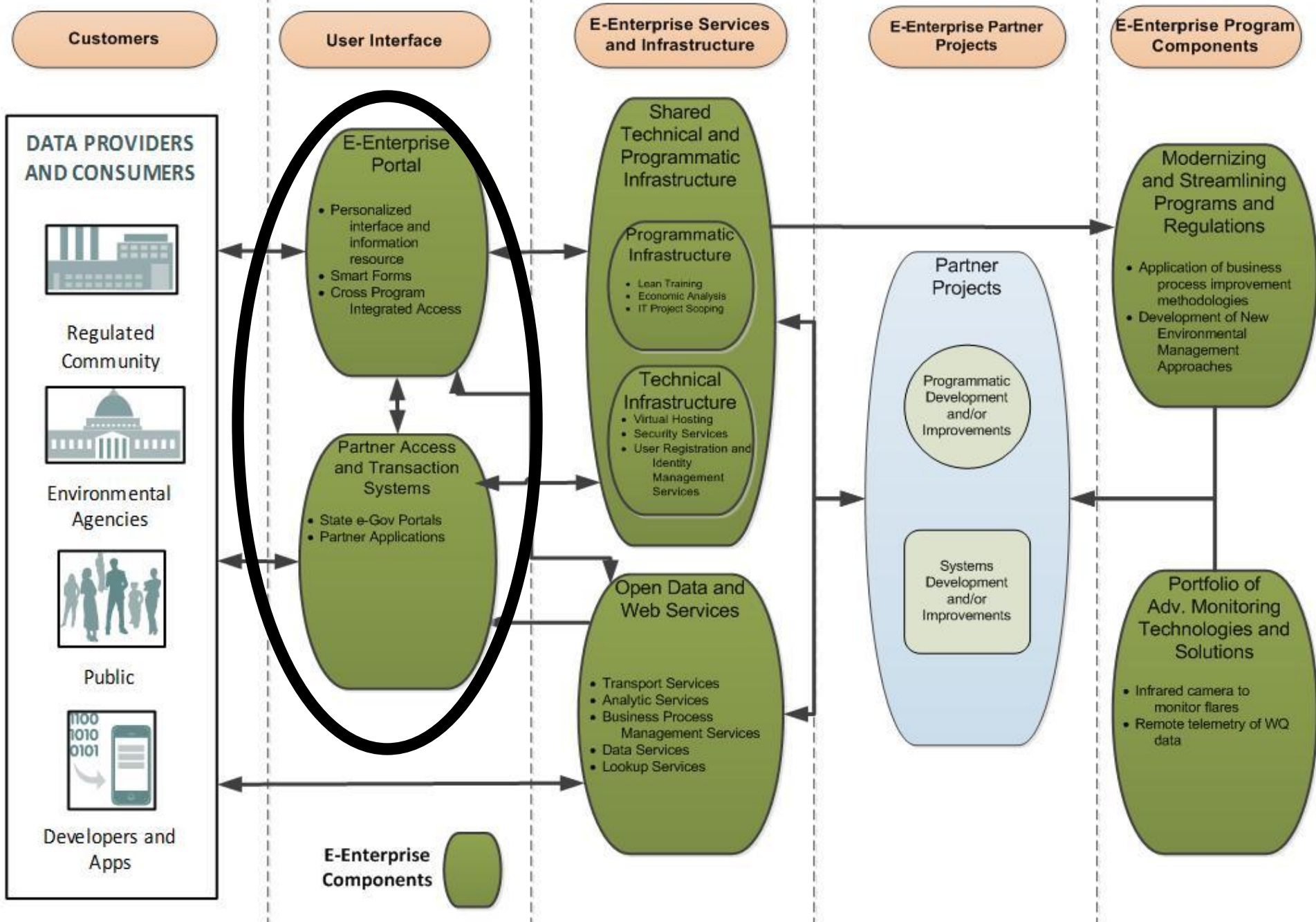
E-Enterprise Component Architecture



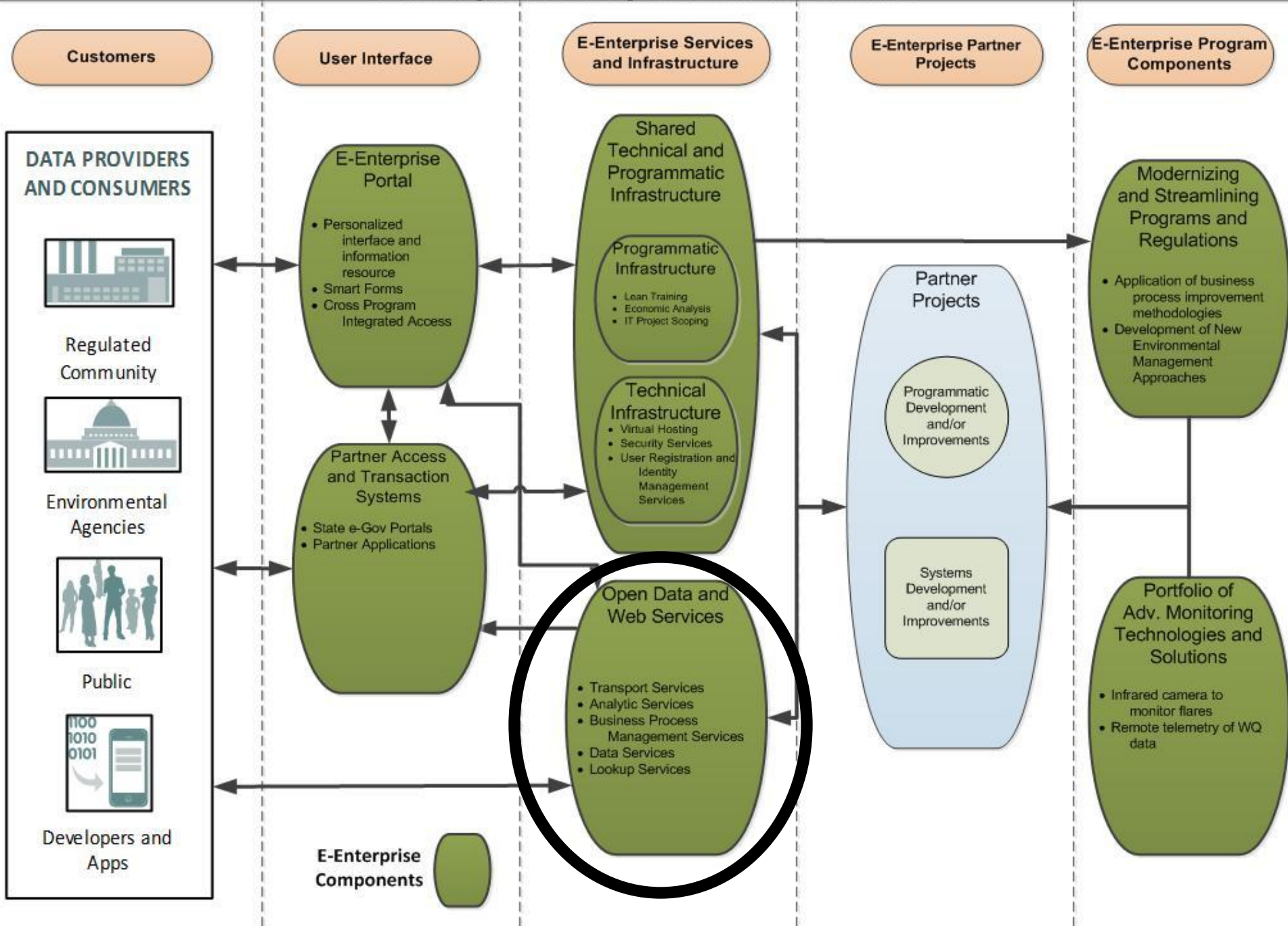
E-Enterprise Component Architecture



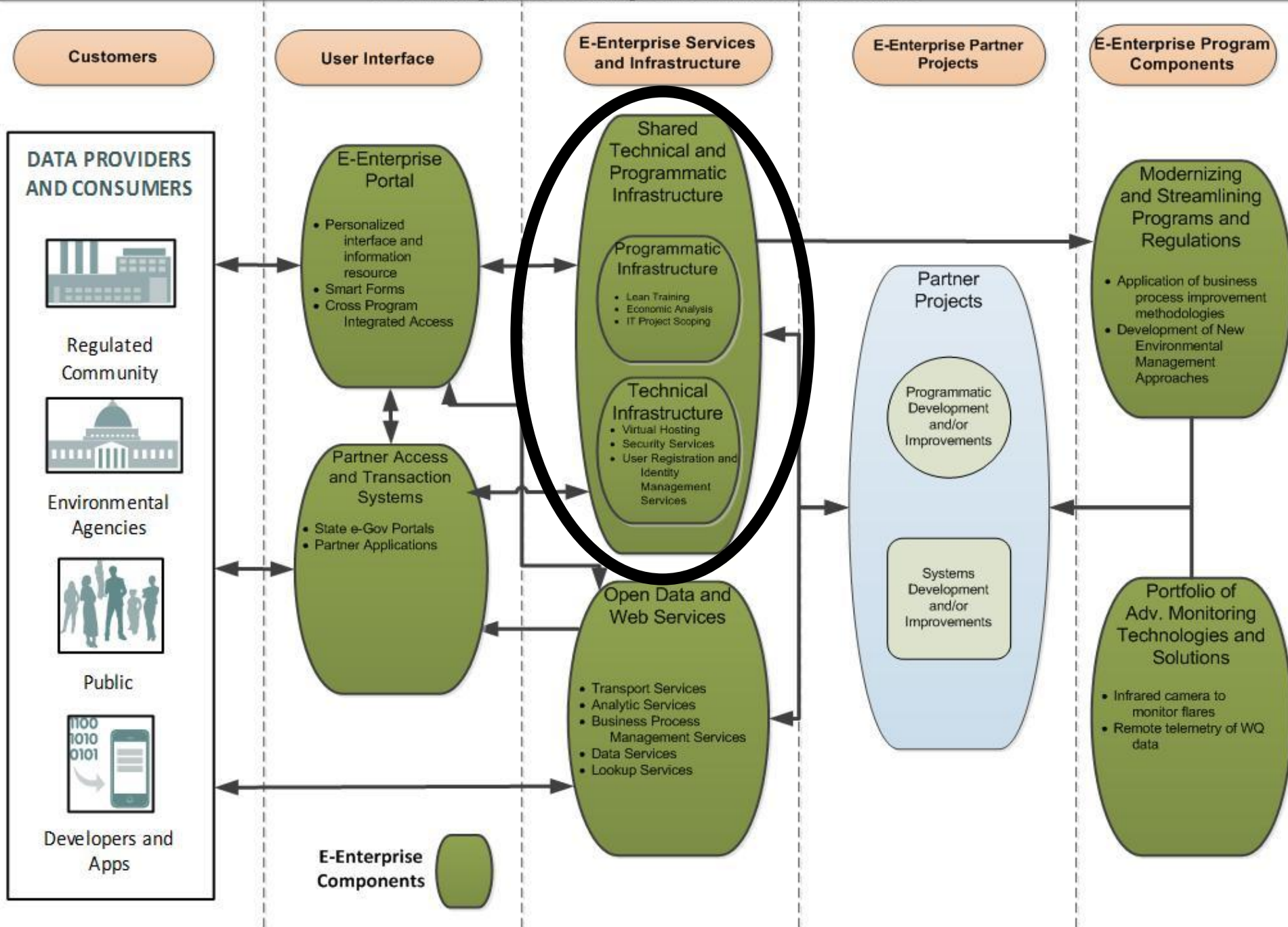
E-Enterprise Component Architecture



E-Enterprise Component Architecture



E-Enterprise Component Architecture



Modernizing and Streamlining Programs and Regulations

Advanced Monitoring Technologies and Techniques

**Data Access
Services
(EN Phase II)**

**Shared
Infrastructure
and Business
Process
Services**

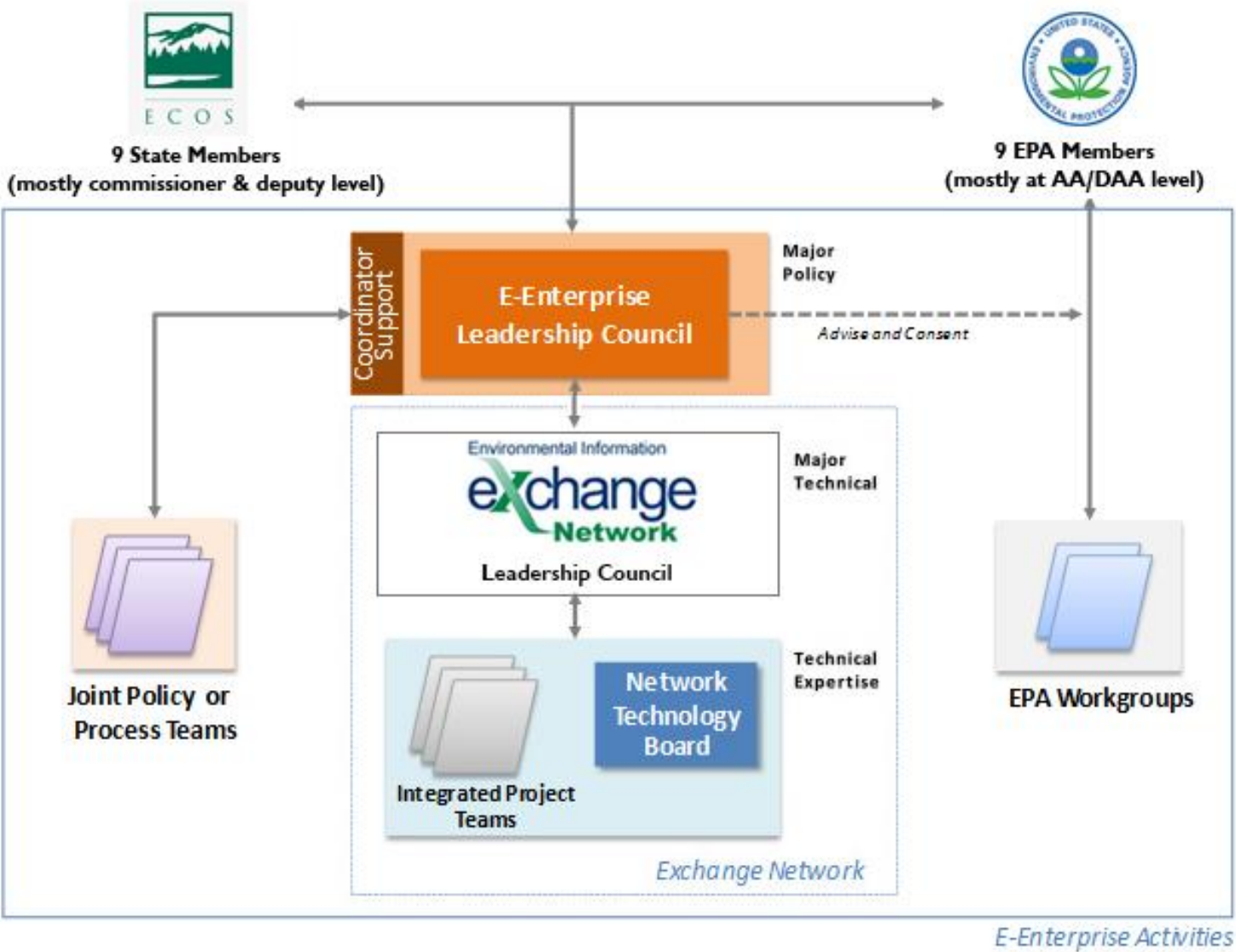
**Portal and
Partner
Systems**

**National System Flows and Other Regulatory State/Tribe/EPA
Data Exchanges (ENPhase I)**

**E-
Enterprise**

**Exchange
Network**

E-Enterprise Joint Governance (EPA & States)



E-Enterprise Leadership Council (EELC)

EPA and State Members

February 2014

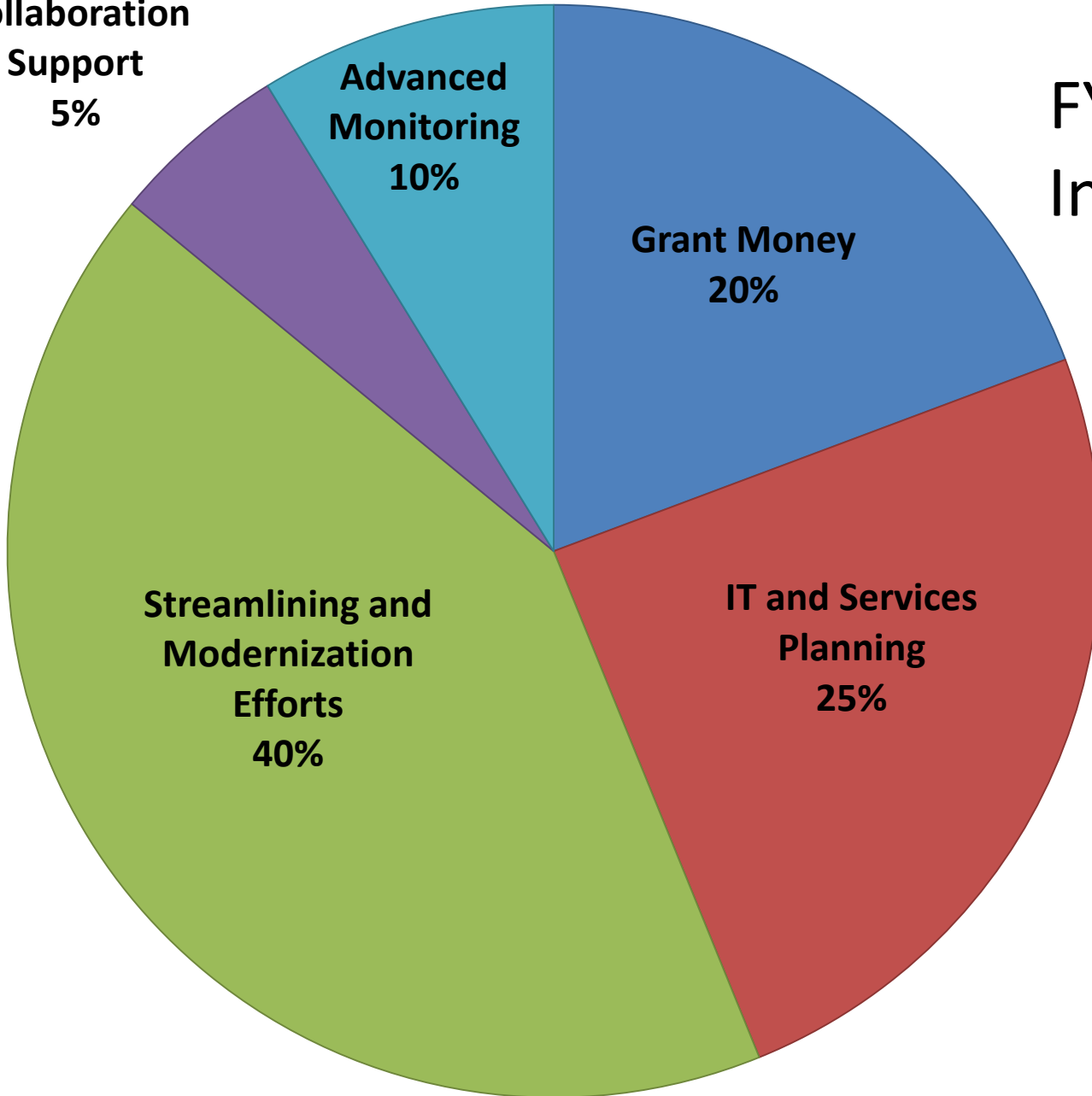
State Members

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

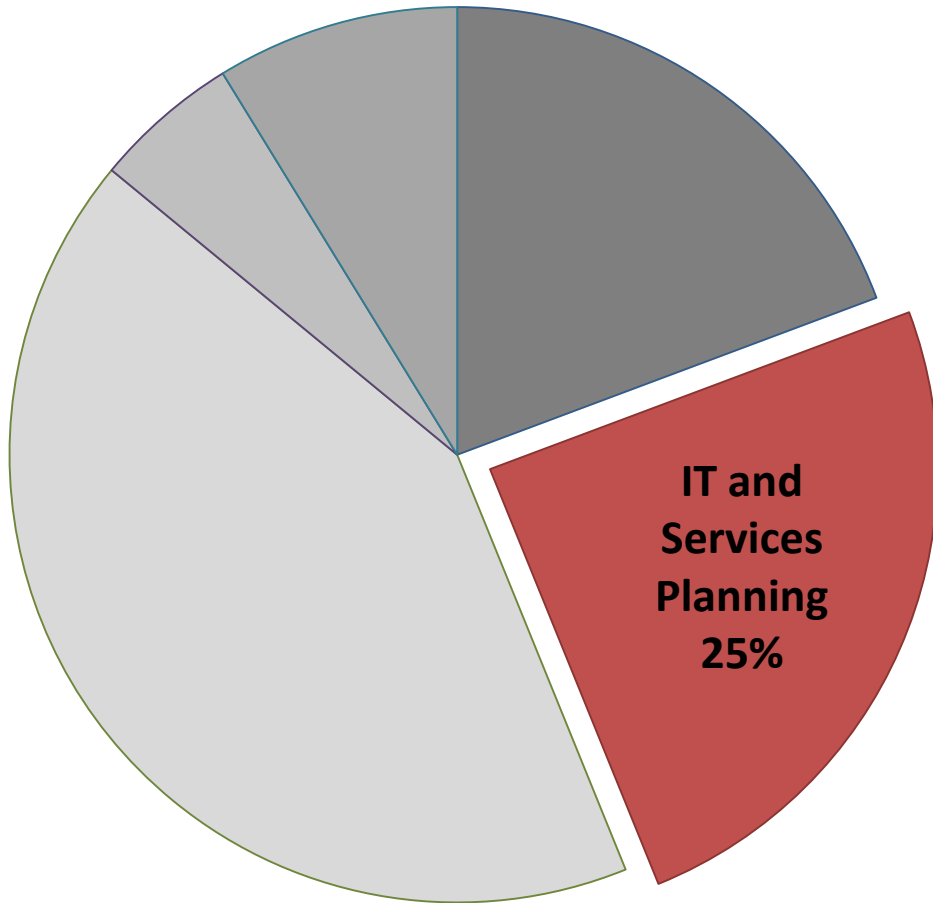
EPA Members

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

E-Enterprise FY2014 Proposed Investment Areas



Information and Shared Service Planning

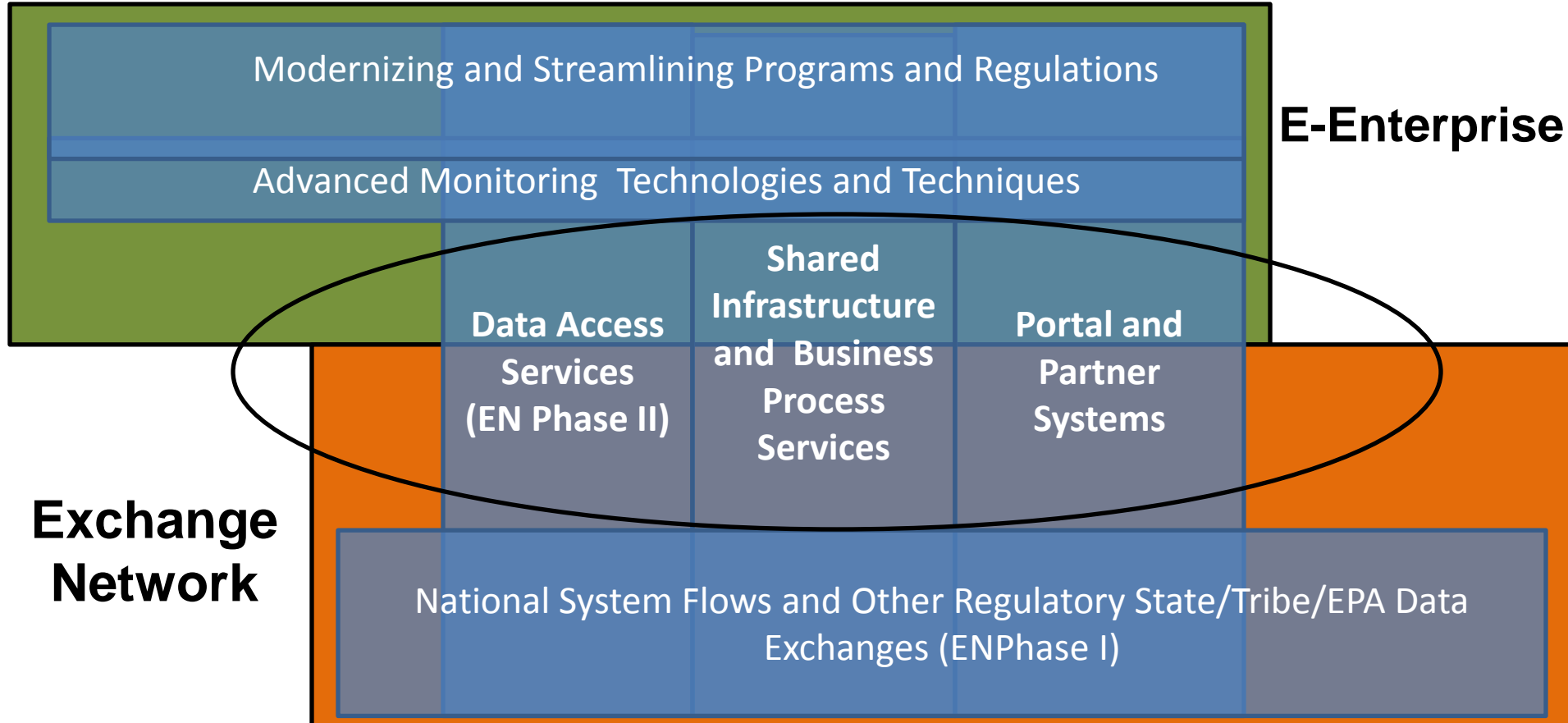


- Development of E-Enterprise Architecture and Service Portfolio to automate functions, ensure interoperability and reduce redundancies
- Proof of concept for single sign-on for regulated facilities, interoperable for EPA/co-regulator systems
- Solicit user needs and develop design for regulatory and 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

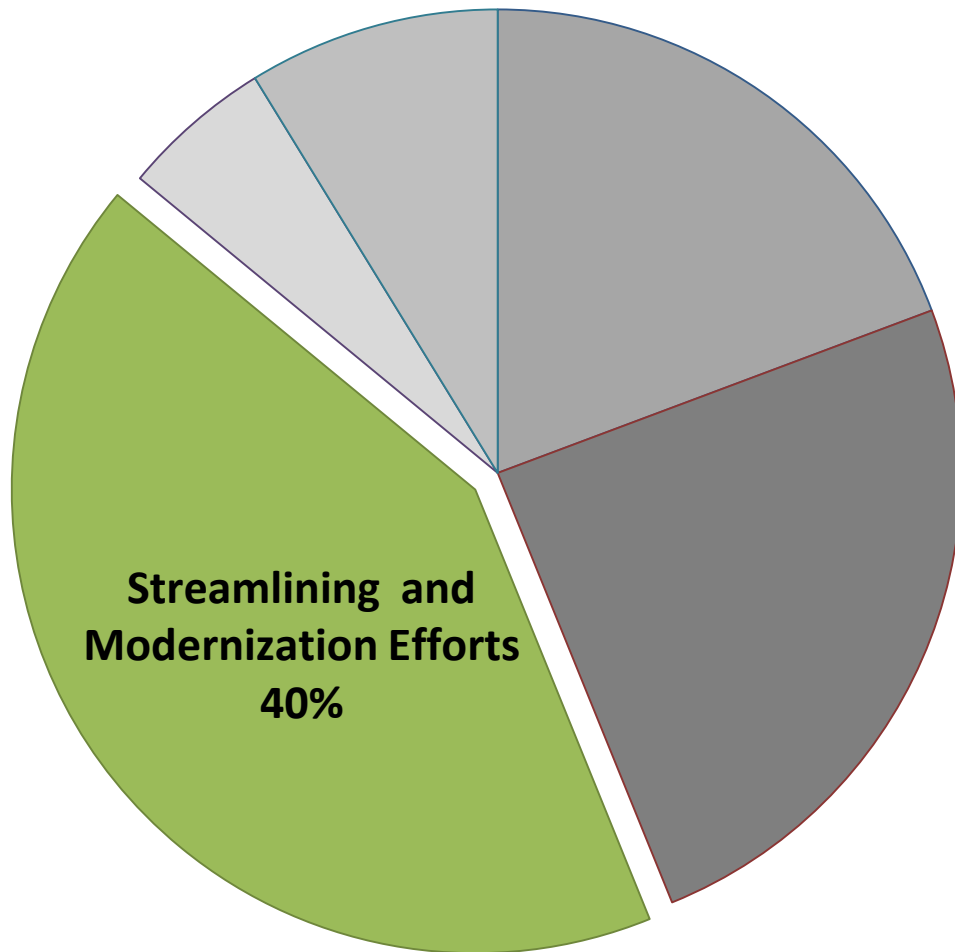


Exchange Network and E-Enterprise

Next Steps in Technical Planning

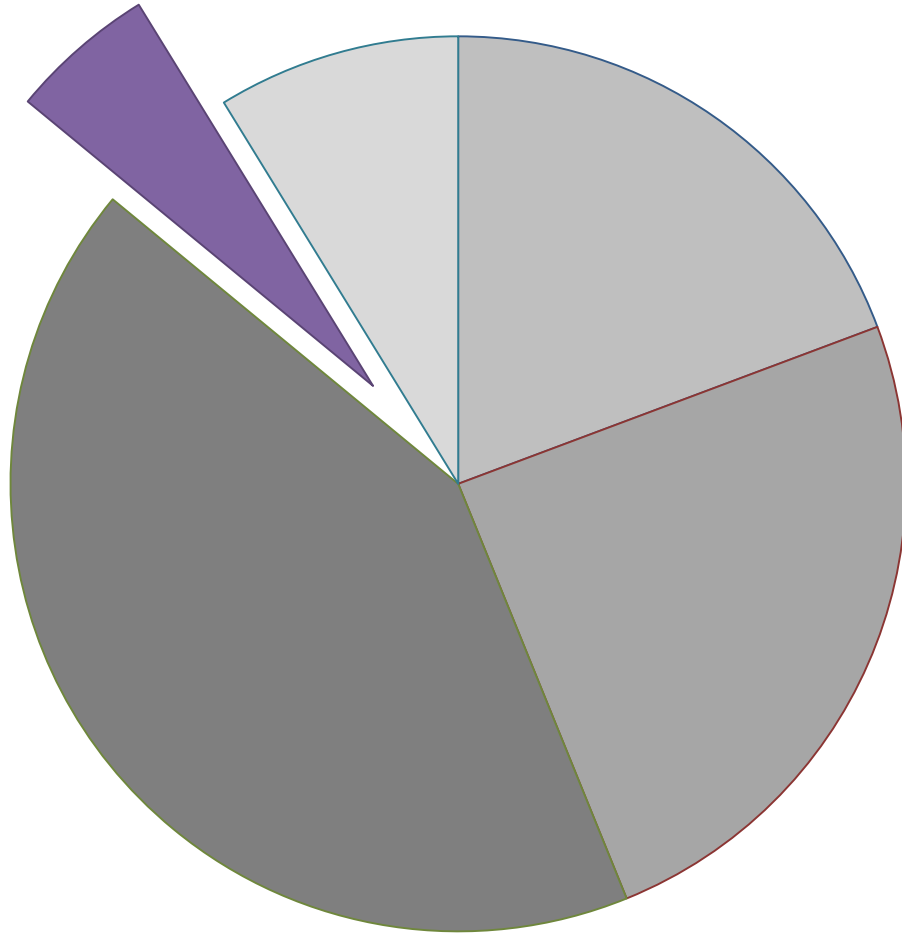
- ***E-Enterprise Solutions Architecture***: This establishes and defines the E-Enterprise architecture, describes the technical requirements for building the architecture, and the mechanisms for interfacing with the architecture.
- ***Version 1.0 E-Enterprise Services Portfolio and Implementation Strategy***: 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

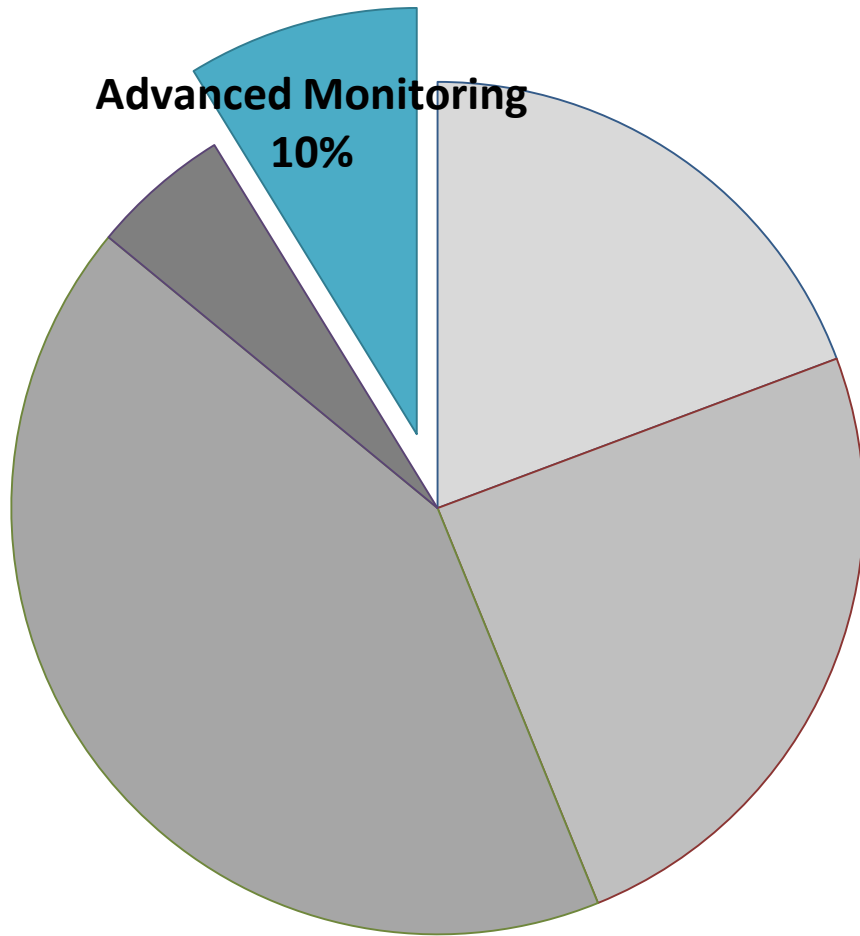
Collaboration Support 5%



Collaboration Support

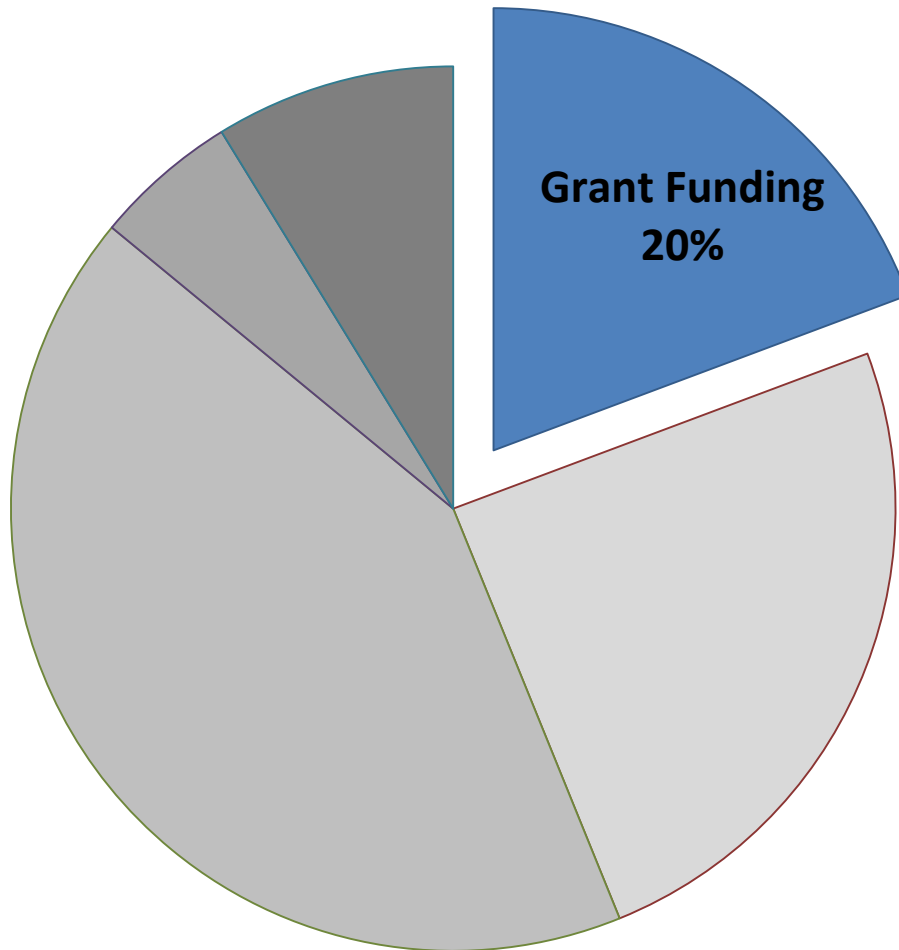
- E-Enterprise Support for EPA/State coordination body similar to ENLC
- Develop an integrated management plan to build out the E-Enterprise vision over time
- Resources to inventory projects jointly considered to be ready for modernization and begin evaluations of most promising

Advanced Monitoring



- Purchase of infrared cameras to detect VOC releases for state use
- Enhance current PM_{2.5} 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?



E C O S