Implementing the e-Manifest Act

Program Update

November 2014

Benefits

- EPA estimates the national e-Manifest system will ultimately reduce the burden associated with preparing shipping manifests by between 300,000 and 700,000 hours.

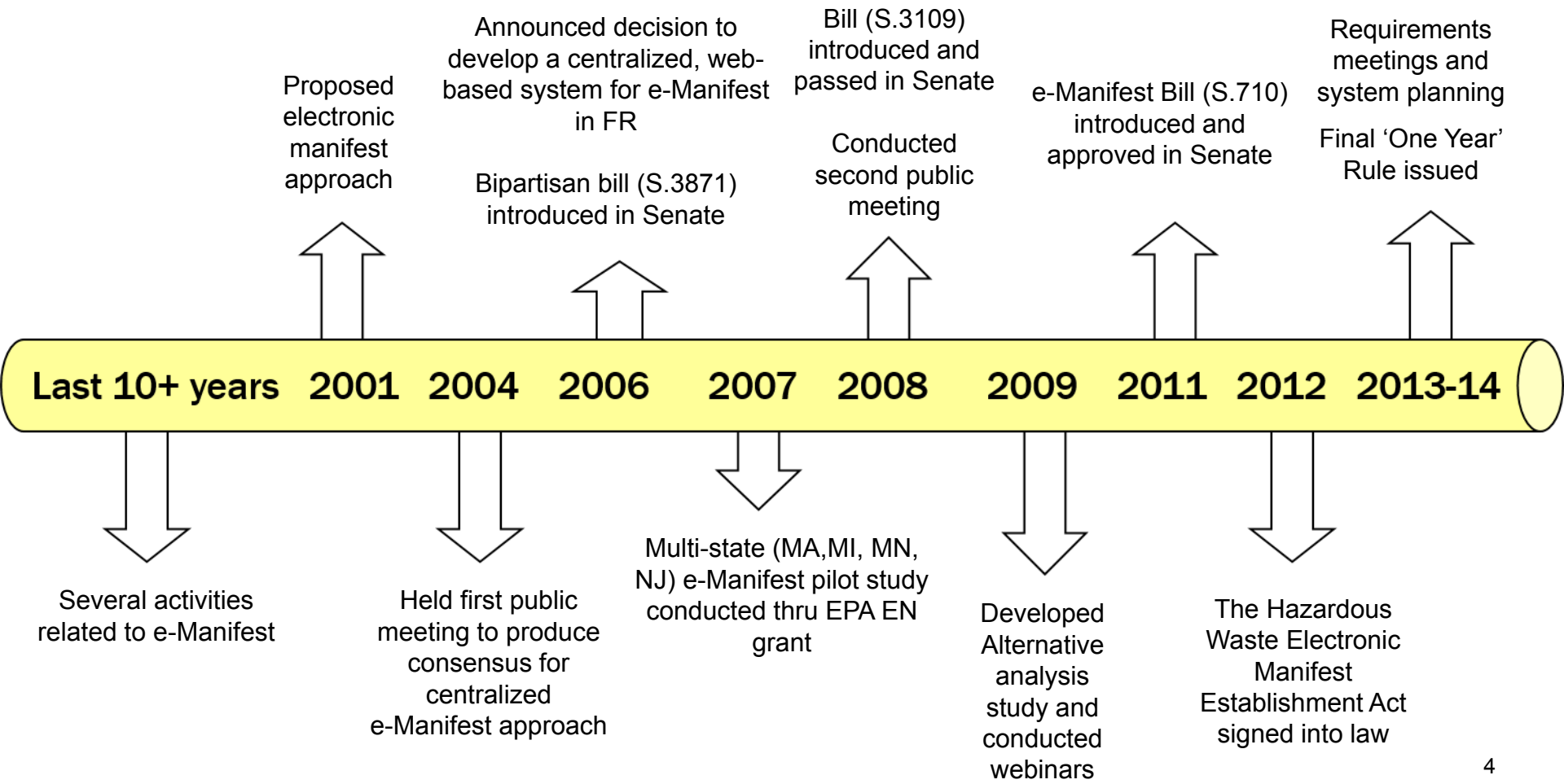
- Result in cost savings of more than $75 million per year for states and industry.

- In line with the E-Enterprise for the Environment initiative (E-Enterprise) principles. The e-Manifest system will:
  - Significantly improve access to higher quality and more timely waste shipment data.
  - Empower communities through increased transparency.
  - Provide more accurate information on completed waste shipments and management trends.

Overview

- Benefits
- History, Background, and e-Manifest Act Highlights
- Regulatory Update/Progress
- Advisory Board Update/Progress
  - Questions (after slide 13)
- System Update/Progress
- Procurement
- High Level Schedule & Next Steps
  - Questions (after slide 24)
- Technical User Meetings Highlights & Key Take Aways
  - Questions (after slide 36)
- Stakeholder Involvement/Communications

History of e–Manifest



e-Manifest Background

- The current paper-based hazardous waste manifest system
  - Set of forms, procedures designed to track hazardous waste shipments from “cradle-to-grave.”
  - Records information on types, quantities, and routing of wastes.
  - 6-copy form must be completed, carried, signed, filed, and mailed to states.
  - Manifest satisfies both EPA's and DOT's requirements for a shipping document.

- Primary External Stakeholders
  - Hazardous Waste Industry Handlers (small and large generators, transporters, TSDFs, brokers)
  - Hazardous Waste Industry IT Staff
  - State/tribal RCRA/Hazardous Waste Program Staff
  - State/tribal IT Staff
  - Department of Transportation.

e-Manifest Act Highlights

- "Hazardous Waste Electronic Manifest Establishment Act" enacted October 2012.

- EPA establish (and own) a national hazardous waste electronic manifest program system.
  - Requires final manifests be sent to the new EPA system
    - All federal and state wastes subject to manifest.
    - Includes collection of electronic and paper manifests.
    - Use of electronic manifests optional for users.
  - No requirement to submit manifests to EPA previously.

- Authorizes EPA to charge a fee for all hazardous waste handlers that use this new system (user fees will offset system development, operations maintenance costs).

e-Manifest Act Highlights

- Regulatory development: regulation that authorizes electronic manifests ("1-year rule") & user fee regulation.

- Establish a 9-member Advisory Board (FACA committee), includes:
  - EPA Administrator Chair (or designee), 2 information technology experts, 3 users of the manifest system, and 3 state manifest program representatives.

  - Purpose is to make recommendations on system effectiveness and user fees.

- e-Manifest Program - System Performance:
  - Meets the needs of the user community including States that rely on data contained in manifests.
  - Attracts sufficient user participation and service fee revenues to ensure the viability of the system.
  - Decreases the administrative burden on the user community.

Regulatory Development "OneYear Rule"

- Rule published in February 7, 2014 *Federal Register* authorizes use of electronic manifests.
  - If used, signed, and submitted per Rule's conditions, they are legal equivalent of paper manifests
- Rule announces legal framework for use of electronic manifests and codifies key provisions of the e-Manifest Act:
  - Federally and state required manifests included in scope of system,
  - Electronic and paper manifests subject to collection and to fees, and
  - Use of electronic manifests optional, but highly preferred.
- Rule addresses requirement for valid electronic signatures:
  - Must comply with EPA e-signature policies (Cross Media Electronic Reporting Rule/CROMERR), and
  - Must be as practical and cost-effective as possible for user community
- No claim of CBI may generally be made for manifest data.
  - EPA considers submitted manifests to be complete and final 90 days after TSDF signature date. At that time, the data may be made public.
  - States' FOIA policies may release data to the public sooner than Federal policy.

Regulatory Development "OneYear Rule"

- Manifest retention is satisfied by retention of an electronic manifest in the handler's account on the national e-Manifest system.

- Electronic manifest requirements will be implemented in all states on the same effective date that the national e-Manifest system takes effect.

- Authorized states must adopt program revisions equivalent to and consistent with federal requirements.
  - States must recognize validity of electronic manifests and cannot impose inconsistent requirements (formats, e-signatures, etc.) under state law.
  - State program modification deadline - July 1, 2015, or
  - July 1, 2016 if a State statutory change is necessary

- Authorization checklist for "one-year rule": http://www.epa.gov/osw/laws-regs/state/revision/spa34.htm

Regulatory Development, User Fee Rule

- Established EPA workgroup in the spring and immediately began work on early stages of regulatory development process. Early Guidance held on 7/17/2014.

- Workgroup developed the analytical blueprint to guide survey and other economic analyses to support the effort.

- Major questions workgroup will answer:
  - What model or formula will we use to calculate fees?
  - Which e-Manifest “users” will be charged fees?
  - Will fees be transaction based or have some other basis?
  - What is the most efficient fee collection point in the business process?
  - Are there transactions that warrant a fee premium?
  - How should we address fee trajectory and fee schedule revisions?
  - What accounting/reporting systems will we develop for fee support and oversight?

Regulatory Development, User Fee Rule

Agency working principles.

- Keep the fee structure as simple as possible.
- The statutory definition of “user” likely precludes charging states or the public fees for their access to manifest data.
- Fee system should not disrupt industry relationships with generators and their activities as manifest service providers to generators.
- Fee schedule should reinforce message that electronic manifests are preferred to paper.
- Fee trajectory factors (e.g., CPI) should be built into initial fee system.

Regulatory Development, User Fee Rule

Next Steps

- Workgroup meetings will continue on issues and options throughout the Fall and Winter.
- Discuss with stakeholders on quarterly basis.
- Future discussions will share possible fee models.
- Proposed Fee Rule will set out fee setting methodology for comment.
- Final rule will publish fee schedule and announce date system will be implemented.
- Goal: Issue Final Fee Rule approximately 90 days prior to system implementation/deployment.

e-Manifest Advisory Board

- 9 member e-Manifest Advisory Board (Federal Advisory Committee Act - FACA).
- Administrator (or designee) Chair, 3 state personnel, 3 users of the system, 2 IT professionals.
- Purpose is to make recommendations on system effectiveness and user fees.
- Completed draft FACA Charter.
- Federal Register Notice and other outreach soliciting Board nominees – February, 2015.
- Establish Advisory Board by October 2015.

System Progress

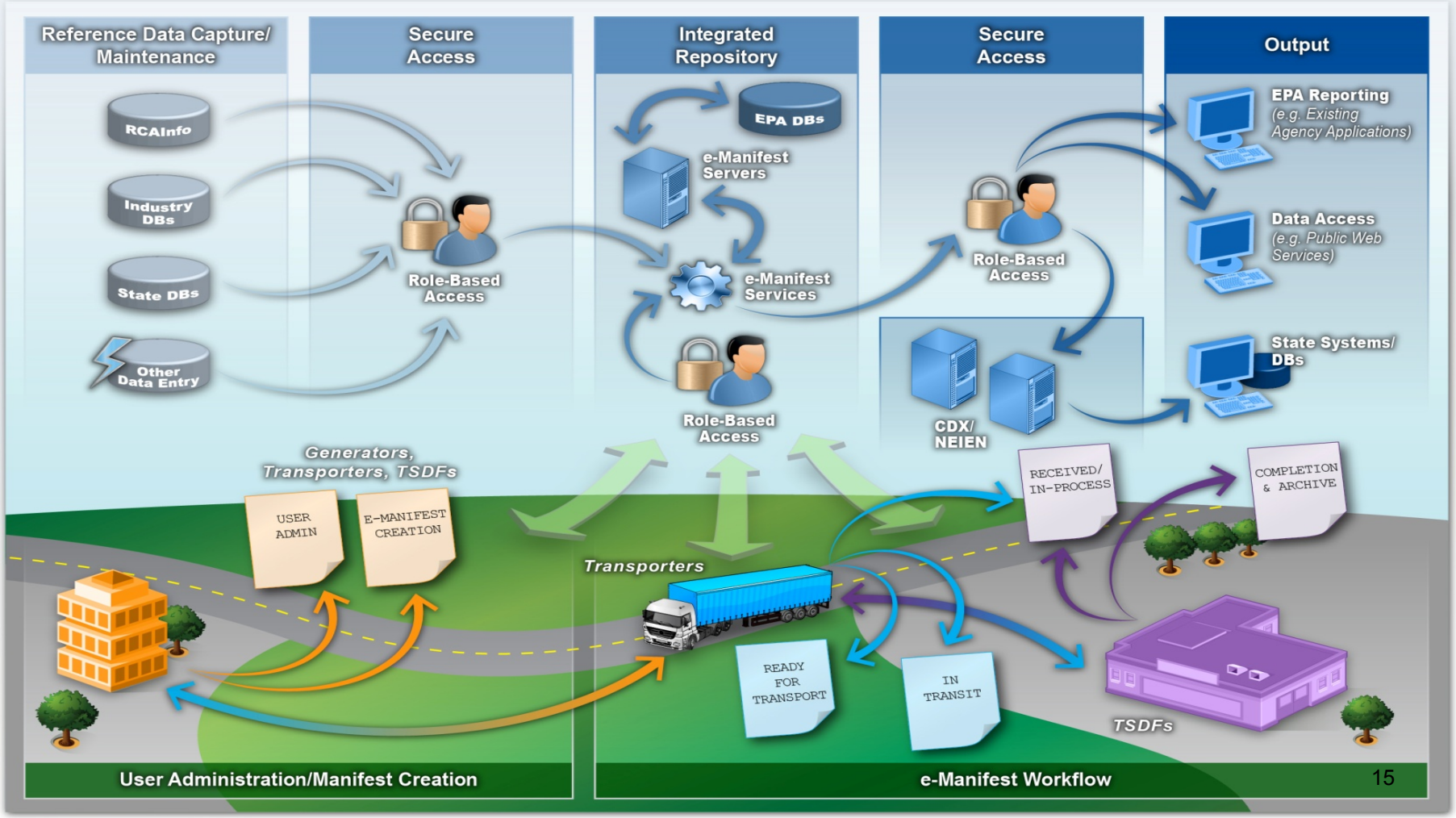
- Early System Requirements Analysis Meetings
  - Gathered and documented functional requirements from industry and state stakeholder meetings.
    - Spring 2013 – conducted three meetings and two webinars.

- Completed Alternatives Analysis/Cost Estimate
  - Identifies and evaluates the components and costs of various system implementation approaches.

- Completed Concept of Operations Document
  - Describes the e-Manifest system's high level architecture and design approach and how data will flow through system.

EPA e-Manifest Conceptual Model

9/26/13



System Progress

- January 2014 - agency received first dedicated funding/appropriations for e-Manifest (FY 2014 funding).

- With this funding the agency embarked on the development of planning documents describing EPA's envisioned approach to various aspects of the e-Manifest system's architecture e.g.
  - Strategy for Industry and States System Integration and Data Sharing.
  - Mobile strategy.
  - Agency shared services integration plan (e.g. E-Enterprise).
  - Analysis of paper manifest scanning/processing operations.
  - System performance standards and hosting scenarios.
  - Helpdesk operations analysis including helpdesk cost model.
  - Strategy for data access and public reporting.

- This work also entailed more detailed requirements gathering and documentation – approximately 600 functional and technical requirements to date.

Architecture Planning Technical Meetings

- User meetings - held 15 lengthy meetings since mid-April with industry and state users.
  - Excellent/robust participation from both state and industry stakeholders
  - **Discuss feedback and take-aways from these meetings on slides 26-36.**

- Conducted a series of 7 technical conference calls/webinars with state RCRA/Hazardous waste program staff, and state IT staff.

- Meetings focusing on areas such as:
  - How states currently process paper manifests.
  - How the envisioned national e-Manifest system should connect with state systems.
  - Projected state requirements for manifest QA/QC.
  - State data access needs and reports available from the e-Manifest system.

Architecture Planning Technical Meetings

- Conducted a series of 8 technical conference calls/webinars with industry stakeholders, including manifest operations as well as IT staff.

- Meetings focusing on areas such as:
  - Current industry operations and IT systems that support manifests.
  - Industry expectations and requirements for interacting with e-Manifest.
  - Electronic signature (CROMERR) requirements for electronic manifests.
  - Industry data access needs and reports available from the e-Manifest system.

- These architecture planning efforts will be complete by January 2015 and will inform the request for proposals (RFP).

- Next major step is to undertake the procurement process to move forward on system development, and goal is to have system development contract awarded in 2015.

Procurement: History

- Options explored through two Requests for Information (RFI's)
  - Leasing/modify existing technology.
  - Cost-sharing contract.
  - Cooperative Research & Development Agreement (CRADA).

- Agency concluded the e-Manifest Act as enacted did not authorize share-in-savings/share-in-revenue arrangement.

- Agency conducted extensive market research (market research meetings have concluded at this point).

- e-Manifest Act requires performance based contracting, and allows up to 10 year period of performance.

Procurement: Key Anticipated Requirements

- Use of shared services -agency anticipates e-Manifest integration with already existing services (e.g. the EPA Central Data Exchange (CDX)).

- While the agency plans to leverage commercially off-the-shelf (COTS) products and existing agency tools/services where possible, extensive customization and systems integration work will need to occur.

- Agile and modular development approaches, and extensive testing as major performance requirements for system development contractor.

- System components must function as a fully integrated national e-Manifest program system.

- System Enhancements
  - Anticipate implementation by phased approach (i.e. delivering basic core functions in first phase), and that system enhancements would begin after initial deployment (e.g. biennial reporting integration functionality).

Procurement: Key Anticipated Requirements

- A core electronic transactional system that accommodates a business-to-business work flow, requiring secure handoffs and manifest retention along a chain-of-custody.

- Components of the core electronic transactional system, for example:
  - An EPA managed web-based and mobile system
  - A standards-based, secure, services based approach allowing industry IT solutions to interact with the e-Manifest system

- Integration with railroad systems and manifest processes

- User management for a large, non-uniform user community

- Practical and cost-effective electronic signature procedures that comply with EPA e-signature requirements (CROMERR)

- National paper manifest scanning/processing center.

Procurement: Key Anticipated Requirements

- QA/QC function and mechanism for data correction.
- User fee collection for paper and electronic manifest processing.
- Public interface for public data access.
- Hosting - development/test, and production environment.
- High transactional volume - potentially 5 million manifests annually each signed a minimum of 3 times.
- Core workflow represents a live business-to-business, commercial transaction, system may need to function as close to 24x7 as possible.
- Operations and system maintenance.
  - Help desk/user support center.

Procurement – Strategy

- Agency considering:
  - Full/open competition.
  - Lengthy ordering period (5+years).

- Considering Indefinite Delivery, Indefinite Quantity (IDIQ) structure.

- Small Business
  - The agency encourages and anticipates appropriate teaming arrangements between large and small contractors.
  - In addition, committed to several potential small business set-aside opportunities outside the main procurement.
    - Training
    - Marketing services
    - Project Management
    - IVV support - independent verification and validation of testing.

- **The agency anticipates releasing some architecture planning and requirements documentation in advance of the procurement process.

Schedule Moving Forward

- Next major step is to undertake the procurement process to move forward on system development, and have system development contract awarded in 2015.

- Conduct system development cycle utilizing agile development approaches and extensive testing.

- Goal to have system fully online no later than Spring, 2018.
  - Funding shortfalls and other unknowns in the procurement process (e.g. protests) could add additional time.

- User fee regulatory development process completed (i.e. final rule) no later than 90 days prior to system online-deployment date.

- e-Manifest Advisory Board (FACA) established by October 5, 2015.

Technical Architecture Key Takeaways

- The following slides (26-36) represent some important information the agency provided as well as some key takeaways, and examples of outstanding questions from the technical architecture planning user meetings and analysis conducted in FY 2014.

- The agency will strive to achieve the user expectations laid out in these key takeaways, however, we will not be able to formally commit to any/all of these until further technical and policy discussions occur with stakeholders during the design and development phase of this project.

- As the national system manager, EPA will need to balance the expectations that can be met given constraints of budget, schedule and policy.

- The agency will pursue answers to the outstanding questions and work closely with stakeholders in doing so.

Draft High Level Architecture Requirements

- Envisioned to be service-oriented, allowing e-Manifest to leverage and provide EPA shared services
  - For example, e-Manifest utilizes appropriate services on the back-end in order to accomplish user registration, data exchange, signature, and copy of record management.

- Must accommodate different ways to manage manifests in e-Manifest (paper data submission, EPA-created applications, industry service calls, etc).

Envisioned Methods of e-Manifest Interaction

Paper-Based	• Continue to print manifests and sign using wet-ink signature. Per rule language, submission can occur via postal mail, or data/image submission.
Web-Based System	• Utilize an EPA-developed web-based system to create, populate, sign and submit manifests.
Services Based Approach	• System to system exchange of data between industry manifest systems and national e-Manifest system. • Services-based
Mobile App	• Utilize an EPA-developed mobile application installed on a handheld device to create, populate, sign, and submit manifests.

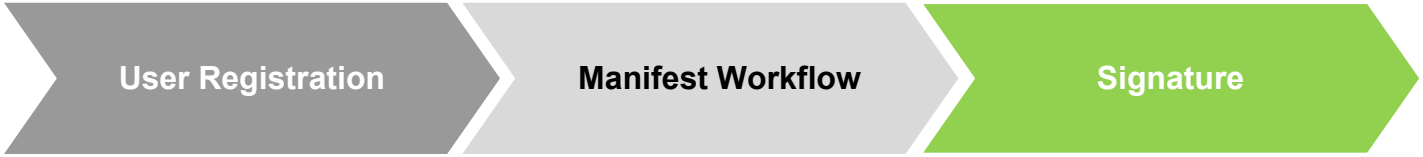
e-Manifest High Level Business Process

- User Registration: User registers for e-Manifest and requests role/function. If necessary, user requests and registers for signature credentials.
  - EPA electronic signature policy requires signatory identity proofing.

- Manifest Workflow: Industry user prepares a manifest within Industry system, EPA web app, or mobile app, and submits to EPA.

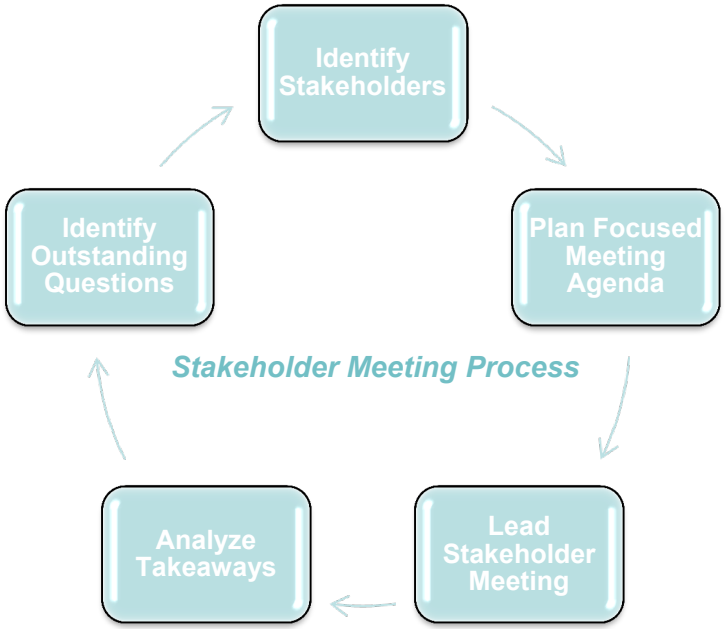
- Signature: Industry user signs manifest in CROMERR-compliant fashion
  - Digitized signature using a high quality digitized signature pad.
  - Use of a password and second factor authentication such as a knowledge-based question.
  - Use of an approach where handlers witness each other's signature ceremonies.

e-Manifest Functional Areas



Technical User Meeting Highlights

- State participants include those who collect manifests and have data systems in place for manifest data, as well as states who do not collect manifests at all.



- We conducted focused meetings with individuals from industry partners that represent advanced Transporter and TSDF handler communities.

Meeting Participants

Industry

- Clean Harbors
- Environmental Technology Council
- Envirosource
- Industrial Economics
- Ross Environmental
- Safety-Kleen
- Stericycle
- Tradebe
- The Environmental Quality Company
- U.S. Ecology, Inc.
- Veolia
- Waste Management

States

- Arizona
- California
- Colorado
- Connecticut
- Florida
- Kansas
- Massachusetts
- Maine
- Maryland
- Michigan
- Minnesota
- New Jersey
- New York
- Texas
- Virginia
- Wisconsin

General State Key Takeaways

Current State Manifest Program Processes:

- States who participated in outreach meetings discussed the volume of manifests they receive annually; while there is a range, 140,000 manifests per year is a potential average.

- OCR (Optical Character Recognition) is not a viable option for manifest data transcription from paper manifests. Manual data entry is used across the board by those capturing manifest data in internal systems.

- 5-10% of manifests received annually require corrections and need to be routed back to TSDFs for processing.

General State Key Takeaways

Expectations of e-Manifest:

- States anticipate that an electronic system will reduce, but not eliminate need for state QA/QC, particularly as paper manifests are still in use.
- States expect to have the option to pull manifest data from a web-based repository, as well as potentially via Exchange Network nodes.
- States with and without manifest tracking systems would like to have access to data – they will run their own reports for fee collection, enforcement, legislative reporting etc. States without systems would prefer to have some basic reporting capability in e-Manifest.
- Generation and destination states require pre-public access to manifest data.
- Scanned manifest images from paper manifests need to be available to states within a specific timeframe (e.g. 30-90 days) of TSDF signature to fulfill state enforcement needs.

General Industry Key Takeaways

- Industry sees the need for e-Manifest to provide both an EPA created web-based and/or mobile application for direct data entry and a services-based API for system to system exchange of data.
  - Large company industry partner preference is for system to system exchange of manifest data.

- Industry believes that EPA requirements around identity proofing and signature standards are excessive and would be interested in managing users within existing industry systems.
  - There are approximately 160,000 handlers, with user volume a multiple of this.
  - Industry expects the ability to approve and manage their own users.

General Industry Key Takeaways

- Handler business relationships are more complex than just handler type (e.g. generator, transporter, TSDF), with various broker roles that arrange shipments, prepare manifests, or sign on behalf of other handlers.
  - Expectation that a role-based access framework shall encompass “brokers” and “on behalf of” relationships

- Some industry participants voiced concern that data that they might consider CBI (Confidential Business Information) or sensitive will be made available publically.

- For manifests in the paper process, industry has expressed a preference for system to system transfer of scanned images and a transfer of data files to EPA over postal mail.

Other Key Takeaways

Help desk:

- The help desk may also need to coordinate with other help desks in response to technical system as well as policy issues.
- State users will likely only contact the help desk during normal business hours, but industry may need assistance at all times of the day.

Mobile Solution:

- System needs to support offline operations, which should include:
  - User registration
  - Electronic signature.

Hosting/ Performance:

- Industry partners want a system with high availability (99.7%+).

Examples of Outstanding Questions

- How flexible can EPA be in allowing industry systems to manage users and signatories of the electronic manifest?
- How should brokers be recognized in the e-Manifest system?
- How will e-Manifest link the levels of individual users and site with corporate level accounts (for example, for retaining the manifest copy at a corporate level)?
- How does EPA support maintenance of an EPA created mobile application while balancing costs?
- What level of support, primarily hours of operation, will be needed for the helpdesk, and what level of support will need to be live, such as telephone, vs. non-live support, such as recorded messages or response to tickets?

Stakeholder Involvement and Communication

- Agile development approaches with extensive user testing is the cornerstone of the agency's plan for stakeholder involvement.

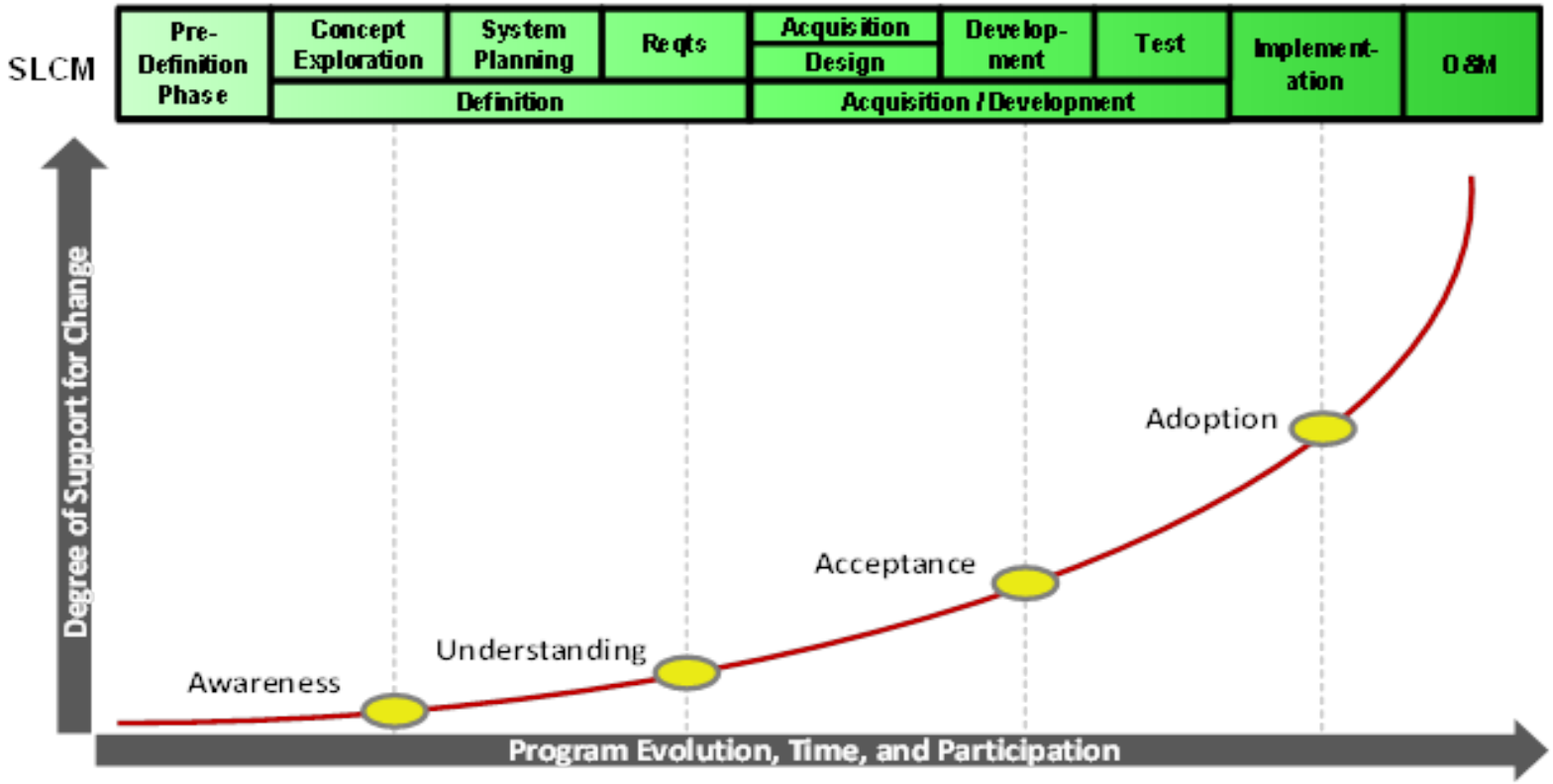
- Recurring Open Meetings & Messaging
  - Bi-annual e-Manifest Program update Public Webinars.
  - Quarterly e-Manifest Program update messages.

- Other Regular Meetings
  - Quarterly User Fee regulation stakeholder outreach meeting with **industry** users.
  - Quarterly User Fee regulation stakeholder outreach meeting with **states.**
  - Regular ASTSWMO Annual and Midyear Meetings - **October and April of each year.**
  - Regular ECOS Spring and Fall Meetings – **September and March of each year.**
  - Intergovernmental meetings throughout – affected agencies (e.g., DOT), OMB, Congressional staff.

- Hazardous waste generator forums and conferences.

- Standard announcements of e-Manifest Advisory Board progress, and procurement process.

e-Manifest Communications and Adoption Curve



Key Message Evolution

Awareness	Understanding	Acceptance	Adoption
▪ Program vision	▪ What's changing?	▪ Training details	▪ Realized benefits
▪ Program goals	▪ Who's affected?	▪ New roles and requirements	▪ Support & Maintenance
▪ Program benefits	▪ Actions required	▪ Formal policies	▪ Future roadmap

Additional Questions??

Submit to eManifest@epa.gov

For more information on EPA's Manifest Program and to join the listserv: http://www.epa.gov/osw/hazard/transportation/manifest/e-man.htm

Or, if you want to discuss please contact:

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