Welcome and Opening Remarks

Richard Bailey

Assistant Commissioner, DOS

March 6, 2020

Agenda

- Cybersecurity
  - Foreign Travel
  - Risk Assessment
  - Software Cybersecurity Policy
  - Municipal Cybersecurity Update
- IT Strategic Planning

Cybersecurity Update

Dan Dister

Chief Information Security Officer

March 6, 2020

2019 in Review

2019: The Year Ransomware Targeted State & Local Governments

Another eventful year online, with more data breaches, malware battles and identity thefts. But the surge in successful, targeted ransomware attacks against governments and hospitals is the top 2019 cybersecurity story.

Story of the year 2019: Cities under ransomware siege

By Kaspersky on December 11, 2019. 10:00 am

Ransomware froze more cities in 2019. Next year is a toss-up

More than 70 state and local governments across the US suffered ransomware attacks in 2019.

2020 Forecast

Texas School District Loses $2.3 Million in Phishing Incident

JANUARY 15, 2020

North Dakota Reports 300 Percent Increase in Cyberattacks

Attempted cyberattacks against the North Dakota state government grew by nearly 300 percent last year, according to Shawn Riley, the state's chief information officer and head of the information technology department.

BY SYDNEY MOOK, GRAND FORKS HERALD / JANUARY 17, 2020

Election Security Concerns Arise Ahead of N.H. Primary

With each state using different election laws under the hyper-localized American system, the election security landscape remains complicated in the first general-election year since the Russian meddling efforts.

BY JAKE LAHUT, THE KEENE SENTINEL / JANUARY 21, 2020

Foreign Travel for Mobile Devices

- Addendum to Computer Use Policy
  - Re: personal calls
- Policy
  - For the protection of state systems, networks and data
  - Applies to all branches, all agencies
- Process
  - Notification - HelpDesk ticket
  - Traveler interview – IT requirements and destinations
  - Traveler debrief
  - Equipment return / scrubbing / wiping
- General Guidance
  - Adapted from guidance from FBI and others

Cybersecurity Risk Assessment

- Work began November 2019: a 6 month project
- Assessment areas:
  - IT Asset Inventory and Management – in progress
  - Network Security and Architecture – complete
  - Host/Server Security – complete
  - Endpoint Security   - in progress
  - Application Security – complete
  - Data Security – in progress
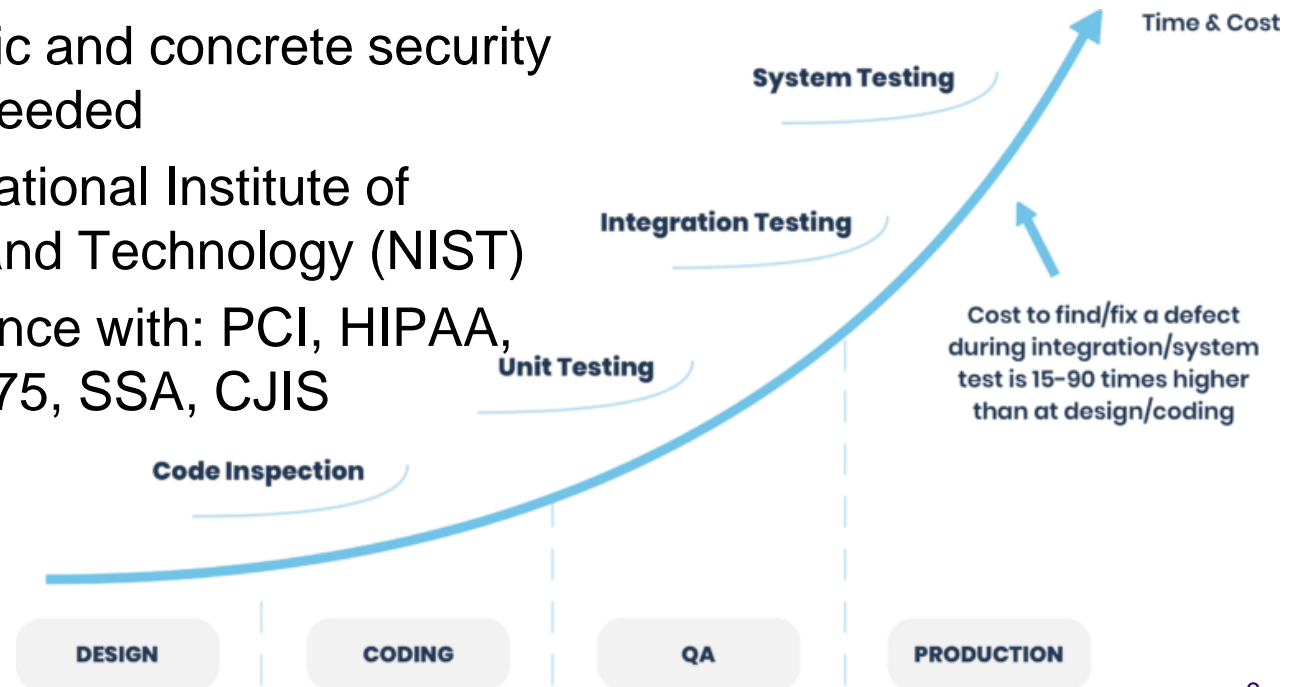 - Cybersecurity and Risk Management Program – complete

Application/Software Cybersecurity Standards

- The evolving threat landscape
  - Proliferation of free and low cost cyber exploitation tools
  - Low technical barrier to use them
  - Outsourcing cyber attacks
    - *Ransomware as a Service*
    - Hackers for hire
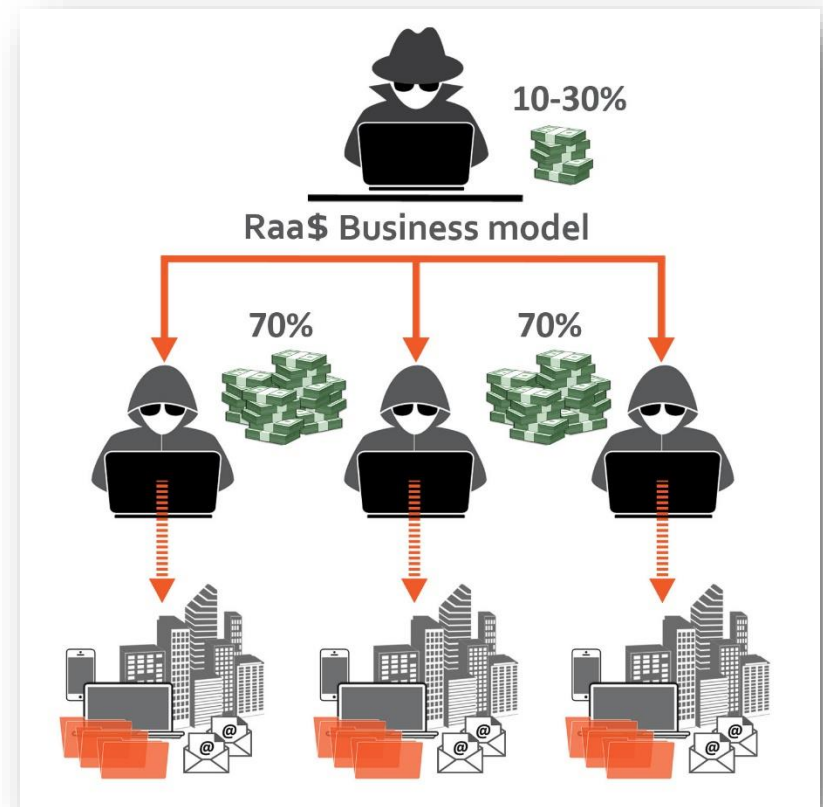
Application/Software Cybersecurity Standards

- Selecting cybersecurity standards for application / software development
  - More specific and concrete security standards needed
  - Leverage National Institute of Standards and Technology (NIST)
  - For compliance with: PCI, HIPAA, IRS Pub 1075, SSA, CJIS

Time & Cost

System Testing

Integration Testing

Cost to find/fix a defect during integration/system test is 15-90 times higher than at design/coding

Unit Testing

Code Inspection

| DESIGN | CODING | QA | PRODUCTION |

Application/Software Cybersecurity Standards

Applying the process:

- Design with security in mind
- Secure coding standards and practices
- Code review
- Code scanning
- Verification and validation testing
  - No critical or high vulnerabilities prior to deployment
- Penetration testing
  - On a periodic basis
- Application Firewall
  - Web-based applications should protected by a Web Application Firewall, with blocking activated

Municipal Cybersecurity

SB 694 **"Recommended minimum cybersecurity standards for municipalities"** sponsored by Senator Dietsch

- Initial hearing held February 12th, Commissioner Goulet and others testified on behalf of the bill
- Discussion with Senator D'Allesandro from Finance Committee revealed that if the bill retains a substantive Fiscal Note, it will not go forward
- The revised bill language now has two principal points:
    - DoIT will publish *recommended* minimum cybersecurity standards for political subdivisions, based on Center for Internet Security (CIS) Controls
    - Political subdivisions must report cybersecurity incidents to NHCIC

- Removed from the bill:
    - *Requirement for self-assessments and submission to local governing body and DoIT*
    - *Creation of a state-wide cyber risk scorecard*
    - *Three new cyber positions within DoIT for scoring and advising political subdivisions*
    - *One-time funding for creation of a cyber incident response template for political subdivisions and a cyber incident response exercise series (to be pursued via Homeland Security Grant)*

Municipal Cybersecurity (2)

Municipal Cybersecurity Summit: *"Managing Cybersecurity Risk for Local Government"*

- April 8, 2020, Grappone Center, Concord
- Sponsored by Primex and the New Hampshire Municipal Association
- DoIT, HSEM, NHIAC, New Hampshire National Guard, DHS/CISA, FBI, USSS
- Intended for local government policy/decision makers
- Information about threats, resources and capabilities for cybersecurity support
- Not dependent on SB694
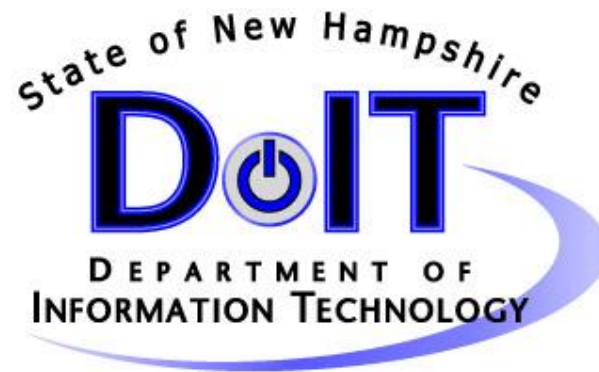
Municipal Cybersecurity (3)

Homeland Security grant requests through the Department of Safety to benefit NH local government:

1. Cyber incident response exercise series and development of a cyber incident response template which ties into the State Cyber Disruption Plan

2. Deployment of 6 Albert network security monitoring sensors (from MS-ISAC) at major metropolitan communication sites around the state, with pre-paid monitoring for 3 years
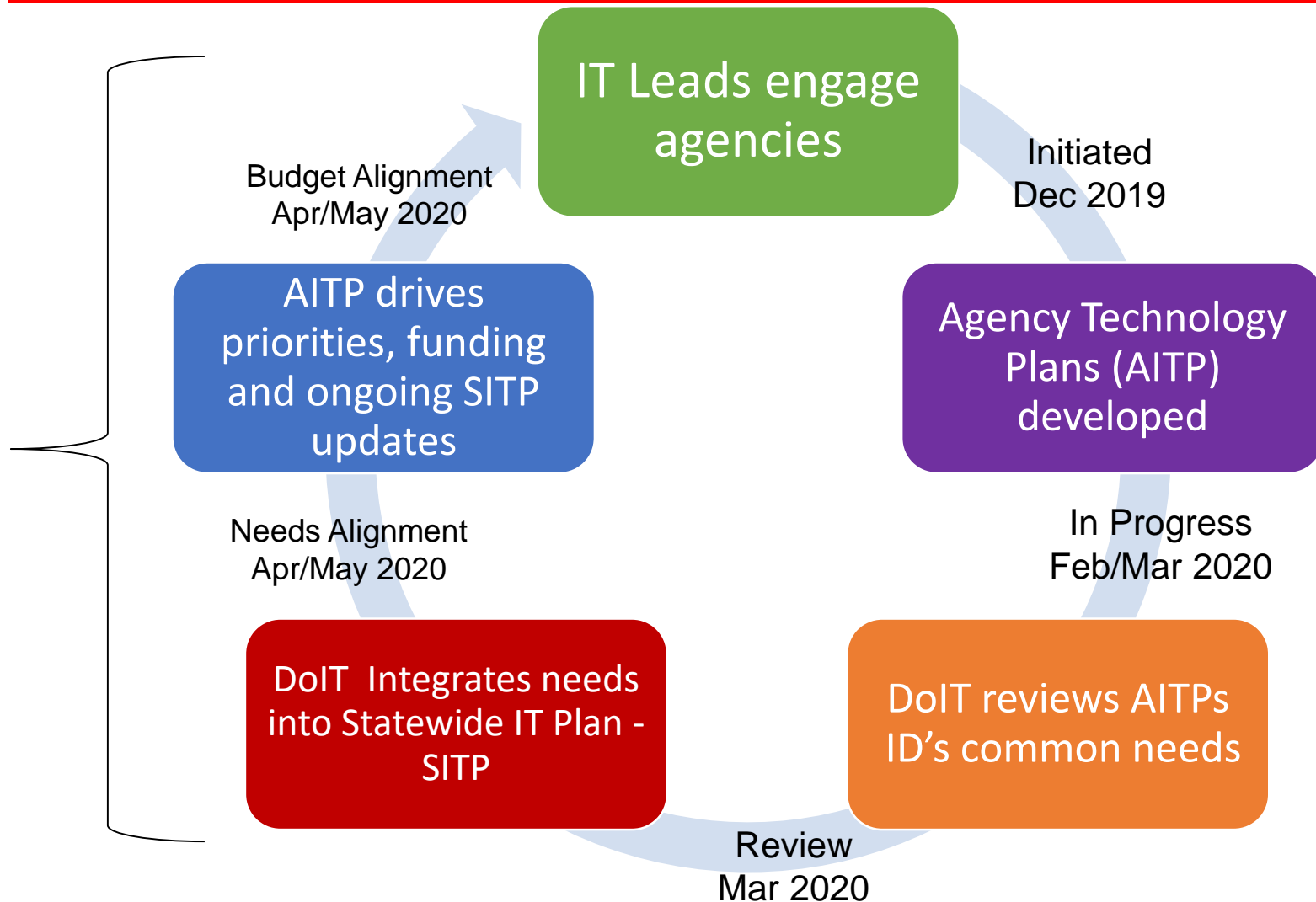
Federal Cybersecurity Legislation

- "Cybersecurity State Coordinator Act of 2020", S.3207
  - Introduced by Senator Hassan (NH), Jan. 2020
  - DHS/CISA to appoint a Cybersecurity State Coordinator for each state
  - Cyber risk advisor to state CIO, CISO and other SLTT entities
  - Principal point of contact for SLTT entities to engage with the Federal Government on cyber incidents
  - Sharing of cyber threat information
  - Assisting SLTT entities with reachback to federal resources

- "State and Local Government Cybersecurity Act of 2019", S.1846
  - Sponsored by Senator Peters (MI), June 2019
  - Expands DHS responsibilities through cybersecurity grants to SLTT
  - Provision of assistance and education on cyber threats, defensive measures
  - Provide notifications containing specific incident and malware information
  - DHS to establish a pilot program to deploy network sensors

Questions?

IT Strategic Planning

IT Strategic Planning Process

IT Leads engage agencies

Initiated
Dec 2019

Budget Alignment
Apr/May 2020

AITP drives priorities, funding and ongoing SITP updates

Agency Technology Plans (AITP) developed

Needs Alignment
Apr/May 2020

In Progress
Feb/Mar 2020

DoIT Integrates needs into Statewide IT Plan - SITP

DoIT reviews AITPs ID's common needs

Review
Mar 2020

Strategy

Initiatives

Budget

Identify Broad Citizen Needs	Define & Align Projects with Strategy	Align Budgets with Projects
Benefit:	**Benefit:**	**Benefit:**
• Clear long term direction & goals	• Initiatives that benefit NH citizens	• Transparent & well managed budgets

AITP Customer Example

- Department of Transportation
  - Early planner
  - Solid goals
  - Well thought-out initiatives
  - Alignment of initiatives to goals
  - Simple capital project overview

- DOT Commissioner Review

Technology Strategies

Biennium Planning FY 2022-2023

NH DEPARTMENT OF TRANSPORTATION

VICTORIA SHEEHAN, COMMISSIONER

CHARLES BURNS, IT LEAD

Department of Transportation Mission/Vision Statement.

Mission: Transportation excellence enhancing the quality of life in New Hampshire.

Vision: Transportation in New Hampshire is provided by an accessible, citizen focused, multimodal system connecting rural and urban communities. Expanded transit and rail services, a well-maintained highway network and airport system provide mobility that promotes smart growth and sustainable economic development, while reducing transportation impacts on New Hampshire's environmental, cultural, and social resources. Safe bikeways, sidewalks, and trails link neighborhoods, parks, schools, and downtowns. Creative and stable revenue streams fund an organization that uses its diverse human and financial resources efficiently and effectively.

Citizen Service Goals

❖**Improve Citizen Safety and Security**
  - ▪ Expanding Intelligent Transportation Systems and traveler safety initiatives.
  - ▪ Continue and enhance sharing of transportation with commercial vendors
  - ▪ Aircraft Registration, replace outdated system used to ensure proper aircraft registration.

❖**Improve Citizen access to Department of Transportation**
  - ▪ Update systems to leverage cloud, mobile and security.

❖**Improve decision making to better service Citizens**
  - ▪ Decisions should be data driven, leveraging Business Intelligence and Data Warehouse initiatives.
  - ▪ Data needs to be easily accessible for it to be used.

Strategic Initiatives (2-3 yrs.)

Strategic Initiatives

❖**Modernizing and Consolidating Existing DOT Systems**

- Update systems to leverage cloud, mobile and security.

❖**Data Accessibility**

- Decisions should be data driven.
- Data needs to be easily accessible for it to be used.
- Business Intelligence fully operational.

❖**DOT Infrastructure Management**

- Expanding Intelligent Transportation Systems and traveler safety initiatives.

❖**IT Infrastructure Improvements**

- Continue to modernize for reliability, failover and disaster recovery to support COOP plans.

Strategic Initiatives (2-3 yrs.)

Modernizing and Consolidating Existing DOT Systems

❖ Work Order Management/Fleet/Inventory (Capital) – Project will allow DOT to better track past, current and future work efforts using mobile technology. Integrated with consumable, equipment inventory and fleet inventory will allow for greater efficiencies.

❖ Pavement and Bridge Management (Federal) – Projects will update and explore additional functionality of the existing pavement and bridge management systems.

❖ Reduce Access databases for enterprise and mission critical systems.

❖ Traffic Signals (Highway) – Project will provide an integrated system for traffic signal work orders as part of the DOT work order system.

Strategic Initiatives (2-3 yrs.)

Modernizing and Consolidating Existing DOT Systems cont.

❖ ITS Network – Implement a more robust and secure Intelligent Traffic System network designed to support future expansion.

❖ Toll Collection System – This system will process the transactions in the Cash and E-ZPass lanes in the Toll Plazas, receiving transactions from Open Road Tolling (ORT) and All Electronic Tolling (AET) systems.

❖ NH First – Finance – Stay current by using the next version of NH First ERP system.

❖ Fuel Management System – Replace and consolidate Fuel Management system.

❖ Aircraft Registration – Replace outdated system used to ensure proper aircraft registration.

Strategic Initiatives (2-3 yrs.)

Data Accessibility

❖ Document Management (Capital) – This project will allow the DOT to centralize document management and integrate with state wide efforts.

❖ Enterprise Data (Highway) – This project will streamline DOT data flows and will comprise of an application, data repository and presentation layers.

❖ Expand OBIEE (Highway) – This project will further expand the reach of business intelligence at the DOT by incorporating additional business areas.

❖ Data Dictionary (Highway) – The project will create a single data dictionary for the entire Department to include how the data is managed in the application, data repository and presentation layers.

❖ The ArcGIS Enterprise Portal (Highway) – Continue implementation ArcGIS Enterprise website portal to enhance GIS awareness. GIS portal will expand the GIS tools and capabilities to develop new applications and support system integrations.

Strategic Initiatives (2-3 yrs.)

DOT Infrastructure Management

❖ Culvert and Closed Drainage System (Turnpikes/Highway) – This project will collect drainage assets in the state right of way using mobile devices. Lessons learned from this initiative will be applied to other asset inventories such as guardrail.

❖ Road Data Collection (Federal) – This project will procure service and equipment, including a new vehicle that measures pavement conditions per federal requirements. It will also upgrade the supporting software providing better capabilities.

❖ Expansion of Intelligent Transportation Systems throughout the state.

Strategic Initiatives (2-3 yrs.)

IT Infrastructure Improvements

❖ Continued expansion of virtual server and storage environments, including redundancy and failover capability to secondary location.

❖ Modernized back up technology, including capability to provide immutable storage to help in Ransomware defense.

❖ Evaluate and expand data warehouse capacity and extend systems to provide integration with various systems, internal and external.

❖ Update, enhance and secure Intelligent Traffic System network. This network supports various technologies including cameras, intelligent signage and traffic signaling. This is expected to grow in scale and support additional technologies.

❖ Implement electronic signatures.

❖ Implement 2-factor authentication.

Initiatives that are dependent on technology:

Work Order, Fleet and Inventory Management:

The Department of Transportation is implementing a comprehensive fleet, work order and inventory management solution that eliminates redundancy, enhances data collection and reporting, and provides for efficient tracking throughout the entire department fleet, work order and inventory life cycle. This will replace existing outdated information systems with a streamlined solution that utilizes newer technologies, complies with Federal guidelines, simplifies the collection/processing of information.

Funding Supports: Class 027

Resource Supports: Current DoIT staff, Current Agency staff and external resources

Initiatives that are dependent on technology:

ITS Network:

Intelligent Transportation Systems Network – Implement a more robust and secure Intelligent Traffic System network designed with future expansion in mind. This network supports various technologies including cameras, intelligent signage and traffic signaling. This is expected to grow in scale and support additional technologies.

Funding Supports: Agency OpEx

Resource Supports: Current DoIT staff, Current Agency staff and external resources

Initiatives that are dependent on technology:

Toll Collection System:

The Department of Transportation is changing the toll system and maintenance efforts within in the Toll Plazas. This system will process the transactions in the Cash and E-ZPass lanes in the Toll Plazas, receiving transactions from Open Road Tolling (ORT) and All Electronic Tolling (AET) systems so we have one reporting system, and sending all of the transactions (Toll Plaza Lanes, ORT and AET) to the E-ZPass Back Office System.

Funding Supports: Agency OpEx

Resource Supports: Current DoIT staff, Current Agency staff and external resources

Initiatives that are dependent on technology:

Fuel Management System:

The Fuel Distribution provides NH State Agencies and other jurisdiction customers (Towns, Counties, etc.) with an easily accessible and adequate supply of multiple motor fuel products. This is accomplished by ordering and maintaining adequate fuel supply across the state as well as preforming regular maintenance and upgrades to equipment. Fuel Distribution also manages the issuance of vehicle and driver devices to track which vehicles are being fueled and by whom. The existing systems are being consolidated, hosted and supported by a third party vendor.

Funding Supports: Agency OpEx

Resource Supports: Current DoIT staff, Current Agency staff and external resources

Initiatives that are dependent on technology:

Document Management System:

Document Management (Capital) – This project will allow the DOT to centralize document management and integrate with state wide efforts.

Funding Supports: Class 027

Resource Supports: Current DoIT staff, Current Agency staff and external resources

Initiatives that are dependent on technology:

Oracle Business Intelligence Enterprise Edition:

Expand OBIEE (Highway) – This project will further expand the reach of business intelligence at the DOT by incorporating additional business areas.

Funding Supports: Class 027

Resource Supports: Current DoIT staff and Current Agency staff

Initiatives that are dependent on technology:

Road Condition Data Collection:

Road condition data collection will shift to a vendor specializing in automated pavement condition data collection and roadway imagery. The vendor will collect, process, verify, and deliver a complete data set from the NH roadway network to the NHDOT that includes roughness, rutting, and cracking distress data and measurements. The system will externally host NH roadway network data, alleviating the need for new onsite data storage hardware at the NHDOT, and provide computer software to the NHDOT that staff can utilize to manage the data and view images from any access point in the NHDOT and online. We will procure a new data collection vehicle to replace one of the NHDOT's existing data collection vehicles used for pavement quality assurance testing of newly constructed pavements.

Funding Supports: Agency OpEx

Resource Supports: Current DoIT staff, Current Agency staff and external resources

Initiatives that are dependent on technology:

DOT Data Warehouse:

This project will streamline DOT data flows and will comprise of an application, data repository and presentation layers. This system will be expanded to facilitate integration with various systems, both internal and external.

Funding Supports: Class 027

Resource Supports: Current DoIT staff and Current Agency staff

Initiatives that are dependent on technology:

Aircraft Registration:

This project will replace the existing outdated registration system. In accordance with New Hampshire statutes RSA Chapter 422 and Code of Administrative Rules Chapter Tra 900, all aircraft owned by New Hampshire residents and/or businesses must be registered annually with the Bureau of Aeronautics regardless of whether the aircraft is in flyable condition or is based or physically located in New Hampshire.

Funding Supports: Capital

Resource Supports: Current DoIT staff, Current Agency staff and external resources

Initiatives that are dependent on technology:

The ArcGIS Enterprise Portal:

Continue implementation ArcGIS Enterprise website portal to enhance GIS awareness and accessibility to the numerous and growing GIS data layers, map viewers, and dashboards for the Department of Transportation. GIS portal will expand the GIS tools and capabilities to develop new applications and support system integrations.

Funding Supports: Class 027

Resource Supports: Current DoIT staff and Current Agency staff

Capital Projects
Anticipated Capital Projects with major technology components

- ❖ **Work Order Management/Fleet/Inventory** (Capital) – Project will allow DOT to better track past, current and future work efforts using mobile technology. Integrated with consumable, equipment inventory and fleet inventory will allow for greater efficiencies.

- ❖ **Document Management** (Capital) – This project will allow the DOT to centralize document management and integrate with state wide efforts.

- ❖ **Aircraft Registration** – This project will replace the existing outdated registration system. In accordance with New Hampshire statutes RSA Chapter 422 and Code of Administrative Rules Chapter Tra 900, all aircraft owned by New Hampshire residents and/or businesses must be registered annually with the Bureau of Aeronautics regardless of whether the aircraft is in flyable condition or is based or physically located in New Hampshire.

- ❖ **Fuel Management System** – Replace and consolidate Fuel Management system.

AITP - Cross Agency Analysis

- Anticipated Broad Agency Trends
  - Security
  - Digital Government
  - Business Intelligence
  - Document Management
  - Collaboration
  - Cloud
  - Application Modernization
  - Others -- TBD

Strategic Planning Process – Next Steps

- Provide AITP Analysis (IT Council)

- Revise IT Strategic Plan

- Enterprise Alignment Initiative

- Socialize and Review (IT Council & Agencies)
  - Initial review: Late FY20
  - Final review: Early FY21

Questions

Enterprise Technology and Business Tools Expo

Demos:

- ◆ Online Forms ◆ Online Licensing ◆ Learning Portal
- ◆ Web Content Management ◆ Collaboration
- ◆ Customer Relationship and Case Management

Save the Date!

Thursday, April 23, 2020
8:00 a.m. – 2:00 p.m.

New Hampshire National Guard
Edward Cross Training Complex
Garrison Training Center
722 Riverwood Drive, Pembroke, NH

Closing Comments