Virginia Information Technologies Agency

VITA

NASCIO
Representing Chief Information
Officers of the States

VA Roads
*Virginia's Portal for
Map-Based Transportation Information*

**CATGEORY: Open Government and Data,
Information and Knowledge Management**

**Initiation Date: February 2014
Completion Date: May 2014**

Nomination submitted by:
Eric R. Link
Interim Chief Information Officer
Commonwealth of Virginia
Virginia Information Technologies Agency

June 1, 2015

www.vita.virginia.gov

Executive Summary

For the Virginia Department of Transportation (VDOT), sharing data from 250 spatial layers with stakeholders was cumbersome. Consumers were forced to browse multiple sites and to interact with VDOT staff via phone, email and mail to obtain needed data.

VA Roads uses modern, cutting-edge technologies to make it easier for citizens, stakeholders and agency staff to obtain data. VA Roads reinvents the way data is shared.

VA Roads is the platform for all requests, opening the door for transparency and faster access to information. Users can easily view current and future paving activities, projects, bridges, crashes, traffic volumes, and speed limits near the vicinity of their homes, work places or statewide. VA Roads is built for the future, too. As new data sets are made available, updating information in VA Roads is a simple process.

The citizens of Virginia are the target audience, however many other groups benefit:

- Virginia's Administration and General Assembly
- City and county government and agencies
- Metropolitan planning organizations and planning district commissions
- Trucking and other transportation industry officials
- Economic development (public and private) officers
- Universities and colleges

VA Roads also displays VDOT's Six-Year Improvement Plan. For the first time VDOT staff and the citizens can see exactly where transportation funding is being allocated.

VA Roads drives better decision making because users can obtain data they need online around-the-clock and may discover valuable datasets they may not have known were available. Some of the additional key benefits include centralized access to more information, improved efficiency, transparency into projects, understanding of government processes, a new platform to replace more than 35 old applications such as static maps on a standard interface that is easier to maintain, staff time savings and more.

VDOT followed best practices related to websites, transparency and customer service; used innovative technology; and met a wide variety of national and state goals and priorities to develop VA Roads – which offers citizens and other stakeholders a new Web-based window into state government transportation.

Description of the Business Problem

The Virginia Department of Transportation (VDOT) manages more than 250 spatial data layers with partner agencies on the local, state and federal levels. Sharing this data with stakeholders was cumbersome. Consumers were forced to browse to multiple sites and to interact with VDOT staff via phone, email and mail to obtain data.

Much of VDOT's spatial intelligence program had focused on supporting internal operations – and typically on stovepipe solutions serving narrow lines of business. IT spent a great deal of energy providing data on an as-needed basis – or not at all. That meant customers had to wait for the data – and in many cases make decisions without data. VDOT used vast amounts of human resources filling these requests. VA Roads was the answer to the question, "Why not just put all data out there for customers to select what they need?"

Solution

VA Roads uses modern cutting-edge technologies to make it easier for citizens, stakeholders and agency staff to obtain important data. VA Roads reinvents the way data is shared with these audiences.

VA Roads is the platform for all requests, opening the door for transparency and faster access to information. Users can easily view current and future paving activities, projects, bridge work, crashes, traffic volumes, and speed limits near the vicinity of their homes, work places or statewide. VA Roads is built for the future, too. As new data sets are made available, updating this information in VA Roads is a simple process.

Technical focus
Data can be overwhelming. Technologically, it is easy to put a lot of data online. It is another thing to make it easy to use. That is why VDOT focused on providing an outstanding user experience.

- Implementation of a mobile-first approach to acclimate to changing landscape of computing

- Responsive design to address a diversity of devices
- Single-page application design for a seamless experience

Mobile-first means ensuring mobile devices are not an afterthought and that the user experience is optimal on smaller devices. The single-page application and iconography (look-and-feel closer to a native desktop or mobile application) allows VA Roads to feel comfortable to users on any device, from the smallest smartphone to tablets, desktops to large-screen electronic bulletin boards.

The technical highlight of VA Roads is the integration of VDOT business spatial data with mapping solutions from ESRI and Google. Using the ESRI JavaScript Application Programming Interface (API) and ArcGIS Server, VA Roads allows citizens and other stakeholders access to VDOT's most current geographic information systems (GIS) data content and related information. As more services and data become available, these will be easily added to VA Roads to give unprecedented access to VDOT data. In addition, VA Roads integrates Google Maps and Google Places on top of the ESRI API. This added power and flexibility allows users to get to their area of interest quickly using familiar Google searching technology. Project management standard methodology for small-scope development was used for VA Roads. Organizing as a project helped focus users and technical resources resulting in VA Roads being implemented on time, on budget and with fully satisfied customers.

Significance

The goal of VA Roads is to make access to existing VDOT mapping applications, publications and project information easier to find by providing a centralized location for all information through a customer-friendly portal. The citizens of Virginia are the target audience, however many other groups benefit:

- Virginia's Administration and General Assembly
- City and county government and agencies
- Metropolitan planning organizations and planning district commissions
- Trucking and other transportation industry officials
- Economic development (public and private) officers
- Universities and colleges

VA Roads displays VDOT's Six-Year Improvement Plan, which is the Commonwealth's portfolio of transportation construction and maintenance projects. The plan had significant input from citizens. However, for the first time, VDOT staff and the citizens can see exactly where transportation funding is being allocated. In addition to seeing where the project is located, users can get the context of the project via:

- Links to project specific websites
- Street views
- Project site photographs

- Available camera views
- Project detail reporting

Previously, [data on the plan was available](#) as a Web application with 261 pages of tabular data.

This type of analysis is available for other important subject areas, including:

- Pavement conditions
- Planned pavement improvement projects
- Traffic crashes
- Traffic counts
- Speed limits
- Bridge restrictions
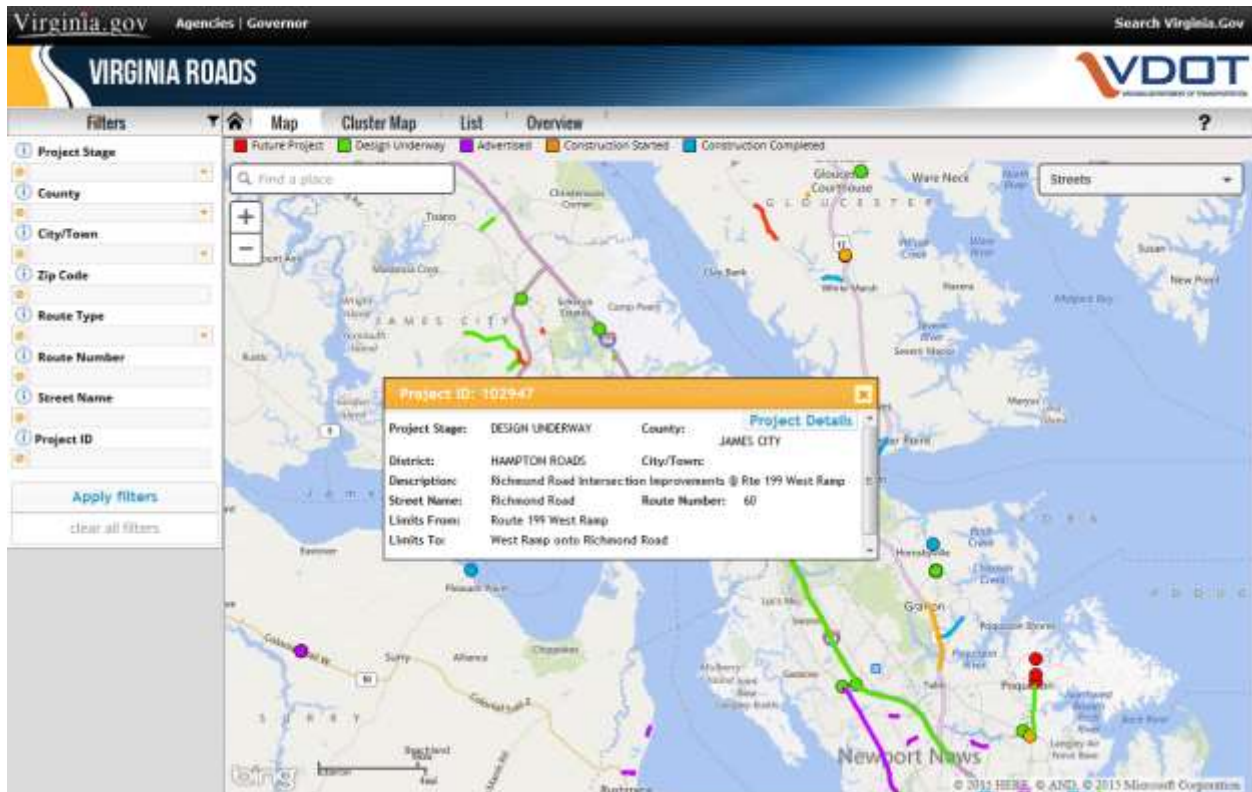
Benefits of the Project

VA Roads drives better decision making among all constituencies by providing easy access to data in two key ways:

- Users get to data they need online without interacting with VDOT staff, saving time, phone calls and providing around-the-clock access

- Users discover other valuable datasets they may not have known were available

Some of the additional key benefits include:

- Centralized access and increased efficiency to access VDOT mapping applications and publications
- Availability of construction and pavement project information in an interactive, geo-enabled view never before available to the public
- Increased transparency by sharing details about projects in the six-year improvement plan
- Easier access and understanding of state government processes and information
- Additional location for pavement projects (as mandated by the legislature)
- Cost avoidance by sequencing district work appropriately across different disciplines
- New platform on which to replace more than 35-plus old applications, including static maps, map publications, etc., to a standard common interface that is much easier to maintain and expand
- Undeterminable amount of staff time savings across VDOT and time savings for citizens, businesses and others seeking information

What our leaders say about VA Roads

Governor Terry McAuliffe: *"Virginiaroads.org is a prime example of the type of project I envisioned when we launched our Data.Virginia initiative aimed at using data to make government more transparent. It's as simple as clicking on the link, selecting a location and seeing in a glance the status of current and future transportation projects. The information is easily accessible and open to the public to see how their taxpayer dollars are being invested to improve Virginia's road system."*

Transportation Secretary Aubrey Layne: *"A good transportation program depends on VDOT providing clear information that is relevant and available to the public. Virginiaroads.org turns complex data into knowledge, allowing the public to become more engaged with their transportation program."*

VDOT Commissioner Charlie Kilpatrick: *"You can easily see what is going on where you live or work by zooming in on a county or city, clicking on the projects for more detail or viewing the latest pavement conditions and repaving projects. This tool combines layers of data in one application that the public can use to learn more about transportation projects in their localities."*

* * *

This project supports the president's, governor's and state's goals and priorities and NASCIO priorities:

- **NASCIO State CIO Priorities for 2015**
  Budget and Cost Control, Human Resources/Talent Management, Mobile Services/Mobility/Enterprise Mobility Management and Customer Relationship Management
- **President's Digital Government Priorities**
  Enable the American people and an increasingly mobile workforce to access high-quality digital government information and services anywhere, anytime, on any device; ensure that as the government adjusts to this new digital world, we seize the opportunity to procure and manage devices, applications, and data in smart, secure and affordable ways; and unlock the power of government data to spur innovation across our nation and improve the quality of services for the American people.
- **Governor's Policy Priorities**
  Innovation, Fiscal Stewardship, Cyber Security and Upgraded Technology, Ethics, Customer Service and Accessibility
- **Virginia Performs 2014 Strategic Plan**
  Economy, Public Safety, Transportation, Government and Citizens

This project meets wide variety of best practices, such as:

- **Usability.gov**
  By putting people first and embracing a user-centric approach, agencies improve the quality of their information and services by making them more useful and usable and by saving money long-term through making iterative improvements.
- **Governing.com**
  Transparency