DC2RVA: Engineering Collaboration and Decision Support through ArcGIS Online

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What is DC2RVA?
Southeast High Speed Rail Corridor Studies

- Washington, D.C. to Richmond
  Tier II EIS - Underway
- Richmond to Raleigh
  Tier II EIS - Underway
- Richmond to Hampton Roads
  Tier I EIS - Complete
- Washington, D.C. to Charlotte
  Tier I EIS - Complete
- Charlotte to Atlanta
  Tier I EIS - Underway
- SEHSR Extended Feasibility Studies - Complete

Southeast High Speed Rail Rail Corridor
Washington, D.C. to Richmond
Southeast High Speed Rail

“DC2RVA”

- Tier II Environmental Impact Statement (EIS)
- Preliminary Engineering (30% design)
- Service Development Planning

Corridor Overview

- 123-mile corridor, parallels heavily congested I-95
- Follows CSX’s rail line
- Shared freight rail and passenger rail corridor
- Amtrak provides intercity passenger rail service
- Virginia Railway Express (VRE) provides commuter rail service
Project Purpose and Need

Increase Reliability
Reduce Travel Time

Improve Frequency
Increase System Capacity
Improvement Concepts

- Construction of additional main line tracks and crossovers.
- Straightening of curves.
- Station area improvements.
- Improvements to sidings and signals.
- Improvements to grade crossings.
## Tier II Environmental Impact Statement (EIS)

1. **Summarize broader issues discussed in the Tier I Study.**
2. **Focus on site-specific impacts and mitigation for individual elements of the larger study.**
3. **Incorporate further public/agency input.**
4. **Quantify impacts and analyze potential mitigation measures.**
5. **Documentation and decisions lead to permitting, final design, right-of-way acquisition, and construction.**
Alternatives Carried Forward

- Addition of a third track mostly within CSX ROW
- Potential bypasses around Town of Ashland and City of Fredericksburg
- 8 alternatives in Richmond area (4 2-station alternatives and 4 single-station alternatives)
AGOL for DC2RVA
Data Organization and Management

- 12 Counties/Cities
- 22 Project Segments → 6 Alternative Areas
- Internal Data vs. External Data
- Alternative Iterations
- Nomenclature, Archiving
- Metadata
Draft EIS Evaluation Criteria & Alternatives Screening Process

• **Stage I Screening:**
  - Cultural Resources
  - Parks
  - Wildlife Refuges
  - Military Installations

• **Stage II Screening:**
  - Urban/Developed
  - Agricultural and Forestal Districts
  - Conservation Lands
  - Wetlands and Streams
  - Cemeteries

• **Stage III Screening:**
  Compare to Potential and Existing Infrastructure
  - Rail Bridges
  - Rail Overpasses

• **Stage IV Screening – Area Options**
ArcGIS Online (AGOL) Mapping Solution
AGOL Project Management

- Organizational Account
- Data & Web Map Assignments
  - Grouping
  - Permissions
  - Sharing
  - Ownership

Data, Private
Editable Maps, Organization
Data, Private
Editable Maps & Data, Public
Maps, Public
Staged Screening Impacts

Stage I

Stage II

Stage III

Stage IV
ArcGIS Online (AGOL) Mapping Solution

- Web mapping
  - Readily understandable
  - Widely accessible
  - Centralized and flexible platform

- Data Review
  - Collaborative
  - Dynamic
  - Interactive
  - Accessible
Data Pathway: Online Adaptability

Engineering Team + Project Leads’ Review Process

• Review conceptual alternatives
• Review impact analyses
• Modify alignments

➢ Iterative
➢ Critical
➢ Immediate

CAD ➔ GIS ➔ AGOL
Data Review

Environmental Team/ Subject Matter Experts

- Review resource layers/impacts
- Writing the Draft EIS and Technical Memos
- Eliminate shuffling pdf maps and large GIS datasets
- Real-time updates as alignments are tweaked and impacts change
Online Functionality

- Aggregation
- Standardization
  - Symbology
  - Nomenclature
- Interaction
- Scale
- Analysis: Tabular & Spatial
- Extraction
Extended Project Support

Fieldwork Coordination & Communication
• Collector App
• Property Owner Notifications

Safety Tracking in CSX ROW
• Coordination with CSX
• Real-time location of field crews
• Data coordination and communication with Stakeholders and Agencies
• Facilitated planning discussions
• Engaged groups dynamically
• Consolidated meeting materials
Client and Public Interaction

DRPT Recommended Preferred Alternatives

- **Executive Access**
  - Detailed interactive map provided on project website
  - Client has mapping at their fingertips

- **Public Outreach**
  - Citizens often able to answer their own project-related or property impact questions
  - Cultivate public participation
Benefits Realized
Synthesis of Internal and External Services

• Key Components:
  • Nontechnical Platform
  • Streamlined Data Review Process
  • Cross Sector Integration
  • Decreased Delivery Time
  • Increased Production Requests
Conclusion

- Data Communication Gateway
  - Readily Understandable
  - Widely Accessible
  - Centralized and Flexible Platform

✓ Versatility
✓ Mobility
✓ User Interface/
  User Experience
DC2RVA Project Website

- www.dc2rvarail.com
- Draft EIS
- Interactive corridor map

Richmond Rails:
Watch the Video: Adapting a Historic Network for Tomorrow's Needs
Thank you!

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