



Virginia Department of Transportation

We keep Virginia Moving

Roadway Network System

(RNS)

Project Charter

Version 2.0

Prepared by:
Information Technology Applications Division

Document History Page

Description	Contributor(s) and Comments	Date
Version 1.0 – Draft prepared	Scott McCombe, Dan Widner	07/31/2003
Version 1.01	Revised by ITA management	08/19/2003
Version 1.02	Revised by ITA management	09/04/2003
Version 1.03	Revised by Scott McCombe for 12/05/2003	12/03/2003
Version 1.04	ITA management recommends inclusion of business subsystem modules in the project scope	12/05/2003
Version 1.05	Includes all revisions requested by ITA management in preparation for Oversight review	01/05/2004
Version 1.06	Included modified cost estimate of \$4.9M	01/28/2004
Version 1.07	Included org chart & revised milestones	01/30/2004
Version 1.08	Updated Business Representatives per Steering Co.	02/18/2004
Version 1.09	Updated based on VDOT oversight comments for ITIB: changed project name, updated the CBA, improved org chart, added more project description information, and updated the deliverable schedule.	03/19/2004
Version 2.0	Updated based on initial VITA scorecard recommendations, WBS cost estimate, and new CBA	04/16/2004

Project Charter

A. General Information

Project Title: Roadway Network System **Project Working Title:** RNS
Proponent Secretary: Hon. Whit Clement,
Secretary of Transportation
Scott McCombe, PMP, Information
Technology Applications Division **Proponent Agency:** VDOT
Prepared by: Technology Applications Division **Date / Control Number:**

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Points of Contact

<i>Position</i>	<i>Title/Name/Organization</i>	<i>Phone</i>	<i>E-mail</i>
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<i>Proponent Agency Head</i>	Philip A. Shucet	(804) 786-2700	Philip.shucet@virginiaDOT.org
<i>Steering Committee: Division Administrators</i>	1) Quintin Elliot, Asset Management 2) George Clendenin, Structure & Br. 3) Ray Khoury, Mobility Management 4) Marsha Fiol (acting), Tr & Mob Pln 5) Michael Estes, Local Assistance	(804) 786-4244 (804) 786-4575 (804) 786-2965 (804) 786-2985 (804) 786-2745	Quintin.Elliott@virginiaDOT.org George.Clendenin@virginiaDOT.org Raymond.Khoury@virginiaDOT.org Marsha.Fiol@virginiaDOT.org Michael.Estes@virginiaDOT.org
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<i>Business Representative(s)</i>	1) Larry Caldwell, Mobility Mngmt. 2) Tom Lester, Structures & Br. 3) Mark White, Local Assistance 4) Ken Smith, Local Assistance 5) Rick Tambellini, Tr. & Mob. Plan. 6) Rob Hanson, Asset Mngmt. 7) Doug Gilman, Asset Mngmt. 8) Ann Austin, IT Appl. - HPMS	(804) 786-7779 (804) 786-2851 (804) 786-3438 (804) 786-2576 (804) 786-7459 (804) 371-2978 (804) 786-7647 (804) 786-7390	Larry.Caldwell@virginiaDOT.org Tom.Lester@virginiaDOT.org M.White@virginiaDOT.org Ken.Smith@virginiaDOT.org Rick.Tambellini@virginiaDOT.org Robert.Hanson@virginiaDOT.org Doug.Gilan@virginiaDOT.org An.Austin@virginiaDOT.org

B. Executive Summary

An Executive Summary is required when Sections C thru G of the charter are excessively long. In two or three paragraphs, provide a brief overview of this project and the contents of this document.

The Roadway Network System Project (RNS) creates a replacement system for the aging Highway Traffic Records Information System (HTRIS). The new system incorporates a relational database that provides universal enterprise data access, links geo-spatial data and business attributes to the roadway centerlines, and provides web accessibility to users currently unable to retrieve critical roadway data.

The scope of work includes the migration of all the data from the ADABAS HTRIS system to the Oracle RNS; ensuring the roadway geo-spatial data is aligned with the roadway centerlines; connecting the business data to the geo-spatial roadway data; building a web-based system for retrieving the roadway and business data; and improving business processes that have been limited due to the older HTRIS technology.

C. Project Purpose

I. Business Problem

HTRIS (Highway Traffic Records Information System) is the official repository for VDOT roadway information used for internal management and reporting, and for all federal government reporting. HTRIS is a comprehensive data management system that interrelates and consolidates Virginia's highway and traffic information contained within multiple subsystems. At a minimum, current functionality of each of the following HTRIS subsystems will be included in the development of the RNS system:

- The Roadway Inventory Subsystem (RDI) contains basic descriptive information about each inventoried road in Virginia.
- The Accident Subsystem (ACC) provides the capability to locate traffic accidents coded in the CAP System. It provides methods for analyzing accident data by route and or county.
- The Pavement Subsystem (PAV) provides descriptive information regarding the pavement. The pavement modules describe the roadbed materials from the surface to the base. Any major maintenance to the roadbed, such as resurfacing or milling is captured by the Pavement Subsystem.
- The Traffic Subsystem (TCA) receives uploaded data from the traffic counting devices throughout the state. This subsystem processes traffic data and produces both raw data and AADT data for use by the rest of HTRIS.
- The Traffic Controls Subsystem (TCI) maintains an inventory of control devices such as traffic signs, lights, and other control devices used on Virginia's highways.
- The Structures and Bridges Subsystem (STI) maintains an inventory of all bridges in the state. It also stores inspection data for all bridges.
- The Railroad Crossing Inventory Subsystem (RRX) maintains an inventory of railroad crossing in the state that is referenced to a route location.
- The HPM Subsystem (HPM) provides a mechanism to ensure the accuracy and completeness of data submitted to the FHWA. The subsystem provides the capability to review data summaries, trend analysis, and various comparative summaries between data years and data components.
- The Central Subsystem (CEN) contains the administrative functions for HTRIS including Table Item Maintenance, Security, and Batch Report generation.
- The Straight Line Diagram Subsystem (SDL) dynamically links information from other subsystems and presents the information as a visual display of the road characteristics and associated data with the location(s).

Built in 1991, the HTRIS system uses an outdated hierarchical type of database software (ADABAS) on the DIT mainframe. Today, VDOT's distributed database model specifies that current and future systems will use relational type database software (e.g., Oracle).

Many of VDOT's recently developed and planned information systems cannot easily communicate and share HTRIS data due to the incompatibility of the hierarchical and relational database systems. As a result, a number of databases were developed to house duplicate data solely to facilitate the sharing of data and satisfy required business processes. The HTRIS upgrade to an Oracle database platform will remedy this incompatibility and database replication while bringing this system into compliance with VDOT's information systems standards.

Users today cannot easily enter, update, retrieve, sort, or share VDOT's official roadway data maintained in the current HTRIS system. The delivery of HTRIS information to the user must also comply with the IT strategic plan that recommends the incorporation of spatially enabled data and providing access to this data through web-based technologies wherever possible.

The Roadway Network System Project creates a replacement system for the existing ADABAS HTRIS. The new system incorporates an Oracle database that complies with VDOT's enterprise database model and incorporates GIS tools and spatial data technologies. In addition, the system will include all existing HTRIS business data functionality and bring this vital system in line with current technology standards that are fundamental for sharing and maintaining official VDOT roadway and traffic information.

2. Project Business Objectives

<i>Commonwealth or Agency Strategic Plan – Initiative or Critical Issue</i>	<i>Project Business Objectives</i>
Maintaining competent workforce: VDOT faces a shortfall of skilled workers with significant anticipated retirements in the next biennium.	1) Improve workforce competence by upgrading HTRIS from an outdated mainframe ADABAS hierarchical database system to an information system that is well supported by competent IT workers both inside and outside of VDOT.
Limited financial resources: Transportation demands consume available resources and require simple communication of complex issues.	2) Improve data quantity and quality in support of obtaining federal funding from the Highway Performance Monitoring System.
Aging infrastructure: increasing traffic demands and congestion issues continuously place stress on an ever-aging roadway infrastructure.	3) Increase the timeliness and accuracy of data regarding changing traffic flow patterns, incident reporting, and congestion monitoring for improving the roadway infrastructure.
Quantitative methods for identifying needs and prioritizing resources: VDOT requires a process and criteria for identifying and prioritizing construction and maintenance needs.	4) Provide easy access to critical roadway inventory data to all parties needing accurate data for determining construction and maintenance needs.

D. Assumptions

- Upper management support exists for replacing the current HTRIS (utilizing ADABAS) with a new system utilizing Oracle, and creating a spatially enabled web-based interface.
- The resources and support that is required to initiate and complete this project will be available to the Project Manager.
- Assigned personnel have sufficient knowledge and skill and totally support the ITA initiative for the RNS project.
- HTRIS data structure and processing is transferable to Oracle within the timeframe and cost estimated.
- Required technology solutions (conversion tools and facilitating software) are applicable, available, and fully functional for moving HTRIS data from ADABAS to Oracle.
- Data cleansing, scrubbing, and loading can be achieved efficiently using commercially available conversion tools.
- The RNS management and project teams prevents scope creep beyond the bounds defined in this Charter.
- During development, the RNS Oracle database is routinely updated from the HTRIS ADABAS database.
- Current business data entry into the ADABAS HTRIS will end at the implementation of the replacement system.
- VDOT and VGIN have worked closely together on the VGIN road centerline project, with VDOT providing technical assistance, input in the development of the project's technical components and quality review of data. VDOT looks forward to a smooth integration of updated GIS state roadway data from VGIN when this is available.

E. Project Description, Scope and Management Milestones

I. Project Description

The specific solution will spatially enable the HTRIS Roadway Inventory data, make this data accessible through relational database technology, migrate all existing business data and business data functionality, and provide interface potential to like information systems. Customers served will be the Mobility Management Division, Structure and Bridge Division, Local Assistance, Transportation and Mobility Planning, and Asset Management. Expected benefits will include unprecedented access by internal information systems to official agency business data, improved and streamlined federal reporting, and the availability of more accurate and timely roadway characteristic information.

The project will follow these general processes:

- 1) Design and creation of the Roadway Network System (RNS) Oracle database structure to incorporate existing HTRIS and geo-spatial data.
- 2) Development of an ADABAS to Oracle temporary interface.
- 3) Transfer of ADABAS data to Oracle with cleansing and scrubbing.
- 4) Addition of data entry screens for Geospatial database maintenance processes.
- 5) Addition of data entry screens for business database maintenance processes.
- 6) Provide critical reporting capability through batch routines and web-based access.

2. Scope

The staffing will be comprised of:

- Central Office staff from the Information Technology Applications Divisions will manage this project as well as design and develop all replacement databases and applications necessary to replace HTRIS.
- Mobility Management Division, Structure and Bridge Division, Transportation and Mobility Planning, Local Assistance, and Asset Management will contribute a Business Team to assist with requirements definition, design, development and testing processes.
- Contracted support will be utilized for specific portions of the design and development phases as required.

This project WILL include:

- Adherence to the management guidelines and principles set forth by the *Commonwealth of Virginia Project Management Guideline* (April 9, 2003) and any policies or procedures issued by the Secretary of Technology that apply to VDOT's Major IT Projects.
- Movement of the HTRIS system from the mainframe to a Windows 2000 application and database server using existing VDOT technology and infrastructure.
- Development of an Oracle database that will replace the current ADABAS HTRIS database
- Consultation with users of external applications and data sets to facilitate system upgrades and interfaces.
- Adding geospatial referencing to centerline data for the new Roadway Network System.
- Web-based access for creation and maintenance of RNS data and roadway business data.
- Functionality for all currently used HTRIS business processes through development of appropriate subsystems.
- Required operational interfaces to external systems such as DMV and State Police.
- Critical batch data reporting and web data viewing capability.
- The functionality of all currently used HTRIS data exports through a similar means of providing required data (at end-user discretion).
- Development of the structure and format for future distributed enterprise architecture projects that will connect to the RNS.
- Re-training for all current HTRIS users.
- A common platform that provides easy access to centerline information as a means to leverage future technical improvements within VDOT.

This project WILL NOT include:

- Incorporation, redesign, or repair of any external applications or data sets that extract data from HTRIS, beyond the need as previously stated to design a system that can be accessed for required information. Assistance will be provided to help determine the changes that may need to be made to these external applications in order to maintain functionality.

This project will be complete when:

- All HTRIS business data has been moved to an Oracle database, cleaned, scrubbed, and normalized.
- GIS centerline data and processes are migrated in the Roadway Network System portion of the new system, and the existing data input/creation backlog eliminated.
- Critical reports (particularly HPMS) and ad-hoc data queries can be performed and maintained at the user level.
- The RNS data and business data structure, format, and maintenance processes are made

available to all current users of HTRIS.

- Standards and guidelines for data access have been developed for use by other applications and systems that will need to access the new system.

The anticipated completion date for this project:

- Is tentatively projected for July 2007, but will be formally determined after the Work Breakdown Structure, task sequencing, and resource identifications and acquisition are complete.

3. Summary of Major Management Milestones and Deliverables

<i>Event</i>	<i>Estimated Date</i>	<i>Estimated Duration</i>
<i>Project Charter Approved by Oversight</i>	February, 2004	2 wks
<i>ITIB Approval to Proceed</i>	May, 2004	2 mo
<i>Overall System Requirements</i>	September, 2004	5 mo
<i>RNS Database Completed</i>	December, 2004	3 mo
<i>Official Roadway Data Availability</i>	June, 2005	6 mo
<i>Each Business Subsystem Completed on a phased deliverable cycle with each to be implemented ASAP</i>	PAV - 10/2005 STI - 12/2005 TCI - 01/2006 TCA - 05/2006 RRX - 06/2006 ACC - 11/2006 SPZ - 03/2007 HPM - 04/2007	22 mo
<i>User Training</i>	Upon completion of each module	
<i>System Integration Testing Complete</i>	Upon completion of each module	
<i>Project Closeout</i>	July, 2007	5 mo

F. Project Authority

1. Authorization

Dr. Gary Allen, Chief of Technology, Research & Innovation

2. Project & Program Manager

Scott McCombe, Information Technology Applications Division will assume the responsibilities of Project Manager for managing the overall project. As such, he will coordinate the activities performed by technical staff in the Information Technology Applications Division, obtain approval of all project deliverables from the ITA Program Manager, and ensure that the project is completed on time, within budget, and at an acceptable level of quality.

Dan Widner, Applications Manager, Information Technology Applications Division will assume the role of Program Manager and assume responsibilities for providing oversight to the project activities directed by the Project Manager and technical staff in the Information Technology Applications Division.

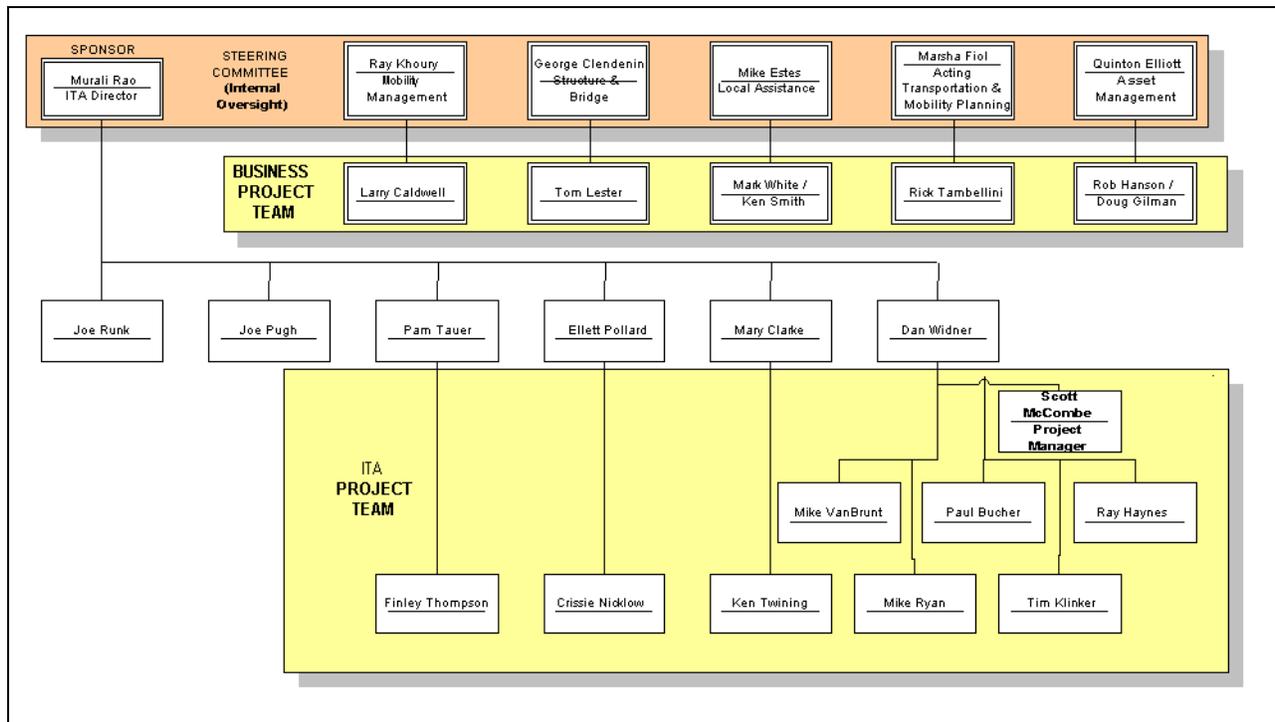
Oversight

Information Technology Applications Division is responsible for administering VITA Governance for VDOT. The RNS Project Steering Committee provides oversight to the efforts of the project. The VDOT Internal Auditors conduct reviews at various stages of the project and report to the Inspector General. The Commonwealth provides oversight via the IT Investment Board, which monitors projects through the VITA IT Project Dashboard.

G. Project Organization

1. Project Organization Chart

Provide a graphic depiction of the project team. The graphical representation is a hierarchal diagram of the project organization that begins with the project sponsor and includes the project team and other stakeholders.



2. Organization Description

Describe the type of organization used for the project team, its makeup, and the lines of authority.

The Information Technology Applications Division is managing this project. The entire project team combines business and IT representation in the context of a “matrixed organization” reporting to the Project Manager for all activities related to this project. The Information Technology Applications Division will form a project team of full-time technical personnel from within the Division and additional contracted expertise where needed.

Project Sponsor – Murali Rao

Project Steering Committee – The members of the proposed steering committee are the division administrators representing the major business stakeholders of the project. The divisions represented on the steering committee include Asset Management, Structure & Bridge, Mobility Management, Transportation & Mobility Planning, and Local Assistance.

Business Project Team – The Steering Committee selects staff members to act as business subject matter experts and provide primary user contact for ensuring that their needs are considered fully during all phases of the project. These members will meet regularly with the project team and be consulted when any additional critical issues arise involving RNS business requirements.

Project Management – The project team members will report to the Project Manager for direction regarding all project activities. The Project Manager will report directly to the GIS Program Manager who reports directly to the ITA Division Head.

ITA Project Team – The ITA project team is composed of technical and support staff from ITA and augmented with contractors where required. In this way, the project team functionally operates as a group of matrixed individuals reporting to both their functional manager and the RNS Project Manager.

Project Stakeholders – There are many stakeholders within and without VDOT that have an interest in the Roadway Network System project. Current VDOT HTRIS users entering, editing, retrieving, and extracting HTRIS data are the primary stakeholders for the project and represent over a half-dozen divisions. In addition, DMV and the State Police use HTRIS data and must be included as primary external stakeholders.

3. Roles and Responsibilities

Describe, at a minimum, the Roles and Responsibilities of all stakeholders identified in the organizational diagram above. Some stakeholders may exist whom are not part of the formal project team but have roles and responsibilities related to the project. Include these stakeholders' roles and responsibilities also.

RNS Steering Committee –

The RNS Steering Committee establishes overall business goals and objectives for the Roadway Network System to ensure that it meets the needs of the Agency as a replacement for HTRIS. Through their business team representatives, the Steering Committee provides input to manage the project scope within the boundaries of this Charter while ensuring that the product delivers the functionality desired. This body has overall responsibility for approving the final RNS project before implementation.

Information Technology Applications Management –

The management team of the Information Technology Applications Division provides overall guidance and support for this project, and is responsible for project expenses and resource allocation. They ensure that the scope of this project remains within the established goals and vision, and resolves organizational and priority conflicts that place the project at risk. They assess specific project risks and see that appropriate mitigation strategies are implemented as necessary. ITA management conducts formal reviews to assess the project's progress every month and reports both progress and issues to the project steering committee.

IT Project Technical Team Members –

This team creates the operational programs and system modules per the requirements specifications, prepares the system modules for testing, integrates changes and fixes required for complete operability to specification, performs all system testing functions as required, and assists with User Acceptance Testing. These members document the system completely and turn it over to production upon user acceptance. The proposed technical team is finalized once the work breakdown schedule has been completed and currently includes Ray Haynes, Mike VanBrunt, Paul Bucher, Finley Thompson, and Mike Ryan.

I. Signatures

The Signatures of the people below document approval of the formal Project Charter. The Project Manager is empowered by this charter to proceed with the project as outlined in the charter.

These original signatures are on file in the RNS project library

<i>Position/Title</i>	<i>Printed Name/Title</i>	<i>Signature</i>	<i>Date</i>
<i>Proponent Cabinet Secretary</i>	Hon. Whit Clement, Sec. of Transportation		
<i>Proponent Agency Head</i>	Philip A. Shucet, Commissioner of VDOT		
<i>Project Sponsor</i>	Murali Rao, Director, IT Applications Division		
<i>Program Manager</i>	Dan Widner, IT Applications Manager		
<i>Project Manager</i>	Scott McCombe, PMP Project Manager		
<i>Stakeholder</i>	Joe Runk, IT Applications Manager		
<i>Stakeholder</i>	Joe Pugh, IT Applications Manager		
<i>Stakeholder</i>	Pam Tauer, IT Applications Manager		
<i>Stakeholder</i>	Ellett Pollard, IT Applications Manager		
<i>Stakeholder</i>	Quintin Elliot, Asset Management		
<i>Stakeholder</i>	Michael Estes, Local Assistance		
<i>Stakeholder</i>	Ray Khoury, Mobility Management		
<i>Stakeholder</i>	George Clendenin, Structure & Bridge		
<i>Stakeholder</i>	Ken Lantz, Transportation & Mobility Planning		