

Rahall Transportation Institute (RTI) Research Project Description

Project Number: TTP 05-01

Project Title: Phase II – Enhance GIS Mapping System for The Appalachian Regional Commission’s Appalachian Development Highway System (ADHS)

Primary Investigator Contact Information:

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Project Objectives:

To make additional enhancements to the existing ADHS GIS that creates better geospatial tools specifically designed to analysis and query specific questions from the Cost to Complete Estimate. These applications will be design from suggestions made from multiple workgroups conducted last year during the completion of phase I, for each of the 13 ARC states. Completion of this phase will provide most of the tools needed to maintain and update a standalone ADHS GIS.

Project Abstract:

The proposed research will implement suggested improvements to the ADHS GIS Mapping System, making it more compatible with the existing protocol for the Appalachian Development Highway System Cost to Complete Estimates. Additional mapping function developed will include; Photolog Viewer, Table B viewer, Zoom Tool, Spatially Located Document Management System, ADHS Website, and cartographic improvements to base mapping. Expected benefits will provide a more uniform transition from the traditional methods of completing the cost to complete estimate to the new GIS based system.

Task Descriptions:

1. Cartography

1. Improve map Cartography.

2. Table B Viewer

1. Design.

Task 1 will include the following (2) subtasks:

- a. Design features and functions.
- b. Research.

2. Development

Task 2 will include the following (3) subtasks:

- c. Click and display.
- d. Edit feature.
- e. Report and Print Feature.

3. Document Management

1. Design and Development.

Task 1 will include the following (2) subtasks:

- f. Design features and functions.
- g. Development.

4. ADHS Website

1. Design and Develop.

Task 1 will include the following (2) subtasks:

- h. Design features and functions.
- i. Development.

5. Training and Support

Milestones, Dates, Schedule:

This project will end 10 months from permission to proceed.

Budget:

The total budget for this project is \$100,000.00

Student Involvement:

The project will provide employment support for 3 research associates and 2 graduate students. The student workers will support the research associates as project assistants.

Relationship to Other Research Projects:

Project Title: "Proposed GIS Mapping System for West Virginia's Appalachian Development Highway System (ADHS) Corridors"

Project Sponsor: Nick J. Rahall II Appalachian Transportation Institute

Project PI: Sean Litteral M.S.

Relationships: This project created an accurate base map of ADHS.

Project Title: "Develop GIS Implementation Strategy for WVDOT"

Project Sponsor: Nick J. Rahall II Appalachian Transportation Institute

Project PI: Dr. Herbert Tesser

Relationships: This project would help with the implement of the proposed project

Project Title: "Automated Road Extraction Using Satellite Images"

Project Sponsor: Nick J. Rahall II Appalachian Transportation Institute

Project PI: Dr. Herbert Tesser

Relationships: Some of the technology developed on this project could assist with the road data accuracy.

Project Title: " Endangered Species Identification Along Corridors in WV Using GIS"

Project Sponsor: Nick J. Rahall II Appalachian Transportation Institute

Project PI: Dr. Mike Little

Relationships: The environmental databases developed on this project can be used to provide environmental data.

Technology Transfer Activities:

Final and progress reports will be available on the RTI Website. Reports and GIS data will be submitted to applicable organizations. Opportunity for the Principal Investigator to present findings through the Transportation Seminar Series to invited guests from ARC, FHWA, and other state DOTs, as well as any other interested parties, will be provided. We will also seek opportunities to demonstrate the research concept and technology to transportation and economic development professionals.

Potential Benefits of this Project:

This project will provide states with the tools needed to establish a more accurate estimate. Challenged with multiple states preparing and submitting information to the ARC, data quality and mapping standards need to be integrated into this system. This project will provide a medium to provide these standards.