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The Integration and Visualization of Economic Modeling, Geographic Information Systems and Remote Sensing Technologies for use in Public Participation Processes

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This paper presents an investigation of new and innovative approaches to streamlining the environmental review process. The research project is part of the National Consortium for Remote Sensing in Transportation - Streamlining Environmental and Planning Processes (NCRST-SEPP). These processes, mandated by The National Environmental Policy Act (NEPA) and SAFETEA-LU, have become overly time consuming and costly. The researchers utilized a planned segment of I-69/296 corridor that traverses Memphis, Tennessee and Northwest Mississippi as a test bed for the study. After presenting a background analysis of NEPA and a problem statement regarding Environmental Impact Statement (EIS) streamlining, the authors illustrate how existing data can be retooled and visualized for use in public participation events. Finally, the authors draw from citizen engagement and agency theories to determine the factors that can affect the success or failure of implementing new and innovative approaches to involving the public, especially utilizing a new visualization modeling tool. The findings suggest that by integrating existing data from remote sensing technologies, Geographic Information Systems and economic modeling a visualization product emerges that can aid today's communities by supporting the 'empowerment' of the citizens, their capacity to work with data and to participate in the discussion of transportation initiatives. Collaborative information must be considered in a visual and qualitative manner to enable its better understanding and provide more active and constructive citizen engagement activities. This research provides a tool, created from existing agency data, that allows just such deliberation to occur.