

Structuring Multi-Scale GeoData for Environmental Impact Assessment in Transportation Corridor Projects: the I-269 Case Study

Rodrigo A. A. Nobrega sal@gri.msstate.edu

Charles O'Hara, C., Sadasivuni, R., Dumas, J.

Geosystems Research Institute, Mississippi State University

2nd Research Boulevard, Starkville MS, 39759, phone 662 325-0821, fax 662 325-7692

Abstract:

Transportation projects usually require a combination of information originate from diverse sources such as ground surveying, hydrological, geological and census data, especially during the early planning phase. However given the variety of data sources, the growth of geo-technology and the environmental requirements, it is imperative that data be used in the proper way so that analysis is correct and accurate.

Data mining is vital for the proper attainment of geo-information for EIA studies. This paper addresses a multi-scale data structuring which is resultant from Streamlining Environmental and Planning project, under development on the proposed I-269 bypassing Memphis-TN. The data are organized according to different categories and applicability. The result is a GIS data structure that allows the selection of least-cost corridors based on low-to-medium scale level. For the large scale level, high resolution data and zoning information from local sources are added into the model to compute the least-coast alignments.

Structuring the multi-scale geodata resulted in a complete inventory of all essential information available for use on the EIA in transportation planning. It is a great help to deal with the best-available data for composing complex maps, identifying and filling the gaps which occurred in traditional EIA studies.

Keywords: Multi-scale, geodata, EIA, data dictionary, transportation planning.