



# Highway Alignment along the Corridors Using Remote Sensing and Geographical Information System

Sandra Sundar\*

*Department of Mechanical Engineering, University of Delhi, Delhi, India*

## DESCRIPTION

Optimizing highway new route for the maximum economical direction is a complex trouble that finds the best options for a new highway connecting specific points or locations. Selecting best route location and highway alignment method is a complicated one, because of the numerous variables that have to be taken into consideration for accomplishing the best outcomes using GIS. Highway alignment between the two corridors is to provide a better and comfortable path with the identification of the shorter path and for reducing the travel for the automobiles with possible various paths or routes. Highway alignment optimization using GIS with genetic algorithms examines the possessions of various costs on alignment selection and explores optimization in constrained spaces in mountainous terrain areas with very complex geography.

Highway network between the new corridors possess multi standards decision techniques with the variety of communal, ecological, economic factors and weighted for a large number of corridor alternatives with a new bi-level continuous location model for expansion by including more number of corridors within a geographical region. The draping of road network on triangulated irregular network version as well as on geomorphology map is used to define alternative and efficient route corridors, with exacting emphasis on assortment of the least-value route and prioritization for repairing. Through spatial operations and database queries, the construction divergence factors between the important coverage and the elected route are recognized and reallocated with GIS. Infrastructure planning of transport according to tradition of public access and desires with environmental impact assessments will leads better highway path for the peoples and stakeholders. Use of Analytical Hierarchical Process (AHP) in GIS for route location with third dimensional data which includes vertical slope, earth-volume, size of

structure, location and construction expenditure to the independent variables for making the road designs are more scientific.

A complete technique to the planning of a new alignment is stimulated through the location of services, existing road conditions and buildings with the monetary, communal and political charges of land continuation which might be recovered through the latest convergence of geospatial imaging, photogrammetry, regional significance examination and alignment optimisation. Transportation applications by integrating GIS easy to handle and control spatial and non-spatial data in an extensive range for problem solving and decision-making through monte carlo simulation by evaluation of winter weather maintenance application with positional uncertainties and substantial impact.

## CONCLUSION

The traffic assignment model with GIS spatial analysis and Auto CAD design capacity is used for integrating the traffic demand analysis and engineering design into a package which optimizes the spatial location and alignment through assembly cost, adventure time and ecological load which might be included into economic terms and analyzed among the special alternatives for the best option. Road mask and road seeds identifies the road network passing through the different elevations with diverse categories of roads and intersections by high-resolution satellite picture as map details traditionally by surveying in urban regions as a useful resource and time consuming in GIS layer. In order to evaluate better alignment, related data such as topography, soil characteristics, geology, land use and land cover etc. are incorporated and analyzed for stable and economic social benefits.

**Correspondence to:** Sandra Sundar, Department of Mechanical Engineering, University of Delhi, Delhi, India, E-mail: sandra.s@gmail.com

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