

Thematic Geoportal Dashboard Connectivity to Optimize Planning Phase of Trans Sumatera Toll Road

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SUMMARY

The government through Presidential Regulation assigned Hutama Karya to carry out the operation of the 2,789 km Trans Sumatra Toll Road consisting of 5 main stages: funding, planning, construction, operation, and maintenance. The planning stage is the stage to determine the trajectory of the Trans Sumatra toll road, based on engineering design parameters and toll road investment costs.

At the initial stage, Hutama Karya uses various spatial data sourced from Indonesian Ministries and Agencies. The spatial data needed as secondary data to support planning stages are forestry data, national roads, distribution of peat hydrological areas, information on rocks and geological formations, and any other data from various other agencies. To optimize the use of spatial data from Ministries and Agencies, Hutama Karya implemented GIS through creating the thematic geoportal dashboard containing spatial data and toll road alignment. The dashboard is prepared using the ArcGIS Enterprise platform from ESRI. The toll road alignment is converted into a feature class and shared as a web layer. Each data from the Government is connected through access to Web Map Service and Web Feature Service. Spatial data in the form of points, lines, and polygons are displayed as a point of interest and zone. Those spatial data displayed already have a database of information in the form of feature names, types, and thematic information such as functions, scale, and depth information.

The spatial data obtained from the Ministry and Agencies are the latest spatial data from the server of each institution, as the planning analysis will become more accurate and the decision-making process can be carried out more quickly and precisely. The objectives, through the thematic geoportal dashboard, will support the planning team to increase the value of the toll road route selection, where the process of toll route selection will consider the Government's program to

develop special economic zone and the industrial area in the Sumatera Area. Through the thematic geoportal dashboard, Hutama Karya could optimize the planning stage by early identifying objects crossed by toll road alignment. Furthermore, the identification of peatlands, pipeline routes, electricity transmission routes, existing roads, and any other objects, will enhance the planning team to take a step forward to establish field survey and verification.

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