Application of Remote Sensing and **GIS** on "**West-East Nature Gas Pipeline**"

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The West-East Nature Gas Pipeline" is one of the four largest projects in the beginning of the new century in China. Remote sensing technology combined with GIS had been used on the research of various possible pipeline routes to select the most favorable result through interpreting the geological, geographical and hazard condition information from the images, as Figure 1. Environmental impact assessment (EIA) is also the necessary factor in the study. There are a lot of changes in geographical and environment factors along the long-distance pipeline due to the rapid development especially in east China. Image maps produced from new satellite data identify the great changes from the published maps and used successfully not only on route-selection studies but also on in situ investigation, together with GPS. Feature data set extracted from remote sensing images and based on GIS offer the important information and parameters for plan and design of the pipeline. They are also the basic data for pipeline database based on GIS. The revised maps for some key area are produced by these techniques and help greatly for the construction of the pipeline. Analytic Hierarchy Process (AHP) and dynamic 3D display have been applied based on RS information and GIS technology. The construction of the "West-East Nature Gas Pipeline " will be of high standard, best quality, advanced technology and high efficiency. It will be built up as a "Digital Pipeline". 3S technologies give the powerful tool to accomplish the great target.

Keyword: Remote sensing, GIS, West-East Nature Gas Pipeline.

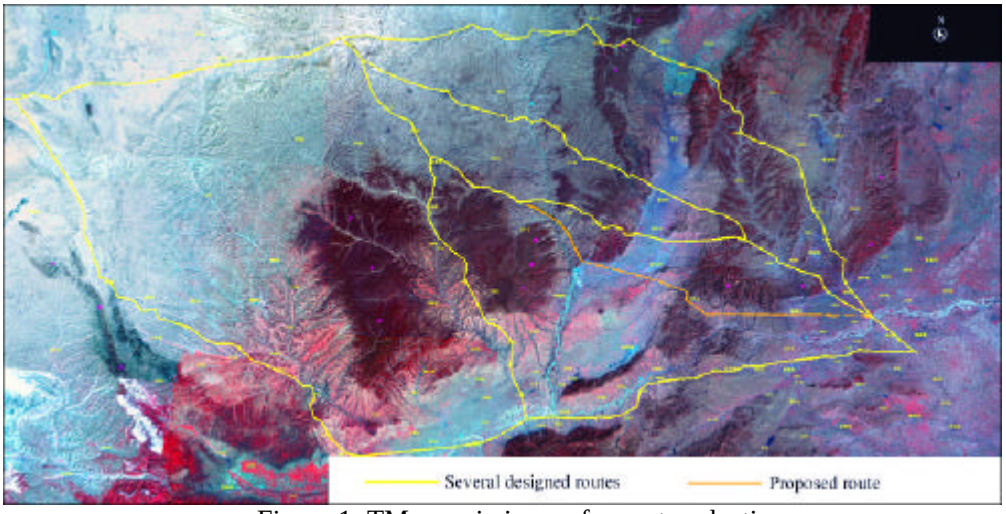

Figure 1. TM mosaic image for route selection