UCLA Cartography GEOG XL 169
Unit 6: Written Assignment
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Executive Summary

The Pan-American Highway is a network of roads that stretches 30,000 kilometers from Prudhoe Bay, Alaska to Ushuaia, Argentina. It is continuous, except for a 106-kilometer break through rainforest along the Panama-Columbia border, known as the Darien Gap. The accompanying exhibits present two options for bridging the gap and completing the Pan-American Highway.

In developing the proposed routes, the cost-distance analysis considers two key parameters, slope and hydrology. A slope-cost scale was developed by on an exponential curve. Hydrology-cost was pegged equivalent to maximum slope-cost.

The results are two options with one route ending in Apartado, Columbia and the second in Chigorodo, Columbia. Either option connects the Highway 1 at Yaviza, Panama with Highway 62 in Columbia that leads south toward Medellín. Examination of the routes shows that the least cost-distance route for either option is identical for the first 86 kilometers, presenting identical elevation profile. Surprisingly, the least cost-distance elevation profile for the remaining 20 kilometers is remarkably similar as well.

In determining the optimal least cost-distance, additional parameters will need to be considered. Some potential parameters could include:

- Environmental impact, as the proposed road would traverse sensitive rainforest;
- Soil type, as different soil/bedrock could impact the cost of establishing a solid road base;
- Economic impact, as to which termination point would provide the greatest economic impact;
- Geopolitical considerations, as the road traverses two countries and four provinces;
- Security considerations, as armed guerillas and drug trafficking present a risk to travelers.