

Multi-Criteria Geographic Information System Analysis of the Costs and Environmental Impacts of Improved Overland Tourist Access to Kaieteur National Park, Guyana

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Abstract : Kaieteur is the most iconic National Park in the rainforest-clad nation of Guyana in South America. However, the magnificent 226-meter-high waterfall at its center is virtually inaccessible by surface transportation, and the occasional charter flights to the small airstrip in the park are too expensive for many tourists and residents. Thus, the largest waterfall in all of Amazonia, where the Potaro River plunges over a single free drop twice as high as Victoria Falls, remains preserved in splendid isolation inside a 57,000-hectare National Park established by the British in 1929, in the deepest recesses of a remote jungle canyon. Kaieteur Falls are largely unseen firsthand, but images of the falls are depicted on the Guyanese twenty dollar note, in every Guyanese tourist promotion, and on many items in the national capital of Georgetown. Georgetown is only 223-241 kilometers away from the falls. The lack of a single mileage figure demonstrates there is no single overland route. Any journey, except by air, involves changes of vehicles, a ferry ride, and a boat ride up a jungle river. It also entails hiking for many hours to view the falls. Surface access from Georgetown (or any city) is thus a 3-5 day-long adventure; even in the dry season, during the two wet seasons, travel is a particularly sticky proposition. This journey was made overland by the paper's co-author Dahlia Durga. This paper focuses on potential ways to improve overland tourist access to Kaieteur National Park from Georgetown. This is primarily a GIS-based analysis, using multiple criteria to determine the least cost means of creating all-weather road access to the area near the base of the falls while minimizing distance and elevation changes. Critically, it also involves minimizing the number of new bridges required to be built while utilizing the one existing ferry crossings of a major river. Cost estimates are based on data from road and bridge construction engineers operating currently in the interior of Guyana. The paper contains original maps generated with ArcGIS of the potential routes for such an overland connection, including the one deemed optimal. Other factors, such as the impact on endangered species habitats and Indigenous populations, are considered. This proposed infrastructure development is taking place at a time when Guyana is undergoing the largest boom in its history due to revenues from offshore oil and gas development. Thus, better access to the most important tourist attraction in the country is likely to happen eventually in some manner. But the questions of the most environmentally sustainable and least costly alternatives for such access remain. This paper addresses those questions and others related to access to this magnificent natural treasure and the tradeoffs such access will have on the preservation of the currently pristine natural environment of Kaieteur Falls.

Keywords : nature tourism, GIS, Amazonia, national parks

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