

# Environmental impacts of road construction

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The paper "Environmental Impacts of Road Construction" is an excellent example of a research paper on engineering and construction. Our modern society is a mobile one, and the need to get from "here" to "there" has necessitated faster means of transportation that, in turn, require the construction of roads built for speed and convenience. Road construction is considered in all countries as a measure of progress and economic advancement. After all, the more roads there are, the faster people, products, and produce could reach their destinations. However, there are serious effects that road construction has on the environment which the general public is largely unaware of. As a civil engineering student, more than a mere professional commitment to protecting the environment, it is my duty as a world citizen to ensure it. The construction of roads is of particular importance because its environmental threat is not obvious to most people. According to the WWF Living Planet Report 2004, 19% of the UK's eco-footprint is taken up by the environmental impact of built infrastructure (Lazarus, 2005, p. 1), including roads. Ready-made concrete and cement are the building materials that create the greatest negative impact on the environment. (Lazarus, 2005, p. 2) Also, the impacts must be assessed as to whether they are permanent or temporary, direct or indirect. (National Roads Authority (NRA), 2006, p. 10). Firstly, the planning of routes through ecology "corridors" often violates the habitats of local wildlife. "Roadkill" may be an ordinary term to many motorists, but hundreds of motorists accounting for hundreds of roadkills in a day may mean the reduction of the productive members of the population of threatened species. Animals that normally traverse the terrain are unaware of the dangers of fast-moving vehicles and would ordinarily cross the path of major

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roads on the way to their natural feeding grounds and watering holes. The wider the roads and the faster the normal traveling speeds along them, as is usually the case with cross-country freeways, the more dangerous it is to the local animals. In fact, the hazard posed by roads to both plants and animals is so broad that important guidelines for road surveying and planning have been issued by governments, with special attention given to “habitats, plants, and fungi; terrestrial and aquatic invertebrates; fish; amphibians; reptiles; birds and mammals.” (NRA, 2006) Ireland’s National Roads Authority has, in fact, expanded its concern for the conservation and protection of her natural heritage and biodiversity. It aims to abide, in the planning stages of road schemes, to avoid or reduce the negative impacts on the natural environment, and if such are not avoidable, to at least mitigate or lessen the impact. Other than the areas designated for road construction, it is important to assess the impact on semi-natural and fringe habitats, as well as the general area that extends beyond site boundaries, which are important for wildlife. (NRA, 2006, p. 9). Another effect roads may have on the environment is that which deal with waterways, particularly those that act as pathways and breeding grounds for fish such as salmon and trout; therefore, there is a need to maintain their water quality and fish habitat. Furthermore, the need to assure a sustainable water policy. There is thus a need to assess the impact of the proposed road on the “hydromorphological and physicochemical elements... in addition to species abundance and diversity.” (NRA, 2006, pp. 8-9) The aim of the designer is to create as little disturbance as possible. Special consideration must be given to rare and protected species of flora and fauna (among which are animals such as bats and badgers). There is also a need to contain visual disturbance and

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disturbance from noise and vibrations, the air quality, trees, and watercourse crossings. Construction noise, water runoff, dust and waste arisings – problems that arise during the construction phase. Finally, the impact of road schemes on the archaeological and architectural heritage of the community/country must be assessed. Road construction involves all phases of the process, which include: project concept, funding identification, preliminary engineering (surveying and design work), environmental review, public hearings and informational meetings, grade inspection, right of way acquisition, bid letting, and finally, project execution, or what is commonly called the “ construction” phase. (Road Commission, 2009). The environmental impacts of a road project could not be specifically isolated for any one phase. (UN-ESCAP, 2001). However, there are temporary environmental effects that are a result of this phase. Site degradation is due to the structures set up for the duration of the works, such as drainage ditches, concrete slabs for storing hazardous materials, or refuse pits; after the project’s conclusion, the structures must be demolished and the site restored to its natural condition. Machinery and used parts (batteries, tires, spark plugs, etc.) must be cleared or else they would constitute pollution. Areas may have been exploited to supply laterite and quarries, compromising conditions in terms of rainfall and hydrography. Trees are sometimes felled due to necessity, thus replanting should be conducted on the particular species of the area. As for base camps, they are sometimes improperly situated on protected parks or reserves, and workers sometimes inappropriately indulge in poaching, forest exploitation, etc.. Furthermore, two problems recur most: soil degradation and pollution due to toxic material storage and machine washing. Airborne dust becomes more concentrated, <https://assignbuster.com/environmental-impacts-of-road-construction/>

and problems on excessive vibrations and noise disturbance intrude into the environment. As to human contact, liaison between road construction workers and the local inhabitants may be an occasion for the spread of AIDS and STDs. (Ntep, 2001) On the following page is a more complete enumeration by the United Nations of all environmental impacts of road construction.