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Surface soil erosion protection for Egnatia Highway: An infrastructure project in Northern Greece

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Abstract

The Egnatia Road constitutes a part of Trans-European Network and is one of the fourteen priority projects of the European Union. It is the most important modern infrastructure project for the development of Greece and its communication, with Europe and the Balkans. The northern part of Greece where Egnatia Road is located, has an extensive range of landscape types and natural vegetation, local climate, geology and soils, aspects. Altitude also varies considerably from one section of the road to the another. As a result upland landscapes in particular, are becoming more scarred while the road development increases. Due to the complex of nature of this environment, the development and the restoration of road is a high challenging task.

The implementation of landscape restoration works of Egnatia Highway project, aims to reduce the ecological damage and to improve the esthetic quality of the site. The removal of vegetation from existing slopes can pose serious erosion problems for the road and the road landscape, since the natural regeneration is far slower than the current pace of development. Therefore revegetation methods on the newly formed slopes should take place as soon as possible. In the context of vegetation stabilization technique, plants are used for catching, armoring, supporting, draining and prevent accelerate run-off and consequent soil erosion. Various applications have been specified, using bioengineering methods for all the different conditions (different degree of slopes, quality of soils, various vegetation zones) with native herb mixtures and plants. Development of native plants in the nurseries takes place for the first time in Greece. Bioengineering techniques can be considered as part of the sustainable development of a road infrastructure creating high esthetic scenery, ensuring the security of transportation and the environmental protection.

Keywords: Landscape, hydroseeding methods, slope protection, native plants

Introduction

The Egnatia Motorway was designed according to the specifications of the Trans-European road network. It is a closed double carriageway motorway 680 kilometres long, with two lanes plus an emergency lane on either side of the central reserve, for a total paved width of 24.5 metres. Egnatia motorway is managed by "EGNATIA ODOS AE". "EGNATIA ODOS AE" was created by a joint European/Greek decision within the framework of the 2nd Community Support Framework, to serve as an motive power of development in Northern Greece, and thus for the entire country. It is a Public Corporation that operates with private sector criteria, under the superintendence of the Ministry of Environment, Planning and Public Works. In 1995 Brown & Root were appointed as Project Manager for the Project and the Construction out to 3 experienced international companies.

On a national level, the Egnatia Motorway will be the trunk of Northern Greece's transport system, and a gateway opened to the isolated provinces of Epirus, Western Macedonia and Thrace. On a European level, the Egnatia Motorway unites the industrial centres of the East with those of the West. The Egnatia Motorway will also be a collector route for the Balkan and Southeastern European transport system and Turkey.

Egnatia Odos and the landscape

The Egnatia Motorway is one of the first large-scale public works to apply a system of Landscape and