

# Deposits of surplus excavated materials in the Tunnel of Albertia. Guipuzcoa.

High Speed Line Vitoria-Bilbao-San Sebastián. Stretch: Legutiano-Eskoriatza. Substretch II.

The project obliges to treat the excavated materials of a dual tube tunnel of 2.090 and 2.080 meters with as less environmental and landscape impact as possible.

The location expected in the project for the filling is crossed by the stream Azkorartutzeta. The initial solution includes two diversions and exposes the stream to possible contaminations by materials dragging and turbidity.

In the Technical Project of filling written at the beginning of the work site to fulfil the EIS, a diversion of the stream for the periphery of the filling is proposed, facilitating implementing tasks of the filling and avoiding the fact that the stream cross it. Moreover, the proposed solution facilitated the environmental integration of the new river canalization and of the own landfill.

To be able to execute this solution, the approbation of the Technical Project was approved by the Regional Environment Vice-Ministry of the Basque Government. The stages of development were:

**Provisional culverting assembly of the ditch while executing the new canalization.** In this way, works are provided avoiding the contamination of piped water flowing, without any contact with external agents.

**Filling execution.** Currently, the filling reaches a volume of approximately 640.000 m<sup>3</sup> (without the excavation of the tunnel had finished completely).

**Construction of the new channel.** The definitive naturalized canalization using stone and stepped downstreams, in a way that facilitates both aquatic vegetation implantation and ichthyologic fauna.

**Filling revegetation.** Due to the breakwater construction at the foot of the filling, the vegetal soil is extended as the embankment consolidates. Hydroseeding is used for the embankment support and then conduct with the plantation of autochthonous trees and bushes species.

With the Project developed, the objective of including approximately 700.000 m<sup>3</sup> of materials coming from tunnel excavation maintaining landscape integrity is fulfilled, encouraging its natural recovery using biodiversity criteria (facilitating natural revegetation of the canalization and the circulation of local fauna through the same).

## Environmental advantages:

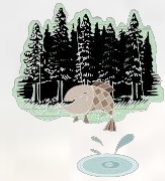
The impacts to the stream water during the works' execution are avoided.



Excess materials are reused on site.



Natural revegetation of the canalization and the circulation of local fauna through the same are facilitated.



Restoration and revegetation

