

			ENVIRONMENTAL IMPACT ASSESSMENT FOR THE RUMICHACA – PASTO DIVIDED HIGHWAY PROJECT, SAN JUAN – PEDREGAL SEGMENT, CONCESSION AGREEMENT UNDER APP SCHEME NO. 15 OF 2015	
GEO-002-17-114-EAM			Version 0.	May 2017
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## CONTENTS

	Pg.
9 ENVIRONMENTAL MANAGEMENT ZONING FOR THE PROJECT _____	2
9.1 ENVIRONMENTAL MANAGEMENT ZONING _____	2
9.2 RESULTS _____	3
9.3 CONCLUSION OF THE ENVIRONMENTAL MANAGEMENT ZONING _____	4

## LIST OF TABLES

	Pg.
Tabla 9-1 Environmental Management Zoning for Project Activities _____	3

## LIST OF FIGURES

	Pg.
Figure 9-1 Illustration of the Management Zoning for the Activity – Levels of Sensitivity, Importance _____	2
Figure 9-2 Map of Management Zoning for Project Activities _____	3

			ENVIRONMENTAL IMPACT ASSESSMENT FOR THE RUMICHACA – PASTO DIVIDED HIGHWAY PROJECT, SAN JUAN – PEDREGAL SEGMENT, CONCESSION AGREEMENT UNDER APP SCHEME NO. 15 OF 2015	
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## 9 ENVIRONMENTAL MANAGEMENT ZONING FOR THE PROJECT

The zoning of the environmental management for the area of influence of the Rumichaca – Pasto Divided Highway Project, San Juan - Pedregal Segment, was developed based on the information described in Chapter 5. Characterization of the Area of Influence, establishing the sensitivity of the ecosystems and natural resources in those areas to the development of the activities of the highway project, in order to obtain the units for use, recovery, and conservation.

### 9.1 ENVIRONMENTAL MANAGEMENT ZONING

Environmental Management Zoning is determined based on the interaction between the Environmental Zoning and the environmental assessment. It takes into account the degrees of vulnerability and sensitivity of each of the environmental components, as well as the social-environmental importance of the ecosystems and natural resources in response to the degree of intervention or impact.

The following defines the areas contemplated by Environmental Management Zoning:

- ü Prohibited Areas
- ü Areas for Intervention with Restrictions
- ü Areas for Intervention

It must be clarified that two categories were obtained in the highway project’s area of influence for environmental management zoning, as shown in Figure 9-1.

Figure 9-1 Illustration of the Management Zoning for the Activity – Levels of Sensitivity, Importance



Source: Geocol Consultores, 2017.

- **Areas for Intervention with Restrictions**

These are sites that due to their nature, state, or magnitude require restrictions on the activities to be developed, or those activities must have special or specific environmental control or handling to avoid being impacted. This classification must consider those areas classified as very high and high in terms of environmental sensitivity.

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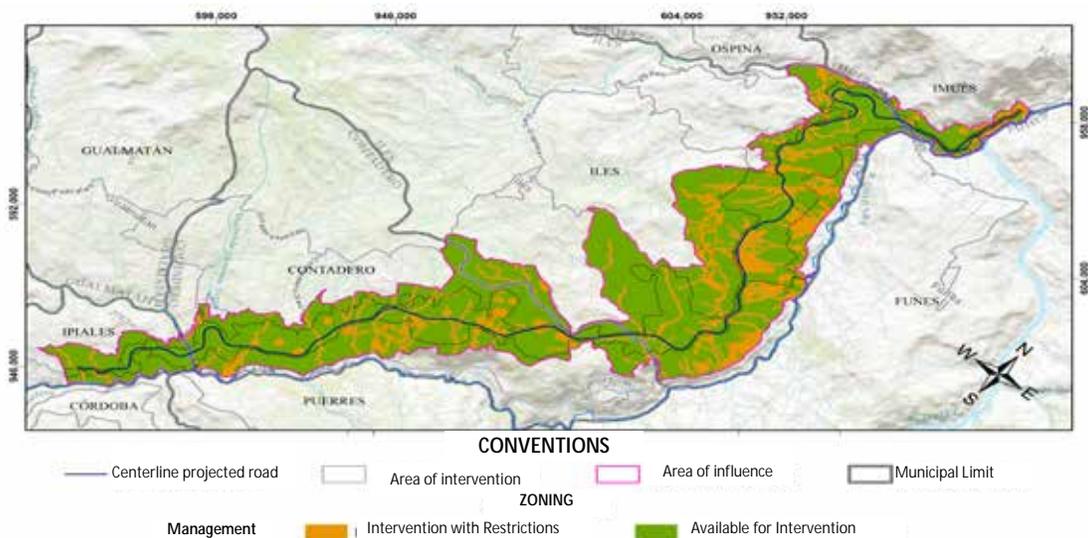
• **Areas for Intervention**

These are the areas that have high potential for development of the project and are defined in the environmental zoning in the medium and low categories.

**9.2 RESULTS**

The interaction between the elements of the environmental zoning related to the degree of sensitivity of each ecosystem with respect to the activities to be developed in the project’s area of influence, and the impacts generated by the diverse activities, are presented below in **Figure 9-2 and Table 9-1**

**Figure 9-2 Map of Management Zoning for Project Activities**



**Table 9-1 Environmental Management Zoning for Project Activities**

MANAGEMENT ZONING	PROJECT ADI		AREA OF INTERVENTION OF THE PROJECT		DESCRIPTION	ACTIVITIES PERMITTED
	AREA Ha	%	AREA Ha	%		
Areas for Intervention with Restrictions	1,056.64	26.15	394.91	24.24	-Bodies of water or water sources and their buffer strip of 30 m to each side of the maximum flood height.	Water intake. Occupation of the channel. Construction of bridges and sewers
					Protective forest areas that correspond to land that may or may not have a forest aptitude, constituted in forest, that are	Some of the project’s activities can be developed, with special

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MANAGEMENT ZONING	PROJECT ADI		AREA OF INTERVENTION OF THE PROJECT		DESCRIPTION	ACTIVITIES PERMITTED
	AREA Ha	%	AREA Ha	%		
					an integral part and support for biological and ethnic biodiversity and environmental provisioning. They must be continuously conserved as forest where there are headwaters of several watercourses ( <i>estrellas fluviales</i> ), water production, forests in areas that supply urban or rural water supply systems, and the buffer strips of creeks.	management and restrictions in line with the activities and the environmental sensitivity of the site. These activities include cuts and earthworks, construction of sewers, and in general drainage and sub drainage works.
					Social infrastructure (municipal seats, towns, scattered homes, health posts, and community meeting halls) and their protective buffer area of 100 m. - Water supply infrastructure, hand-dug wells and their protective buffer strips of 100 m. - Productive infrastructure associated with homes, corresponding to income generation and people's livelihood.	Access is permitted to services in said zones such as lodging, food, and healthcare, but they cannot be intervened by the works or the activities of the project.
Areas for Intervention	2,984.02	73.85	1,234.32	75.76	Areas with land cover of mosaics of crops, pasture, and artificial territories, etc.	The adaptation and construction of civil works is permitted. All activities will be done with the management measures established in Chapter 11.
TOTAL	4,040.66	100	1,629.23	100		

### 9.3 CONCLUSION OF THE ENVIRONMENTAL MANAGEMENT ZONING

The results obtained from the environmental management zoning establish that 24.24% of the Project's Area of Intervention consists of areas for intervention with restrictions, equivalent to 394.91 ha. These areas have very high and high environmental sensitivity, and therefore, based on their environmental conditions, they can be intervened for project development with the implementation of management strategies that guarantee balance with the ecosystem. The areas that can be intervened total 75.76% (1234.32 ha) of the

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Intervention Area, which, and based on their environmental conditions, they can be intervened for the development of the project.

The **Map Appendix\_Map No. 32 Environmental Management Zoning** provides a graphic representation of the zoning for the development of the highway project activities, which shall be executed according to the strategies proposed in **Chapter 11 Environmental Management Plan**.