

	MODIFICATION OF ENVIRONMENTAL LICENSE FOR THE PROJECT OF CONSTRUCTION AND OPERATION OF A PORT TERMINAL OF SOLID BULK IN THE MUNICIPALITY OF TURBO		
	EXECUTIVE SUMMARY	Page 1 of 63	
	GAT-391-15-CA-AM-PIO-01	Revision:	B

EXECUTIVE SUMMARY

B	22/10/2015	EXECUTIVE SUMMARY	Maria Andrea Patiño	Maria Andrea Patiño	Maria Andrea Patiño
B	26/10/2015	EXECUTIVE SUMMARY	Maria Andrea Patiño	Maria Andrea Patiño	Maria Andrea Patiño
REVIEW	DATE	DESCRIPTION	ELABORATED	REVISED	APPROVED

Revision A: Issued for Customer Comments

Revision B: Issued for Client Approval

Revision 0: Approved for Basic Engineering

	MODIFICATION OF ENVIRONMENTAL LICENSE FOR THE PROJECT OF CONSTRUCTION AND OPERATION OF A PORT TERMINAL OF SOLID BULK IN THE MUNICIPALITY OF TURBO		
	EXECUTIVE SUMMARY	Page 2 of 63	
	GAT-391-15-CA-AM-PIO-01	Revision:	B

1. TABLE OF CONTENTS

EXECUTIVE SUMMARY	7
1. CONTENT OF THE ENVIRONMENTAL IMPACT STUDY	10
2. PROJECT CHARACTERISTICS	11
2.1 Phases of the project.....	15
2.1.1 Project design	17
2.1.2 Maritime Wharf	18
2.1.3 Viaduct and Bridge	18
2.1.4 Fluvial Jetty.....	19
2.1.5 Onshore terminal	20
2.1.6 Access path	21
2.1.7 Dredging	22
2.1.8 Disposal of dredged material	23
2.2 Operation phase.....	24
3. AREA OF INFLUENCE	26
3.1 Abiotic Component.....	27
3.1.1 Components geology, geomorphology and geotechnics	27
3.1.2 Soil components and land uses, landscape, water quality and continental and marine sediments.....	28
3.1.3 Atmospheric component	29
3.2 Biotic component.....	30
3.3 Socioeconomic environment	32
4. CHARACTERIZATION OF THE INFLUENCE AREA	33
5. DEMAND, USE AND USE OF NATURAL RESOURCES	33
6. ENVIRONMENTAL EVALUATION	34
6.1 Analysis of the results of the Environmental Evaluation Without Project..	35
6.2 Analysis of the results of the Environmental Evaluation with Project	36
6.3 Economic environmental assessment	37

	MODIFICATION OF ENVIRONMENTAL LICENSE FOR THE PROJECT OF CONSTRUCTION AND OPERATION OF A PORT TERMINAL OF SOLID BULK IN THE MUNICIPALITY OF TURBO		
	EXECUTIVE SUMMARY	Page 3 of 63	
	GAT-391-15-CA-AM-PIO-01	Revision:	B

7.	ENVIRONMENTAL ZONING.....	38
7.1	Abiotic Medium.....	39
7.2	Biotic Medium.....	40
7.3	Socioeconomic Medium	40
7.4	Elements with dominant or spatial sensitivity	40
7.5	Results Zoning	40
8.	ZONING OF ENVIRONMENTAL MANAGEMENT	41
9.	ENVIRONMENTAL MANAGEMENT PLAN.....	42
9.1	Abiotic Medium.....	43
9.2	Biotic Medium.....	46
9.3	Socioeconomic Medium	47
10.	INVESTMENT PLAN 1%.....	48
11.	MAIN RISKS.....	49
11.1	Risk analysis and evaluation - Construction phase.....	50
11.2	Risk analysis and evaluation - Operation phase	52
12.	TOTAL COST OF THE PROJECT	52
13.	CHRONOGRAM.....	52
14.	DECOMMISSIONING AND ABANDONMENT PLAN.....	58
15.	COMPENSATION PLAN FOR LOSS OF BIODIVERSITY	58

	MODIFICATION OF ENVIRONMENTAL LICENSE FOR THE PROJECT OF CONSTRUCTION AND OPERATION OF A PORT TERMINAL OF SOLID BULK IN THE MUNICIPALITY OF TURBO		
	EXECUTIVE SUMMARY	Page 4 of 63	
	GAT-391-15-CA-AM-PIO-01	Revision:	B

LIST OF FIGURES

	Pag.
Figure No. 2.1 Location of the project.	¡Error! Marcador no definido.
Figure No. 2.2. Phases of the maritime dock.....	¡Error! Marcador no definido.
Figure No. 2.3 Example of the adjustment of the geometry of the phases	¡Error! Marcador no definido.
Figure No. 2.4 Bridge over the León river	19
Figure No. 2.5. Onshore terminal.	¡Error! Marcador no definido.
Figure No. 2.6. Access road.....	¡Error! Marcador no definido.
Figure No. 2.7 Dredging area.....	¡Error! Marcador no definido.
Figure No. 2.8. Location of the dump	¡Error! Marcador no definido.
Figure No. 2.9 Main machinery of Puerto Antioquia. ¡Error! Marcador no definido.	
Figure No. 3.1 Area of influence for the abiotic environment – geology, geomorphology and geotechnical component.....	¡Error! Marcador no definido.
Figure No. 3.2 Area of influence for the abiotic environment - soil components, landscape, water quality and continental and marine sediments...	¡Error! Marcador no definido.
Figure No. 3.3 Area of influence for the abiotic environment - Atmospheric component.....	¡Error! Marcador no definido.
Figure No. 3.4 Area of influence for the biotic environment.....	¡Error! Marcador no definido.
Figure No. 3.5 Area of Social Influence	¡Error! Marcador no definido.
Figure No. 6.1 Percentage of identified nature impacts without Project	36
Figure No. 6.2 Percentage of the nature of the impacts identified with the project	¡Error! Marcador no definido.

	MODIFICATION OF ENVIRONMENTAL LICENSE FOR THE PROJECT OF CONSTRUCTION AND OPERATION OF A PORT TERMINAL OF SOLID BULK IN THE MUNICIPALITY OF TURBO		
	EXECUTIVE SUMMARY	Page 5 of 63	
	GAT-391-15-CA-AM-PIO-01	Revision:	B

Figure No. 7.1 General location of the port terminal project in Bahía Colombia **¡Error! Marcador no definido.**

Figure No. 7.2 Methodological summary used for the environmental zoning of the project **¡Error! Marcador no definido.**

Figure No. 7.3 Environmental zoning **¡Error! Marcador no definido.**

Figure No. 8.1 Zoning of environmental management **¡Error! Marcador no definido.**

Figure No. 11.1 Geo-hazards identified in the project area **¡Error! Marcador no definido.**

Figure No. 13.1 Schedule..... 53

Figure No. 15.1 Areas of forest use..... **¡Error! Marcador no definido.**

Figure No. 15.2 Areas of forest use **¡Error! Marcador no definido.**

LIST OF TABLES

Pag.

Table No. 2.1. Coordinates that limit the perimeter of the dock..... **¡Error! Marcador no definido.**

Table No. 2.2. Coordinates that limit the perimeter of the terminal on the ground. **¡Error! Marcador no definido.**

Table No. 2.3. Projection of cargo in the short and medium term..... 18

Table No. 9.1 Equivalence of environmental management plans authorized by Resolution 0032 of 2012 and those proposed in the present study for the construction stage **¡Error! Marcador no definido.**

Table No. 9.2 Equivalence of the environmental management plans authorized by Resolution 0032 of 2012 and those proposed in the present study for the operative stage **¡Error! Marcador no definido.**

	MODIFICATION OF ENVIRONMENTAL LICENSE FOR THE PROJECT OF CONSTRUCTION AND OPERATION OF A PORT TERMINAL OF SOLID BULK IN THE MUNICIPALITY OF TURBO		
	EXECUTIVE SUMMARY	Page 6 of 63	
	GAT-391-15-CA-AM-PIO-01	Revision:	B

Table No. 9.3 Environmental management plans added for the present study..... **¡Error! Marcador no definido.**

Table No. 9.4 Equivalence of environmental management plans authorized by Resolution 0032 of 2012 and those proposed in the present study..... **¡Error! Marcador no definido.**

Table No. 9.5 Equivalence of environmental management plans authorized by Resolution 0032 of 2012 and those proposed in this study **¡Error! Marcador no definido.**

Table No. 12.1 Total Cost Project **¡Error! Marcador no definido.**

Table No. 15.1 Areas of forest use **¡Error! Marcador no definido.**

Table No. 15.2 Compensation for affected natural ecosystem 62

	MODIFICATION OF ENVIRONMENTAL LICENSE FOR THE PROJECT OF CONSTRUCTION AND OPERATION OF A PORT TERMINAL OF SOLID BULK IN THE MUNICIPALITY OF TURBO		
	EXECUTIVE SUMMARY	Page 7 of 63	
	GAT-391-15-CA-AM-PIO-01	Revision:	B

EXECUTIVE SUMMARY

In January 2010, Sociedad Puerto Bahía de Colombia de Urabá S.A. presented the Port concession request before the National Institute of Concessions (INCO), for the occupation, temporary and exclusive usage of an area of public use located in Colombia Bay, municipality of Turbo, for the construction and operation of a port terminal of deep draft solids in bulks.

Through Resolution 898 of December 21, 2012, the National Infrastructure Agency - ANI granted a port concession to the company PUERTO BAHÍA COLOMBIA DE URABÁ SA, for temporary and exclusive occupation of the public usage area that includes the sectors of beach, low tide lands and marine zones access to those found in Bahía Colombia, Golfo de Urabá.

The ANI, by Resolution 939 of August 26, 2013, extended in six (6) months the term indicated in the twenty-second article of Resolution 898 of December 21, 2012.

Subsequently, by means of Resolution 507 of March 21, 2014 issued by the Vice Presidency for the Structuring of the ANI, article 11 of Resolution 898 of December 21, 2012, regarding the value and form of payment of the contract, was modified. Article twenty-two of the same resolution, in the sense that it points out that the concession contract will be signed within a period of six (6) following months, counted from the execution of this resolution.

Finally, the ANI, through Resolution 606 of April 14, 2015, granted feasibility to the request for modification of the conditions under which the port concession was granted to the company PUERTO BAHÍA COLOMBIA DE URABÁ SA, through Resolution 898 of December 21, 2012 and modified by resolutions 939 of August 26, 2013 and 507 of March 21, 2014.

Likewise, the Sociedad Puerto Bahía de Colombia de Urabá SA by means of file No. 4120-E1-50880 of April 2010, requested the then Ministry of Environment, Housing and Territorial Development - MAVDT (currently the National Authority of Environmental Licenses - ANLA), declaration on the need to present an Environmental Diagnosis of Alternatives - DAA for the port terminal.

The MAVDT, through Auto 2417 of June 28, 2010, stated that the project did not require the presentation of Environmental Diagnosis of Alternatives, setting the terms of reference for the preparation of the Environmental Impact Study - EIA and making specific requirements.

By means of file No. 4120-E1-89762 of July 16, 2010 and supplemented by the filings No. 4120-E1-97290 of August 5, 2011, 4120-E1-104997 of August 19 and

	MODIFICATION OF ENVIRONMENTAL LICENSE FOR THE PROJECT OF CONSTRUCTION AND OPERATION OF A PORT TERMINAL OF SOLID BULK IN THE MUNICIPALITY OF TURBO		
	EXECUTIVE SUMMARY	Page 8 of 63	
	GAT-391-15-CA-AM-PIO-01	Revision:	B

4120-E1-1074721 of August 25, 2011, the Sociedad Puerto Bahía de Colombia de Urabá SA presented an application for an environmental license for the project "Construction and Operation of a Port Terminal of Solid Grids of Great Drainage in Bahía Colombia".

Therefore, the National Authority of Environmental Licenses - ANLA, through Resolution 0032 of January 25, 2012, granted the Environmental License for the project "Construction and Operation of a Port Terminal of Solid Grids of Great Draft in Colombia Bay, in the Municipality of Turbo, department of Antioquia, with a capacity of 2.2 million tons/year, of imported grains "; however, by means of an ANLA 2015008528-1-000 dated February 20, 2015, the company Puerto Bahía Colombia de Urabá S.A. requested a ruling related to minor modifications or normal adjustment within the ordinary course of activity licensed in Resolution 0032 of January 25, 2012.

To the foregoing, the National Authority of Environmental Licenses - ANLA, through the filing 2015008528-2-001 of March 13, 2015, authorized as ordinary turn of activity the construction of a viaduct as a connection between the dock and the port terminal, in replacement of the conveyor belt that had been initially projected.

Such authorization does not imply changes in the structure of the suspension bridge over the León River, approved in the environmental license; nor the variation in the conditions of usage, use, and impact of renewable natural resources; However, in reference to the inclusion of additional charges (containers, general cargo and vehicles) and the works inside the port terminal, said authority determined that Puerto Bahía Colombia de Urabá S.A. should present additional information related to the charges so that said authority could issue a pronouncement in this regard.

Likewise, the proposal to build and operate a new maritime wharf was not authorized within the ordinary course of business of the licensed activity, and therefore it was defined that the procedure for modification of environmental license should be carried out, in accordance with established in the sectoral standard defined in Decree 1076 of 2015.

Therefore, the scope of this study is the modification of the Environmental License granted by Resolution 0032 of January 25, 2012, meeting all the legal requirements of the current environmental regulations and the terms of reference MM-INA-05 adopted by the ANLA through Resolution 0112 of January 28, 2015; for the construction of the baseline corresponding to the abiotic, biotic and socioeconomic means, defining the activities of the extension of the platform in the marine area, the dredging of deepening of the access channel and maneuvering area, dump area, realignment of the access road, changes in the type and capacity of cargo and cargo

	MODIFICATION OF ENVIRONMENTAL LICENSE FOR THE PROJECT OF CONSTRUCTION AND OPERATION OF A PORT TERMINAL OF SOLID BULK IN THE MUNICIPALITY OF TURBO		
	EXECUTIVE SUMMARY	Page 9 of 63	
	GAT-391-15-CA-AM-PIO-01	Revision:	B

(multipurpose port terminal) and changes in the use and exploitation of natural resources; as well as the evaluation of the new environmental impacts identified and the adjustments to the management measures in the environmental management plan.

	MODIFICATION OF ENVIRONMENTAL LICENSE FOR THE PROJECT OF CONSTRUCTION AND OPERATION OF A PORT TERMINAL OF SOLID BULK IN THE MUNICIPALITY OF TURBO		
	EXECUTIVE SUMMARY	Page 10 of 63	
	GAT-391-15-CA-AM-PIO-01	Revision:	B

1. CONTENT OF THE ENVIRONMENTAL IMPACT STUDY

The following is a list of the chapters included in this document:

Chapter 1. Objectives: The objectives of the project are defined considering the scope of the study.

Chapter 2. General: This chapter relates the content of the document, the objectives, background, normative framework and scope; describes the methodologies used for the construction of the baseline, the evaluation of environmental impacts, management zoning and other items requested by the terms of reference.

Chapter 3. Project description: It describes in a general way the current status of the project and the additional activities that are part of the modification of the Environmental License.

Chapter 4. Definition Influence Area: This chapter defines and delimits the influence areas of the project for the different components (abiotic, biotic and socioeconomic). Considering the potential impacts of the project on the different media.

Chapter 5. Characterization of the Area of Influence: It is constructed from the definition of the areas of influence and is developed following the requirements of the terms of reference. For the characterization, primary and secondary information is used. From the analysis of the information, the elements of each of the three-characterized media (abiotic, biotic and socioeconomic) are described, following the methodologies established by the current environmental regulations and the methodology for presentation of environmental studies of the Ministry of Environment, Housing and Territorial Development, nowadays Ministry of Environment and Sustainable Development. Finally, an analysis of ecosystem services is presented.

Chapter 6. Environmental zoning: Environmental zoning is carried out, which determines the environmental sensitivity of the most relevant elements in each characterized environment, before the alterations of its current condition by any anthropic intervention.

Chapter 7. Demand, Use, Use and/or Affectation of Natural Resources: It presents the summary of the status of the permits and concessions granted in force or in the process of being updated. Additionally, the need for the use and/or use of additional natural resources is estimated for the activities subject to modification and the processing of associated environmental permits.

	MODIFICATION OF ENVIRONMENTAL LICENSE FOR THE PROJECT OF CONSTRUCTION AND OPERATION OF A PORT TERMINAL OF SOLID BULK IN THE MUNICIPALITY OF TURBO		
	EXECUTIVE SUMMARY	Page 11 of 63	
	GAT-391-15-CA-AM-PIO-01	Revision:	B

Chapter 8. Environmental Assessment: Identification and assessment of environmental impacts that may affect the area of influence, taking into account the activities subject to the modification of the Environmental License.

Chapter 9. Zoning of Environmental Management: According to the results of environmental zoning and impact assessment, the management zoning is spatially identified, in which the areas with environmental exclusion restriction, intervention with restriction or simply intervention is defined.

Chapter 10. Environmental economic evaluation: An analysis of the potential environmental costs and benefits generated by the project is presented.

Chapter 11. Plans and Programs: Includes the Environmental Management Plan and the Monitoring and Monitoring Plan. This chapter establishes the programs and measures for prevention, mitigation, correction and/or compensation to be carried out in the abiotic, biotic and socioeconomic media, considering the impact that may be generated during the execution of the Project's own activities. In this chapter, follow-up and monitoring measures are also formulated to guarantee compliance with environmental management measures and monitoring programs for the environment impacted.

Likewise, the risk management plan adjusted to the new characteristics of the project is presented, where the plan for prevention, care and evaluation of unexpected events is structured; following the risk analysis scheme identifying threats and vulnerabilities; so that later the strategic plans of the contingency plan are designed.

Dismantling and abandonment plans are presented through the proposal of end-use proposals and management measures and morphological rebuild of infrastructure areas intervened directly by the project.

And finally, an update to the investment plan of 1% is presented following the guidelines of decree 1900 of 2006 and the compensation plan for loss of biodiversity, in accordance with the compensation allocation manual (Resolution 1517 of 2012).

2. PROJECT CHARACTERISTICS

The project of Puerto Bahía Colombia de Urabá, consists of a multipurpose port for cargo handling, export/import of containers, bulk solids, liquids and an import terminal for vehicles. The main design features of the multipurpose port are the projection of cargo from the commercial services of the port and therefore the vessel or design vessel. The projected loads in the short and long term (2018 and 2030, respectively), according to the load analysis of CK Americas (2010), are 2,894,540 Ton and 6,696,991 Ton, respectively.

	MODIFICATION OF ENVIRONMENTAL LICENSE FOR THE PROJECT OF CONSTRUCTION AND OPERATION OF A PORT TERMINAL OF SOLID BULK IN THE MUNICIPALITY OF TURBO		
	EXECUTIVE SUMMARY	Page 12 of 63	
	GAT-391-15-CA-AM-PIO-01	Revision:	B

The main purpose of this port facility is multipurpose, focused mainly on the following sectors:

- Exportation of perishable foods such as bananas, plantains and exotic fruits.
- Export and Import of containers.
- Import of motor vehicles.
- Import and Export of solid and liquid bulks

It is located on the south side of Bahía Colombia del Golfo Urabá, the Caribbean Sea of the Atlantic coast of Colombia, near the mouth of the León River and the El Canal beach of the corregimiento of Nueva Colonia, belonging to the municipality of Turbo, Antioquia.

The project is located 2600 m upstream from the mouth of the León River, at coordinates 7 ° 55'28 " North latitude and 76 ° 44'15 " West longitude. The average height of the project is 1.5 MSL. According to its location the project limits with:

- North: Colombia Bay, Urabá Gulf and the municipality of Turbo
- South: Canal de Nueva Colonia, municipality of Apartadó and Carepa, department of Antioquia.
- East: Corregimientos de Turbo, Nueva Colonia and Río Grande.
- West: León river and border with Panama.

	MODIFICATION OF ENVIRONMENTAL LICENSE FOR THE PROJECT OF CONSTRUCTION AND OPERATION OF A PORT TERMINAL OF SOLID BULK IN THE MUNICIPALITY OF TURBO		
	EXECUTIVE SUMMARY	Page 13 of 63	
	GAT-391-15-CA-AM-PIO-01	Revision:	B

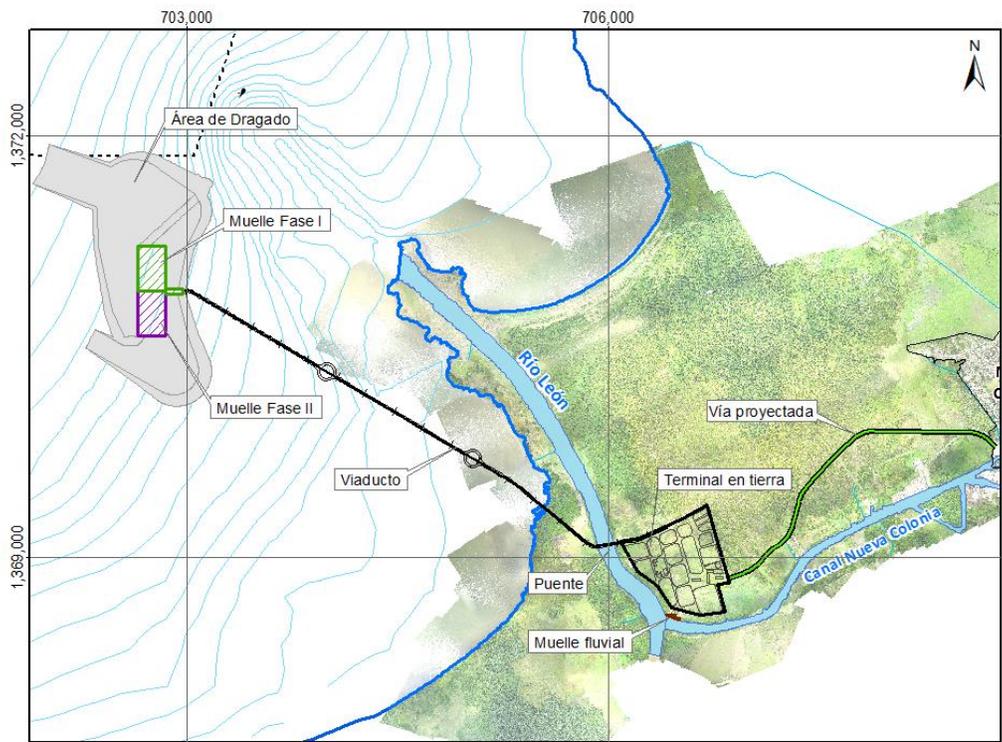
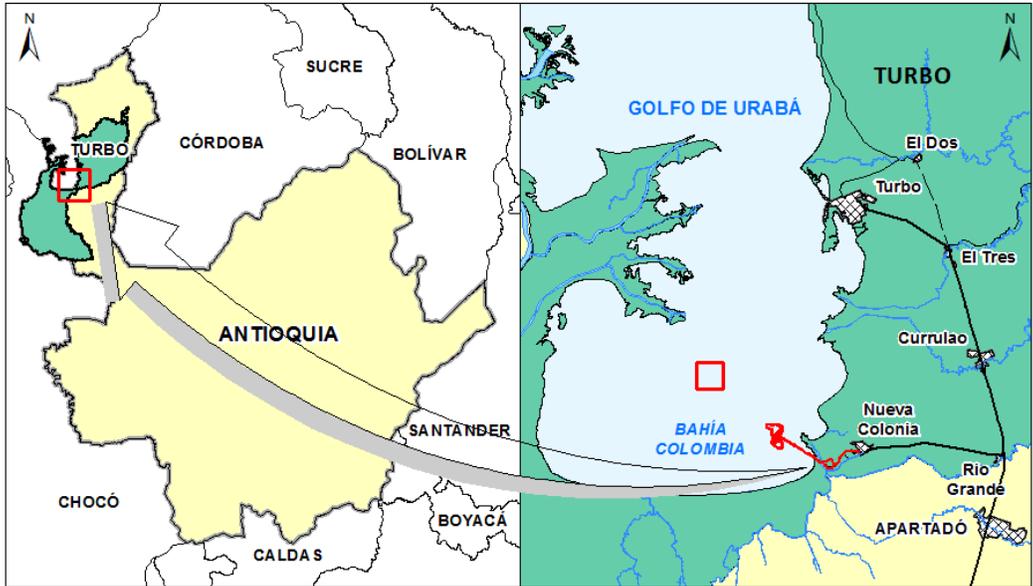


Figure No. 2.1 Location of the project.

Source: Prepared by Aqua & Terra Consultores Asociados S.A.S., 2015

	MODIFICATION OF ENVIRONMENTAL LICENSE FOR THE PROJECT OF CONSTRUCTION AND OPERATION OF A PORT TERMINAL OF SOLID BULK IN THE MUNICIPALITY OF TURBO		
	EXECUTIVE SUMMARY	Page 14 of 63	
	GAT-391-15-CA-AM-PIO-01	Revision:	B

The project is located in two relevant sectors and named as, terminal on land and dock. The connection between the two sectors is developed from a viaduct. The coordinates of each of the sectors are:

Table No. 2.1. Coordinates that limit the perimeter of the dock.

Point	North	East
1	1371214.45	702645.89
2	1371214.45	702845.89
3	1370574.93	702845.89
4	1370574.93	702645.89

Source: Prepared by Aqua & Terra Consultores Asociados S.A.S., 2015

The onshore terminal is located 50 meters east of the right bank of the León River.

Table No. 2.2. Coordinates that limit the perimeter of the terminal on the ground.

Point	North	East
1	1369113.603	706081.135
2	1369270.235	706519.645
3	1369371.024	706698.387
4	1368815.985	706857.085
5	1368807.805	706770.907
6	1368607.500	706825.340
7	1368589.745	706647.135
8	1368637.195	706441.995
9	1368800.797	706338.436
10	1368900.580	706201.710

Source: Prepared by Aqua & Terra Consultores Asociados S.A.S., 2015

The connection between the onshore terminal and the pier will be made by means of a viaduct that will cross the León River with a bridge of free length between piles of 137.91 m and a total length of the viaduct of 4200 m (including the bridge and splice platform). The project area of the ground terminal consists of 35 hectares (ha) and that of the maritime dock of 12.8 ha.

	MODIFICATION OF ENVIRONMENTAL LICENSE FOR THE PROJECT OF CONSTRUCTION AND OPERATION OF A PORT TERMINAL OF SOLID BULK IN THE MUNICIPALITY OF TURBO		
	EXECUTIVE SUMMARY	Page 15 of 63	
	GAT-391-15-CA-AM-PIO-01	Revision:	B

2.1 Phases of the project

The Puerto Bahía Colombia de Urabá project is divided into 2 phases, described below:

Phase 1

This phase includes the terminal on land, bridge over the León River, connection viaduct and pier phase 1. The pier phase 1, consists of 340 m long and 200 m wide for 5 berths.

In this phase the berth configuration is: western side container vessel with 3 post-panamax gantry cranes, general cargo vessels and solid bulk are distributed on the sides, north, south and east. In this first phase of the wharf there will be a distribution of storage areas for dry containers with a capacity of 4168 TEUs and refrigerated with a capacity of 864 TEUs, for a total capacity of 4896 TEUs in the phase 1 wharf.

Phase 2

The quay phase 2 which is an extension of the quay phase 1 and its dimensions are 310 m long and 200 m wide. As this phase is an extension of the phase 1 wharf, the maritime terminal will have a total length of 640 m, keeping the width of 200 m. As with phase 1, this will be an extension of dry and refrigerated container storage areas and therefore of static capacity, total capacity and operation equipment.

Additionally, it is important to clarify that taking into account the conditions of the port market and the current needs for the reception, unloading and storage of raw materials, a geometric design was presented in two phases (see Figure No. 2.2). The option of location and geometry of the quay proposed for phase 1, was planned to be developed in the northern section of the quay and would consist of 340 m in length and 200 m in width with availability of 5 berths. Phase 2 has an extension and geometry similar to the stage 1 spring. The dimensions proposed for the phase 2 pier are 300 m long and 200 m wide. The entire dock or marine terminal will have a total length of 640 m, and a width of 200 m.

	MODIFICATION OF ENVIRONMENTAL LICENSE FOR THE PROJECT OF CONSTRUCTION AND OPERATION OF A PORT TERMINAL OF SOLID BULK IN THE MUNICIPALITY OF TURBO		
	EXECUTIVE SUMMARY	Page 16 of 63	
	GAT-391-15-CA-AM-PIO-01	Revision:	B

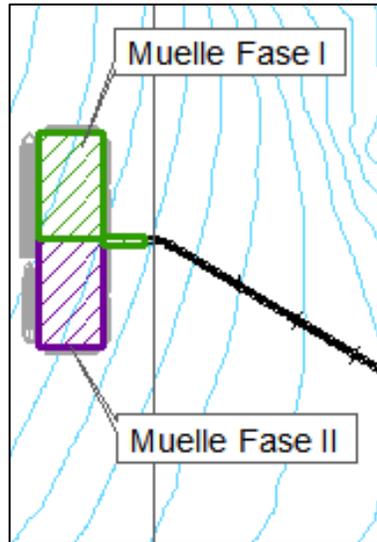
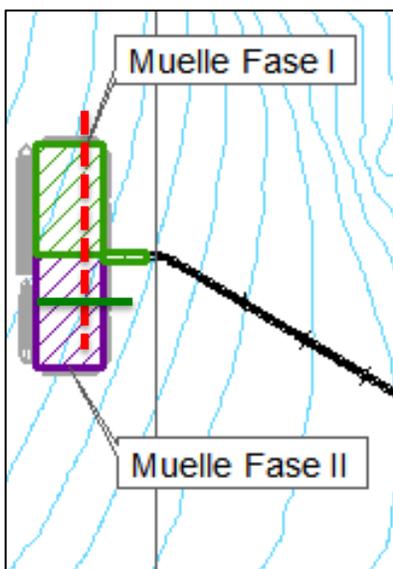


Figure No. 2.2. Phases of the maritime dock

Notwithstanding the foregoing, it is important to mention that the port market is dynamic and changing, as are the needs of the volume of import and export of raw materials and inputs required by the country. Therefore, the possibility is considered that the geometry (but not the area of the dock or marine terminal Phase 1 and Phase 2 nor its method or constructive design) can be adjusted according to the requirements and needs. Figure No. 2.3 presents an example of the possible geometries. From this it is highlighted that, independent of the geometry, no additional areas would be intervened to those evaluated in the present study and that any adjustment in the spring geometry will be in accordance with the international construction standards and those related in the present study in terms of foundations, piles driving, concrete slabs, etc., as well as the proposed construction methods will not be modified. It is also highlighted that the area of influence will be respected, so that in dynamic conditions of the foreign market, the port solution is designed and built which, in terms of safety and operation, meets the highest standards of efficiency.

	MODIFICATION OF ENVIRONMENTAL LICENSE FOR THE PROJECT OF CONSTRUCTION AND OPERATION OF A PORT TERMINAL OF SOLID BULK IN THE MUNICIPALITY OF TURBO		
	EXECUTIVE SUMMARY	Page 17 of 63	
	GAT-391-15-CA-AM-PIO-01	Revision:	B



- Ejemplo de adaptación en la geomertía 1
- Ejemplo de adaptación en la geometria 2

Figure No. 2.3 Example of adjustment of the geometry of the Phases

Considering the dynamics of the market and the implication of an adjustment in the geometry of the project phases, it is important to mention that the evaluation of the possible environmental impacts to be generated by the different activities of the project, mainly in the construction stage, were evaluated contemplating the execution of these in the whole area and final geometry of the maritime wharf, which allowed to know during each stage the impact and importance of the same on the identified environmental components. This allows us to conclude that an adjustment in the geometry of the phases of the dock would not generate additional impacts or an increase in the magnitude and importance of those already contemplated.

2.1.1 Project design

The Puerto Bahía Colombia de Urabá project consists of a multipurpose port for cargo handling, export/import of containers, solid and liquid bulk, vehicle import terminal. The main design features of the multipurpose port are the projection of cargo from the commercial services of the port and therefore the vessel or design

	MODIFICATION OF ENVIRONMENTAL LICENSE FOR THE PROJECT OF CONSTRUCTION AND OPERATION OF A PORT TERMINAL OF SOLID BULK IN THE MUNICIPALITY OF TURBO		
	EXECUTIVE SUMMARY		Page 18 of 63
	GAT-391-15-CA-AM-PIO-01		Revision:

vessel. The projected loads in the short and long term (2019 and 2030 respectively), according to the load analysis, are listed below (Table No. 2.3).

Table No. 2.1. Projection of cargo in the short and medium term.

	2,018	2,019	2,020	2,021	2,022	2,023	2,024	2,025	2,026	2,027	2,028	2,029	2,030
MOBILE LOAD													
TON Mobilized type of cargo													
Containers 40 Ft., Full Refrig.	825,000	1,650,000	1,707,000	1,765,973	1,826,986	1,890,111	1,950,356	2,003,802	2,003,802	2,003,802	2,003,802	2,003,802	2,003,802
Full Dry Containers	633,540	1,267,081	1,355,776	1,450,681	1,523,215	1,599,376	1,679,344	1,729,725	1,729,725	1,729,725	1,729,725	1,729,725	1,729,725
Mobilized Vehicles	36,000	36,000	36,000	36,000	36,000	36,000	36,000	36,000	36,000	36,000	36,000	36,000	36,000
Loose Load (TON)	400,000	800,000	1,000,000	1,015,000	1,030,225	1,045,678	1,061,364	1,077,284	1,093,443	1,109,845	1,126,493	1,143,390	1,160,541
Bulk Cargo (TON)	1,000,000	1,500,000	1,522,500	1,545,338	1,568,518	1,592,045	1,615,926	1,640,165	1,664,767	1,689,739	1,715,085	1,740,811	1,766,923
Total TON	2,894,540	5,253,081	5,621,276	5,812,991	5,984,943	6,163,210	6,342,990	6,486,975	6,527,737	6,569,110	6,611,104	6,653,728	6,696,991
Cargo Mobilization (TEUs)													
Refrigerated Void TEUs	67,500	135,000	139,800	144,770	149,917	155,246	161,270	166,615	166,615	166,615	166,615	166,615	166,615
Refrigerated Full TEUs	82,500	165,000	170,700	176,597	182,699	189,011	195,036	200,380	200,380	200,380	200,380	200,380	200,380
Refrigerated Banana Expo	75,000	150,000	155,250	160,684	166,308	172,128	178,153	183,498	183,498	183,498	183,498	183,498	183,498
Refrigerated Others Impo	7,500	15,000	15,450	15,914	16,391	16,883	16,883	16,883	16,883	16,883	16,883	16,883	16,883
Empty Dry TEUs	10,000	20,000	21,400	22,898	24,043	25,245	26,507	27,303	27,303	27,303	27,303	27,303	27,303
Full Dry TEUs	60,000	120,000	128,400	137,388	144,257	151,470	159,044	163,815	163,815	163,815	163,815	163,815	163,815
Total	220,000	440,000	460,300	481,654	500,916	520,972	541,857	558,113	558,113	558,113	558,113	558,113	558,113

Source: PIO SAS

2.1.2 Maritime Wharf

The pier is located on the western side of the mouth of the León River (approximately 1900 m). The orientation of the pier in Bahía Colombia is North - South. This pier will be built in two phases, namely:

The pier phase 1, is defined with the northern section of the pier and will consist of 340 m long and 200 m wide with availability of 5 berths. The pier phase 2, south section of the pier with a length of 300 m, for a total length of 640 m and a total of 8 berths. This quay is structurally defined by a platform built on piles and a concrete slab.

This platform consists of a large area of reinforced concrete, located at approximately 5.00 m above the average low-water level of the MLWS Scythe, supported by metallic piles.

2.1.3 Viaduct and Bridge

To access both vehicular and pedestrian, from the facilities on land to the maritime dock, an aerial footbridge has been provided at the same level of the dock for most of the route, except for the area of higher level necessary to ensure the free navigation clearance of the River Leon, on which the footbridge itself must be crossed in its terrestrial portion.

The estimated total length of the assembly that originates in the terrestrial operations platform consisting of fillings and stabilizations up to the splicer platform is 4080 m, of which the first 1008 m are on the mainland, including the bridge, and the off-shore portion with an extension of 3000 m.

	MODIFICATION OF ENVIRONMENTAL LICENSE FOR THE PROJECT OF CONSTRUCTION AND OPERATION OF A PORT TERMINAL OF SOLID BULK IN THE MUNICIPALITY OF TURBO		
	EXECUTIVE SUMMARY	Page 19 of 63	
	GAT-391-15-CA-AM-PIO-01	Revision:	B

The initial portion of the viaduct on the ground is distributed, initially at 380 m from the terminal on land connected to a bridge of 137.91 m of free length on the León River, where it must have a free clearance of 15.0 m above the mean level of said river to guarantee your current navigability. Finally, 490 m on land, for a total of 1008 m.

The length of the bridge has been dimensioned to avoid the intervention of the canal, so that the abutments of the same, in each of the banks, have been defined so that they are located and allow their construction on land.

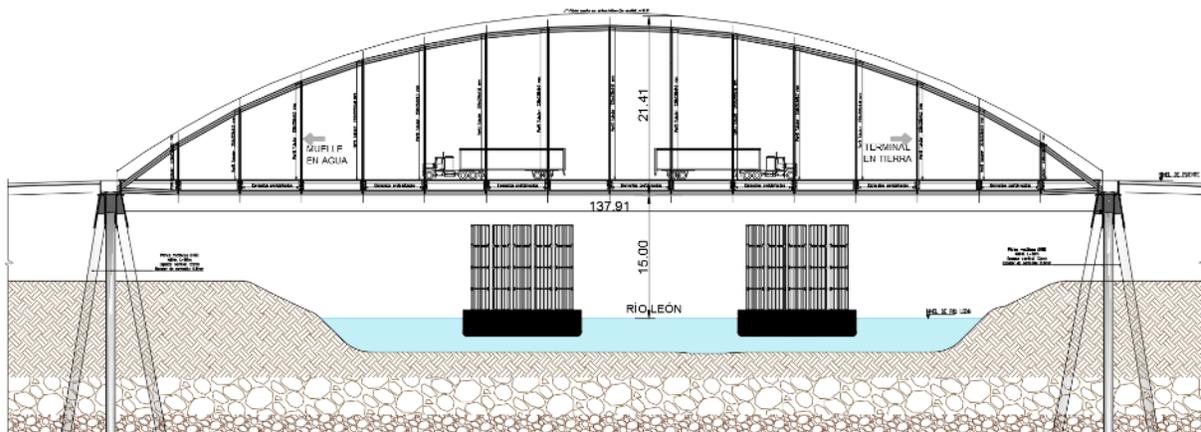


Figure No. 2.1 Bridge over the river León

Source PIO SAS, september 2015.

2.1.4 Fluvial Jetty

In the construction phase, a fluvial dock will be built on the left bank of the artificial canal of Nueva Colonia, as authorized by Resolution 0032 of 2012, within the extension of the Puerto Bahía Colombia de Urabá site, for the purpose of main to support the constructive execution of the maritime wharf.

In addition, it will facilitate future construction phases of Puerto Bahía Colombia de Urabá and to handle special oversized loads that cannot be served from the main docking platform.

	MODIFICATION OF ENVIRONMENTAL LICENSE FOR THE PROJECT OF CONSTRUCTION AND OPERATION OF A PORT TERMINAL OF SOLID BULK IN THE MUNICIPALITY OF TURBO		
	EXECUTIVE SUMMARY	Page 20 of 63	
	GAT-391-15-CA-AM-PIO-01	Revision:	B

2.1.5 Onshore terminal

The terminal to be built on land will be developed in an area of 35 ha, in which the distribution of port facilities will be made, such as: entrance portal, storage yards for dry (full and empty) and refrigerated containers, container handling, vehicle import yard, bulk area, parking areas, buildings, roads, expansion area, substations, among others (see Figure No. 2.5).

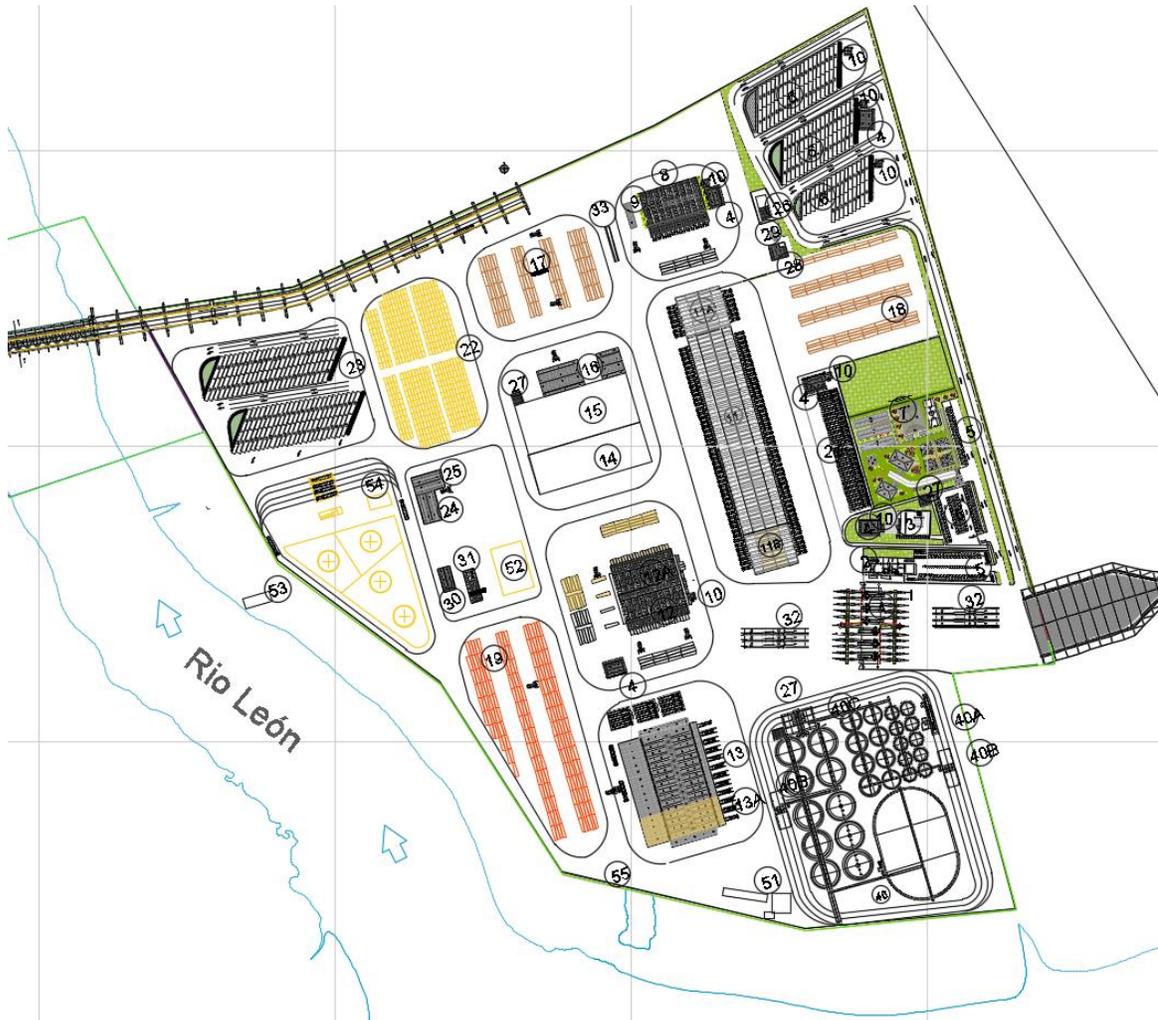


Figure No. 2.5. Onshore terminal.
PIO SAS Sources, September 2015.

	MODIFICATION OF ENVIRONMENTAL LICENSE FOR THE PROJECT OF CONSTRUCTION AND OPERATION OF A PORT TERMINAL OF SOLID BULK IN THE MUNICIPALITY OF TURBO		
	EXECUTIVE SUMMARY	Page 21 of 63	
	GAT-391-15-CA-AM-PIO-01	Revision:	B

2.1.6 Access path

In order to facilitate the construction process of the works, the improvement of the existing road (from the new colony to the port) must be made over a length of approximately 2.46 km and a bench of 10.3 m. This improvement must take into account the specifications for the transit of cargo vehicles and consists of the supply, transport, placement and compaction of the materials of the finished subgrade.

It must be considered that this improvement is made for the construction phase, since, for the operation phase, the access road will be composed of a flexible pavement structure.

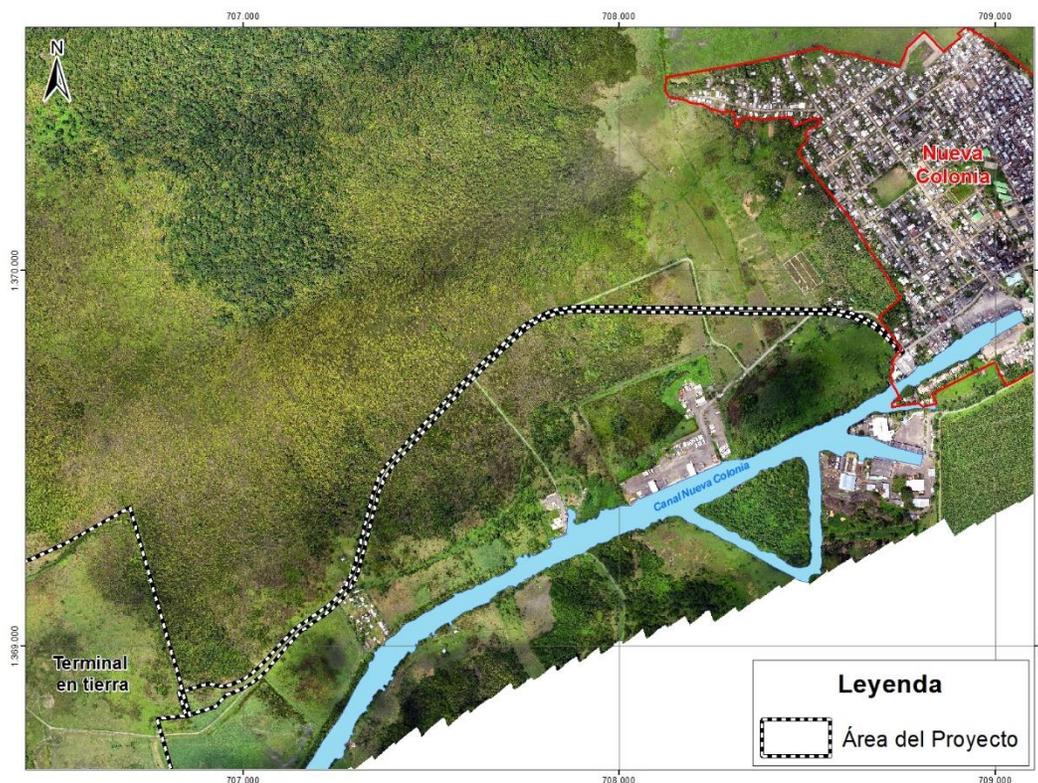


Figure No. 2.6. Access road

Source: Aqua & Terra Consultores SAS.

	MODIFICATION OF ENVIRONMENTAL LICENSE FOR THE PROJECT OF CONSTRUCTION AND OPERATION OF A PORT TERMINAL OF SOLID BULK IN THE MUNICIPALITY OF TURBO		
	EXECUTIVE SUMMARY	Page 22 of 63	
	GAT-391-15-CA-AM-PIO-01	Revision:	B

2.1.7 Dredging

The dredging areas related in this project correspond to the areas that guarantee the access of the vessels that will operate on the dock, known as the access channel and maneuvering dock.

The configuration of the areas and the respective levels were established according to the berthing lines, type of vessel and phases of the project, in such a way that the dredging levels defined for container ships that dock to the western wharf are of -16.70 m, for the rest of bulk vessels, vehicle and general cargo the dredging level will be -13.70 m (Figure No. 2.7).

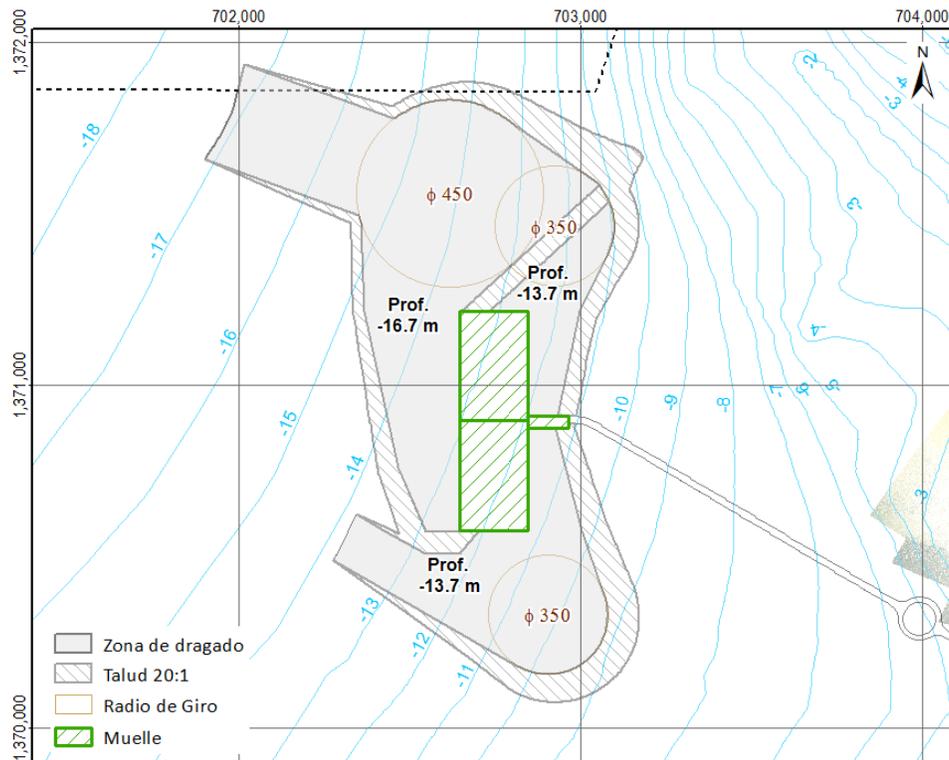


Figure No. 2.7 Dredging areas.

Source: Aqua & Terra Consultores SAS.

On the other hand, the dredging that will be carried out in this area will be developed with a suction-type dredge running TSHD (Trailing Suction Hopper Dredge), taking into account that the bottom material corresponds to clays and loose silts (mud). The volume of dredging is 2'794,375 m³. The cut slope for dredging has been defined as 1V: 20H.

	MODIFICATION OF ENVIRONMENTAL LICENSE FOR THE PROJECT OF CONSTRUCTION AND OPERATION OF A PORT TERMINAL OF SOLID BULK IN THE MUNICIPALITY OF TURBO		
	EXECUTIVE SUMMARY	Page 23 of 63	
	GAT-391-15-CA-AM-PIO-01	Revision:	B

This dredging activity will be executed depending on the commercial needs of the port. In this way, initially the port will have access to vessels that comply with the draft in natural conditions such as:

- Container ships with a capacity of less than 4000 TEU
- Bulk ship of 40,000 DWT
- General cargo ship of 35,000 DWT

Once the port has access to larger vessels, this activity will be executed in its entirety, taking into account that the duration of the dredging and disposal takes approximately 120 days.

The type of soil or bottom material in the dredging area is classified as soft silty clay, characteristic of a muddy material. The detailed description of the physicochemical quality of the sediments is described in the chapter on the characterization of the area of influence, in the subchapter of quality of marine sediments.

2.1.8 Disposal of dredged material

The disposal of the dredging material of the maneuvering areas and access channels will be arranged in the dump area that is sought to be licensed in this modification of the Environmental License, which will be located 4 km from the dredging area. The dimensions of the area destined for the dump are 1400 m by 1400 m.

	MODIFICATION OF ENVIRONMENTAL LICENSE FOR THE PROJECT OF CONSTRUCTION AND OPERATION OF A PORT TERMINAL OF SOLID BULK IN THE MUNICIPALITY OF TURBO		
	EXECUTIVE SUMMARY	Page 24 of 63	
	GAT-391-15-CA-AM-PIO-01	Revision:	B

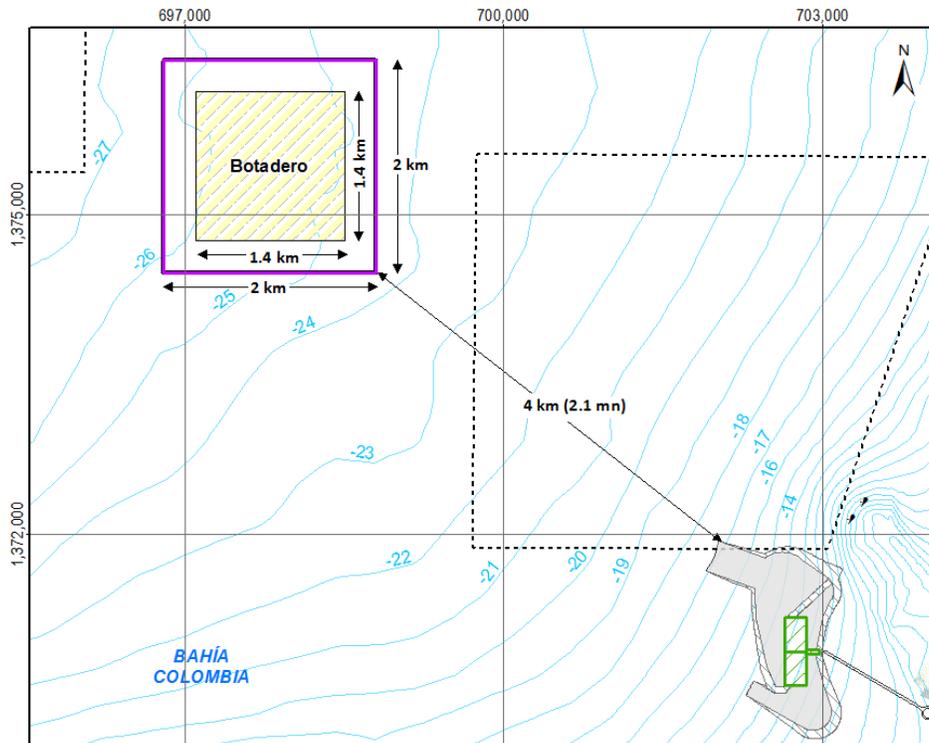


Figure No. 2.8. Location of the dump

Source: Aqua & Terra Consultores Asociados SAS.

On the other hand, the location of the dump obeys the following criteria:

- That the dump does not impact the coastal dynamics.
- That the selected area does not affect the conditions of navigability and anchoring of the bay.
- That the selected area does not affect fishing grounds areas

2.2 Operation phase

The multi-purpose terminal at Puerto Bahía Colombia de Urabá will be designed with a specialized berth for containers and three multipurpose berths to operate containers, solid bulk, liquid bulk, palletized fruit, vehicles and general cargo in the first phase of the dock. For phase 2 with the extension of the dock, the berth configuration changes for containers and for grading.

	MODIFICATION OF ENVIRONMENTAL LICENSE FOR THE PROJECT OF CONSTRUCTION AND OPERATION OF A PORT TERMINAL OF SOLID BULK IN THE MUNICIPALITY OF TURBO		
	EXECUTIVE SUMMARY	Page 25 of 63	
	GAT-391-15-CA-AM-PIO-01	Revision:	B

Next, the main machinery for the loading/unloading operation of the commercial activities of Puerto Bahía Colombia de Urabá is presented.

	
New Post Panamax Gantry Cranes	Liebherr Mobile Crane Model LHM 550
	
RTG (Rubber Tyred Gantry crane)	Refrigerated storage racks
	
Reach stacker	Side Handler

	MODIFICATION OF ENVIRONMENTAL LICENSE FOR THE PROJECT OF CONSTRUCTION AND OPERATION OF A PORT TERMINAL OF SOLID BULK IN THE MUNICIPALITY OF TURBO		
	EXECUTIVE SUMMARY	Page 26 of 63	
	GAT-391-15-CA-AM-PIO-01	Revision:	B



Figure No. 2.9 Main Machinery of Puerto Antioquia.

Source: PIO SAS

3. AREA OF INFLUENCE

In accordance with the terms of reference for the preparation of the Environmental Impact Study - EIA in construction projects or expansion and operation of deep sea ports (MM-INA-05), the area of influence was raised according to the unit minimum that is going to be analyzed.

The areas of influence were defined by component and group of components with the minimum unit of analysis according to the activities and/or works that will be executed in the modification of the environmental license for the construction and operation of the port terminal of solid bulk of great depth in Bahía Colombia, so that it is defined as a multipurpose port terminal; which are associated by the relationship of the manifestations of the environmental impacts in the area of intervention and the magnitude of the affectation that can be generated by the construction of the infrastructure for the port terminal (terrestrial and marine), the realignment and improvement of the road of access from the Nueva Colonia to the access to the Terrestrial Terminal, the pier on the León River, the bridge and the viaduct that crosses a dense high mangrove area.

	MODIFICATION OF ENVIRONMENTAL LICENSE FOR THE PROJECT OF CONSTRUCTION AND OPERATION OF A PORT TERMINAL OF SOLID BULK IN THE MUNICIPALITY OF TURBO		
	EXECUTIVE SUMMARY	Page 27 of 63	
	GAT-391-15-CA-AM-PIO-01	Revision:	B

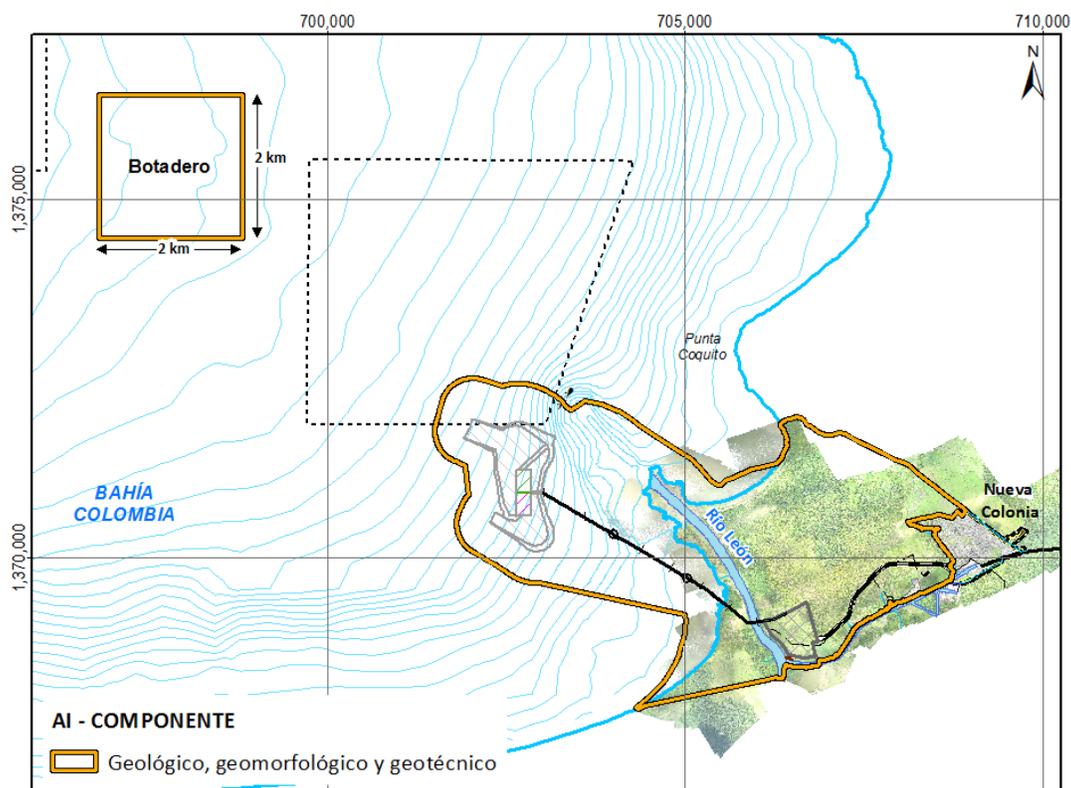
3.1 Abiotic Component

Next, the criteria of the components and/or groups of components considered for the delimitation of the area of abiotic influence of the project are presented.

3.1.1 Components geology, geomorphology and geotechnics

The area of influence for these components is comprised by 2,233 ha (see Figure No. 3.1), which was delimited based on the geological units contained in the intervention areas of the project, both terrestrial and marine.

However, given that the units identified for the project are very extensive such as alluvial deposits (Qal), recent fluviomarine deposits (Qfm) and marine deposits (Qm), which will not be affected in their entirety by the construction of the project, the units were delimited to an area that allowed to relate the geological, geomorphological and geotechnical characteristics of the study area, taking into account the beach formations and being able to show the evolution of the coast line of the area closest to the project



	MODIFICATION OF ENVIRONMENTAL LICENSE FOR THE PROJECT OF CONSTRUCTION AND OPERATION OF A PORT TERMINAL OF SOLID BULK IN THE MUNICIPALITY OF TURBO		
	EXECUTIVE SUMMARY	Page 28 of 63	
	GAT-391-15-CA-AM-PIO-01	Revision:	B

Figure No. 3.1 Area of influence for the abiotic environment - geology, geomorphology and geotechnical component

Source: Prepared by Aqua & Terra Consultores Asociados S.A.S., 2015

3.1.2 *Soil components and land uses, landscape, water quality and continental and marine sediments*

The area of influence for these components is comprised of 1,313.2 ha (see Figure No. 3.2), which was delimited using the cartographic units with the crossing of the existing land cover in the intervention area. The cartographic units correspond to the Embarcadero Consociation (EM), Bihao Consociation (BI), Asociación la Honda (Honda Association) (LH) and Carepa Consociation (CE), prevailing the landscape of marine plain, lacustrine and alluvial fluvial. Regarding land cover, it was identified that the majority correspond to plantain and banana crops and clean pastures, and in smaller strips there is gallery forest, open shrubs, secondary high and low vegetation, fragmented forests, vegetation high secondary and dense high mangrove.

For the area where the deepening dredging material called "Botadero" will be deposited, it was delimited according to the perimeter of the dump, comprised of 1.4 km in length and 1.4 km in width, with a halo of 300 meters for a final polygon of 2 km of length by 2 km of width.

	MODIFICATION OF ENVIRONMENTAL LICENSE FOR THE PROJECT OF CONSTRUCTION AND OPERATION OF A PORT TERMINAL OF SOLID BULK IN THE MUNICIPALITY OF TURBO		
	EXECUTIVE SUMMARY	Page 29 of 63	
	GAT-391-15-CA-AM-PIO-01	Revision:	B

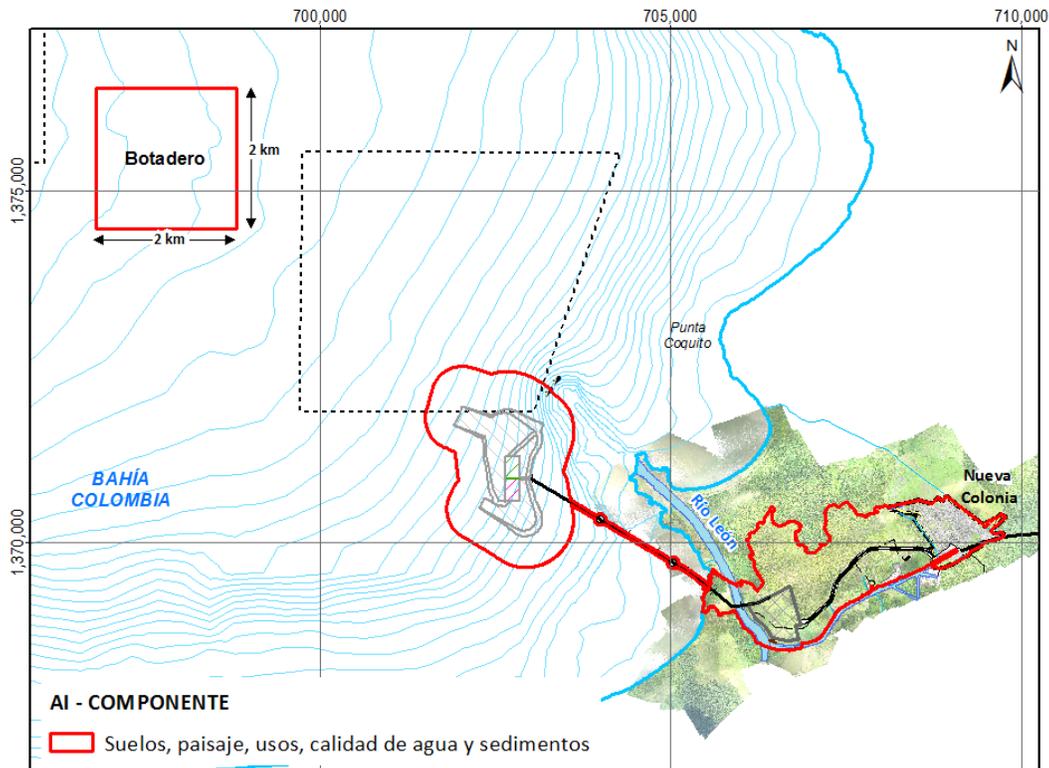


Figure No. 3.2 Area of influence for the abiotic environment - soil components, landscape, water quality and continental and marine sediments

Source: Prepared by Aqua & Terra Consultores Asociados S.A.S., 2015

3.1.3 Atmospheric component

The area of influence of the atmospheric component is comprised of 1,681.0 ha (see Figure No. 3.3), which was delimited according to the environmental noise modeling performed for the viaduct that starts at the terminal on land to the terminal in water marine and for the access road from the corregimiento Nueva Colonia to the project site.

	MODIFICATION OF ENVIRONMENTAL LICENSE FOR THE PROJECT OF CONSTRUCTION AND OPERATION OF A PORT TERMINAL OF SOLID BULK IN THE MUNICIPALITY OF TURBO		
	EXECUTIVE SUMMARY	Page 30 of 63	
	GAT-391-15-CA-AM-PIO-01	Revision:	B

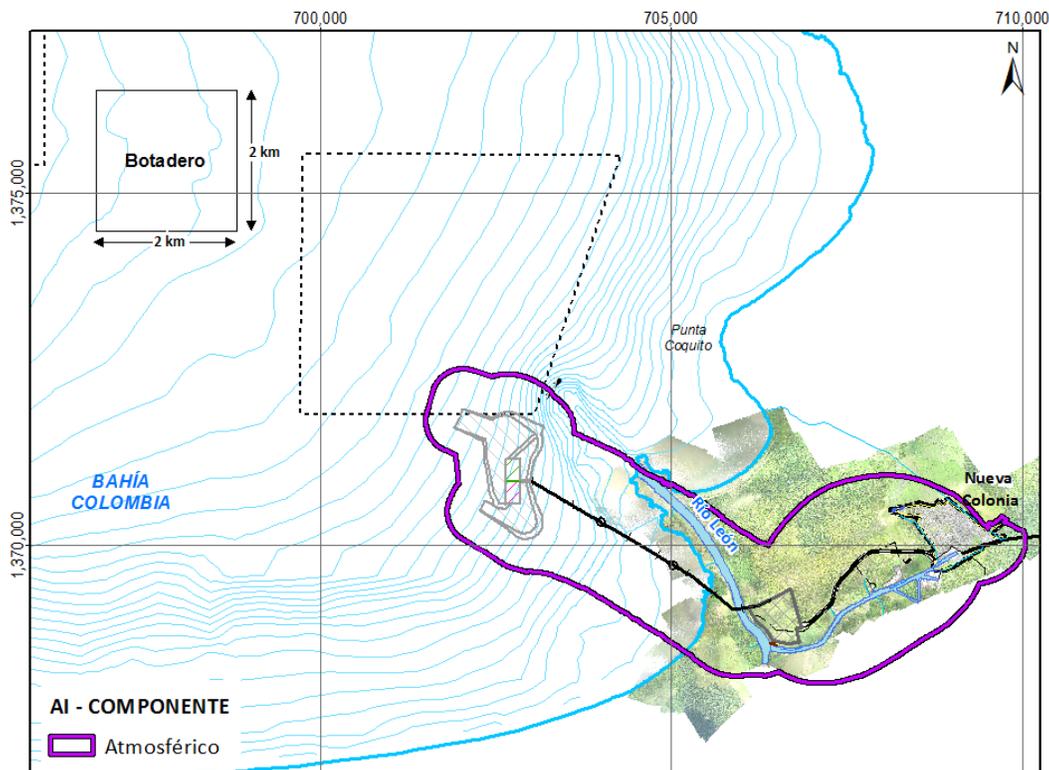


Figure No. 3.3 Area of influence for the abiotic environment - Atmospheric component

Source: Prepared by Aqua & Terra Consultores Asociados S.A.S., 2015

3.2 Biotic component

The area of influence of the biotic environment in the terrestrial portion of the project, was delimited using as a minimum unit of analysis the present vegetation cover, having as a natural boundary the Nueva Colonia canal.

The identified vegetation coverings are the following: open shrub, arracachal, gallery and/or riparian forest, helechal, dense wooded land with wooded and non-wooded land, dense, flooded, non-wooded herbaceous, high-dense mangrove, palm groves, wooded and clean pastures, plantation of hardwoods, banana and banana and high and low secondary vegetation.

To define the area of influence in the coastal aquatic part, the principle of coverage was maintained, splicing these on both banks of the León River, comprising part of the Nueva Colonia canal up to the León River's mouth.

	MODIFICATION OF ENVIRONMENTAL LICENSE FOR THE PROJECT OF CONSTRUCTION AND OPERATION OF A PORT TERMINAL OF SOLID BULK IN THE MUNICIPALITY OF TURBO		
	EXECUTIVE SUMMARY	Page 31 of 63	
	GAT-391-15-CA-AM-PIO-01	Revision:	B

To define the area of marine influence, the area approved by the National Authority of Environmental Licenses - ANLA in Resolution 0032 was maintained, which states that "... which comprises the 60 m wide strip, measured 30 m each side of the axis ... " For the platform that will be built in the marine part, the dredging polygon was used as a criterion. This is because in this area the sediments are mostly made of fine material, mainly clay, silt, and sand, and from studies conducted in areas where the dredging material is similar to that presented in Bahía Colombia, it can be estimated that the dispersion of sediments is at the mouth of the dredger, so that the impact on marine diversity will occur punctually in the place where the dredging process will be carried out.

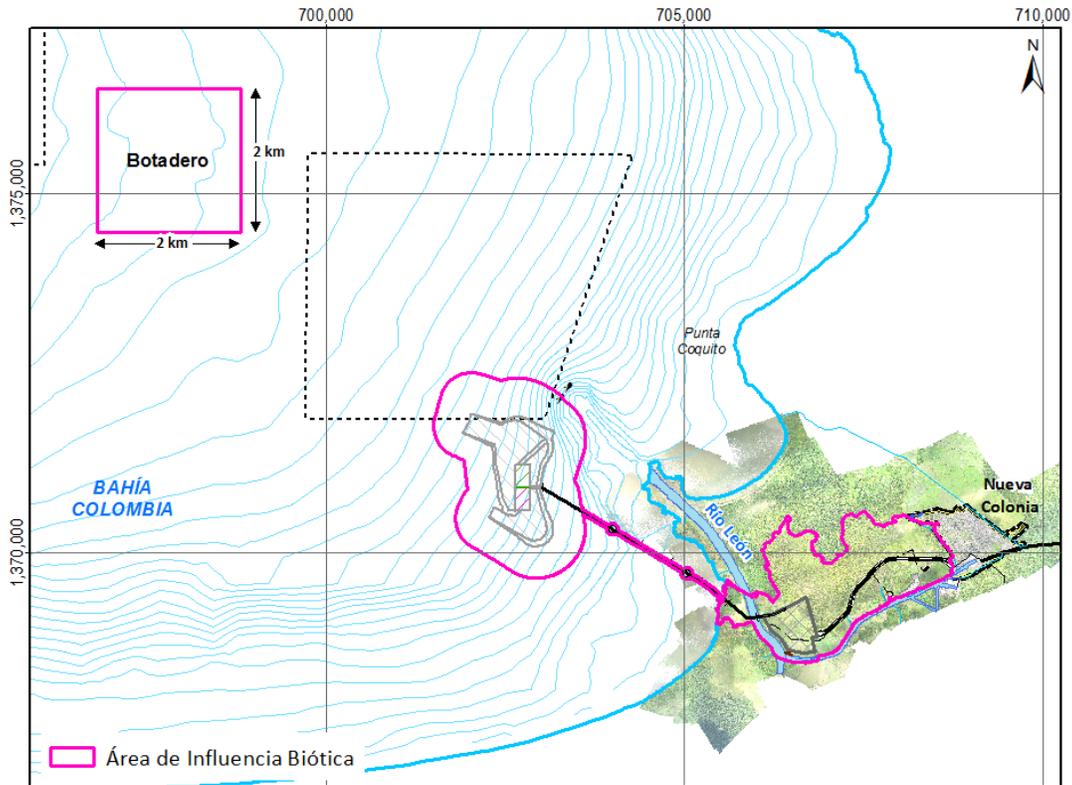


Figure No. 3.4 Area of influence for the biotic environment

Source: Prepared by Aqua & Terra Consultores Asociados S.A.S., 2015

	MODIFICATION OF ENVIRONMENTAL LICENSE FOR THE PROJECT OF CONSTRUCTION AND OPERATION OF A PORT TERMINAL OF SOLID BULK IN THE MUNICIPALITY OF TURBO		
	EXECUTIVE SUMMARY	Page 32 of 63	
	GAT-391-15-CA-AM-PIO-01	Revision:	B

3.3 Socioeconomic environment

For the socioeconomic component, the area of influence of the project is defined as the town center of the corregimiento of Nueva Colonia and the section of the road that connects the populated center with the area where the construction of the port is planned. It is clear that the section of the road that is incorporated into the area of socioeconomic influence, only corresponds to the path that will be rectified.

Additionally, a marine area corresponding to the polygon where the marine wharf is planned is proposed to be incorporated within the area of socioeconomic influence. This area is included due to the eventual presence of population carrying out artisanal fishing activities in the area.

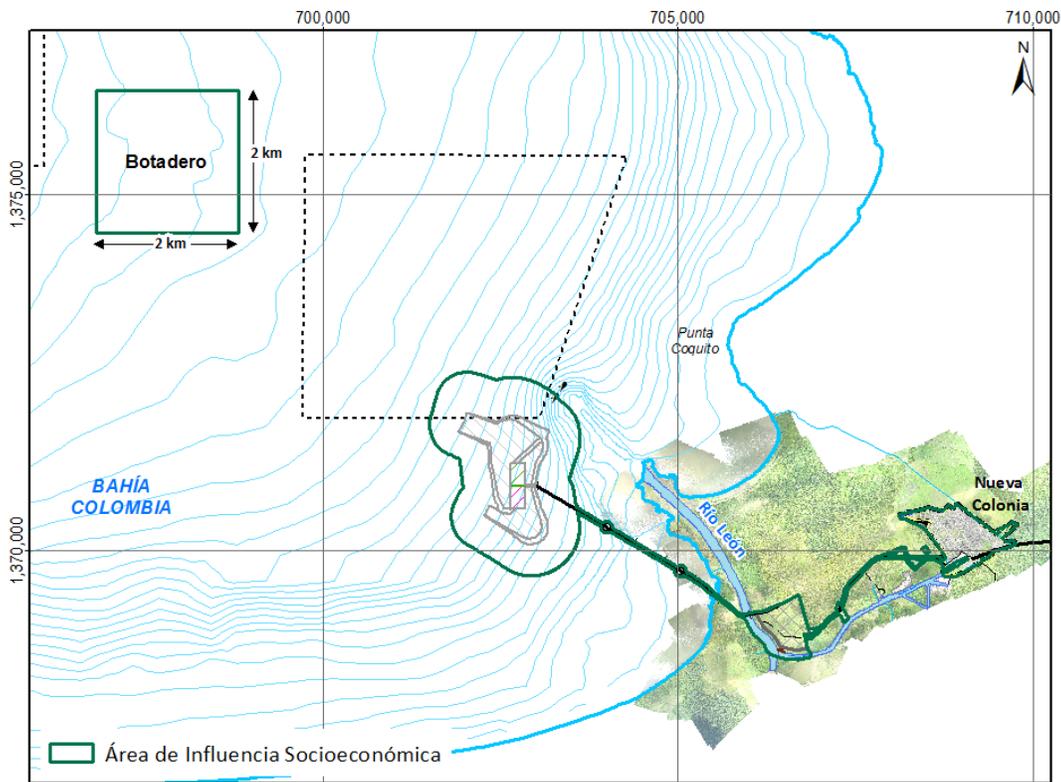


Figure No. 3.5 Area of Social Influence

Source: Prepared by Aqua & Terra Consultores Asociados S.A.S.

	MODIFICATION OF ENVIRONMENTAL LICENSE FOR THE PROJECT OF CONSTRUCTION AND OPERATION OF A PORT TERMINAL OF SOLID BULK IN THE MUNICIPALITY OF TURBO		
	EXECUTIVE SUMMARY	Page 33 of 63	
	GAT-391-15-CA-AM-PIO-01	Revision:	B

4. CHARACTERIZATION OF THE INFLUENCE AREA

For the characterization of the area of influence, the stipulations of the terms of reference for the preparation of the environmental impact study - EIA in construction projects or expansion and operation of deep sea ports (MM-INA-05), as well as the Methodology for the presentation of environmental studies, the Manual of environmental evaluation of the today Ministry of Environment and Sustainable Development - MADS and the specific documentation for each of its components.

The methodology used in a general way consisted of:

- 1) Collection and review of secondary information of the area where the project is located.
- 2) Generation of new information, updating and complementation of the existing information of the Environmental Impact Study that supports the environmental license granted by Resolution 0032 of January 25, 2012, through field visits and corresponding samplings of marine and continental water, marine, continental sediments and environmental noise.
- 3) Processing of information.

5. DEMAND, USE AND USE OF NATURAL RESOURCES

This chapter presents the renewable natural resources that will be used, exploited or affected during the construction and operation phases of the solid bulk port terminal in the municipality of Turbo, which obtained an Environmental License through Resolution No. 0032 of 2012, the which will be modified by a multipurpose port terminal called "Puerto Bahía Colombia de Urabá" (see Chapter 3 Project Description, of the current environmental impact study).

The modification of the Environmental License object of application, already has the permits of concession of waters and dumping for the operative stage, and forest use for the execution of the project, which were granted by Resolution No. 0032 of 2012 for the project "Construction and Operation of a Port Terminal of Solid Grids of Great Draft in Bahía Colombia "; however, in the present modification it is required to request the use of the same flow granted in the operative stage, for the construction stage of the project. Likewise, it is necessary to correct the location coordinates of

	MODIFICATION OF ENVIRONMENTAL LICENSE FOR THE PROJECT OF CONSTRUCTION AND OPERATION OF A PORT TERMINAL OF SOLID BULK IN THE MUNICIPALITY OF TURBO		
	EXECUTIVE SUMMARY	Page 34 of 63	
	GAT-391-15-CA-AM-PIO-01	Revision:	B

the concession points and dumping, due to an error in the origin of the project coordinates.

In terms of forest use, an increase in the volume to be used is required, in the areas where the works contemplated in the modification of the environmental license will be executed and, additionally, it is required to process permit of atmospheric emissions during the operation of the port terminal for the management of solid bulk, during the activities of loading and unloading in the terminal on land and maritime wharf.

Additionally, the program for saving and efficient use of water for the requested concessions and the rational use of energy program is presented.

6. ENVIRONMENTAL EVALUATION

For the Environmental License Modification of the project, in compliance with the Terms of Reference established by Resolution 0112 of 2015 for large seaports, the environmental impact assessment was carried out analyzing two scenarios: No Project or current situation and with Project. This evaluation was based on the assignment of values to different criteria according to the methodological guide for the environmental impact assessment, in which the current environmental conditions and impacts derived from the activities of the area and the environmental problems existing in the area were determined. the area of influence of the project, product of the main activities.

The environmental impact assessment was carried out in phases: 1) The environmental impacts of the activities that have the greatest impact on the area of influence were identified and evaluated (scenario without project - Ex Ante) and 2), based on the activities for the modification of the environmental license defined in the project description and starting from the impacts previously identified in the environmental impact study and in accordance with the analyzes carried out in the characterization of the area of influence of the project for the abiotic, biotic and socioeconomic media, were identified the impacts and its affectation was analyzed, called scenario with project (Ex - Post).

The assessment of the importance of both positive and negative environmental impacts identified in the two scenarios: Without Project and With Project, was carried out jointly with the interdisciplinary group of professionals who participated in the

	MODIFICATION OF ENVIRONMENTAL LICENSE FOR THE PROJECT OF CONSTRUCTION AND OPERATION OF A PORT TERMINAL OF SOLID BULK IN THE MUNICIPALITY OF TURBO		
	EXECUTIVE SUMMARY	Page 35 of 63	
	GAT-391-15-CA-AM-PIO-01	Revision:	B

preparation of the environmental impact study for the modification of the Environmental License for the construction and operation of a solid bulk port terminal in the municipality of Turbo, which will be modified by a multipurpose port terminal called "Puerto Bahía Colombia de Urabá"; this was done in order to reduce the possible personal biases of the professionals and thus increase the validity of the same and decrease subjectivity, since the criteria vary according to the profession and the degree of development of the theories of each discipline.

6.1 Analysis of the results of the Environmental Evaluation Without Project

The identification and evaluation of impacts for the Without Project scenario consisted in qualifying the current state of each of the abiotic, biotic and socioeconomic media, considering the most relevant activities carried out in the area of influence of the project.

According to the results obtained in the evaluation of impacts Without Project in the study area, 64 positive and negative class impacts were identified for the abiotic, biotic and socioeconomic media of the 310 possible interactions of the impacts related to the main activities (10 activities) such as the transit of vessels (fishermen and banana convoys), maintenance dredging of Canal Nueva Colonia and León River, vehicle traffic, artisanal fishing, agriculture with the use of agrochemicals, clearing of vegetation, parking of forest plantations, generation of solid waste, export of bananas and human settlements. Based on the analysis and identification of impacts by activity, there were 54 negative impacts with an equivalence of 84.4% and 10 positive impacts equivalent to 15.6%, as shown graphically in Figure No. 6.1.

	MODIFICATION OF ENVIRONMENTAL LICENSE FOR THE PROJECT OF CONSTRUCTION AND OPERATION OF A PORT TERMINAL OF SOLID BULK IN THE MUNICIPALITY OF TURBO		
	EXECUTIVE SUMMARY	Page 36 of 63	
	GAT-391-15-CA-AM-PIO-01	Revision:	B

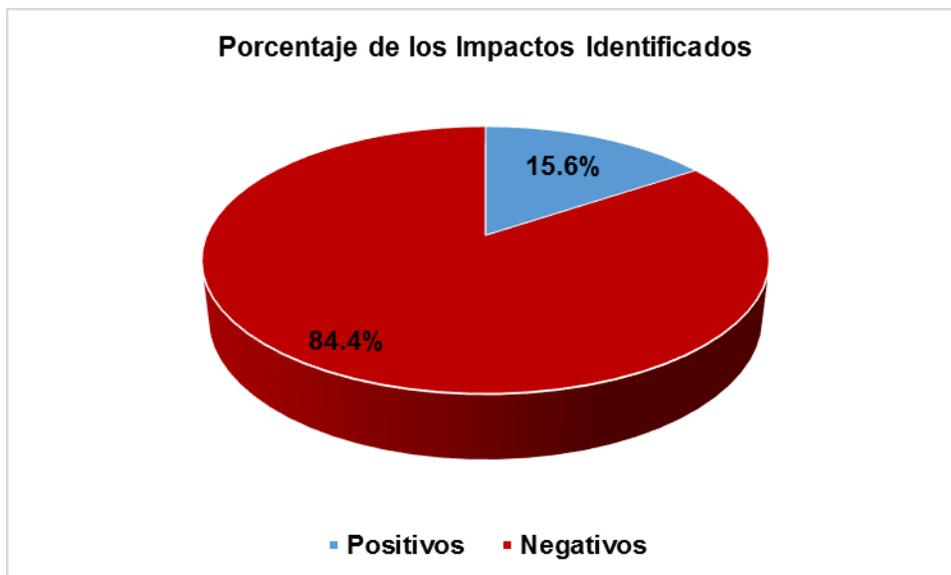


Figure No. 6.1 Percentage of identified nature impacts without Project
Source: Aqua & Terra Consultores Asociados S.A.S., 2015

6.2 Analysis of the results of the Environmental Evaluation with Project

In this analysis, the actions that can generate an impact, the definition of the impacts identified due to the activities that will be carried out during the construction and operation of the project are presented, and the qualitative assessment of the impacts for each medium is finalized. respective analysis of the most relevant impacts independent of their positive or negative nature.

According to the results obtained in the evaluation of impacts With Project in the area of study of the municipality of Turbo in the corregimiento of Nueva Colonia, 283 positive and negative class impacts were identified for the abiotic, biotic and socioeconomic media of the 1,569 possible interactions of the impacts related to the main activities (39 activities) for the phases of construction, operation and closure during construction. From the analysis and identification of impacts by activity, there were 214 negative impacts with an equivalence of 75.6% and 69 impacts are positive, equivalent to 24.4%, as presented graphically in Figure No. 6.2.

	MODIFICATION OF ENVIRONMENTAL LICENSE FOR THE PROJECT OF CONSTRUCTION AND OPERATION OF A PORT TERMINAL OF SOLID BULK IN THE MUNICIPALITY OF TURBO		
	EXECUTIVE SUMMARY	Page 37 of 63	
	GAT-391-15-CA-AM-PIO-01	Revision:	B

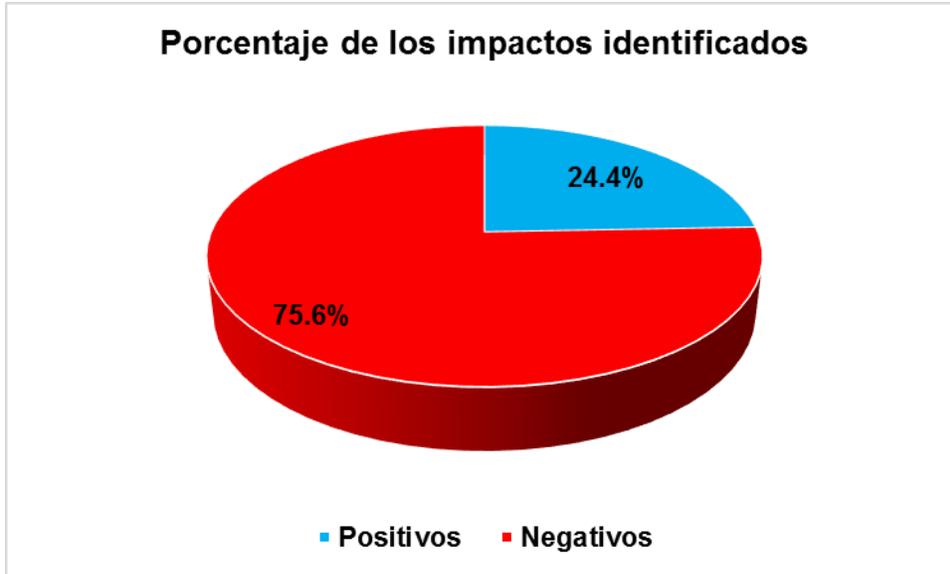


Figure No. 6.2 Percentage of the nature of the impacts identified with the project

Source: Aqua & Terra Consultores Asociados S.A.S., 2015

6.3 Economic environmental assessment

As a result of the environmental assessment, it was determined that the stage responsible for the greatest negative impacts is the construction, mainly the activities related to clearing, cleaning, for the full land, both in the stage of construction of the viaduct, pier and jetty, as of the onshore terminal.

On the other hand, the variation in the volume of vehicular traffic had impacts evaluated as critical in the activities of transportation and storage in port, and loaded and unloaded trucks, these impacts will be valued economically, as well as the impacts classified as severe, which are related to the activity of material transport in the construction stage, and to the loading and unloading activities of merchandise, both for liquids, solids and general cargo, as well as in the operation and maintenance of infrastructure and associated facilities. the operation of the terminal.

On the other hand, in the activity of transport, manufacture and piles driving, associated with the construction stage, the impact of alteration of the landscape was identified, which was evaluated as severe, and in the extraction activity of sea bed material, also associated with the construction stage, were identified and evaluated as severe, the impacts of alteration of marine aquatic habitats and modification in

	MODIFICATION OF ENVIRONMENTAL LICENSE FOR THE PROJECT OF CONSTRUCTION AND OPERATION OF A PORT TERMINAL OF SOLID BULK IN THE MUNICIPALITY OF TURBO		
	EXECUTIVE SUMMARY	Page 38 of 63	
	GAT-391-15-CA-AM-PIO-01	Revision:	B

the structure (distribution, abundance and composition) of marine benthic communities.

In addition, the impact on the coverage and quality of public services was identified, which directly affects, in a severe manner during the construction phase, the construction and operation of temporary facilities and construction of infrastructure and facilities associated with the operation of the terminal. And in the operation stage, it affects not only this activity but also the maintenance of infrastructure and facilities associated with the operation of the terminal.

7. ENVIRONMENTAL ZONING

The environmental zoning identifies the importance and/or environmental sensitivity of the abiotic, biotic and socioeconomic units compared to the environment without a project, in the area of influence that comprises the present modification. The general location of the project is presented in Figure No. 7.1.

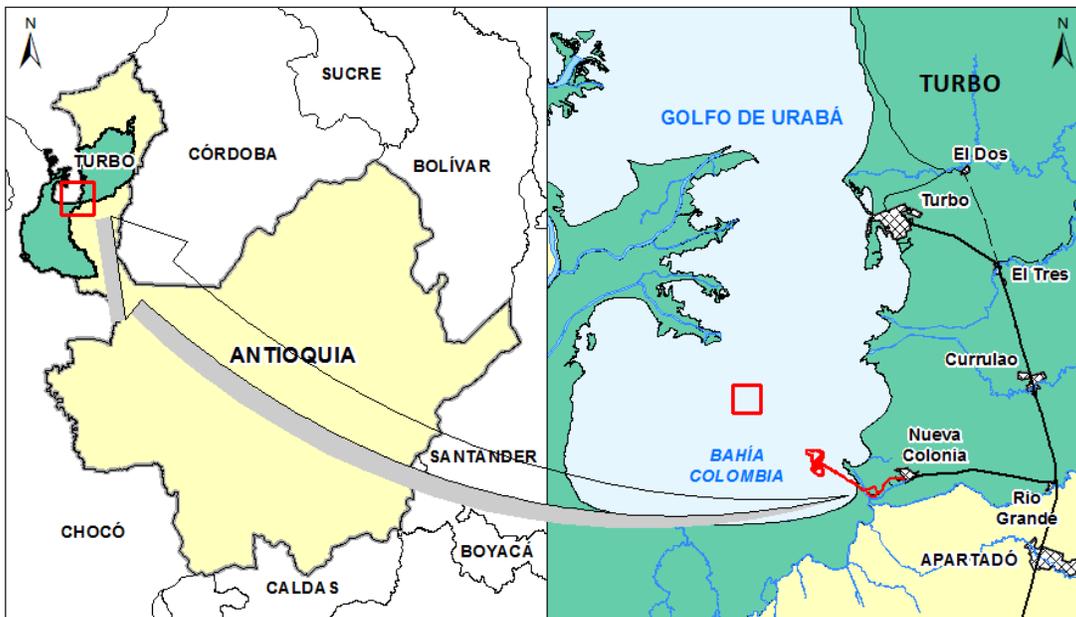


Figure No. 7.1 General location of the port terminal project in Bahía Colombia

Source: Prepared by: Aqua & Terra Consultores Asociados S.A.S., 2015

	MODIFICATION OF ENVIRONMENTAL LICENSE FOR THE PROJECT OF CONSTRUCTION AND OPERATION OF A PORT TERMINAL OF SOLID BULK IN THE MUNICIPALITY OF TURBO		
	EXECUTIVE SUMMARY	Page 39 of 63	
	GAT-391-15-CA-AM-PIO-01	Revision:	B

Once the abiotic, biotic and socioeconomic media were characterized, environmental zoning was carried out, identifying the aspects of environmental interest that allowed delimiting those areas that presented the greatest threat to the actions generally of anthropogenic and natural origin, which could induce or worsen situations or very sensitive states of the natural and/or human environment, taking as reference the current conditions of it. This zoning is the basic input for the ordering and planning of the area.

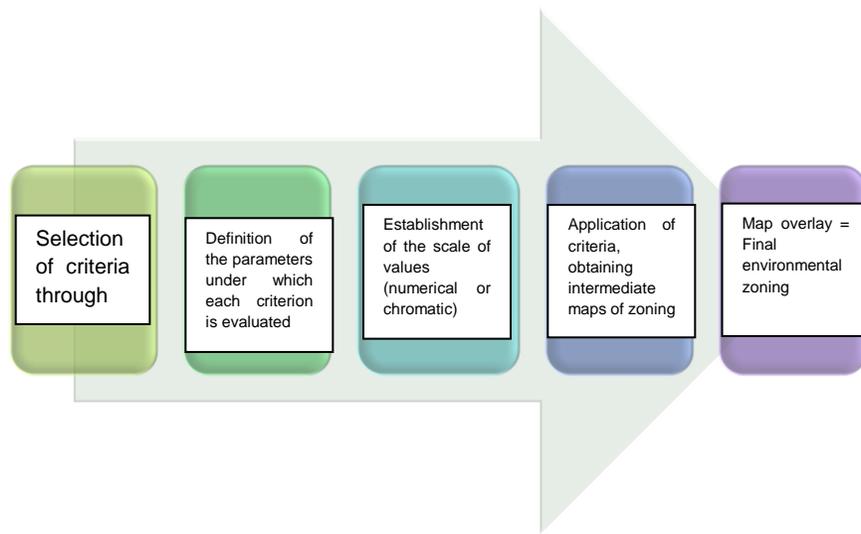


Figure No. 7.2 Methodological summary used for the environmental zoning of the project
Source: Prepared by: Aqua & Terra Consultores Asociados S.A.S., 2015

Criteria and variables that are easily quantifiable and cartographic were selected, and which, in turn, allowed to represent the current state of the environmental goods and services that are part of the project area of influence.

7.1 Abiotic Medium

Based on the characteristics of the study area, the criteria and establishment of the scale for the abiotic environment were defined and selected, which was carried out under the framework of geotechnical stability, susceptibility of the morpho-dynamic processes and/or recovery areas susceptibility to geohazards and/or risk areas, visual quality of the landscape, conflict over land use, surface hydrogeology, continental water quality and marine water quality.

	MODIFICATION OF ENVIRONMENTAL LICENSE FOR THE PROJECT OF CONSTRUCTION AND OPERATION OF A PORT TERMINAL OF SOLID BULK IN THE MUNICIPALITY OF TURBO		
	EXECUTIVE SUMMARY	Page 40 of 63	
	GAT-391-15-CA-AM-PIO-01	Revision:	B

7.2 Biotic Medium

The selection and definition of criteria and establishment of the scale for the biotic environment, was carried out under the framework of the unit covers, areas of special ecological importance and elements with special sensitivity.

7.3 Socioeconomic Medium

The zoning of the social component aims to express the sensitivity of the communities present in the area of influence of the project, in terms of quantifiable criteria and that may represent vulnerability to receive impacts due to the execution of project activities.

The selection and definition of criteria and establishment of the scale for the socioeconomic environment, was made taking into account the characterization made in the Minor Territorial Unit, represented by the communities of the Corregimiento of Nueva Colonia and the “*El Canal*” settlement.

7.4 Elements with dominant or spatial sensitivity

According to the environmental baseline, the following elements were identified with a dominant or special sensitivity: Forest Protector-Producer Areas Law 2nd of 1959, areas of the regional system of protected natural areas - SIRAP (Protective Forest Reserves), currents and bodies of surface water (30 m), corresponding to the areas of environmental importance.

7.5 Results Zoning

With each one of the intermediate maps by component and the elements with dominant or special sensitivity, the zoning map for the area of influence of the project was obtained.

	MODIFICATION OF ENVIRONMENTAL LICENSE FOR THE PROJECT OF CONSTRUCTION AND OPERATION OF A PORT TERMINAL OF SOLID BULK IN THE MUNICIPALITY OF TURBO		
	EXECUTIVE SUMMARY	Page 41 of 63	
	GAT-391-15-CA-AM-PIO-01	Revision:	B

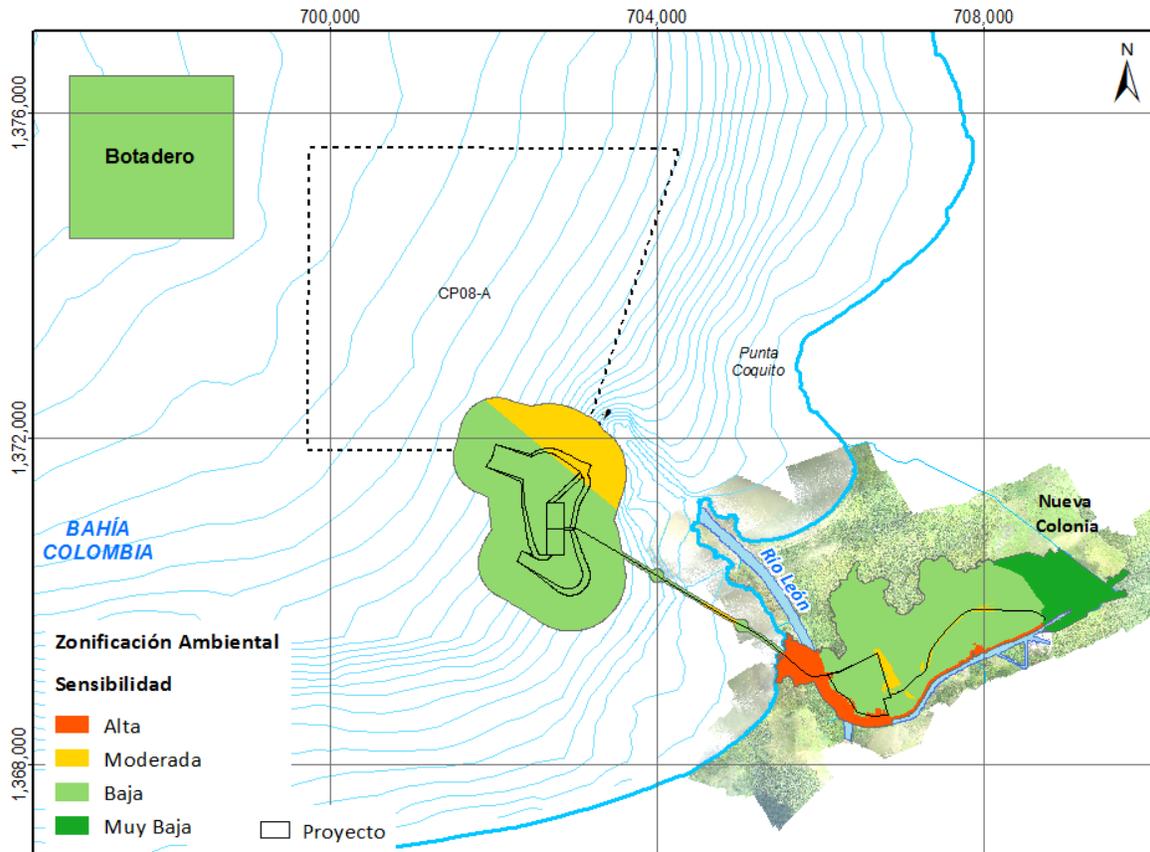


Figure No. 7.3 Environmental zoning

Source: Aqua & Terra Consultores Asociados S.A.S., 2015

8. ZONING OF ENVIRONMENTAL MANAGEMENT

The zoning of environmental management was developed based on environmental zoning, which was based on the environmental characterization of the project area of influence, considering the impact evaluation carried out.

Management zoning aims to ensure the rational use of available natural resources, in harmony with the conservation and protection of fragile and/or special ecological systems or that provide environmental services, such as areas with biodiversity.

By means of the reclassification of the environmental zoning according to the environmental restrictions, the environmental management zoning map was obtained, under a contrasting scale of sensitivity values and restrictions; reaching an

	MODIFICATION OF ENVIRONMENTAL LICENSE FOR THE PROJECT OF CONSTRUCTION AND OPERATION OF A PORT TERMINAL OF SOLID BULK IN THE MUNICIPALITY OF TURBO		
	EXECUTIVE SUMMARY	Page 42 of 63	
	GAT-391-15-CA-AM-PIO-01	Revision:	B

ordering scheme of the project area, where the global impacts of the project are reflected. In other words, it is the general prospective image of the project area.

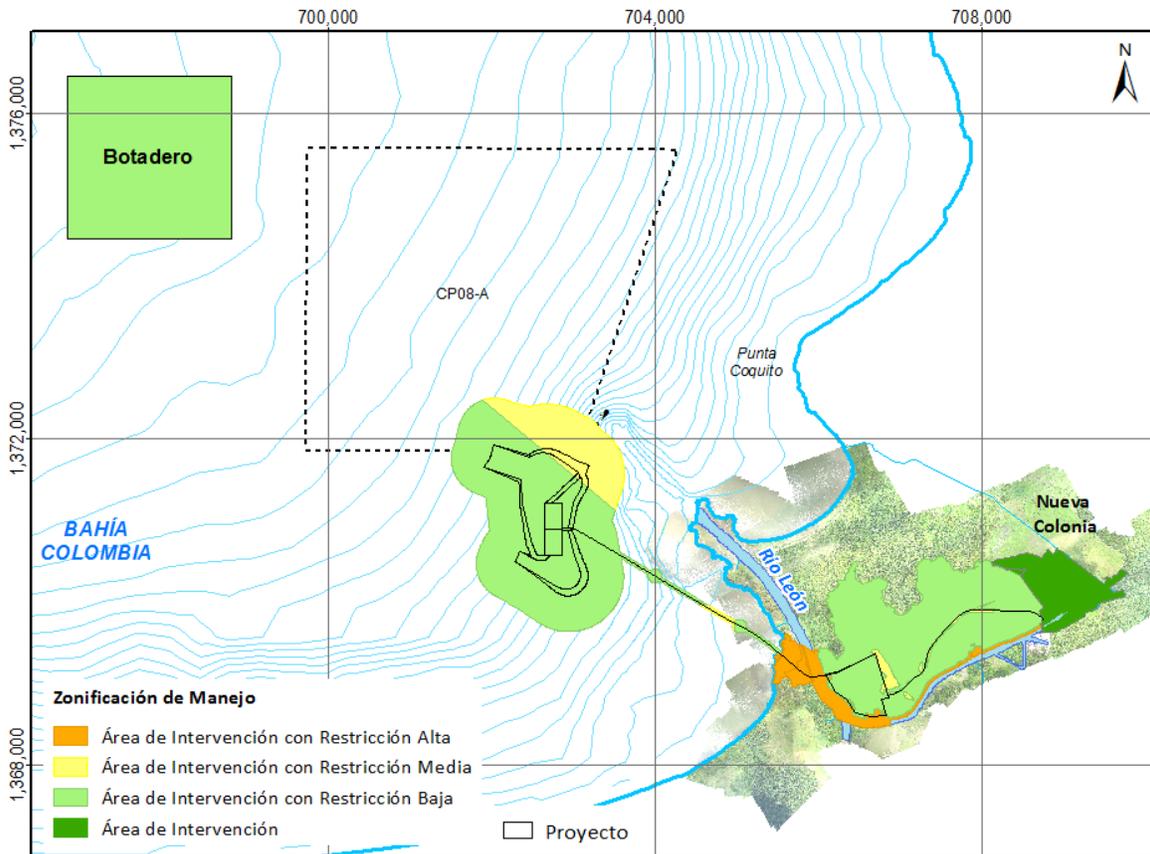


Figure No. 8.1 Zoning of environmental management

Source: Aqua & Terra Consultores Asociados S.A.S., 2015

9. ENVIRONMENTAL MANAGEMENT PLAN

In this section, the environmental management programs proposed for the abiotic, biotic and socioeconomic media are shown. These plans are intended to prevent, mitigate, correct and/or compensate for the impacts identified through the environmental assessment, which are the product of the activities that will be developed in the construction and operational stages of the project.

	MODIFICATION OF ENVIRONMENTAL LICENSE FOR THE PROJECT OF CONSTRUCTION AND OPERATION OF A PORT TERMINAL OF SOLID BULK IN THE MUNICIPALITY OF TURBO		
	EXECUTIVE SUMMARY	Page 43 of 63	
	GAT-391-15-CA-AM-PIO-01	Revision:	B

The environmental management programs proposed through this modification of Environmental License and its equivalence against the programs authorized by the ANLA through Resolution 0032 of 2012, are shown below:

9.1 Abiotic Medium

The following are the environmental management programs proposed for the abiotic environment:

Table No. 9.1 Equivalence of environmental management plans authorized by Resolution 0032 of 2012 and those proposed in the present study for the construction stage

Code Plan Resolution 0032	Name of the plan and/or environmental management program (Resolution 0032)	Code Plan in the present study	Name of the proposed plan and/or environmental management program
SCHEDULE MC-1	Environmental management of the camp facility	SCHEDULE PMA-1	Environmental management of temporary and permanent infrastructure works (concrete, pavements, piloting, metalworking, among others).
SCHEDULE MC-2	General environmental management of vehicles, machinery and equipment, including handling of fuels and lubricants	SCHEDULE PMA-2	Environmental management of vehicles, machinery, equipment, ships and naval devices.
SCHEDULE MC-4	Environmental management of filled and affirmed activities	SCHEDULE PMA-3	Environmental management of the unravel activities, landfills and land consolidation
SCHEDULE MC-7	Environmental management of storage activities and handling of construction materials	SCHEDULE PMA-4	Environmental management of construction materials
SCHEDULE MC-8	Environmental management of the construction activities of concrete works, pavements and metalworking and electrical Works	Note: Included in SCHEDULE PMA-1	
SCHEDULE MC-11	Environmental management of hazardous waste and non-hazardous solid waste on land	SCHEDULE PMA-5	Integrated management of hazardous and non-hazardous solid waste (On land, dock and boats)

	MODIFICATION OF ENVIRONMENTAL LICENSE FOR THE PROJECT OF CONSTRUCTION AND OPERATION OF A PORT TERMINAL OF SOLID BULK IN THE MUNICIPALITY OF TURBO		
	EXECUTIVE SUMMARY	Page 44 of 63	
	GAT-391-15-CA-AM-PIO-01	Revision:	B

Code Plan Resolution 0032	Name of the plan and/or environmental management program (Resolution 0032)	Code Plan in the present study	Name of the proposed plan and/or environmental management program
SCHEDULE MC-12	Environmental management of effluents on land	SCHEDULE PMA-6	Environmental management of water resources
SCHEDULE MC-13	General environmental management of motorboats, auxiliary vessels and naval artifacts	Note: Included in SCHEDULE PMA-2	
SCHEDULE MC-14	Environmental management of fuels and lubricants, aboard motorboats, auxiliary vessels or naval artifacts	SCHEDULE PMA-7	Environmental management of fuels, oils and lubricants (On land, dock and boats)
SCHEDULE MC-15	Environmental management of hazardous waste and solid waste, aboard motorboats, auxiliary vessels or naval artifacts	Note: Included in SCHEDULE PMA-5	
SCHEDULE MC-16	Environmental management of the effluents generated on board the motor ships, auxiliary vessels or naval artifacts	Note: Included in SCHEDULE PMA-6	
SCHEDULE MC-17	Environmental management of the rehabilitation and improvement of the access road to the port area	Note: Included in SCHEDULE PMA-3	
SCHEDULE MC-18	Environmental management of the construction and operation activities of the marginal service dock (construction and operation phase of the port project), on the north bank of the Nueva Colonia canal	Note: Included in SCHEDULE PMA-1	
SCHEDULE MC-19	Environmental management of the demolition activities of the administrative module, the wharf and the winery, existing in the property where the port project will be	Note: Included in the program in section 11.4 Dismantling and abandonment plan	

	MODIFICATION OF ENVIRONMENTAL LICENSE FOR THE PROJECT OF CONSTRUCTION AND OPERATION OF A PORT TERMINAL OF SOLID BULK IN THE MUNICIPALITY OF TURBO		
	EXECUTIVE SUMMARY		Page 45 of 63
	GAT-391-15-CA-AM-PIO-01		Revision:

Code Plan Resolution 0032	Name of the plan and/or environmental management program (Resolution 0032)	Code Plan in the present study	Name of the proposed plan and/or environmental management program
	developed, with the management and final disposal of debris generated by this demolition		
SCHEDULE MC-20	Note: Included in the program in section 11.4 Dismantling and Environmental Management Plan of the piling work on barge, casting and installation of plans for dock and gangway and installation of the conveyor belt....	Note: Included in SCHEDULE PMA-1	
SCHEDULE MC-21	Environmental management of the construction of the bridge over the León River and installation of the conveyor belt.	Note: Included in SCHEDULE PMA-1	

Source: Made by Aqua&Terra Consultores Asociados S.A.S, 2015

Table No. 9.2 Equivalence of the environmental management plans authorized by Resolution 0032 of 2012 and those proposed in the present study for the operative stage

Code Plan Resolution 0032	Name of the plan and/or environmental management program (Resolution 0032)	Code Plan in the present study	Name of the proposed plan and/or environmental management program
SCHEDULE MO-1	Environmental management of solid bulk unloading activities	SCHEDULE PMA-11	Environmental management of loading and unloading activities of authorized cargo types.
SCHEDULE MO-2	Environmental management of user vessels, tugboats and auxiliary vessels	Note: Included in SCHEDULE PMA-2	
SCHEDULE MO-3	Environmental management of fuels and lubricants	Note: Included in SCHEDULE PMA-7	
SCHEDULE MO-4	Environmental management of maintenance dredging activities	Note: Included in SCHEDULE PMA-9	

	MODIFICATION OF ENVIRONMENTAL LICENSE FOR THE PROJECT OF CONSTRUCTION AND OPERATION OF A PORT TERMINAL OF SOLID BULK IN THE MUNICIPALITY OF TURBO		
	EXECUTIVE SUMMARY	Page 46 of 63	
	GAT-391-15-CA-AM-PIO-01	Revision:	B

Code Plan Resolution 0032	Name of the plan and/or environmental management program (Resolution 0032)	Code Plan in the present study	Name of the proposed plan and/or environmental management program
SCHEDULE MO-5	Environmental management of rainwater	Note: Included in SCHEDULE PMA-6	
SCHEDULE MO-6	Environmental management of the water system for toilet and bathroom	Note: Included in SCHEDULE PMA-6	
SCHEDULE MO-7	Environmental management of hazardous waste and non-hazardous solid waste	Note: Included in SCHEDULE PMA-5	
SCHEDULE MO-8	Environmental management of effluents on land	Note: Included in SCHEDULE PMA-6	
SCHEDULE MO-9	Environmental management of particulate, gas and noise emissions	Note: Included in SCHEDULE PMA-11	

Source: Made by Aqua&Terra Consultores Asociados S.A.S, 2015

Additionally, three (3) environmental management programs were created that complement the programs proposed by the ANLA through Resolution 0032 of 2012, see Table No. 9.3.

Table No. 9.3 Environmental management plans added for the present study

Code Plan in the present study	Name of the proposed plan and/or environmental management program
SCHEDULE PA-8	Environmental management for dredging deepening, maintenance and disposal of dredged material
SCHEDULE PA-9	Management for the control of atmospheric emissions and noise
SCHEDULE PA-10	Land signaling management

Source: Prepared by Aqua & Terra Consultores Asociados S.A.S, 2015

9.2 Biotic Medium

The following are the environmental management programs proposed for the biotic environment:

Table No. 9.4 Equivalence of environmental management plans authorized by Resolution 0032 of 2012 and those proposed in the present study

	MODIFICATION OF ENVIRONMENTAL LICENSE FOR THE PROJECT OF CONSTRUCTION AND OPERATION OF A PORT TERMINAL OF SOLID BULK IN THE MUNICIPALITY OF TURBO		
	EXECUTIVE SUMMARY	Page 47 of 63	
	GAT-391-15-CA-AM-PIO-01	Revision:	B

Code Plan Resolution 0032	Name of the plan and/or environmental management program (Resolution 0032)	Code Plan in the present study	Name of the proposed plan and/or environmental management program
SCHEDULE MC-3	Environmental management for land clearing and clearing activities	SCHEDULE PMB-01	Environmental management of the vegetal cover and cleaning activities
SCHEDULE MC-5	Environmental management of forest use on the property and the corridor of the future footbridge	SCHEDULE PMB-02	Environmental management of forest use
SCHEDULE MC-6	Rescue of wildlife during forest harvesting	SCHEDULE PMB-03	Environmental management of wildlife and protection of habitats
SCHEDULE MC-9	Recovery of vegetation cover and landscape management on the property and the runway corridor		This plan joins the PMB-1
SCHEDULE MC-10	Management of forest compensation	SCHEDULE PMB-04	Compensation for loss of biodiversity
		SCHEDULE PMB-05	Environmental management of the hydrobiological communities

Source: Made by Aqua&Terra Consultores Asociados S.A.S, 2015

9.3 Socioeconomic Medium

The following are the environmental management programs proposed for the socioeconomic environment:

Table No. 9.5 Equivalence of environmental management plans authorized by Resolution 0032 of 2012 and those proposed in this study

	MODIFICATION OF ENVIRONMENTAL LICENSE FOR THE PROJECT OF CONSTRUCTION AND OPERATION OF A PORT TERMINAL OF SOLID BULK IN THE MUNICIPALITY OF TURBO		
	EXECUTIVE SUMMARY	Page 48 of 63	
	GAT-391-15-CA-AM-PIO-01	Revision:	B

Code Plan Resolution 0032	Name of the plan and/or environmental management program (Resolution 0032)	Code Plan in the present study	Name of the proposed plan and/or environmental management program
SCHEDULE MS-1	Education and training program for personnel linked to the Project	SCHEDULE PS-1	Environmental education program for personnel linked to the Project
SCHEDULE MS-2	Community information and participation program	SCHEDULE PS-2	Community information and participation program
SCHEDULE MS-3	Resettlement program for the affected population		The present program is deleted.
SCHEDULE MS-4	Support program for institutional management capacity	SCHEDULE PS-3	Support program for institutional management capacity
SCHEDULE MS-5	Training program, education and awareness to the community surrounding the Project	SCHEDULE PS-4	Environmental education program for the communities in the area of influence
SCHEDULE MS-6	Labor hiring program		This program is abolished because it is the responsibility of the Ministry of Labor
		SCHEDULE PS-5	Strengthening and management program for artisanal fishing activities.
		SCHEDULE PS-6	Neighborhood records program.
SCHEDULE MS-7	Preventive archeology program	SCHEDULE PS-7	Archaeological management program (ICANH)

Source: Made by Aqua & Terra Consultores Asociados S.A.S, 2015

10. INVESTMENT PLAN 1%

During the construction and operation stages of the PUERTO BAHÍA COLOMBIA DE URABÁ project, it is required to capture surface water on the León River for the development of industrial and domestic activities, for which the SOCIEDAD PROTUARIA PUERTO BAHIA COLOMBIA DE URABA SA, formerly the Sociedad PUERTO BAHÍA COLOMBIA DE URABÁ SA, presents a proposal for the 1% Environmental Investment Plan, in order to comply with the provisions of Resolution number 0032 of January 25, 2012 "Through which the environmental license is granted" And with what is defined in article 4 of Decree 1900 of June 12, 2006, which regulates the paragraph of article 43 of Law 99 of 1993, in relation to this program.

	MODIFICATION OF ENVIRONMENTAL LICENSE FOR THE PROJECT OF CONSTRUCTION AND OPERATION OF A PORT TERMINAL OF SOLID BULK IN THE MUNICIPALITY OF TURBO		
	EXECUTIVE SUMMARY	Page 49 of 63	
	GAT-391-15-CA-AM-PIO-01	Revision:	B

In accordance with the regulatory decree in question, the cost of the investment that must be made has been calculated, and based on the characterization of the project area, the investment proposal is formulated identifying the programs that could be part of the plan of investment of 1%.

The proposal that follows is due to the initial state (before the project) of the conditions found in the land cover units, hydrological status of the bodies of water, land use and environmental conditions of the municipalities of Turbo, Apartadó, Carepa, Mutatá and Chigorodó, which belong to the Leon River basin, as well as the quality of life conditions of the populations that live there, especially in relation to the quality of water they consume.

Thus, the 1% Investment Plan proposes:

- I. Support program for the development of the Management Plan for the Protective Forest Reserve of the Wetlands between the León and Suriquí Rivers
- II. Program of plant enrichment and isolation of areas to facilitate the natural succession, conservation and protection of Mangrove areas.
- III. Program of support for the management and management of the river basin of the León River
- IV. Program of recovery and conservation of strategic areas for connectivity and water regulation of the Leon River basin

11. MAIN RISKS

The Risk Management Plan presented in this study corresponds to the one approved by Resolution 0032 of 2012 for the project "Construction and Operation of a Port Terminal of Solid Bulk of Great Draft in Bahia Colombia", updated according to the activities included in the current modification of environmental license for a multipurpose port terminal.

 <p>PUERTO BAHÍA COLOMBIA DE URABÁ S.A. TERMINAL PORTUARIO DE GRANDES CARGAS</p>	<p>MODIFICATION OF ENVIRONMENTAL LICENSE FOR THE PROJECT OF CONSTRUCTION AND OPERATION OF A PORT TERMINAL OF SOLID BULK IN THE MUNICIPALITY OF TURBO</p>	 <p>aqua & terra</p>	
	<p>EXECUTIVE SUMMARY</p>	<p>Page 50 of 63</p>	
	<p>GAT-391-15-CA-AM-PIO-01</p>	<p>Revision:</p>	<p>B</p>

11.1 Risk analysis and evaluation - Construction phase

During the construction phase, the most significant risks are related in the first instance to the safety and health of workers as listed below:

- In the execution of activities at height, due to the dangers of falling (for example, during the construction of the silos) or the risks associated with the fall of tools
- In case of debris or structural parts collapse.
- Blows, punctures, cuts or entrapment due to misuse or poor maintenance of work tools.
- Exposure to sunlight without proper protection.
- Exposure or contact with chemical products without protection and observance of the safety sheets.
- Hazards present due to fire and explosion events if the generative factors (fire tetrahedron) are not taken into account, to which permanent attention must be paid to reduce the risks.
- Fuel spills.

In second instance are other dangers that would not have consequences as significant as those that can be generated by the hazards cited above, but also have to be kept in mind, requiring staff to comply with the procedures and construction plans and the use of the elements of personal protection:

- The welding works related risks.
- Exposure to noise.
- Ergonomic risks.
- Stress.

Within the external risks, the following are considered relevant:

- Seismic risk: The project is located in a tectonically active zone, with a high seismic threat.

	MODIFICATION OF ENVIRONMENTAL LICENSE FOR THE PROJECT OF CONSTRUCTION AND OPERATION OF A PORT TERMINAL OF SOLID BULK IN THE MUNICIPALITY OF TURBO		
	EXECUTIVE SUMMARY	Page 51 of 63	
	GAT-391-15-CA-AM-PIO-01	Revision:	B

- Flood risk:** The area where the port facilities will be located is bordering the León River. In addition, it is a topographically very low area, badly drained and affected by the daily fluctuations of the tides, so the flood threat could occur in case of a flood of the León River during a high tide. However, the site where the facilities will be built is separated from the León River by the presence of a high dam that protects it from possible flooding, therefore, the threat is considered average. While in the areas adjacent to the coast as well as the natural and artificial drainages a high flood threat was assigned as detailed in Figure No. 11.1.

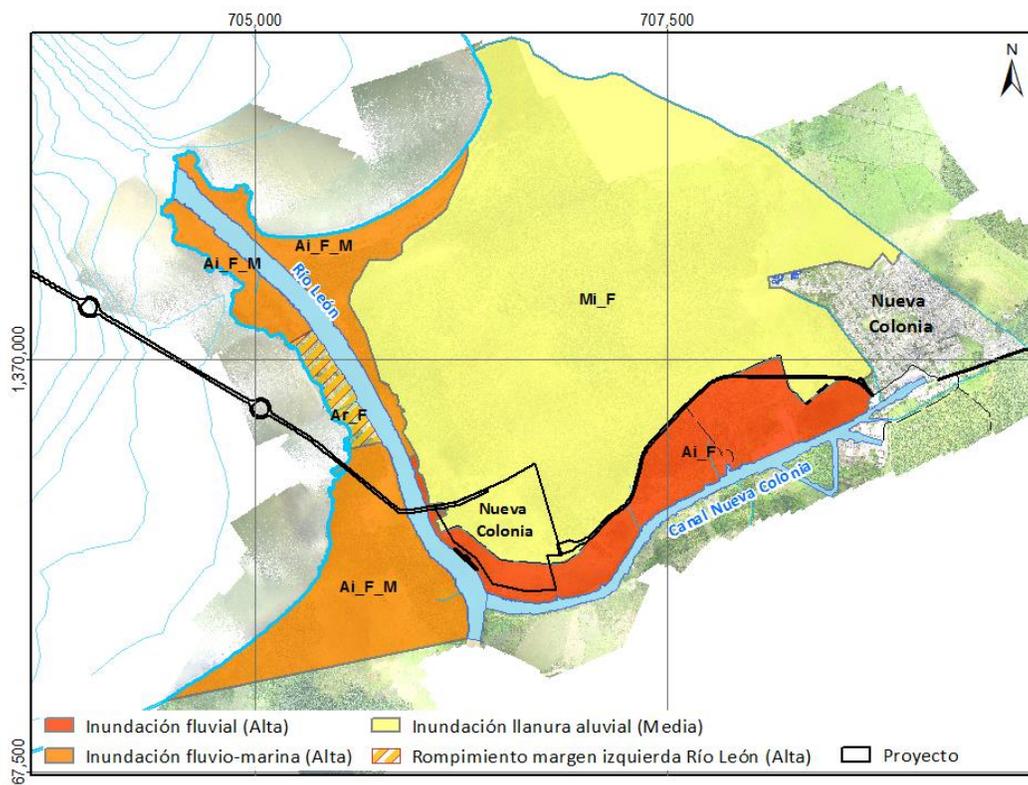


Figure No. 11.1 Geo-hazards identified in the project area

Source: Aqua & Terra Consultores Asociados S.A.S., 2015

- Risk arising from physical security problems and public order:** This risk includes civic strikes due to disagreement with the community surrounding the execution of the project, causing the cessation of activities due to the partial or total blockage of the project and the attacks against the equipment and machinery, which causes delays in the schedules and additional costs.

	MODIFICATION OF ENVIRONMENTAL LICENSE FOR THE PROJECT OF CONSTRUCTION AND OPERATION OF A PORT TERMINAL OF SOLID BULK IN THE MUNICIPALITY OF TURBO		
	EXECUTIVE SUMMARY	Page 52 of 63	
	GAT-391-15-CA-AM-PIO-01	Revision:	B

11.2 Risk analysis and evaluation - Operation phase

During the operation phase of the terminal, the different risks identified have practically the same significance (lower than for the construction phase), with a slight probability of occurrence, if all the preventive actions of the system are implemented and maintained.

Special care must be taken when managing loads, applying proper maintenance to the cranes, conveyor belts and other components of the bulk handling system, to avoid the risk of spills.

12. TOTAL COST OF THE PROJECT

The total direct costs of the project are:

Table No. 12.1 Total Cost Project

ITEM	VALUE (USD)
a) Port Facilities	190.944.464
b) Roads (roads) to Nueva Colonia	5.047.994
c) Equipment	43.700.082

Source: Aqua & Terra Consultores Asociados S.A.S., 2015

For a total direct project costs of **USD 239,692,540**.

13. CHRONOGRAM

The construction schedule for Puerto Bahía Colombia de Urabá is forty (40) months as shown below:

	MODIFICATION OF ENVIRONMENTAL LICENSE FOR THE PROJECT OF CONSTRUCTION AND OPERATION OF A PORT TERMINAL OF SOLID BULK IN THE MUNICIPALITY OF TURBO		
	EXECUTIVE SUMMARY	Page 53 of 63	
	GAT-391-15-CA-AM-PIO-01	Revision:	B

Figure No. 13.1 Schedule



MODIFICATION OF ENVIRONMENTAL LICENSE FOR THE PROJECT OF CONSTRUCTION AND OPERATION OF A PORT TERMINAL OF SOLID BULK IN THE MUNICIPALITY OF TURBO



EXECUTIVE SUMMARY

Page 54 of 63

GAT-391-15-CA-AM-PIO-01

Revision:

B

CODE – ACTIVITY – DURATION - MONTH	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40		
SPRING, MANEUVER AREA AND CONTAINER PATIO																																									
PRELIMINARY ACTIVITIES																																									
1.1 Mobilization and demobilization																																									
1.2 Rehabilitation via access to the port																																									
1.3 Improvement of provisional works floors																																									
1.4 Contraction of temporary camp work																																									
1.5 Conditioning storage yard for construction materials																																									
1.6 Electric connection and temporary hydraulic works																																									
1.7 Provisional pier for reception of construction materials, including sheet piling, fillings, ground conditioning and works necessary for its proper functioning (Jetty)																																									
(See Scheme Drl) Area: 35,095 M																																									
2.1 Supply and installation of Fenders Type MCN 1000 Grade 4																																									
2.3 Supply and installation of Bitas																																									
2.4 Rails for gantry crane Type A-120																																									
2.5 Boxes and Other Elements Embedded in the Plate																																									
2.6 Toperas and Parking Pins																																									
2.7 Metallic Inflatable Piles D = 70 "E11 mm (534 Vertical and 32 Inclined)																																									
2.8 Metal Driven Piles D = 60 "E11.9 mm (38 Vertical)																																									
2.9 Prefabricated Concrete 35%																																									
2.10 Concrete on Site 65%																																									
2.12 Signaling Access Channel and Dock																																									
2.13 Enveloping Beacons																																									
3.1 RMA D 1E er Es ema N ° 1 Area: 3.861M2																																									
Metallic Inflated Piles D = 70 "E. = 11 mm (43 Vertical and 6 Inclined)																																									
3.2 Prefabricated Concrete 35%																																									
3.3 Concrete on Site 65%																																									
4.0 SILVER OF CONTAINERS (See Scheme 2																																									
4.1 Metal Driven Piles 1> 70 "E = 11 mm (S97 Vertical and 68 inclined)																																									
4.2 Metal Driven Piles D = 60 "11.9 mm (70 Vertical)																																									
4.3 Prefabricated Concrete 35%																																									
4.4 Concrete on Site 65%																																									
4.6 Metallic Structures For Reefers																																									
(GATEWAY IN SEA)																																									
5.0 PASS (VIADUCT) 3.38 Km (See E 1 ->) Arta: 3380 ML x II37.856 M2																																									
5.1 Metal Driven Piles l> 50 "E. = 11.9 mm (10 Vertical and 420 Inclined)																																									
5.2 Prefabricated Concrete 35%																																									
5.3 Concrete on Site 65%																																									
5.5 Anden																																									
5.6 Handrails																																									



MODIFICATION OF ENVIRONMENTAL LICENSE FOR THE PROJECT OF CONSTRUCTION AND OPERATION OF A PORT TERMINAL OF SOLID BULK IN THE MUNICIPALITY OF TURBO



EXECUTIVE SUMMARY

Page 55 of 63

GAT-391-15-CA-AM-PIO-01

Revision:

B

CODE – ACTIVITY – DURATION - MONTH	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	
(FOOTBRIDGE ON EARTH)																																									
6.1 Metal Driven Piles D = 50 "E11.9 mm (54 inclined)																																									
6.2 Prefabricated Concrete 35%																																									
6.3 Concrete on Site 65%																																									
6.5 Anden																																									
6.6 Railings																																									
6.7 Cantitravel or Similar as Support Structure																																									
BRIDGE OVER THE LEON RIVER																																									
7.0 Total light 132 mts... Blackboard width 20.00																																									
7.1 Metal Driven Piles D = 50 "E11.9 mm (4 Vertical and 12 Inclined)																																									
7.2 Prefabricated Concrete 35%																																									
7.3 Concrete on Site 65%																																									
7.5 Metal Strike																																									
7.6 Supports and Joints																																									
ROAD OF ACCESS TO THE PROJECT																																									
8.0 CARRETERA NUEVA COLONIA - PUERTO																																									
8.1 Rehabilitation of the improved Area in Numeral 1.2 For Pavement																																									
8.2 Asphalt Base E = 9.10																																									
8.3 Granular Base E = 9.30																																									
8.4 Hot Dense Mixture Type 2 (E4.1.12 Includes Primer)																																									
8.5 Conformation and Empradization of Slopes																																									
8.6 Ditches and Drainage Works																																									
8.7 Delimitation fences																																									
FLOOR INSTALLATIONS OUTSIDE THE FREE REGIME																																									
9.0 NON-Customs ZONE																																									
9.1 Soil improvement																																									
9.2 Surveillance and Control Building (No. 2)																																									
9.3 Administration Building (No. 3)																																									
9.4 Administration Dining Room (No. 4) - They are: 2 Typical Modules -																																									
9.5 Flexible pavement for light vehicle parking lots (No. 5)																																									
9.6 Parking of Enturnamiento (No. 6) with improvement of soil																																									
9.7 Anti-drug Police Housing Complex (No. 7)																																									
9.2 Bath Module (No. 4) - They are: 4 doubles -																																									
9.9 Concrete paving platforms																																									
9.10 Green Zone																																									
9.11 Flexible pavement roads for light vehicles																																									
9.12 Flexible pavement roads for heavy vehicles type C6 6 T3-53																																									
9.13 Crawling mesh enclosure (Height: 3.00 m)																																									
9.14 Enclosure in concrete wall (Height: 3.00 mts)																																									



MODIFICATION OF ENVIRONMENTAL LICENSE FOR THE PROJECT OF CONSTRUCTION AND OPERATION OF A PORT TERMINAL OF SOLID BULK IN THE MUNICIPALITY OF TURBO



EXECUTIVE SUMMARY

Page 56 of 63

GAT-391-15-CA-AM-PIO-01

Revision:

B

CODE - ACTIVITY - DURATION - Month
 FLOOR INSTALLATIONS WITHIN THE FREE ZONE
 CUSTOMS AREA.
 10.1 Soil Improvement
 102 Portal of Entry (No. 1)
 103 Administration Dining Building (No. 4) - There are 3 typical Modules -
 10.4 Export Inspection Warehouse (No. 8)
 10.5 Anti-narcotics Police Office (No. 9)
 10.6 Bath Module (No. 4) - They are: 3 doubles -
 10.7 Inspection Warehouse for Perishable Food Exports (Nos. 11 and 11A)
 10.8 Import Inspection Warehouse (No. 12)
 10.9 Consolidation and Deconsolidation Warehouse (No. 13)
 10.10 Sheds for Container Maintenance Facility (No. 16)
 10.11 Maintenance Workshop (No. 24)
 10.12 Spare Parts Store (No. 25)
 10.13 Fire Station (No. 28)
 10.14 Nursing (No. 29)
 10.15 Fuel Station (No. 30)
 10.16 Fuel Tanks and Control Office (No. 31)
 10.17 Scales (No. 32)
 10.18 Flexible pavement (design vehicle: Reach Stacker)
 10.19 Enclosure in Concrete Wall (Height: 3.00 mts)
 10.20 Enclosure in Concrete Wall (h: 3.00 mts) + Crawling mesh (h: 3.00 mts)
 NETWORK AND SERVICES INSTALLATIONS
 11.0 AQUEDUCT NETWORKS, SANITARY AND PLUVIAL SEWAGE
 11.1 Drinking Water Installations on Land
 11.2 Drinking Water Installations in Dock
 11.3 Wastewater Ground Installations
 11.4 Residual Water Dock Installations
 11.5 Fire System
 11.6 Oleaginous Liquid Residues
 11.7 Rainwater Ground Installations
 11.8 Rainwater Installations in Dock

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
[Dark blue header bar]																																							
[Light blue bar]																																							
[Grid with blue shading for activities 10.1-10.20]																																							
[Dark blue header bar]																																							
[Light blue bar]																																							
[Grid with blue shading for activities 11.0-11.8]																																							



MODIFICATION OF ENVIRONMENTAL LICENSE FOR THE PROJECT OF CONSTRUCTION AND OPERATION OF A PORT TERMINAL OF SOLID BULK IN THE MUNICIPALITY OF TURBO



EXECUTIVE SUMMARY

Page 57 of 63

GAT-391-15-CA-AM-PIO-01

Revision:

B

ACTIVITY CODE - DURATION - month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
12.0 ELECTRICAL INSTALLATIONS																																								
12.1 EXTERNAL ELECTRICAL NETWORKS																																								
12.1.1 Transmission line																																								
12.1.2 115kv Substation (supply, installation, testing, commissioning) This Substation will be built by the Network Operator.																																								
12.1.3 Main Substation 1E1. (345 / 13.2kv, supply, installation, testing, commissioning).																																								
12.1.4 Substation SE2. (34.51 (v)																																								
12.1.5 Substation SE3. (13.21m)																																								
12.1.6 Substation SE4. (13.2kv)																																								
12.1.3 Substation SE5. (34.51 (v)																																								
12.1.8 Outdoor Lighting																																								
12.19 Refrigerated Containers Phase I																																								
12.1.11 Design details of exterior networks																																								
12112 Duets Bank																																								
INTERNAL ELECTRICAL NETWORKS:																																								
12.2.1 General facilities Buildings																																								
12.2.20 Bulk Area																																								
12.2.21 Antinarcotics Police Office																																								
12.2.22 Water Tank																																								
12.2.23 Maintenance and Repair of RTG																																								
12.2.24 Design Assembly of interior networks																																								
13.0 NETWORK OF C011UNICACT e J .:																																								
13.1 Structured cabling networks and external telecommunications																																								
13.2 Structured cabling networks and internal telecommunications																																								

Fuente: Aqua & Terra Consultores Asociados S.A.S., 2015

	MODIFICATION OF ENVIRONMENTAL LICENSE FOR THE PROJECT OF CONSTRUCTION AND OPERATION OF A PORT TERMINAL OF SOLID BULK IN THE MUNICIPALITY OF TURBO		
	EXECUTIVE SUMMARY	Page 58 of 63	
	GAT-391-15-CA-AM-PIO-01	Revision:	B

14. DECOMMISSIONING AND ABANDONMENT PLAN

The National Agency of Infrastructure - ANI, is the entity responsible for granting port concessions. Said agency defines within its contracts that: "the obligation of the concessionaire to assign free and in good state of maintenance and operation, at the end of the concession contract or to be declared the expiration, to the Nation, all the constructions and real estate by destination that are usually installed in the area of public use object of the concession "

In accordance with the above, the plan for dismantling and abandoning the area comprises two main scenarios:

- a) Once the construction phase of the port has been completed
- b) The completion of the port concession

For these scenarios, efficient and environmentally safe administrative measures are established, so that the dismantling and abandonment process of each construction is carried out in an appropriate manner, controlling risks and preventing damage to natural and human resources.

Prior to the dismantling of the infrastructure of temporary facilities necessary for the construction of the Port, informative meetings will be held with the communities and authorities of the area of influence in order to inform the completion of the works and the start of the operation of the port. This action will be developed in accordance with the stipulations of the PS-02 Community Information and Participation Program.

In order to comply with this plan, an initial evaluation of the infrastructure must be carried out, which must be removed from the area once the different phases of the project have been completed.

Additionally, and taking into account the analysis presented in Chapter 8 - Impact Evaluation - in its separate analysis of cumulative and synergistic impacts for each component, it is presented in chapter 11.1.1 Environmental Management Program and 11.1.2 Monitoring and Monitoring Plans. The proposed indicators to track the impacts. Likewise, the plan of follow-up to the trend of the medium, will allow to identify the results reached by the management plan and the changes generated in each one of the means.

15. COMPENSATION PLAN FOR LOSS OF BIODIVERSITY

The compensation plan for biodiversity loss consists of actions that aim to compensate for the impacts or negative effects that cannot be prevented, corrected

	MODIFICATION OF ENVIRONMENTAL LICENSE FOR THE PROJECT OF CONSTRUCTION AND OPERATION OF A PORT TERMINAL OF SOLID BULK IN THE MUNICIPALITY OF TURBO		
	EXECUTIVE SUMMARY	Page 59 of 63	
	GAT-391-15-CA-AM-PIO-01	Revision:	B

or mitigated and that lead to loss of biodiversity in terrestrial natural ecosystems and secondary vegetation; in such a way that the effective conservation of an ecologically equivalent area is ensured where a permanent conservation strategy and/or its ecological restoration can be generated, so that when comparing with the baseline the net loss of biodiversity is guaranteed. Within the management plans established in the present study (Chapter 11.1.1), management measures that allow the prevention, correction or mitigation of the impacts identified on the fauna are considered, for this reason the environmental management program of the wildlife and habitat protection; According to the above, a Compensation Plan for Loss of Biodiversity is not required for the faunal community.

The construction of works for the operation of the PUERTO BAHÍA COLOMBIA DE URABÁ project requires the forestry exploitation of the arboreal individuals located in the area of direct affectation of the project; which is formed by a corridor of 2,474.7 m long and 60 m wide, for an area of 148,484 m² that goes from Nueva Colonia district, to the land where the terrestrial terminal of the port will be built.

The property (350,079 m²) plus the withdrawal strip of the León river and the Nueva Colonia canal (63,358.58 m²) have an area of 413,437.68 m²; and a strip 437.6 m long and 20 m wide (9,832.7 m²), where the viaduct will be constructed that will lead from the land terminal to the dock; This strip is within the Protective Forest Reserve of the León and Suriquí rivers wetlands declared by agreement No. 100-02-02-01-0010-2011 by CORPOURABÁ and which includes the mangrove vegetation of this area, as seen in Table No. 15.1 and Figure No. 15.1. This strip was taken from the Protective Forest Reserve through agreement No. 100-02-02-01-0004-2011 by CORPOURABÁ.

The volume under which forest use was estimated for the construction of Puerto Bahía Colombia in Urabá was made taking into account the entire area of influence of the project; however, considering that the land where the land terminal will be built borders the riverbank of the León River and the artificial canal of Nueva Colonia, a retirement area defined by Decree 1076 of 2015 must be respected, which corresponds to a strip of 30 meters, conserving the riparian forest of this area. However, the only area that will be intervened and that has been included in the forest inventory, is the one associated to the fluvial pier, which will be located on the right margin of the north end of the artificial canal of Nueva Colonia, approved this in resolution number 0032 of 2012, by which the environmental license of the Project was obtained.

	MODIFICATION OF ENVIRONMENTAL LICENSE FOR THE PROJECT OF CONSTRUCTION AND OPERATION OF A PORT TERMINAL OF SOLID BULK IN THE MUNICIPALITY OF TURBO		
	EXECUTIVE SUMMARY	Page 60 of 63	
	GAT-391-15-CA-AM-PIO-01	Revision:	B

Table No. 15.1 Areas of forest use

Coverage unit	Ecosystem	Area (m2)	Area (ha)
Terrestrial vegetation	Gallery and/or riparian forest of the tropical humid zonal biome (zonobioma) of Magdalena-Caribe	148.500,00	14,85
	Un-forested dense flooded forest of the Magdalena-Caribe tropical humid zonal biome (zonobioma) Agricultural un-forested dense flooded humid zone of the Magdalena-Caribe tropical humid Zonobioma		
	Palmar of the tropical humid Zonobioma of the Magdalena-Caribe		
Land where the land terminal will be built	Clean pastures of the tropical humid Zonobioma of the Magdalena-Caribe	413,400	41,34
Forest Reserve of the León and Suriquí rivers wetlands			
Mangrove vegetation within the Forest Reserve	Dense high mangrove of the Caribbean Halo-biome	5.400	0,54
	High secondary mangrove vegetation of the Caribbean Halo-biome	4.400	0,44
Total area of forest use		571.700,00	57,17

Source: Aqua & Terra Consultores Asociados S.A.S., 2015

	MODIFICATION OF ENVIRONMENTAL LICENSE FOR THE PROJECT OF CONSTRUCTION AND OPERATION OF A PORT TERMINAL OF SOLID BULK IN THE MUNICIPALITY OF TURBO		
	EXECUTIVE SUMMARY	Page 61 of 63	
	GAT-391-15-CA-AM-PIO-01	Revision:	B

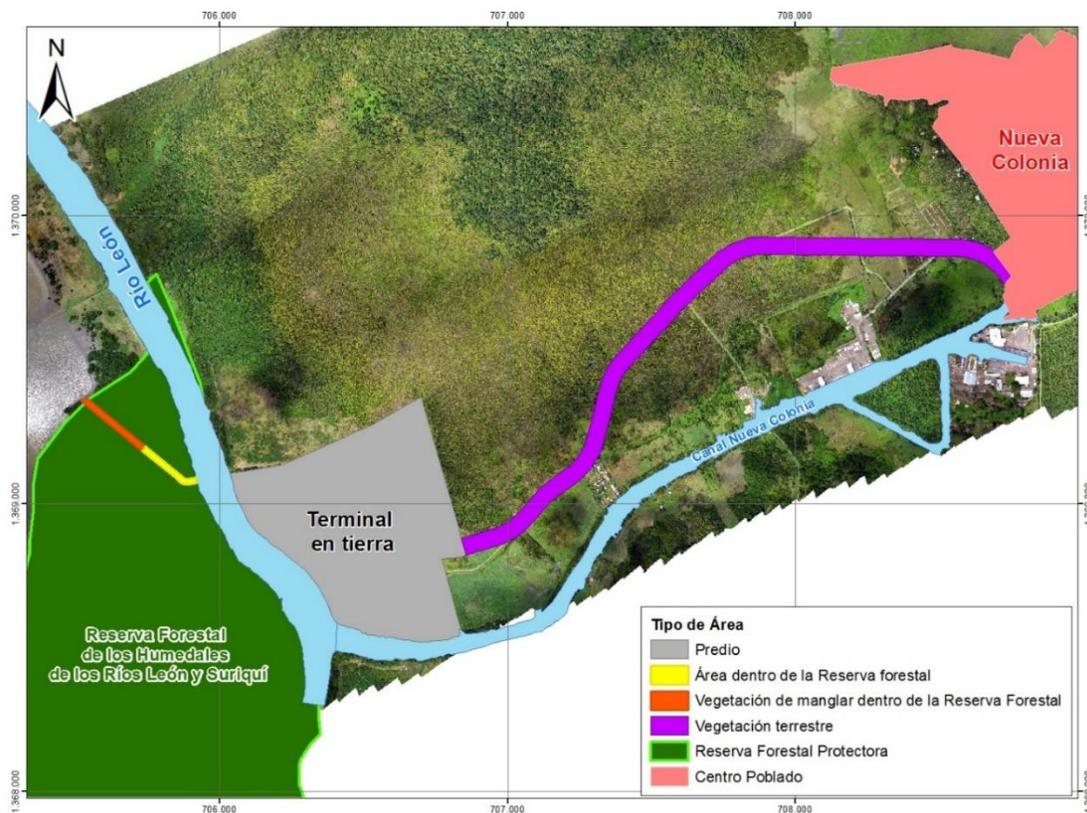


Figure No. 15.1 Area of direct involvement of the project

Source: Aqua & Terra Consultores Asociados S.A.S., 2015

The calculation of the total compensation area was made based on the four individual compensation factors established in the manual¹:

- 1) Representativeness of the ecosystem in the national system of protected areas, this factor varies from 1 to 3.
- 2) Its rarity, this factor varies from 1 to 2.
- 3) Its remanence, this factor varies from 1 to 3.
- 4) Annual transformation rate, this factor varies from 1 to 2.

¹ Ibid.

	MODIFICATION OF ENVIRONMENTAL LICENSE FOR THE PROJECT OF CONSTRUCTION AND OPERATION OF A PORT TERMINAL OF SOLID BULK IN THE MUNICIPALITY OF TURBO		
	EXECUTIVE SUMMARY	Page 62 of 63	
	GAT-391-15-CA-AM-PIO-01	Revision:	B

The sum of these four compensation factors results in the total compensation factor for each of the affected coverage units².

Table No. 15.2 shows the compensation factors for the calculation of the area to be compensated by the natural ecosystem intervened; In total, 255.40 hectares will be compensated.

Table No. 15.1 Compensation for affected natural ecosystem

Code	Ecosystem	Affected area (ha)	Fce	Fcr	Fcb	FCTP	Fc	Ac (ha)
Mda_HC	Dense high mangrove of the Caribbean Halo-biome	0,54					10	5,40
Vsa_HC	High secondary mangrove vegetation of the Caribbean Halo-biome							
Bgr_ZHTM C	Gallery and/or riparian forest of the tropical humid zonal biome of Magdalena-Caribe	5,68	1,25	1,5	2	1	5,75	32,65
Hdina_ZHT MC	Dense, flooded dense forest of the Magdalena-Caribe tropical humid Zonobioma	10,80	2,5	1,3	1	1	5,75	62,11
Palm_ZHT MC	Palmar of the tropical humid Zonobioma of the Magdalena-Caribe	0,76	1,25	1,5	2	1	5,75	4,36
PI_ZHTMC	Clean pastures of the tropical humid Zonobioma of the Magdalena-Caribe	33,53	1	1	1	1,5	4,5	150,89
TOTAL AREA TO COMPENSATE		51,31						255,40

Fce: Compensation factor for Representativeness of ecosystems-priority districts/biogeographic in the National System of Protected Areas - Priority types, Fcr: Compensation factor for ecosystem-biology Rareness/biogeographic districts, Fcb: Compensation factor for ecosystem Remanence -biomes/Biogeographic districts, FCTP: Compensation factor for Annual Transformation Rate of biomass ecosystems/biogeographic districts. Fc: Total compensation factor, Ac: Area to be compensated for Loss of Biodiversity.

Source: Aqua & Terra Consultores Asociados S.A.S., 2015

It is then proposed to make the compensation 255.40 hectares of very humid tropical forest, in areas heavily intervened in the Protective Forest Reserve of the Wetlands of the León and Suriquí Rivers, due to the change of aptitude for land use generated by the construction of the project PUERTO BAHÍA COLOMBIA DE URABÁ.

² Ibid.

 <p>PUERTO BAHÍA COLOMBIA DE URABA S.A. TERMINAL PORTUARIA DE GRANDES CARGAS</p>	<p>MODIFICATION OF ENVIRONMENTAL LICENSE FOR THE PROJECT OF CONSTRUCTION AND OPERATION OF A PORT TERMINAL OF SOLID BULK IN THE MUNICIPALITY OF TURBO</p>	 <p>aqua & terra</p>	
	<p>EXECUTIVE SUMMARY</p>	<p>Page 63 of 63</p>	
	<p>GAT-391-15-CA-AM-PIO-01</p>	<p>Revision:</p>	<p>B</p>

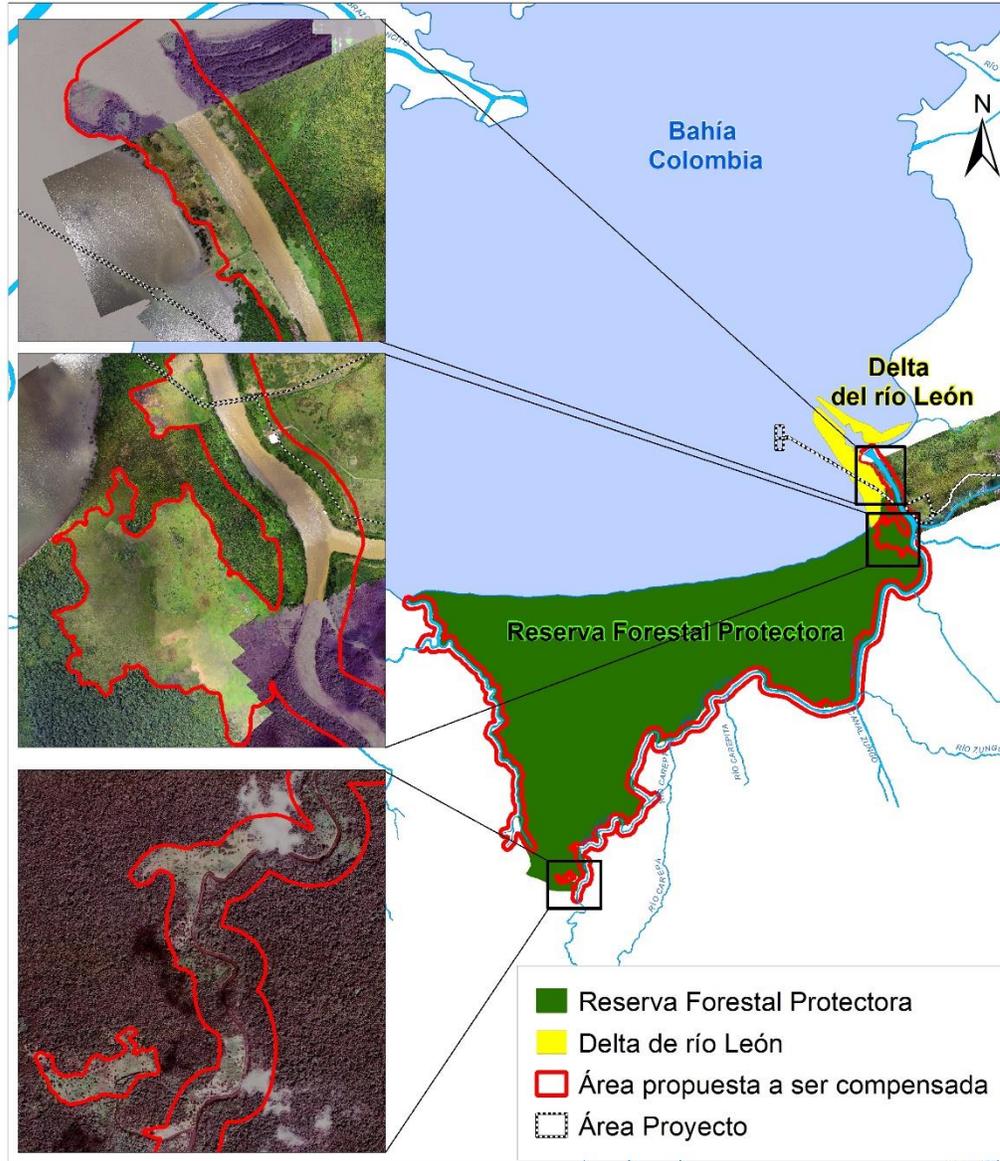


Figure No. 15.2 Area where compensation is proposed
Source: Aqua & Terra Consultores Asociados S.A.S., 2015