

DISASTER RISK MANAGEMENT PLAN FOR THE CORE ZONE OF THE HISTORIC CENTRE OF QUITO, WORLD HERITAGE SITE



INSTITUTO METROPOLITANO
DE PATRIMONIO **IMP**



DISASTER RISK MANAGEMENT PLAN FOR THE CORE ZONE OF THE HISTORIC CENTRE OF QUITO, WORLD HERITAGE SITE

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INTRODUCTION



The problem of disasters and Ecuador's response to them starts in 1960, with the creation of Civil Defense. However, in 2008 and in line with the worldwide development of this issue, the Constitution establishes as a mandate an integral process, based on the disaster risk management cycle, which consists of the following phases: analysis, reduction, response, rehabilitation and recovery.

The international instrument currently in force is the **Sendai Framework for Disaster Risk Reduction 2015-2030**, adopted at the Third United Nations World Conference, held in Sendai, Japan, on March 18, 2015. This document emphasizes on **disaster risk management** and defines **seven global objectives**, as well as a set of **guiding principles**, including the **primary responsibility of States**: to prevent and reduce disaster risk, and the participation of their institutions and society.

In this context, the UNESCO World Heritage Centre and the International Centre for the Study of the Preservation and Restoration of Cultural Property (ICCROM) work towards the strengthening of the management of natural and cultural heritage assets, with the inclusion of disaster risk management, which must achieve an integration with local, national and regional plans and strategies.

Pursuant the first paragraph of Article 2 of the Resolution of the Mayor's Office No. A 0040, from December 28, 2010, issued by the mayor of the Metropolitan District of Quito, the **Metropolitan Institute of Heritage (IMP)** is responsible for the powers and attributions that, within the scope of the executive faculties and in accordance with the legal system, the MDQ must undertake for the **registration, inventory, restoration, conservation, protection, intervention and management of the archaeological, urban and architectural heritage, as well as the management and conservation of intangible heritage and of movable, instrumental, artistic, craft and utilitarian assets.**

The Metropolitan Plan for Development and Territorial Planning (PMDOT), establishes **five axes of sustainable development: economy, environment, society, mobility and territory**, defines guidelines and actions for the protection and preservation of the cultural heritage of the Historic Centre of Quito (CHQ) and constitutes the public policy instrument that guides the action of the IMP.

The PMDOT includes the Metropolitan Management Plan for Disaster Risk Reduction in the city of Quito, prepared by the General Secretariat for Security and Governance, which is linked to the Disaster Risk Management Plan for the Core of the Historic Center of Quito, World Heritage Site, whose summary is presented below.



1.

GENERAL INFORMATION

1.1. General Objective

To reduce the risks that threaten the cultural heritage assets of the Core Zone of the Historic Centre of Quito (NCHQ) in case of natural disasters and those caused by human beings.

1.2. Specific objectives

- ▶ To prepare strategic guidelines in accordance with the UNESCO Managing Disaster Risks for World Heritage Resource Manual.
- ▶ To perform a threat analysis in the Core Zone of the Historic Centre of Quito, considering the probability of occurrence and the level of impact on the heritage.
- ▶ To put together the Disaster Risk Management Plan for the Core of the Historic Center of Quito, World Heritage, and the Metropolitan Management Plan for Disaster Risk Reduction.
- ▶ To define characteristics of the territorial environment to prioritize the cultural heritage, in accordance with the Outstanding Universal Value (OUV) of the property included in the World Heritage List.
- ▶ To state the institutional guidelines on risk management for the protection of heritage.
- ▶ To generate materials for the elaboration of a cultural heritage geodatabase in the Core Zone of the Historic Centre of Quito.

1.3. Legal and institutional framework

	Legal instruments	Articles
Disaster risk management in the municipal/district Decentralized Autonomous Governments (GAD)	Constitution of the Republic of Ecuador	<ul style="list-style-type: none"> • Art. 264 , paragraphs 8 and 13 • Art.340, subparagraphs 1) and 3) • Art.389, subparagraph 2) • Art.390 • Art.397, paragraph 5
	Organic Code on Territorial Organization, Autonomy and Decentralization	<ul style="list-style-type: none"> • Art. 3, paragraph d) • Art.7, subparagraphs 1) and 2) • Art. 54, paragraphs a) and j) • Art. 60, paragraphs d) and i) • Art. 115 , 128, 140, 155
	Organic Law on Territorial Planning, Land Use and Management	<ul style="list-style-type: none"> • Art.8 • Art.11, paragraph 3 • Art.43 • Art.91, paragraph 4 • Art. 113, paragraph c)
	Municipal Regulations	<ul style="list-style-type: none"> • Resolution of the Mayor's Office No. A 0040 • Metropolitan Ordinance No. 260 • Metropolitan Ordinance of Quito No. 0094 • Metropolitan Ordinance No. 260
	Law on Public and State Safety	<ul style="list-style-type: none"> • Art. 11, paragraph d)
	Regulations for the Law on Public and State Safety	<ul style="list-style-type: none"> • Art. 16, 19, 20, 24
	Organic Code on Planning and Public Finances (COPLAFIP)	<ul style="list-style-type: none"> • Art. 64
	Organic Law for the National System of Public Procurement (LOSNCPP)	<ul style="list-style-type: none"> • Art. 6 , paragraph 31) • Art. 57
	Municipal Regulations	<ul style="list-style-type: none"> • Ordinance 265 - Corrective Ordinance-, of September 14, 2008 • Ordinance 0556, of May 8, 2014 • Metropolitan Plan for Development and Territorial Planning (PMDOT) of MDQ, 2015-2025

Cultural Heritage Management	Constitution of the Republic	<ul style="list-style-type: none"> • Art. 268 , paragraph 8)
	Organic Code on Territorial Organization, Autonomy and Decentralization	<ul style="list-style-type: none"> • Supplement of the Official Record No. 303 of October 19, 2010, paragraph u) • Art. 55, paragraph h • Art. 4, paragraph e
	Organic Law on Culture	<ul style="list-style-type: none"> • Articles 92, 94 and 98
	Municipal Regulations	<ul style="list-style-type: none"> • Resolution of the Mayor's Office No. A 0040, of December 28, 2010, Art. 1 and Art. 2, paragraph 1) • Metropolitan Ordinance No. 260, June 10, 2008 • Metropolitan Ordinance of Quito No. 0094, July 1, 2011 • Metropolitan Plan for Development and Territorial Planning (PMDOT) of MDQ, 2015-2025





2. CITY OF QUITO, WORLD HERITAGE SITE

2.1. Criteria

The Convention on the Protection of the World's Cultural and Natural Heritage, approved by the General Conference of UNESCO, in its XVII session held in the city of Paris between October 17 and November 21, 1972, establishes a system through which the international community can actively participate in the conservation and defense of cultural and natural heritage assets that have an **Outstanding Universal Value (OUV)**, defined by UNESCO as:

(...) a cultural and/or natural significance which is so exceptional as to transcend national boundaries and to be of common importance for present and future generations of all humanity. As such, the permanent protection of this heritage is of the highest importance to the international community as a whole. (Art. 49 of the Practical Guidelines for the Application of the World Heritage Convention, 2017).

The Convention has a body called the **World Heritage Committee**, currently made up of 21 countries and is responsible for the implementation of the Convention. Among the main roles developed by the Committee, the definition of use of the World Heritage Fund stands out, through the allocation of financial aid at the request of the States Parties.

Likewise, on the one hand, the Committee fulfills the role of examining the reports on the state of conservation of the properties included in the World Heritage List, requesting the States Parties to implement actions in the event that said properties are not properly managed.

On the other hand, it has the final say on the inclusion of the property both on the World Heritage List and on the List of World Heritage in Danger.

For the inscription of cultural and natural property in the World Heritage List, the Convention establishes 10 criteria that aim to justify its Outstanding Universal Value (OUV).

Likewise, the properties proposed under criteria (i) - (vi) related to cultural properties, must meet the conditions of **authenticity** and comply with the conditions of **integrity**.

In the case of the *City of Quito*, these two conditions are described as follows.

Integrity

- ▶ Most of the attributes upon which the OUV of Quito is based are present and are intact. The CHQ has maintained its original configuration, in fact, when analyzing the blueprints of Quito, made in 1734 by Dionisio Alcedo and Herrera, it can be seen that the original configuration of the streets, the blocks of houses and squares - with some rare exceptions - is the same as today. Despite numerous earthquakes that have affected it throughout history, the city has the least modified historic center of all Latin America due to the action of the municipal authorities of the MDQ and the Ecuadorian government.

Authenticity

- ▶ In general, the urban plan and its integration into the landscape can be considered completely authentic because the original generic form has remained un-changed and the Plaza Mayor has developed organically with very few changes. The preservation of traditional trades, the knowledge of the bearer craftsmen and the use of local materials (stone, lime, mud and wood) maintain the characteristics of the different architectural components and their decorative elements.
- ▶ The recognition and structuring of the different territorial components with significance and patrimonial worth, both in the Core and in the buffer zone, and in the Metropolitan District, are carried out through processes of physical-social conformation, of historical and cultural significance, which gives them the nature of patrimonial areas, considering monumental architecture, minor architecture and public space.

The **criteria** under which the **World Heritage Committee included the *City of Quito*** in the **World Heritage List in 1978**, are:

▶ Criterio (ii):

Criterion (ii): The **influence of the Baroque School of Quito** (Escuela Quiteña) was recognized in the cultural domain, especially in the artistic field in all the cities of the Audiencia, and even in those of the neighboring.

▶ Criterio (iv):

Criterion (iv): Quito forms a harmonious sui generis where the actions of man and nature come together to create a **unique and transcendental work of its kind**.

In summary, the **values of the Historic Center of Quito** are::

- Historical: they bear witness to the great social and historical roles that Quito has played in the national concert.
- Aesthetic-formal: they provide balance in the symbolic composition, a link between the past and the present.
- Usage: they meet specific needs.
- Architectural-urban: considering its state of conservation.

2.2. Inventory



One of the processes that has been strengthened since the Declaration of the City of Quito as a World Heritage Site is the preparation of the inventory of real estate or Heritage Inventory. This process allows to register, valuate and catalog the buildings of the Historic Center in a large database, which becomes an instrument for planning and management.

Its continuous updates have allowed for a reliable instrument in which the architectural heritage of the Metropolitan District of Quito is registered thanks to a rating scale that is included in the files for the IMP heritage inventory. They are grouped according to their degree of protection: absolute protection, partial protection and negative.

The Heritage Inventory was an essential tool for the preparation of the Disaster Risk Management Plan for the Core Zone of the Historic Centre of Quito, World Heritage Site, since it is the planning and management instrument that contains the registration, recognition, physical evaluation and record of interventions of heritage assets and information on urban, environmental, cultural, architectural, constructive, occupation and use characteristics, as well as their state of conservation.

This information is available at the Inventory and Administration System of Heritage Properties (SIABIP).

It should be noted that this first phase of the plan does not include residential properties, since the Core and the entire Historic Center have suffered, for several decades, a shift where residential use has decreased and service provision spaces, whether they be commercial or public, especially for social welfare, have increased.

Below is a table and a mapping of the patrimonial assets located in the Core Zone of the Historic Centre of Quito. The definition of this list arises from the permanent heritage inventory work carried out by the Metropolitan Heritage Institute, the study carried out by the IRD¹ and the criteria with which Quito was declared a World Heritage Site and, very importantly, from the analysis and deliberation carried out by a multidisciplinary team in a participatory process with the community of the sector.

1. D'Ercole, R. y Metzger, P. (2002a). El patrimonio en el Distrito Metropolitano de Quito: valoración de sus principales elementos y análisis espacial. Quito: MDMQ.

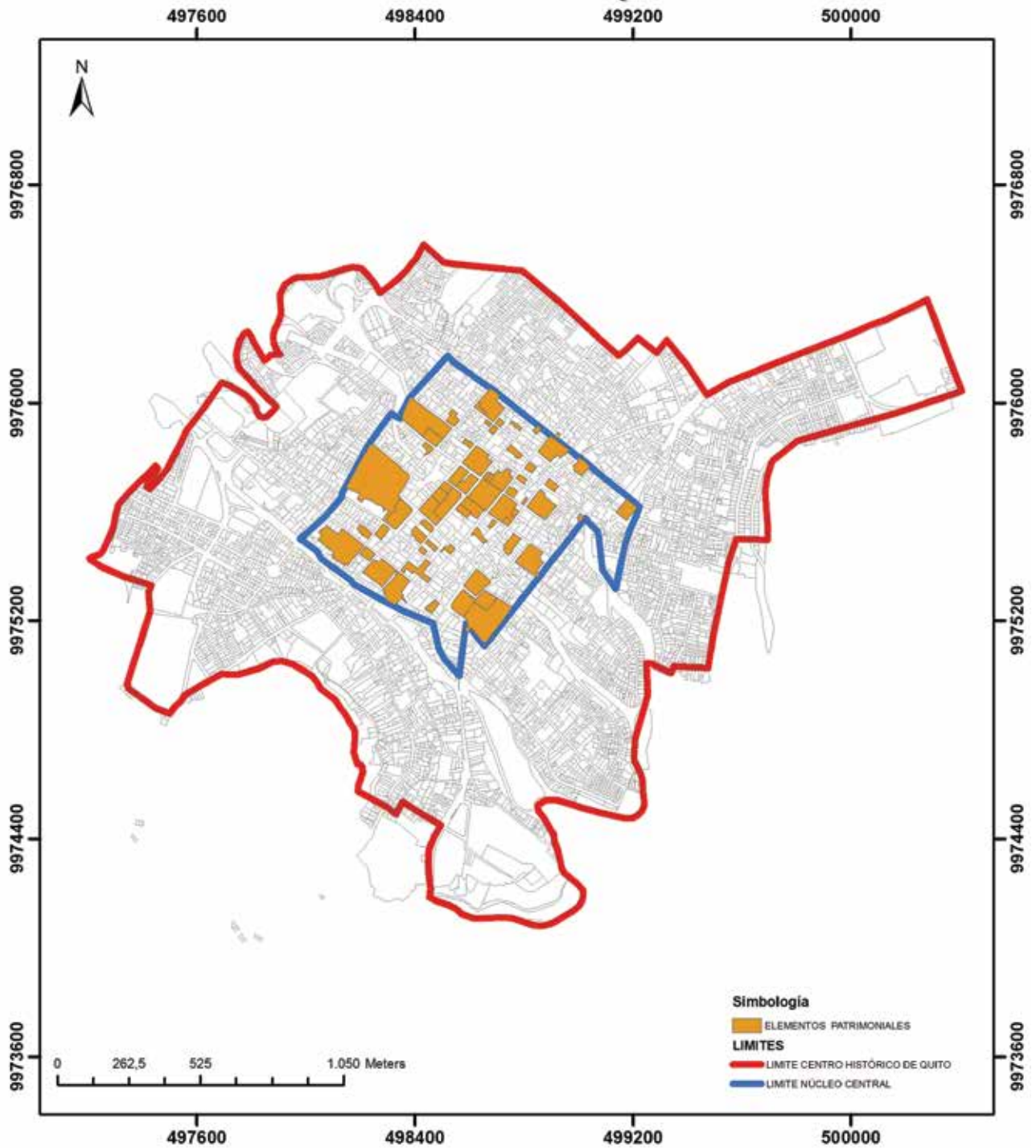
► **Table 2. Heritage public spaces of the Core of the Historic Centre of Quito**

N°	Name	Cadastral Code
1	Iglesia de San Agustín	4000110001
2	Iglesia de La Compañía	4000111002
3	Iglesia de la Catedral	4000111003
4	Iglesia del Sagrario	4000122002
5	Plaza de la Independencia	4000121004
6	Palacio Municipal	4000121003
7	Conjunto de San Francisco	4000121002
8	Plaza de San Francisco	4000109005
9	Museo Casa de Sucre	4000109009
10	Iglesia y Convento de La Merced	3000126001
11	Palacio Arzobispal	3000104001
12	Arco de Santo Domingo	3000104002
13	Iglesia y Monasterio de Santa Clara	3000104004
14	Museo de la Ciudad	3000115020
15	Museo Alberto Mena Caamaño (antiguo cuartel de la Real Audiencia)	3000115015
16	Centro Cultural Metropolitano (antigua Universidad Central)	3000103001
17	Iglesia y Monasterio de Santa Catalina de Siena	3000103012
18	Iglesia y Monasterio de la Concepción	3000102001
19	Palacio Presidencial	3000102001
20	Vicepresidencia (Palacio de Correos)	3000102002
21	Plaza de Santo Domingo	4000111001
22	Teatro Sucre	4000123005
23	Museo Casa del Alabado	4000124014
24	Conjunto de Santo Domingo (conjunto edificado)	4000125008
25	Arco de la Reina	4000120010
26	Plaza de La Merced	4000108006
27	Iglesia y Monasterio del Carmen Bajo	1000127005
28	Colegio Sagrados Corazones	2000118001
29	Iglesia y Monasterio del Carmen Alto	3000116031
30	Plazoleta de San Agustín	3000119001
31	Colegio San Fernando	3000114001
32	Ex Colegio Gonzága	3000114009
33	Antiguo Círculo Militar	3000114007
34	Plaza del Teatro	3000113003
35	Ex Colegio Simón Bolívar	3000113001
36	Capilla del ex Colegio Simón Bolívar	3000101001
37	Museo María Augusta Urrutia	4000113002

N°	Name	Cadastral Code
38	Museo Numismático antiguo edificio del Banco Central	4000114045
39	Museo Nacional de Arte Colonial	4000116002
40	Plaza de Santa Clara	4000116001
41	Plazoleta Benalcázar	4000117004
42	Hotel Plaza Grande (antiguo Hotel Majestic)	4000118002
43	Coliseo Julio César Hidalgo	4000118002
44	Casa de los Alcaldes	4000119007
45	Edificio Pérez Pallares	4000119003
46	Administración zonal Manuela Saenz - Municipio de Quito	4000107011
47	Casa de Benalcázar	1000130006
48	Secretaría de Educación, Recreación y Deporte - Municipio de Quito	1000119001
49	Teatro Bolívar	1000119036
50	Edificio de CNT (Centro)	2000119024
51	Plazoleta Marín	3000107001
52	Plazoleta antiguo Teatro Granada	3010105001
53	Hotel Casa Gangotena	3010105001
54	Embajada de Palestina	3010105001
55	Gestión Documental - Municipio de Quito	3000125001
56	Plaza Chica	3000109003
57	Hotel Patio Andaluz	3000121003
58	Museo Casa del Higo	3000110001
59	Edificio de Catastros	s/n
60	Secretaría de Territorio, Hábitat y Vivienda (Antiguo Hogar Javier)	3000111002
61	Ex archivo Histórico del Banco Central	3000208001
62	ICAM (antigua Casa del Toro)	3000206001
63	Centro comercial La Manzana	3000205015
64	Casa Ponce	3000112005
65	Centro comercial Pasaje Baca	2000123001

Source: Based on the records of the Department of Heritage Inventory, 2018

► Map 1. Map of heritage elements in the NCHQ



Source: Department of Heritage Inventory and Metropolitan Institute of Heritage, August, 2018.



3.

RISK IDENTIFICATION IN THE CORE ZONE OF THE HISTORIC CENTRE OF QUITO

3.1. Key concepts

The Disaster Risk Management Plan for the Core Zone of the Historic Centre of Quito, World Heritage Site, identifies the existing risk in relation to prioritized real estate and public patrimonial spaces.

The process of analysis for the identification of risk has as conceptual framework the terms of disaster risk management that are included in the Consultation Guide prepared by the Secretariat of Risk Management (SGR), in 2018. These concepts are shared below:

► Disaster risk:

The potential loss of life, injury, or destroyed or damaged assets which could occur to a society or a community in a specific period of time, determined as a function of hazard, vulnerability and responsiveness. (United Nations Office for Disaster Risk Reduction -UNISDR-, 2016).

► Hazard:

A process, phenomenon or human activity that may cause loss of life, injury or other health impacts, property damage, social and economic disruption or environmental degradation. (UNISDR, 2016).

► Vulnerability:

The conditions determined by physical, social, economic and environmental factors or processes which increase the susceptibility of an individual, a community, assets or systems to the impacts of hazards. (UNISDR, 2016).

► Exposure:

The situation of people, infrastructure, housing, production capacities and other tangible human assets located in hazard-prone areas. (UNISDR, 2016).

► Susceptibility:

The degree of internal fragility of a subject, object or system when facing a hazard and receive a possible impact due to the occurrence of a hazardous event. (CIIFEN)

► Resilience:

The ability of a system, community or society exposed to hazards to resist, absorb, accommodate, adapt to, transform and recover from the effects of a hazard in a timely and efficient manner, including through the preservation and restoration of its essential basic structures and functions through risk management. (UNISDR 2016).

Additionally, in the process of risk identification, the information available in studies conducted for the entire area of the MDQ on natural or anthropic hazards was analyzed and systematized, as well as within the framework of the multi-hazard approach defined by the governing body in risk management for our country.

With these materials, **the main natural hazards** for the Core Zone of the Historic Centre of Quito and its buffer zone were identified as **earthquakes, mass movements, floods and volcanic eruptions** and, as hazards **of anthropogenic origin, structural fires and conflicts in concentrations and massive demonstrations, political or social** are analyzed.



Secondly, following the Disaster Risk Management Manual for World Heritage (UNESCO), **the identification and analysis of risk** was elaborated under the following diagram:

- a. **Description of the hazard**, based on the susceptibility studies published in the Atlas of Natural Threats, in 2016.
- b. **Analysis of risk factors**, which includes secondary hazards and underlying risk factors related to the environment. These can be physical, social, economic or institutional, as well as be related to people's attitudes.
- c. **Description of the disaster hypothesis**, is an account of the foreseeable situation after the adverse event.
- d. **Evaluation of risk level**, based on the hazard description, the risk factors and the frequency of occurrence of the adverse event, a level of low, medium and high is defined.

Finally, there are two more variables that were taken into account to rigorously establish the situation of each heritage property in terms of physical vulnerability:

Degree of exposure, which refers to “people, property, systems, or other elements present in hazard zones that are thereby subject to potential losses” (UNISDR, 2009, p.17).

Conservation State, which corresponds to a comprehensive view of the building through the assessment of the direct relationship between the constructive or spatial elements (which form the property), its pathology level, the constructive material and the interventions it had. This valuation produces four levels which are registered in the inventory form.

3.2. Identified risks

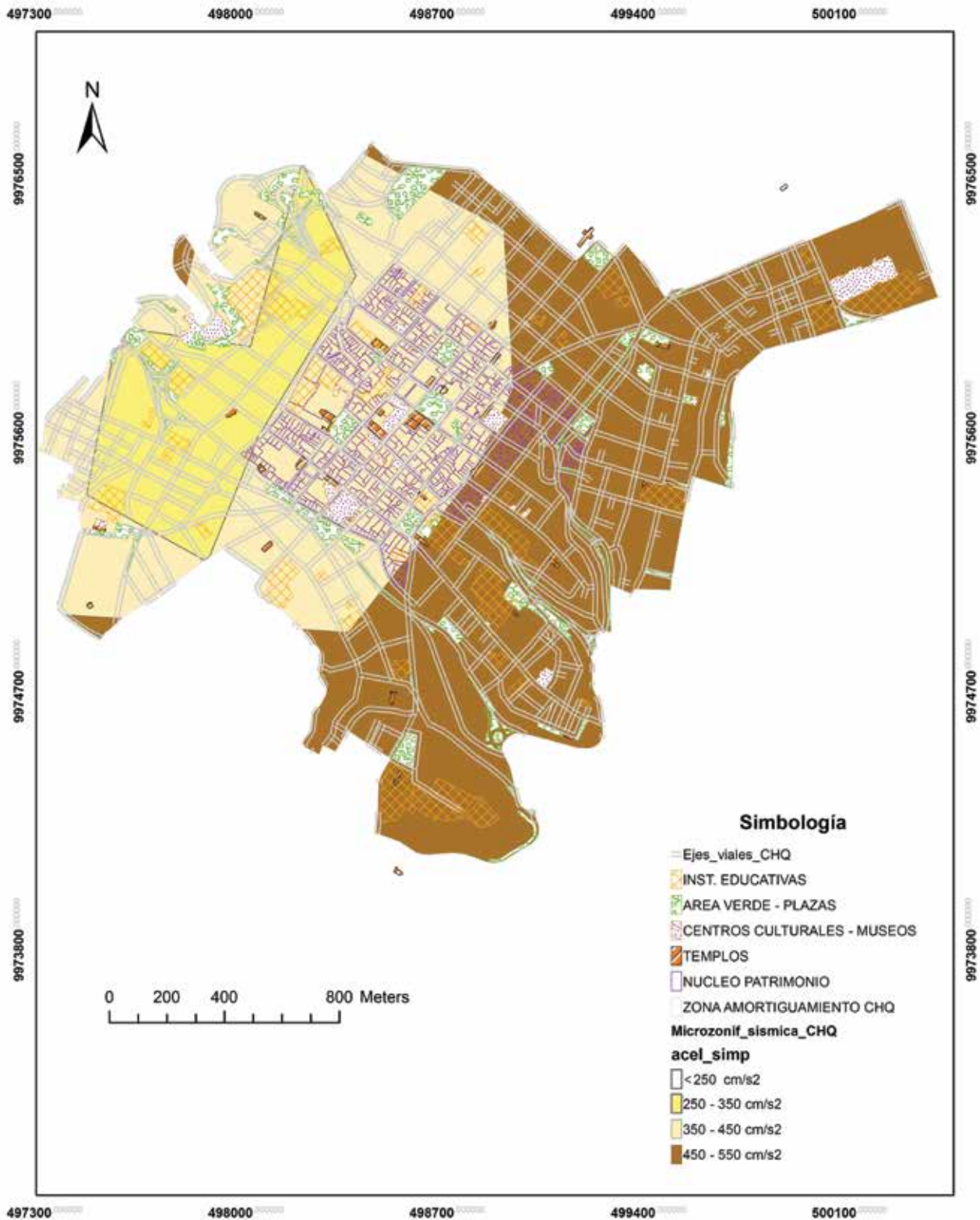
The result of this rigorous process of analysis of anthropogenic and natural risks of property and patrimonial public spaces of the Core Zone of the Historic Centre of Quito, is summarized in the following tables, which prioritize property and patrimonial public spaces with greater susceptibility to each of the risks analyzed.

3.2.1. Earthquakes

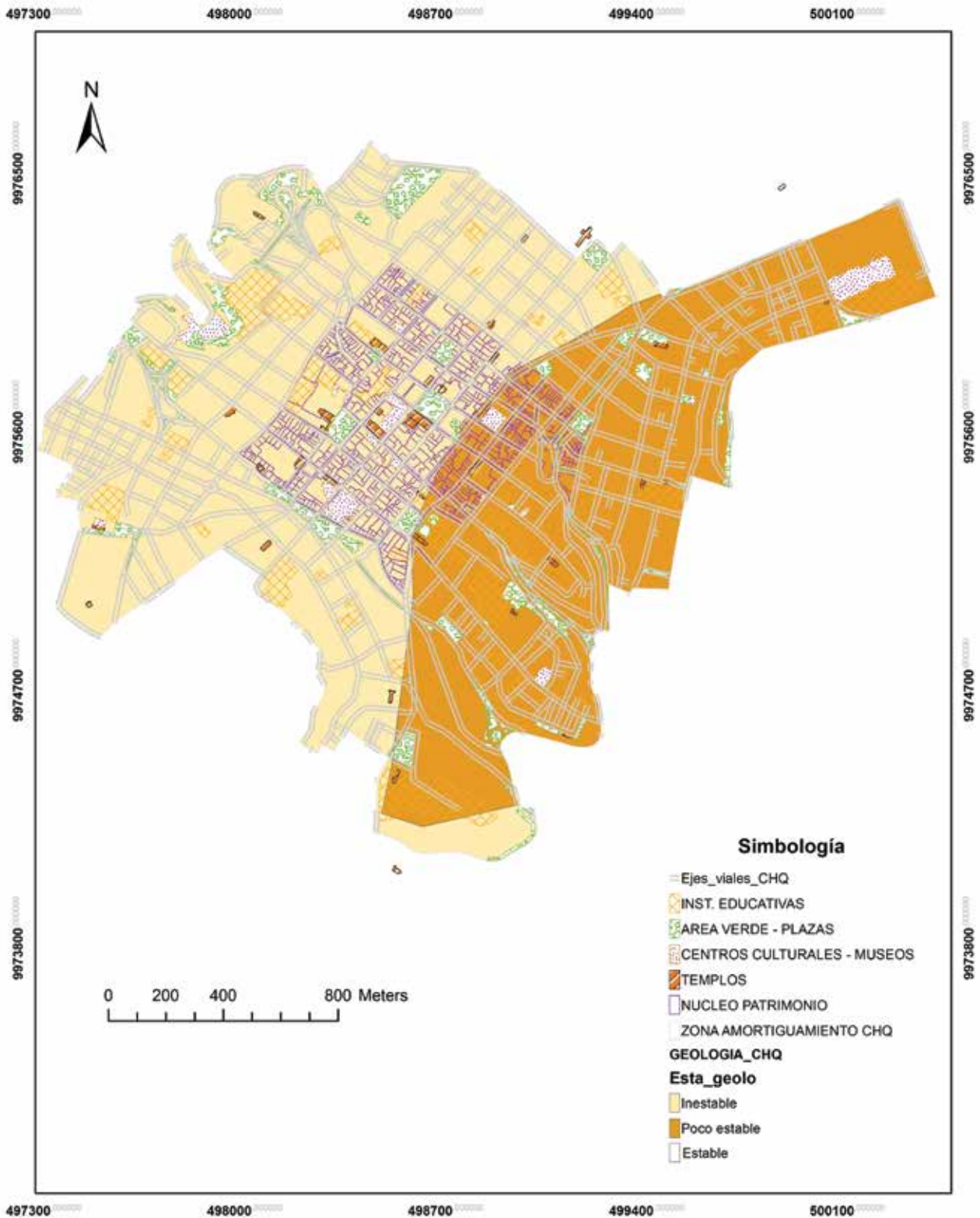
Rapid and sudden movement of faults and fractures inside the Earth's crust, during which a large amount of accumulated energy is released for a long time (Municipality of the Metropolitan District of Quito, 2016, page 71).

The **risk level established for the seismic hazard is between medium and high**, because although the impact of an earth-quake greater than 6 degrees in Mw Scale or Magnitude of the Moment would be high, events of such intensity do not occur frequently. Therefore, work must be done on prevention, mitigation and preparation measures, considering the cultural heritage and the strengthening of institutional and community capacities.

► Map 2: Seismic microzoning in the CHQ



► Map 3: Mass movement in case of earthquakes - CHQ



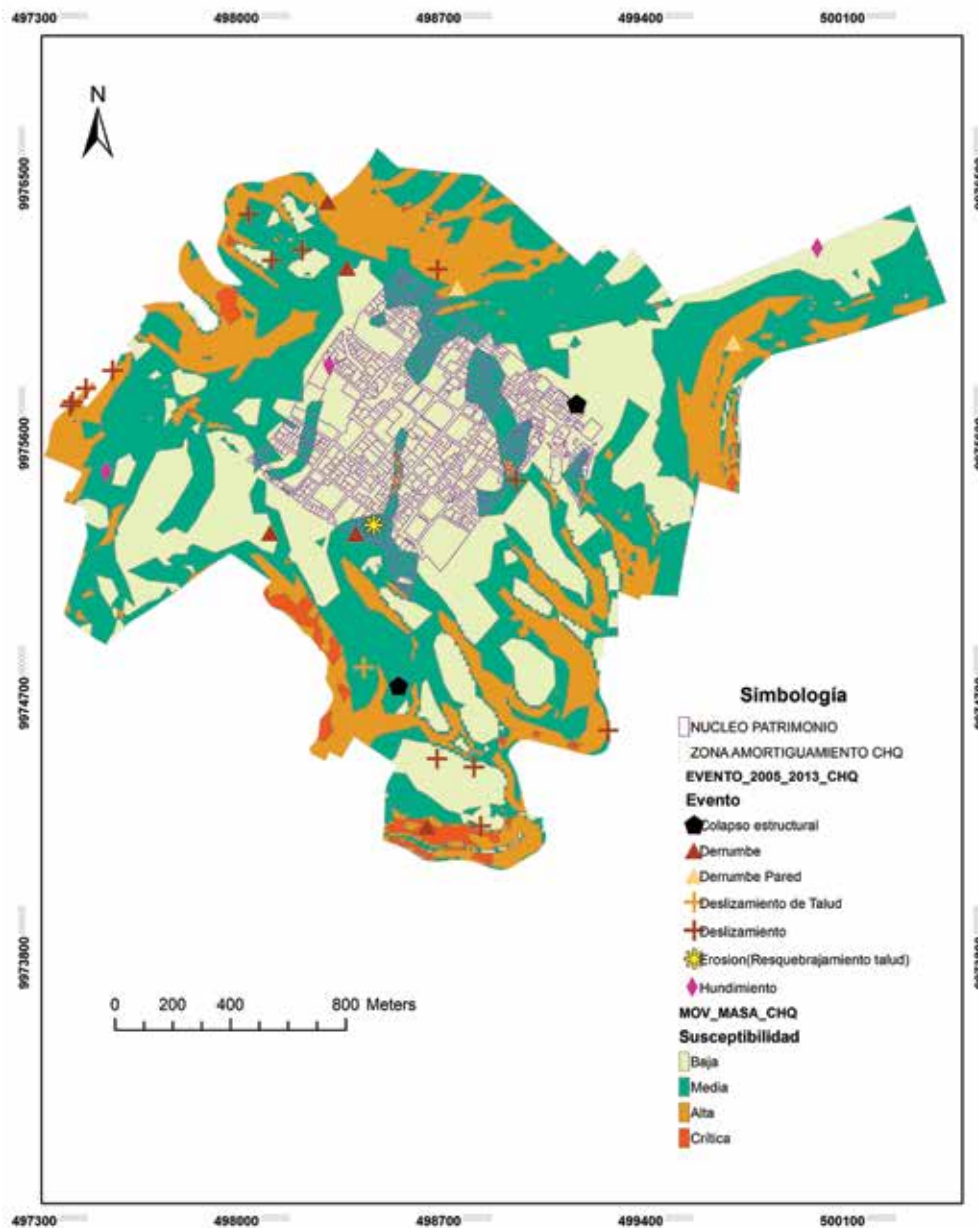
3.2.2. Mass movements

They occur due to a great diversity of geological, hydrometeorological, chemical and mechanical processes in the Earth's crust and in the interface between it, the hydrosphere and the atmosphere (MAGAP, SENPLADES, IEE, 2015).

Landslides are classified according to the shape of the sliding plane: rotational and translational. **Falls** are a type of mass movement in which one or several blocks of rock or soil are detached from a slope, without appreciable short displacement occurring along this surface.

The **level of risk defined for mass movements** is medium, from the biophysical perspective. It can become **high due to constructive interventions** carried out without the corresponding technical study that defines the bearing load of the floors.

► Map 3: Mass movement susceptibility - CH Q2015

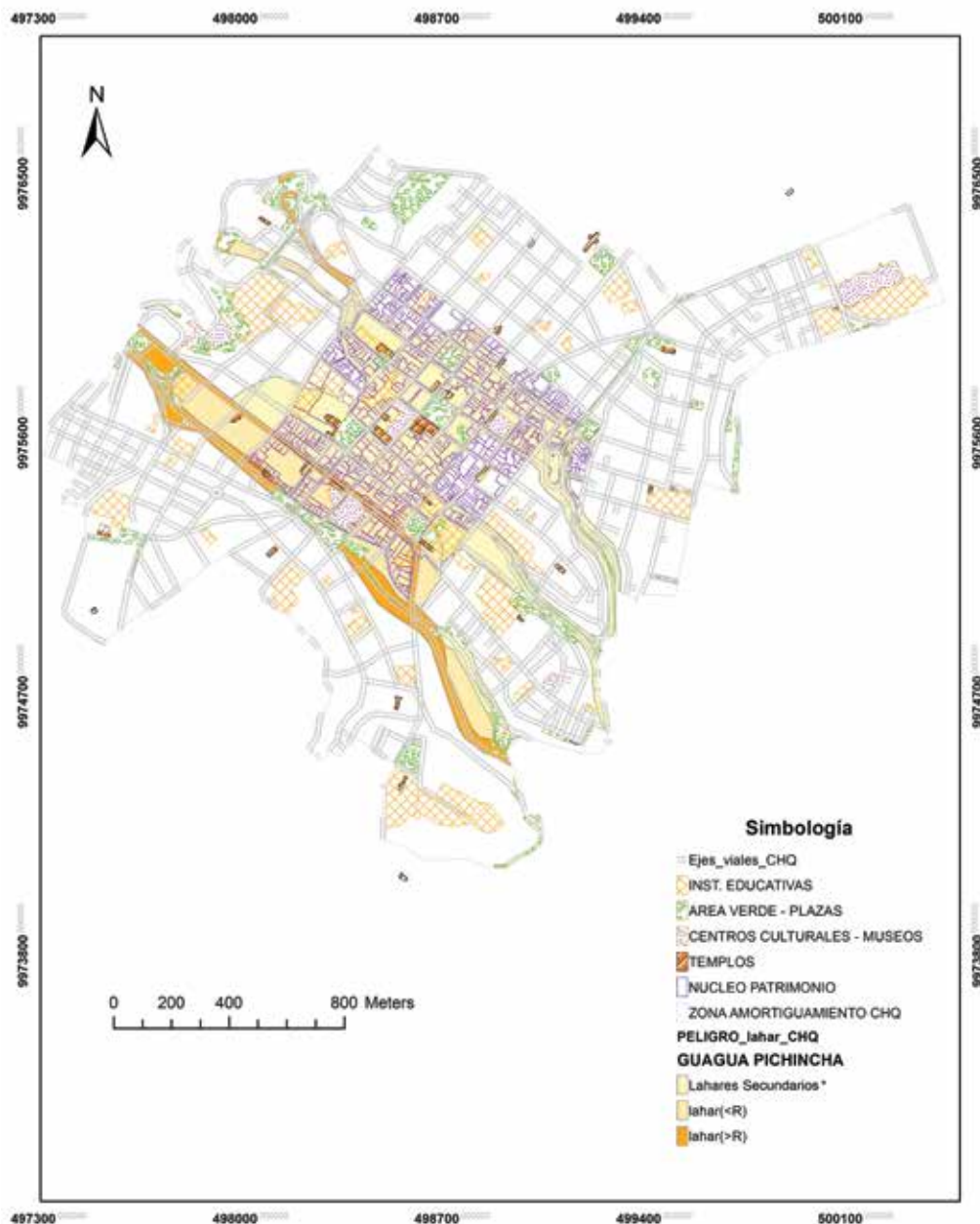


3.2.3. Volcanic hazard

Volcanoes are geological structures originated by a fissure in the Earth's surface through which smoke, steam, gases, ash, rocks, pyroclastic material, lahars and lava are expelled to the outside, at high temperatures (D'Ercole and Metzger, 2004). The active volcano that is located near the Core Zone of the Historic Centre of Quito is the Guagua Pichincha.

Regarding ash fall, a medium risk level can be established, since, despite the fact that the Historic City Center is located in a dangerous area, the occurrence of this phenomenon is low. Regarding **lahars**, a **low risk level** is considered because the Guagua Pichincha crater is located towards the western side of the volcano, while the Quito Historic Center is on the opposite side.

► Map 4: Lahars - CHQ

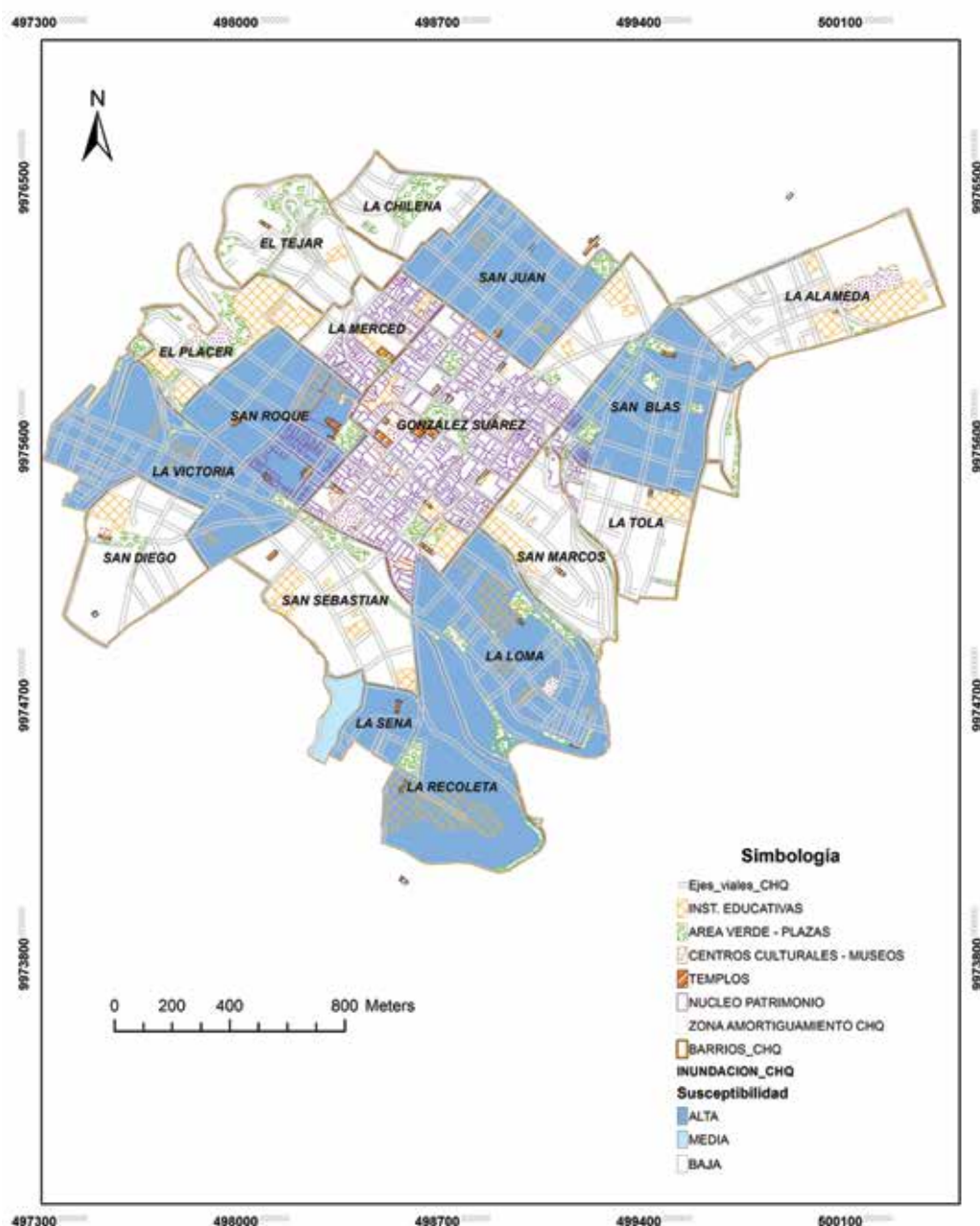


3.2.4. Floods

The main cause of flood risk in Quito is the urbanization and waterproofing of soils, as well as the change in the use of green areas; these factors increase the quantity and speed of the water to be drained (D'Ercole and Metzger, 2004).

Although this phenomenon has a high recurrence, several works have been carried out to improve the runoff of rainwater in the Core Zone of the Historic Centre of Quito, so the risk level is considered to be medium. However, it must be borne in mind that the risk level increases in several neighborhoods areas.

► Map 5: Flooding susceptibility - CHQ

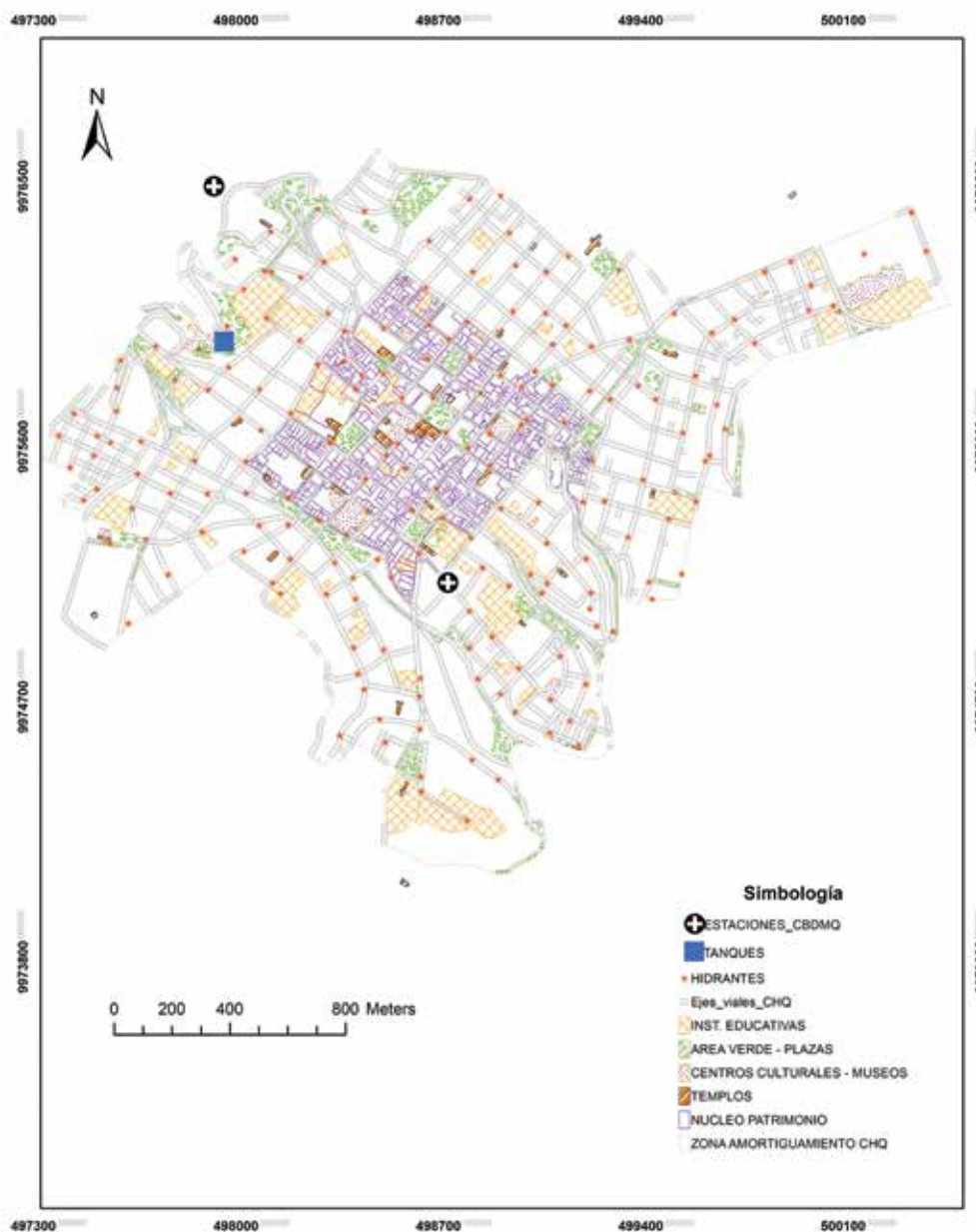


3.2.5. Structural fires

It is the type of fire that is produced from the interior of houses, buildings, commercial or industrial premises, warehouses, among others. Most structural fires are **caused by people**, whether due to negligence, carelessness in the use of fire **or lack of maintenance** of the electric system and liquefied petroleum gas (LPG).

Its **potential trigger is high due to the number of people or activities that can become agents**, as well as the great destructive impact it can cause. Considering that the occurrence of a fire is not frequent and that the infrastructure to counteract this is in good condition within the Core Zone of the Historic Centre of Quito, **a medium and high risk level can be defined.**

► Map 6: Fire protection - CHQ

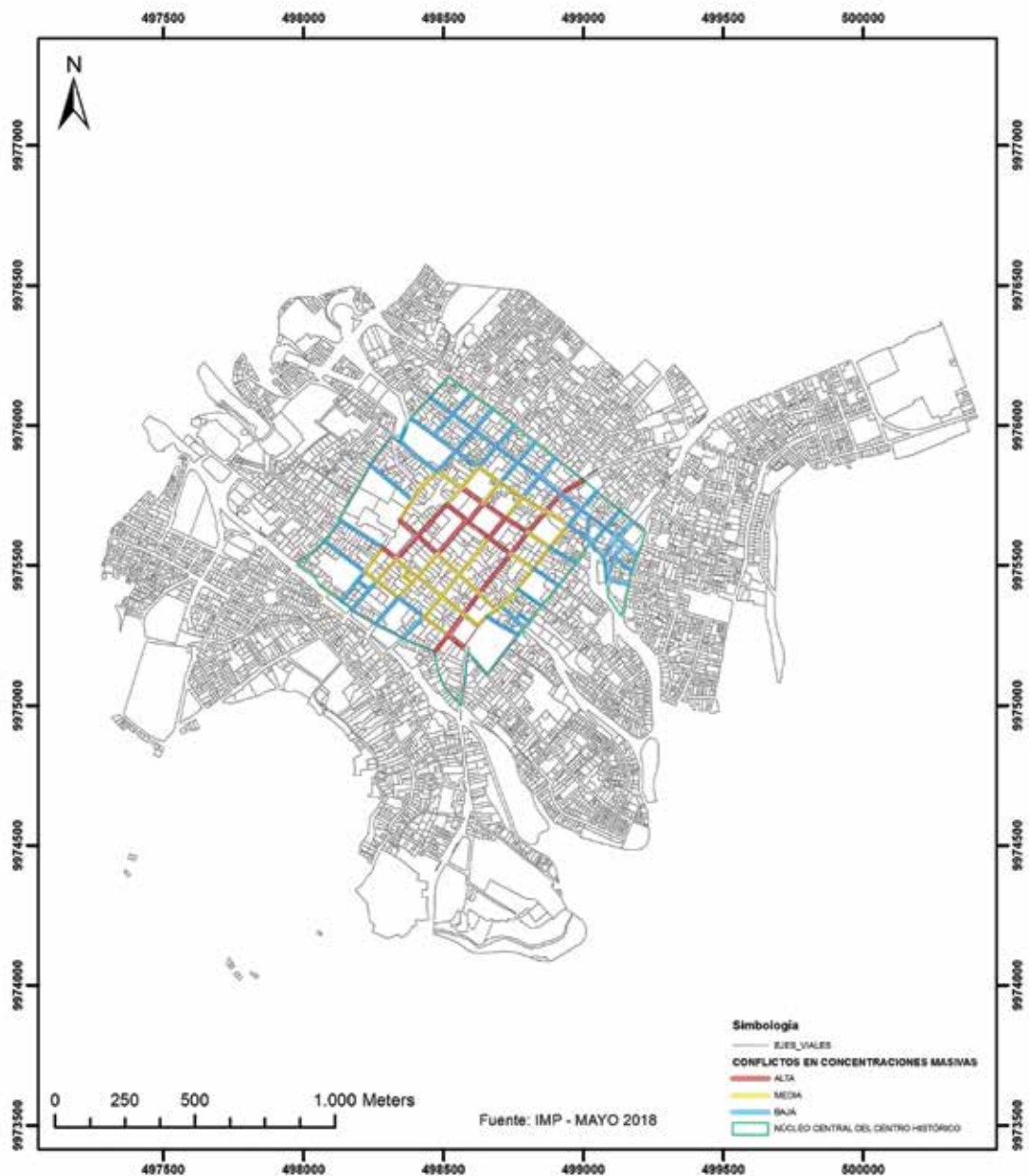


3.2.6. Concentrations and mass demonstrations

The Historic Center is a sector where several diverse demonstrations occur: cultural, political, community, among others. The problem of this type of events is that they can generate confrontations that affect the property either by use of material to throw to the public force, burning of tires, etc., as well as firing projectiles, bullets or tear gas bombs, use of pressure hoses, etc., by the public force.

The risk of damage due to massive concentration events **is medium**, because although its frequency is high, in recent years there have been no major issues against property, beyond garbage, painted walls and possible vandalism without causing serious damage.

► Map 7: Conflict at concentrations and political demonstrations - CHQ





4. STRATEGIC LINES OF ACTION

Disaster risk management involves the definition of concrete actions in four strategic fields in the face of adverse events. These fields are different and, at the same time, complementary:

ADVERSE EVENTS

- ▶ Prevention
- ▶ Mitigation
- ▶ Preparation and organization of response
- ▶ Response

4.1. revention

A group of measures and actions that are implemented in advance to avoid hazards or to stop new hazards from occurring. Preventive actions help to avoid the impact of adverse events.

a

► **Strategic plan:**

Analysis and strengthening of the legal framework.

► **Objective:**

Strengthen the legal and regulatory framework for disaster risk management in relation to the protection and conservation of cultural heritage.

► **Goals:**

- To draft bills and regulations that contribute to the enforcement of guidelines and actions of this plan.
- To comply with the laws and regulations currently in force on the protection and conservation of heritage.

► **Actions:**

Interinstitutional coordination at a municipal and central government level for drafting bills and regulations regarding the protection and conservation of cultural heritage.

b

► **Strategic plan:**

Maintenance of heritage property

► **Objective:**

Carry out regular maintenance on the heritage property listed.

► **Goals:**

- Coordination with property owners and administrators for a periodic control through technical cards.
- Basic services supply coordination and administration for their technical maintenance.

► **Actions:**

- To create technical cards for maintenance (regulations proposal).
- To implement a communication network with property owners and administrators.
- To implement a communication network with basic service administrators (electricity, drinking water, sewage, road network).
- To share the technical card (regulations).
- To carry out maintenance in a specific number of properties in terms of their importance and location, taking in consideration prioritization in relation to their OUV contributions.
- Maintenance coordination of basic service networks.

c

► **Strategic plan:**

Awareness campaigns for the protection of cultural heritage property.

► **Objective:**

Encourage specific population groups to protect, preserve and give proper maintenance to heritage property through the impact of people, groups and institutions' behavior by identifying, modifying, discouraging or introducing new behaviors.

► **Goals:**

- To launch an annual awareness campaign for each behavior that affects the preservation of heritage property in the neighborhoods and areas with higher susceptibility to the threats described in this plan or any other that may arise.

► **Actions:**

- To launch a campaign by identifying the practices that need to change, priority public, dissemination spaces, designation of spokespersons and media, selection of dates, definition of verification and evidence sources, establish launch, carry out the campaign and hold a public ceremony for the end of the campaign.

d

► **Strategic plan:**

Preventive control.

► **Objective:**

To have a technical tool that allows us to learn and apply the necessary actions to reduce the hazards for each heritage property and to establish coordination and performance levels in case of emergencies..

► **Goals:**

- To introduce regulations for the application of the PGRI format from 2019.

► **Actions:**

- To define the PGRI format and present it for approval from the IMP director.
- To present the format for review from the DMGR.
- To draft a regulations proposal for approval from the corresponding authorities.

4.2. Adverse events mitigation

A group of measures adopted to reduce the impact on property, which, just as the heritage property of the Core Zone of the Historic Centre of Quito, is vulnerable to natural disasters, urbanization and concentration of business activity.

a

▶ **Strategic plan:**

Structural mitigation

▶ **Objective:**

To reduce the impact of disasters in heritage property in relation to the defined risk levels by building physical reinforcements, with priority on the protection of heritage property through OUV.

▶ **Goals:**

To implement structural mitigation measures.

▶ **Actions:**

- Design anti-seismic structural reinforcements for the main domes in the NCHQ.
- Reinforcement of buildings with higher probabilities of threats.
- Reinforcement of retaining walls in slopes.

b

▶ **Strategic plan:**

Operational mitigation

▶ **Objective:**

To reduce the impact of disasters in heritage property in relation to the defined risk levels through the improvement of administrative and organizational levels, with priority on their protection through OUV.

▶ **Goals:**

To implement operational mitigation measures.

▶ **Actions:**

- Assessment of the way heritage property is administered.
- Creation of optimization measures for the administration of heritage property and technological innovation in terms of heritage conservation.

4.3. Preparation and Organization of response

Measures that guarantee coordination with local communities. The main objectives are: to raise awareness on the importance of heritage property and to allow communities to manage their conservation efforts even after disasters hit. These measures are extremely important because community perception on hazards and mitigation measures related to heritage property is not necessarily the same as technical experts' opinions.

a

► **Strategic plan:**

Response organization

► **Objective:**

To strengthen interinstitutional coordination for adverse event control and the conservation of NCHQ cultural heritage.

► **Goals:**

Share the response to adverse events in the NCHQ plan with the involved institutions.

► **Actions:**

- To make an inventory of human and material resources necessary for each emergency level.
- To define media and communication channels for interinstitutional operation.
- Coordination with the DMGR for supporting the CBDMQ and service supply companies.
- The response plan for adverse events in the NCHQ will be shared with support from institutions.
- To define access and evacuation routes.

b

► **Strategic plan:**

Training of response teams.

► **Objective:**

To get the response teams to act under cultural heritage preservation principles in case of adverse events in NCHQ.

► **Goals:**

Personnel from all support institutions have been trained in the control and preservation of the cultural heritage of the NCHQ in the face of adverse events.

► **Actions:**

- Creation of the Preservation of Cultural Heritage course for operational coordinators of support institutions.
- Training in techniques for the control and preservation of cultural heritage for at least 10 members of each of the response teams of the support institutions.
- Organization of crews of support personnel for the preservation of cultural heritage in case of adverse events.

C

► Strategic plan:

Special plans

► Objective:

To implement specific property risk management plans.

► Goals:

Two priority heritage properties.

► Actions:

- To establish a list of priority heritage property.
- To elaborate a special risk management plan. s.



4.4. Response to adverse events in the NCHQ

The proposed mechanisms were developed according to the current situation, and since the planning of the response is a completely dynamic process, a periodic review and update is necessary based on the situation, information and structures at the time. The plan will be applied once the population has been evacuated and protected according to the procedures of the General Risk Management Plan of the Municipality of the DMQ.

▶ Moments

- a Damage assessment.
- b Protection of heritage property in the first 72 hours.
- c Rehabilitation or repair.
- d Restoration and reconstruction.

▶ Objective:

To protect the cultural heritage of the NCHQ after an adverse event.

▶ Goals:

To guarantee that the protection, conservation, rehabilitation or reconstruction of heritage properties be carried out without problems after a disaster hits.

▶ Actions:

- To prepare a template for initial damage assessment according to the heritage property type, so as to collect information under a common format.
- To share the templates with the response entities and implement its application.
- To create a database of properties and maintain a prioritized list of artifacts.
- To identify areas for custody of heritage goods and artifacts.
- To prepare a database of risk estimation for each heritage property in accordance with the OUV.

Coordination Plan	Interinstitutional response process	Response protocols
Command post.	Institutional resources dispatch.	Damage assessment.
Emergency Operations Committee of the DMQ.	Follow up and monitoring.	Protection of heritage property in the first 72 hours.
	Information management.	Rehabilitation or repair.
	Definition of urgent and transitory measures.	Restoration or reconstruction.
	National support request.	

Collaboration with authorities and relevant actors during the reconstruction process is important, as well as the promotion of a recovery and reconstruction approach that takes into consideration multiple factors and priorities, such as the need to preserve culture and heritage, the improvement of security and sustainability, and the recognition of the potential of culture as a catalyst for social and economic reparation.

The following protocol is defined for this moment:

Zone Administration and DMGR

- Provide technical support for the intervention in infrastructure rehabilitation or repair activities.
- Provide logistic support for the different activities that will be developed for rehabilitation or repair.

Metropolitan Institute of Heritage

- Be the first to support the different institutions to rehabilitate or repair in the shortest possible time.
- Prioritize heritage property for the intervention of human resources, logistics and interinstitutional materials.
- Coordinate with owners or administrators the repair of affected heritage properties.
- Verify that the rehabilitation or repair actions were sufficient so that the patrimonial property can be used normally.

Service provider companies

- Provide technical support through human, logistical and material resources for the rehabilitation or repair of heritage property.
- Carry out rehabilitation or repair works based on their competence.

Metropolitan Transportation Agency

- Regulate traffic to improve the execution of rehabilitation or repair works.

Metropolitan and National Police

- Designate personnel and logistical resources to provide 24-hour security to the patrimonial properties, to prevent looting or additional damages.
- Prevent unauthorized persons from entering the affected area.

Emergency Operations Center for the Metropolitan District of Quito

- Prepare monitoring reports on the progress of the rehabilitation and repair works of the properties.
- Coordinate support from institutions at provincial and national levels, as needed.

It should be considered that these stages may take several days, even months, depending on the type of adverse event, so it is important to keep the staff of the AMT, Metropolitan and National Police active and rotating shifts for the protection of the heritage property. Likewise, the staff designated for these works must comply with the work schedules established by the Municipality of the DMQ, in coordination with the IMP.



5. MECHANISMS FOR INSTITUTIONAL ALIGNMENTS IN PROTECTION OF CULTURAL HERITAGE: ARTICULATION AND ALIGNMENTS

It is necessary to build mechanisms that allow for collaboration between governmental and non-governmental actors, to promote the resilience of cultural heritage. The National Risk and Emergency Management Service, the Ministry of Culture and Heritage, the National Institute of Cultural Heritage, the Municipality of the Metropolitan District of Quito, private entrepreneurs and communities must work together to preserve the cultural heritage.

Its conservation must include the principles of Disaster Risk Management, since its contribution is vital, not only to coordinate the immediate efforts after the disaster, but also for the permanent management of resources and the reduction of risks.

5.1. Interaction

The obligatory linkage and complementarity that must be kept between the institutions and the planning instruments, to guarantee coherence in the decisions adopted. In this sense, **three types of interaction are recognized:**

- a. Substantive: the content of the mechanisms and planning instruments and finance should guide public institutions in complying with the guarantees, the rights recognized in the Constitution and in international human rights instruments, within the framework of their specific responsibilities.

- b. Vertical: is when the different levels of government adhere to the hierarchy of the authorities and planning instruments.
- c. Horizontal: is when the public entities of a same level and government adhere to the processes and methodological guidelines.

5.2. Guidelines

They are **referential core ideas and general guidelines** to help institutions creatively fulfill their daily management of risk reduction and prevention duties, with focus on the preservation of the cultural heritage. They involve basic and common guidelines for all institutions, in the following areas:

- Institutional strengthening, organizational structure and tool development.
- Implementation of basic equipment and tools for management in all phases, as well as the generation and application of instruments and methodologies for measuring impact for the adaptation of the corresponding actions, in the response phase.
- Building a culture of safety within institutions, in which public servants identify themselves as responsible for the protection of cultural heritage, beyond the identity of each place.
- Implementation of changes in operational practices: disaster risk management with a cultural heritage protection approach must be intrinsic to the planning processes of all public entities, at all levels of government, and not an isolated practice. Taking into consideration the scope of their competences, public entities must reduce the risk of their own activity and avoid the creation of new risks.
- Strengthening of training: awareness and training.
- Follow-up: measurement of progress and integration of control measures.
- Focus: learning experiences, comprehensive protection, and protection of vulnerable groups.
- Risk management based on multi-hazard.
- Development, advertising and dissemination of studies and research related to the generation of knowledge on the protection of cultural heritage.

5.3. Entities on the plan monitoring committee list

The Plan Monitoring Committee shall be formed as follows, based on the scope of their responsibilities:

► Table 4. Entities on the plan monitoring committee

Level	Department	Number of delegates
MUNICIPALITY OF THE MDQ	CITY HALL OF THE METROPOLITAN DISTRIC OF QUITO -IMP	3
	GENERAL SECRETARIAT FOR SECURITY AND GOVERNANCE – MDMQ	
	Metropolitan Department on Citizen Security Management, Metropolitan Department on Risk Management, Emergency Operations Center Quito	1
	Metropolitan Police	1
	Fire Department of Quito	1
	GENERAL SECRETARIAT ON TERRITORIAL COORDINATION AND PARTICIPATION (body that coordinates with departments and Works with the community and social actors)	1
	Manuela Sáenz Central Zone Administration	1
	Central Zone Administration, City Hall	1
	SECRETARIAT ON TERRITORY, HABITAT AND HOUSING	
NATIONAL GOVERNMENT	Historic Areas Unit	1
	NATIONAL RISK AND EMERGENCY MANAGEMENT SERVICE	1
	MINISTRY OF CULTURE AND HERITAGE –UNDERSECRETARIAT OF HERITAGE -INPC	1
TOTAL		12

Source: prepared by the author





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