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Tracing the Historical Roots of Urban Transformation: The Case of Portoviejo, Ecuador

Kelvin CHOEZ-GARCÉS[1], Mirian GUILLÉN-VIVAS[2], Ignacio LOOR[3]

Abstract

This paper examines the historical trajectory of Portoviejo, Ecuador, to address how urban planning often overlooks the significance of historical processes, leading to fragmentation and neglect of culturally important spaces. While urban transformation literature has explored the socio-economic, environmental, and infrastructural drivers of change, a gap remains in understanding the specific historical contexts that shape cities in developing countries. This study aims to bridge this gap by exploring key moments in Portoviejo's development, including its colonial foundation, natural disasters, and modernization efforts, and how they have shaped its urban form. Using a mixed-methods qualitative approach, the research analyses 63 historical documents and local archives, combined with Geographic Information System (GIS) mapping to trace urban growth and spatial reorganization. The findings reveal that Portoviejo's development has been shaped by colonial policies, infrastructural changes such as the introduction of the railway, and natural disasters that led to urban fragmentation and informal settlements. The study highlights that understanding the historical trajectory of cities is essential for developing urban planning strategies that are resilient and contextually grounded. For practitioners, this research underscores the importance of integrating historical insights into planning processes to ensure development aligns with the socio-cultural identity and long-term resilience of cities.

Keywords: *Urban Transformation, Historical Urban Development, Urban Planning, Latin American Cities, Portoviejo.*

Introduction

Urban planning frequently overlooks the historical trajectory of cities, resulting in strategies that fail to account for the complex ways in which past events shape urban form and functioning. In cities with long histories, it is essential to understand how historical processes—such as colonization, natural disasters, and profound political shifts—have influenced urban growth to inform future development. Yet, contemporary urban planning in many developing cities often prioritizes modern growth objectives over historical continuity, leading to urban fragmentation and the neglect of culturally and historically important spaces. The city's history, therefore, is not just an academic concern but a practical necessity for planners aiming to create resilient, contextually grounded urban environments. Problematizing the relationship between history and urban planning is essential for addressing the limitations and opportunities in current development strategies.

The literature on urban transformation has long emphasized the impact of socio-economic forces, infrastructure development, and environmental factors on the morphology of cities. de Terán (2009) and Rodríguez González and Lestegás (2018) have shown how historical events, including colonization, economic booms, and natural disasters, leave enduring imprints on urban landscapes. These studies stress that urban planning should not be disconnected from the historical processes that have shaped a city's growth. Similarly, Petter et al. (2020) and Woo and Hui (2011) highlight that urban reconfigurations, particularly following disasters, or policy interventions, are deeply influenced by a city's unique historical context. These insights provide a vital backdrop for understanding the transformation of Portoviejo and similar cities in Latin America, where colonial legacies, infrastructure projects, and natural disasters play key roles in shaping urban space.

[1] Posgrado, Universidad San Gregorio de Portoviejo, Orcid: https://orcid.org/0009-0008-7860-3254, Email: kchoezgarces@gmail.com.
[2] Carrera de Arquitectura, Universidad San Gregorio de Portoviejo, Orcid: https://orcid.org/0000-0002-7049-331X, Email: mjguillen@sangregorio.edu.ec.
[3] Facultad de Ciencias Humanísticas y Sociales, Universidad Técnica de Manabí, Orcid: https://orcid.org/0000-0003-4806-1032, Email: ignacio.loor@utm.edu.ec.

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This study examines the historical trajectory of Portoviejo, Ecuador, and its impact on the city's current urban form. By analyzing key historical moments, this paper seeks to provide a nuanced understanding of how these events have shaped the city's spatial structure. The case of Portoviejo is relevant because it serves as a characteristic example of a secondary city in the Latin American tropics, one that evolved from a Spanish colonial outpost pushed inland to protect against coastal threats (Mansoor, 2021). Portoviejo's development as an administrative satellite of colonial power, followed by its growth through waves of migration, disasters, and modernization efforts, offers a rich context for exploring the role of history in urban transformation.

A mixed-methods qualitative approach was adopted for this study, incorporating document analysis and mapping techniques to trace the city's evolution over time. The research involved analyzing historical documents, local chronicles, and official municipal archives, followed using Geographic Information System (GIS) software to create thematic maps of urban growth. This approach allows for a comprehensive view of how historical factors have intersected with spatial changes, revealing key patterns in Portoviejo's urban development.

The structure of this paper is as follows: the next section provides a literature review on urban transformation and the role of history in urban planning. Following that, the materials and methods section outlines the research methodology used in this study. The results are presented in chronological order, detailing the key historical moments that have shaped Portoviejo's urban structure. Finally, the discussion addresses how the findings contribute to the broader discourse on the importance of integrating historical insights into urban planning.

Literature Review

Urban transformation is a complex process influenced by a combination of socio-economic, environmental, technological, political, and natural factors, such as earthquakes or hurricanes. These forces interact in various ways to shape the physical and social fabric of cities, often leading to substantial shifts in population, infrastructure, and land use. However, the way a city transforms is not uniform across different contexts. Social and physical particularities influence how each city responds to policies, investments, and natural disasters. Therefore, understanding the unique history of each city is essential for effective urban planning. Generalizing from the experience of one city can be misleading, as urban transformations occur within specific social and historical contexts.

The study of urban transformation requires a critical approach to understanding how history informs both past and future urban forms. As de Terán (2009) suggests, urban history is not merely a retrospective account, but a tool for shaping future development. By examining the historical trajectory of cities, we can see how past events continue to influence contemporary urban morphology, providing critical insights for modern planning decisions.

Economic forces, particularly through real estate markets and investment patterns, have long been central to urban transformation. A wide range of studies have claimed that capital influx into real estate markets drives displacement. Rodríguez González and Lestegás (2018) illustrate how the real estate boom following the 2008 financial crisis led to increased property values in Lisbon's historic center, which displaced long-term residents. However, the specific ways in which this displacement occurs and reflects in the city's urban structure depend heavily on local socio-economic conditions. In Lisbon, tourism and external investment were key factors, but in other cities, similar policies might yield different results. Rezaei and Gholami Gowhareh (2021) similarly show how private investment reshaped historic neighborhoods in Kashan, Iran, where cultural factors played a key role in how the city responded to tourism development. These cases highlight that, while capital influx may drive displacement, the form this takes is deeply influenced by the unique context of each city.

Public policies are another major driver of city morphology, but their effects depend highly on local social and historical contexts. For example, Kowalczyk-Aniol (2023) explains how tourism-oriented urban regeneration policies in Kraków, Poland, led to both spatial changes and social displacement. However,

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these policies were rooted in the post-socialist context of Central and Eastern Europe, where decades of stagnation had created distinctive urban conditions. Similarly, Woo and Hui (2011) underscore the uniqueness of policy outcomes by showing how redevelopment policies in Hong Kong's Sham Shui Po district led to the destruction of historic urban fabrics. They argue that recognising historical continuity in urban structures can guide future development and help preserve elements of the past that contribute to a city's identity.

Environmental factors, particularly climate change, are becoming increasingly central to reshaping cities. Swart et al. (2021) argue that cities need transformative approaches to integrate climate resilience into long-term planning, linked to reducing urban infrastructure's vulnerability to heat and flooding. However, the way cities handle climate risks varies based on their historical relationship with the environment. Similarly, natural disasters such as earthquakes are another key driver of urban transformation. For instance, Port-au-Prince underwent major spatial reconfigurations after devastating earthquakes, but the reconstruction process was shaped by the city's unique socio-economic conditions, governance structures, and historical development (Petter et al., 2020). While natural disasters often force cities to reorganize, the way this reorganization unfolds depends on the city's distinct physical and social characteristics.

Transportation infrastructure also plays a vital role in shaping city morphology, as it influences growth patterns. Pratama et al. (2022) show how highway expansion and improved access to highways in the Jakarta Metropolitan Area (JMA) led to urban sprawl and spatial reorganization. Similarly, placing railway stations within city spatial plans can substantially shape urban growth and form. Solikhah (2019) highlights how the Ambarawa-Kedungjati railway line, in Indonesia, particularly the placement of Ambarawa station, played a pivotal role in the city's development. This railway station contributed to a range of spatial expressions, including compact urban forms around the city's core and more linear, sprawling development along transportation corridors. This highlights the profound influence of transportation infrastructure in both expanding and reorganizing urban spaces.

This discussion underscores that, while various factors—economic, environmental, political, and social—drive urban transformation, the local historical and social context always mediates the outcomes. Generalizing from one city's experience can obscure the complexity of local conditions that shape how cities respond to policies, investments, and natural disasters. To ensure that future development strategies are sustainable, resilient, and responsive to local needs, urban planners must consider the unique historical and social contexts of each city.

Materials and Methods

This study adopted a mixed-methods approach, encompassing document analysis and mapping techniques. The research was conducted in three phases. Phase 1 comprised a detailed bibliographic review to describe the key factors influencing Portoviejo City's historical development. Qualitative, descriptive, and interpretative methods were used to analyze information gathered from various sources, including official municipal archives, historical documents, local chronicles, maps, journal articles, and books by local historians. A total of 63 documents were examined, sourced from both the physical library of Portoviejo's municipality and the personal collections of local historians. The search for these materials followed a physical, snowballing approach, whereby each document led to the discovery of further relevant texts and maps.

The second phase involved using Geographic Information System (GIS) software, allowing for the creation of thematic maps to visually represent and exemplify the city's urban dynamics over time. These maps provided a visual depiction of urban growth and spatial changes throughout different historical periods.

In the final phase, the historical implications on the city's configuration were examined, from its initial founding to political decisions made during various periods, culminating in the earthquake of 16 April 2016. The study analyzed each of these factors and their interconnections, identifying how they contributed to shaping the current urban structure of Portoviejo.

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For data analysis, the collected information underwent content analysis and thematic mapping. Qualitative data, such as archival documents and historical texts, were coded and categorized according to key themes related to the causes of transformation, including public policies, governmental decisions, natural disasters, and migration. The analysis also focused on the actual forms of transformation, such as changes in urban morphology, densification, and spatial reorganization. GIS software was used to analyze spatial data and identify patterns and correlations between historical events and shifts in urban form in Portoviejo.

Findings were organized in a chronological order, illustrating the progression of urban reconfiguration from the city's origins to its present-day state. This approach highlighted how various forces have shaped Portoviejo's urban fabric over time, demonstrating the cumulative nature of urbanization. By synthesizing these findings, the study established connections between historical events and the city's evolving structure, providing a comprehensive understanding of Portoviejo's development.

Results

This section presents the historical transformation of Portoviejo in chronological order, tracing key events from its foundation during the colonial era through to the present day. By organizing the findings in this manner, the evolution of the city's urban structure, influenced by political, economic, and environmental factors, becomes evident.

Foundation and Colonial Era (1535–1820)

For the Spanish crown, "a suitable location was one that was neither too low nor too high—the former to avoid humidity, the latter to not hinder transport. Additionally, it needed to have sufficient water, forests, pasture, and other resources" (Hidrovo, 1993, p. 14). The search for such territories arose from the need to meet the objectives of the Spanish colonizing process, which involved the takeover of both land and local cultures. In 1535, under the command of Francisco Pacheco, Spanish conquistadors arrived in what is now known as La Boca, Manabí. After assessing the site, they determined it did not meet the requirements set by the crown, prompting them to move further inland to Correagua de Charapotó, where they continued their journey on foot to find a more appropriate location (Molina, 1986).

Later that year, a settlement was established at El Higuerón de Rocafuerte. By 1538, Gonzalo Olmos, acting under special authority from Spain, relocated the settlement further inland to El Higuerón de Picoazá, motivated by the search for gold and emeralds. Although this shift meant the city lost its status as a port, Olmos saw it as necessary to solidify territorial control within the colonial framework (Molina, 2005).

Portoviejo, as it came to be known, initially developed in an unstructured manner, characteristic of many early colonial settlements. Emperor Charles V granted the settlement city status, renaming it San Gregorio and officially designating it as the Province of Puerto Viejo (Molina, 2005). To further entrench Spanish cultural and religious influence, Fray Dionisio de Castro, a representative of the Mercedarian order, founded the Monastery of La Merced in the city (Monroy, 1935).

By 1565, Portoviejo, still located in Higuerón de Picoazá, comprised 17 houses, a church, the Monastery of La Merced, 14 Spanish families, and 16 indigenous leaders (Molina, 2009). The city's urban structure developed spontaneously, with limited planning, reflecting the broader colonising process and its often ad-hoc settlement strategies (Hardoy & Cazzato, 1975). Thirty years later, Hernando de Santillán, president of the Real Audiencia of Quito—a Spanish colonial administrative court that governed much of northern South America—ordered that half of the Spanish families be relocated to an indigenous settlement (Regalado Espinoza, 2022). This move, about one league (6 km) inland near the present-day Colón Street (Vélez Guerrero & Paredes Ávila, 2021), fragmented the city, disrupting its previous coherence and creating a new urban configuration. See Figure 1.

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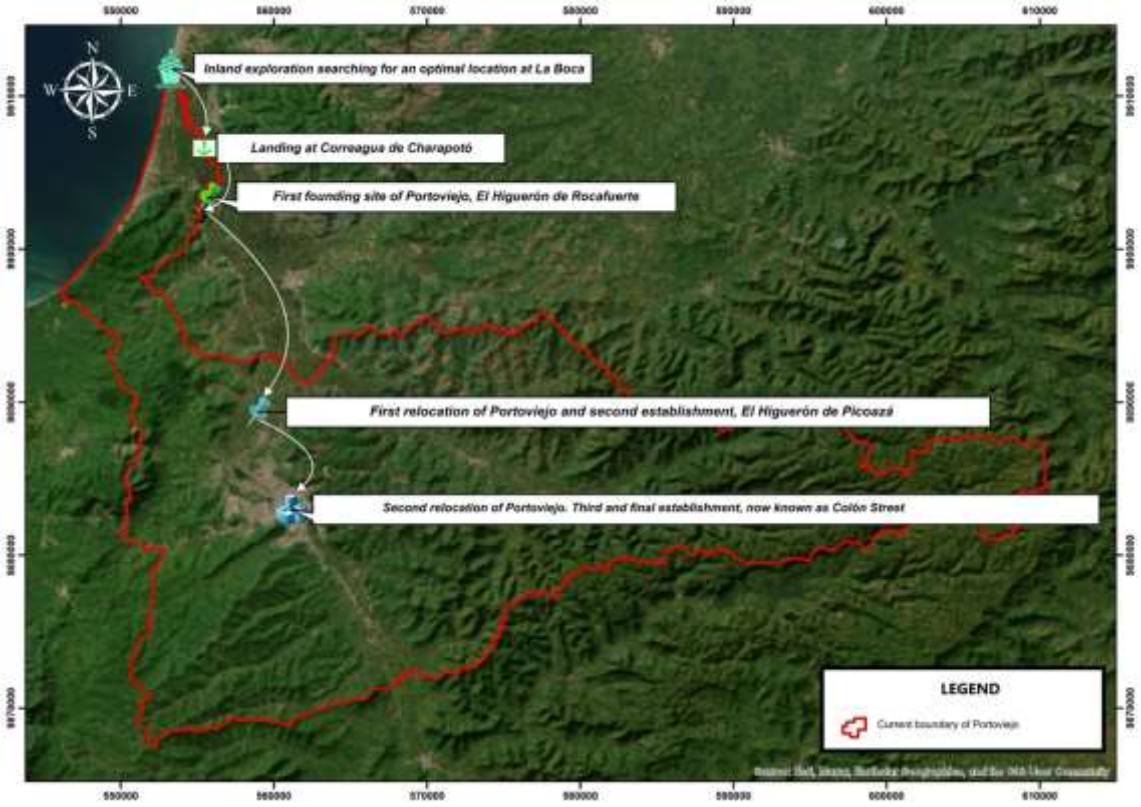

Figure 1. Relocations of Portoviejo During the Colonial Era.

The relocations carried out during this short period substantially impacted Portoviejo's urban, economic, and political development. After its first relocation, Portoviejo lost its status as a port, leading to a period of neglect and economic hardship due to its isolation from maritime routes, which reduced its importance to the authorities of the Real Audiencia of Quito. At that time, the city was known as Puerto Viejo, designated as a "partido" (a provincial division), encompassing towns like Manta and Charapotó. The importance of a city at that time was not only based on its natural resources but also on its population. However, Portoviejo lacked a sufficient number of inhabitants to be considered for any substantial structural development (Molina, 2010).

By 1718, the Real Audiencia of Quito, along with the Kingdom of Quito, of which Portoviejo was a part, was dissolved, and the city was annexed to the Viceroyalty of Santa Fe—an administrative division of the Spanish dominion located in what is now Colombia and parts of Venezuela, Ecuador, and Panama. Due to its old foundation, Puerto Viejo was granted the distinction of "Cuerpo Capitular," which gave it the authority to elect ordinary mayors and other political and economic officials annually (Barcia, 2018). Once firmly established in the territory, the city developed a rudimentary administrative structure that included two mayors, a general attorney, two councilors, a notary, and a treasurer. Gradually, the city began to take shape, following the model of a typical Spanish colonial city. Nevertheless, since 1605, the city already had a basic grid layout with four main streets converging on a central plaza, around which 32 houses were located (Molina, 2002).

Spain implemented a unified set of norms across its colonies, meaning the same regulations applied uniformly throughout its territories. This common urban morphology was based on a grid layout, with the central plaza (plaza mayor) as the focal point, surrounded by civil and ecclesiastical authorities, as well as significant commercial activities (Durán, 2006).

Thus, the city gradually emerged during the colonial period. By 1808, it had a population of 2,054 inhabitants, with officials appointed by the crown to oversee internal affairs, such as sanitation, street

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maintenance, revenue administration, forest conservation, land distribution, and boundary demarcation (Molina, 2009). The imposition of colonial norms was evident, from the appointment of rulers by the crown to the grid layout and the style of the main façades of the houses.

Portoviejo in the Early Republican Period (1820–1900)

Portoviejo, which was considered a province at that time, achieved its independence on 18 October 1820 (Polit, 1983). On 16 December 1821, Portoviejo was annexed to the Republic of Colombia, becoming the first Ecuadorian province to be incorporated. On 1 January 1822, the first republican council was established in the territory that is now Manabí (Loor, 1969). On 25 June 1824, under the Colombian territorial division law, the Department of Guayaquil was created, encompassing the provinces of Manabí and Guayaquil, leading to the cantonization of Portoviejo (Barcia, 2018). On 31 May 1830, Ecuador separated from Gran Colombia, after which the people of Portoviejo, in a general meeting, drafted a document of gratitude to the liberator Simón Bolívar (Hanna Cabrera, 2023).

This was a key phase for Portoviejo, though a challenging one, as it witnessed various administrative changes that affected its economic, social, political, and urban development. Public and administrative actions were inconsistent, marked by significant transitions in governance, from colonial rule to independence, and later the separation from Gran Colombia.

During this period, public administration had limited influence on the territories. Cities "grew from formal foundations, and their physical expansion was spontaneous and not aligned with predetermined design norms" (Hardoy & Cazzato, 1975, p. 1). Yet, public action is essential, as it is "the way in which a society defines and addresses its collective problems, developing solutions, content, and processes to tackle them" (Thoenig, 1997, p. 28). At this stage, Portoviejo lacked administrative equilibrium to foster meaningful progress, either directly or indirectly. With the 1830 Constitution marking Ecuador's establishment as a republic, there was partial advancement in the development of infrastructure. As the provincial capital, Portoviejo hosted state institutions and was considered a bureaucratic-political-educational hub, attracting skilled populations to engage in these activities. Migration became a key factor in the city's demographic and urban growth.

Portoviejo housed important governmental institutions, attracting people from across the province to handle administrative processes. In the field of education, institutions were established to promote the intellectual development of the youth. Additionally, commerce, particularly agriculture and mercantile activities, played a vital role in Portoviejo's economy, benefiting from its proximity to the river. Rural areas actively participated by selling their products in the urban core, attracting both local populations and migrants from Europe and Asia, with the latter becoming predominant.

From the early to late 19th century, there was a wave of Chinese migration to Latin America, with the first recorded instance in 1845. These migrants worked on large agricultural plantations (Reyes & Trujillo, 2022). Ecuador, and particularly Portoviejo, welcomed these migrants, who developed various enterprises, especially in commerce. They led trade activities in the city, particularly along what is now Colón Street, greatly boosting the central urban core (Hidrovo & Hidrovo, 1998).

By 1884, Portoviejo had several important institutions, including the governorship, council, two schools, a college, print shops, a prison, cemetery, two churches, the court of justice, pharmacies, an improvised hospital, and public lighting around the Plaza de Armas. In the same year, the Supreme Government issued a decree assigning names to the city's streets and developed a map of public and private buildings and the city's street layout. Prominent names were given to streets in the city centre, including Colón, Bolívar, Sucre, Córdoba, Santander, and Rocafuerte (Molina, 2009).

During this period, the town suffered six fires, the most devastating of which occurred on 10 March 1888, leaving most houses destroyed and affecting government buildings. These were later restored or relocated as part of the urban expansion in the northern area. Monseñor Schumacher played a key role in establishing

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the fire brigade and contributed to the construction of the San José Bridge and an art school, improving the city's infrastructure (Barcia, 2018).

Portoviejo has a high vulnerability to seismic activity. Throughout its history, the city has experienced earthquakes of varying magnitudes, the most significant of which during this period occurred in 1896. This disaster caused the collapse of several buildings and substantial human losses, prompting a large portion of the city's central population to move to the outskirts (Cevallos Ponce, 1977). As a result, informal settlements emerged in the urban periphery, where concerns about the collapse of structures were less prominent.

All these factors had a considerable impact on the city's morphological transformation. Population growth, infrastructure development, and the repercussions of fires and earthquakes contributed to the creation of new roads, expanding the urban layout, and strengthening the city.

Portoviejo from 1900 to the Present

By this period, Portoviejo had developed a consolidated urban layout, enriched by a wider range of facilities and infrastructure. These included the city's library, the construction of Plaza Alfaro (the city's third square), the local branch of the Red Cross, Portoviejo Central Hospital, the Civil Hospital, Plaza de Abastos (market square), a waste collection system, and fire prevention wells. Within this context, the oldest known urban map of Portoviejo was created on 13 July 1911 by Army Captain Augusto González Illescas, drawn to a scale of 1:2000. The map shows the city's urban distribution, the projection of new streets, and the planned urban expansion of that time. As shown in Figure 2, Colón Street is depicted with a slight curvature due to its proximity to the river, while Rocafuerte Street begins at Venezuela Street (now known as Francisco P. Moreira) and stretches until it intersects with Pedro Gual, 10 de Agosto, Córdoba, Sucre, and Bolívar streets.

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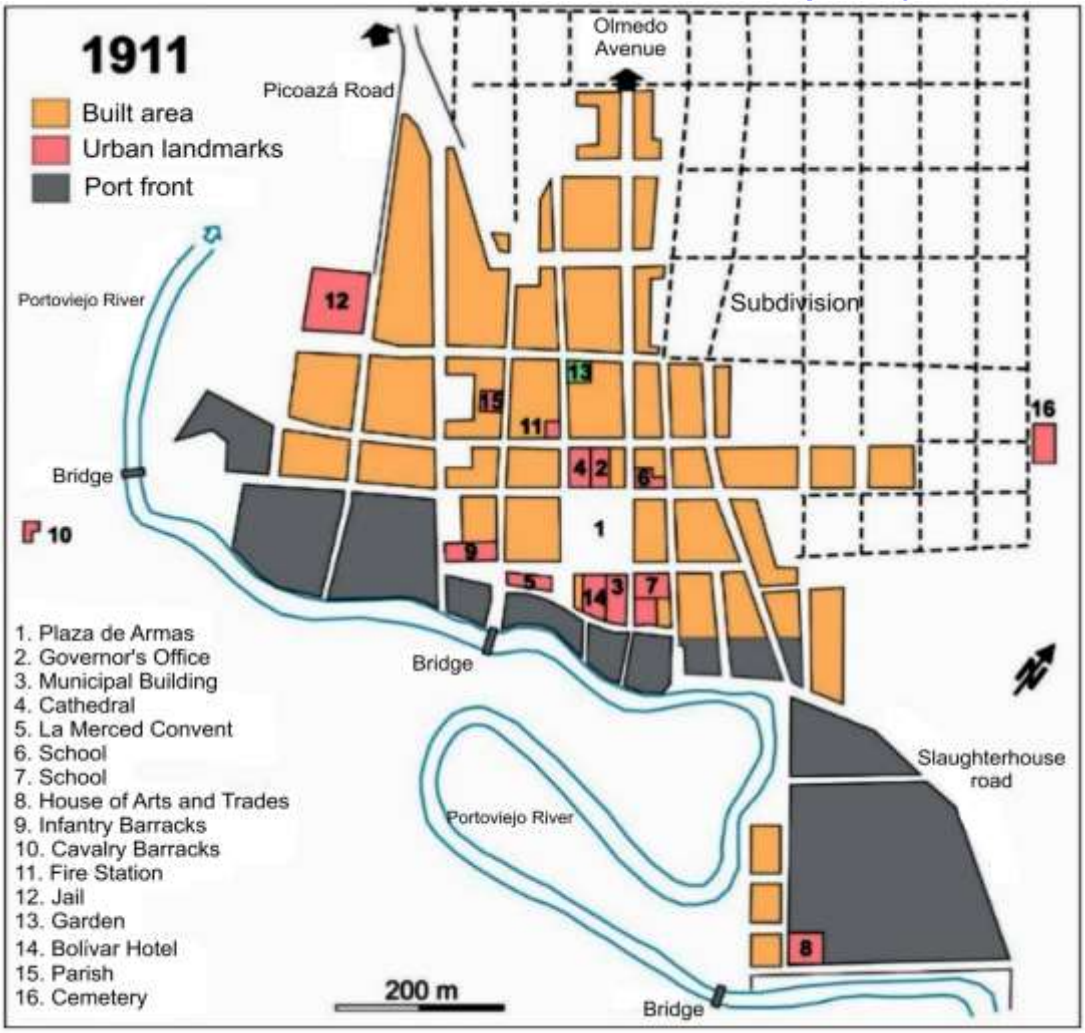

Figure 2. 1911 Map of Portoviejo *(Ponce & Pelegrín, 2020).*

In Figure 2, the highlighted polygons represent the existing urban layout at that time, with the Plaza de Armas at its core and public establishments surrounding it. The segmented lines indicate the projected expansion of new streets, extending the grid pattern toward the northern area, referred to as the "new population." The authorities offered an incentive: free plots of land measuring 17 meters by 30 meters to anyone who built on them within two years, aiming to quickly populate the projected area. By 1917, Bolívar Street, at the intersection with Rocafuerte Street, was extended to reach the limits of the cemetery (Barcia, 2018).

Throughout its history, Portoviejo became a hub for Asian migrants, many of whom settled along Colón Street, a central arrival point for both formal and informal merchants due to its proximity to the river. The river served as the main transportation route for those coming from its upper basin to trade in the city. Colón Street became known as the "Chinese Quarter" (López Giler, 2021). Over time, the authorities regularized the status of these migrants, and their presence contributed significantly to the city's urban development.

Portoviejo, already the bureaucratic, commercial, and educational hub of the province, saw an increase in its growth and dynamism with the arrival of the railway on May 13, 1913. This project was initiated by Eloy Alfaro Delgado, knowing the British were interested in the tagua (vegetable ivory) from the region, and that exporting this product, alongside cacao, coffee, and royal palm, was a promising business. Construction of the railway in Manabí began in 1905. The first route connected the cities Chone – Canuto – Calceta –

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Tosagua – Bahía, while the second route, which included central and southern Manabí, linked Santa Ana – Portoviejo – Montecristi – Manta. This transportation network connected the main cities of the province, significantly reduced mobility difficulties, and boosted commerce (L. Molina, 2002). Each city along the second route had a clear function: Santa Ana served as a product collection centre, Portoviejo was the political and educational center, Montecristi was known for its educated population and the production of toquilla straw hats, and Manta was an international seaport (Hidrovo, 2012).

In Portoviejo, the train station was in what is now the Andrés de Vera Parish, precisely where the Fire Department is currently situated, due to its easy access and proximity to the city center. The route extended across the Manta - Santa Ana corridor. Today, the railway route has been replaced by the present-day 15th of April Avenue. It is worth noting that the initial railway route underwent some modifications to develop this avenue, which is now one of the city's main thoroughfares (see Figure 3).

The Andrés de Vera neighborhood gained substantial value due to the presence of the railway station, becoming the city's main axis of development. This attracted residents to the outskirts, integrating these areas into the city's urban structure. In 1933, Andrés de Vera was officially established as an urban parish through a municipal ordinance, making it the first urban parish in the city (Polit, 1983).

With the introduction of the railway, the river gradually lost its role as the main transportation route, becoming a secondary channel (Ponce & Pelegrín, 2020). The proximity of buildings to the river caused issues such as house collapses and street deterioration due to annual flooding. These problems had been acknowledged since 1884, but the Municipal Council only decided to modify the river's course in 1927, marking a shift away from relying on the river for transport and signaling a move towards further urban development.

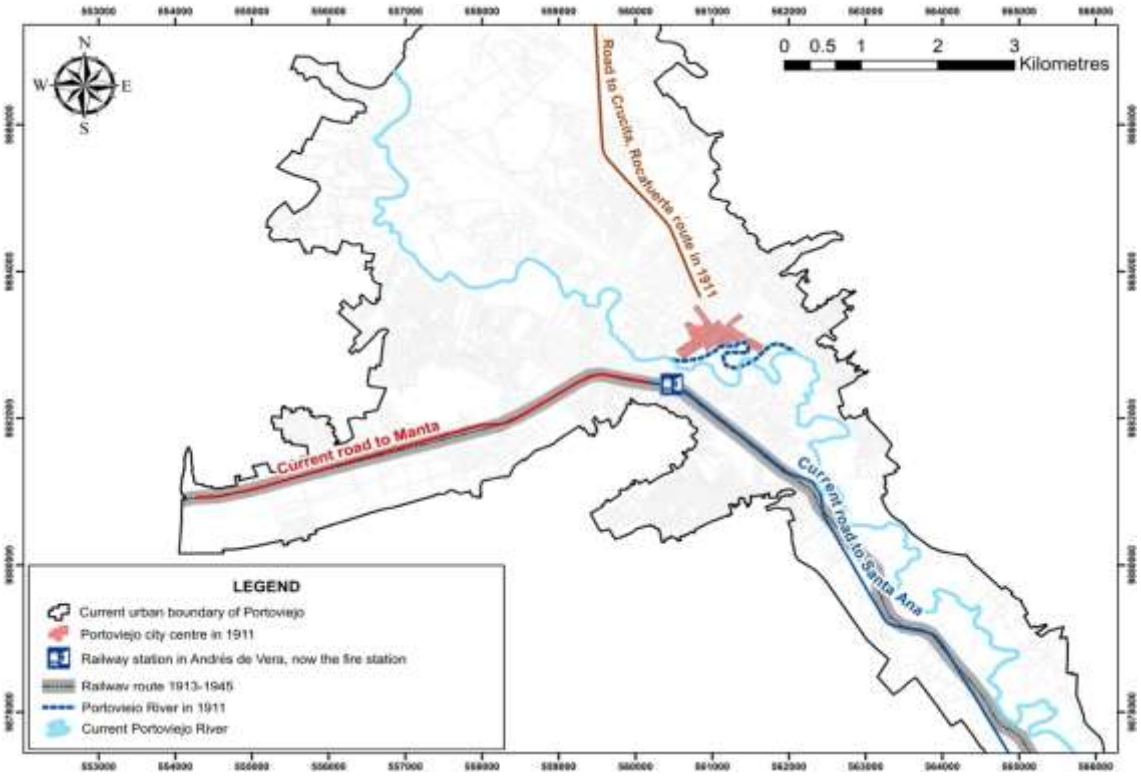

Figure 3. Route And Location of The Railway in Portoviejo – Portoviejo River Course in 1911 and Today.

On January 17, 1925, Portoviejo experienced another devastating fire, which destroyed houses and public buildings, including the Cabildo, the emblematic Olmedo High School, and the stalls of the city's market (Cevallos Ponce, 1977). Olmedo High School was relocated to the square formed by the streets Córdova,

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Morales, 10 de Agosto, and Olmedo. In 1931, a new market, known as "Mercado Norte," was constructed at the intersection of Pedro Gual, Chile, 9 de Octubre, and Ricaurte streets. The relocation of these two establishments followed the urban projection set out in Captain González's 1911 plan, which guided the city's expansion towards the northern zone. See Figure 4.

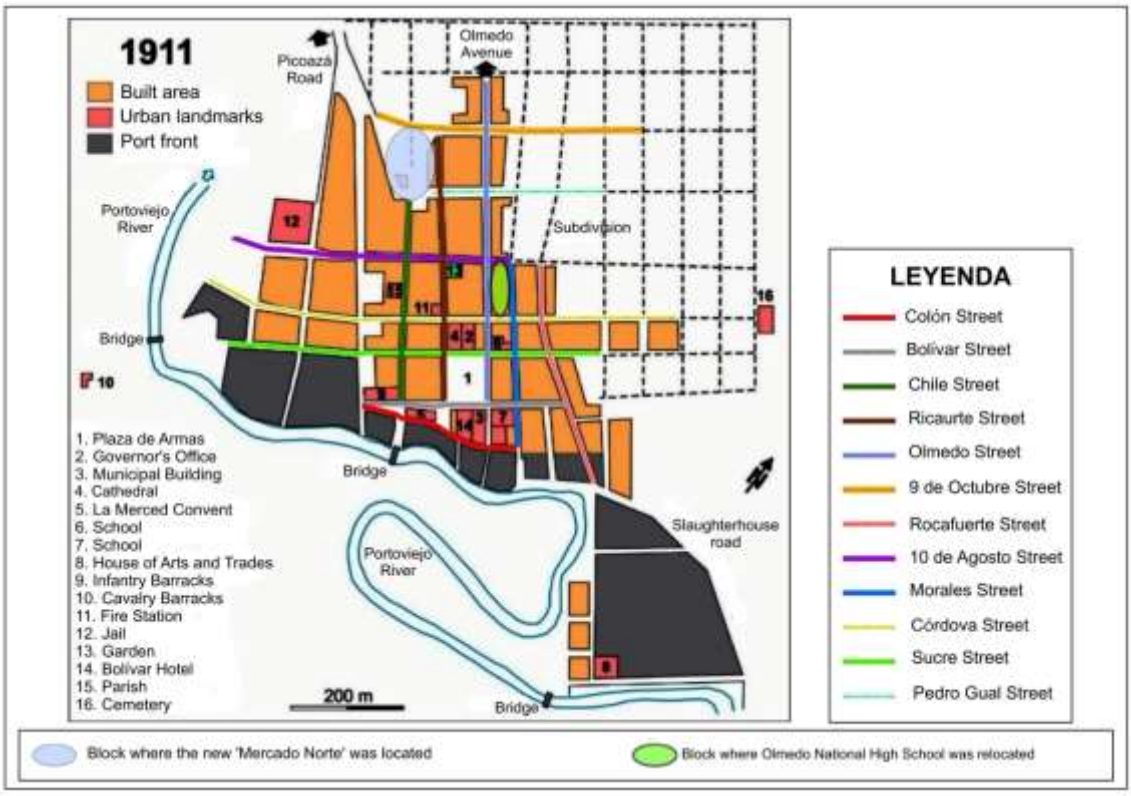

Figure 4. Map of Portoviejo from 2011 showing Olmedo High School and Mercado Norte 1931.

Portoviejo's economy relied heavily on commerce, agriculture, livestock, and public administration. Suitably, the city required an airstrip to expedite the flow of people and goods. Despite its right to develop infrastructure in line with its growth since its establishment as a city, Portoviejo had to wait until 1940 to obtain this key infrastructure, while Manta had already had an airstrip since 1932.

Thanks to the initiative of the Pro-Avión Manabí committee and local authorities, the creation of an airfield was finally realized. The central government dispatched a technical team to inspect potential sites, selecting the most suitable location based on factors such as altitude, size, proximity to the city center, and urban planning considerations. On 6 December 1940, the "Manabí Airfield" was inaugurated, now known as the "Reales Tamarindos Airport," located northeast of the city. This airport was deemed essential for the development and growth of both the city and the province. In 1947, an expansion transformed it into an international airport, with a runway 2,000 meters long and 150 meters wide. The work was completed on 25 December 1948 (Molina, 2010).

Portoviejo's urban expansion followed a regulated plan, with adjustments made to the original grid structure, gradually providing the necessary infrastructure for the capital. In 1965, the central government approved the construction of the Poza Honda dam to supply water to Portoviejo and surrounding areas. This enabled the municipality to plan the city's growth, constructing roads, potable water networks, sewage systems, and stormwater drainage.

In 1954, the Universidad Técnica de Manabí opened its doors, followed by the inauguration of the Reales Tamarindos Stadium in 1970, both located in the northern area of the city, formerly known as the road to

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Rocafuerte, now called José María Urbina Avenue. The oil boom of the 1970s funded the construction and improvement of several key facilities, including the Municipal Palace, the Municipal Commercial Centre, markets, the Reales Tamarindos Stadium, the Universidad Técnica de Manabí, and the bus terminal.

The construction of the Municipal Commercial Centre began in 1975 and was completed with its inauguration in 1980. It occupied the area where the Mercado Norte once stood. This new infrastructure revitalized the area, making it the city's commercial epicenter. Both formal and informal vendors congregated in this area. Chile Street, which ran alongside part of the commercial center, became a popular spot for sellers offering a wide variety of products along its sidewalks and part of the road.

The city's bus terminal, opened in 1987, is in the Andrés de Vera parish, southwest of the city, along the main access and exit route. This strategic location increased the parish's prominence, making it a key hub for commerce and attracting new residents to the surrounding area.

These facilities and infrastructure were strategically located, in previously planned areas, playing a key role in urban development. Each of these projects increased property values in nearby areas, organized the urban environment, and attracted more residents. Another important project was the construction of the Manabí Guillén Highway, carried out by the Directorate of Public Works of Manabí in 1980 (Molina, 2009). Its purpose was to reduce the impact of heavy traffic on the city's inner streets, which had been designed for lighter traffic. Over time, improvements to the highway and surrounding areas, facilitated by the authorities, encouraged settlements around the highway and leading to unplanned urban sprawl.

In 1985, the Urban and Rural Development Plan was implemented alongside the city's land registry, with the goal of regulating urban growth and making appropriate use of resources in productive rural areas. During this period, a significant increase in migration from rural areas to the city was observed. This migration was driven by the lack of support from the central government for agricultural development and the negative impacts of natural events. Many of these migrants settled in informal settlements, contributing to the creation of a "fragmented city." This phenomenon was particularly evident in the hills of Andrés de Vera, San Alejo, and Florón (Cedeño Zambrano et al., 2019). See Figure 5.

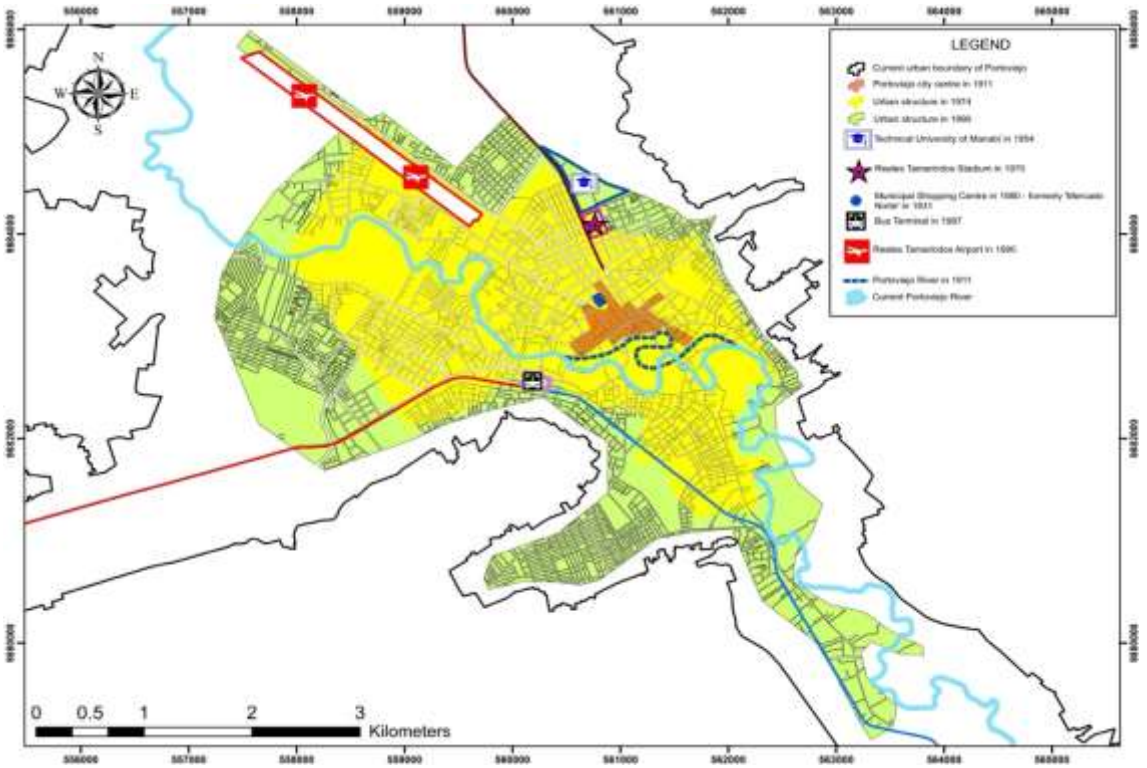

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Figure 5. Portoviejo in 1990 - Infrastructure Developed From 1954 To 1987. Based on Geographic Information System Data From the Municipality of Portoviejo And *(Cedeño Zambrano Et Al., 2019).*

In 1998, the municipal administration introduced regulations to control urban expansion, directing growth towards the north, specifically the El Negrital Valley. This move encouraged construction companies to develop residential projects, which in turn led to demands on the municipal administration to provide basic services. See Figure 6.

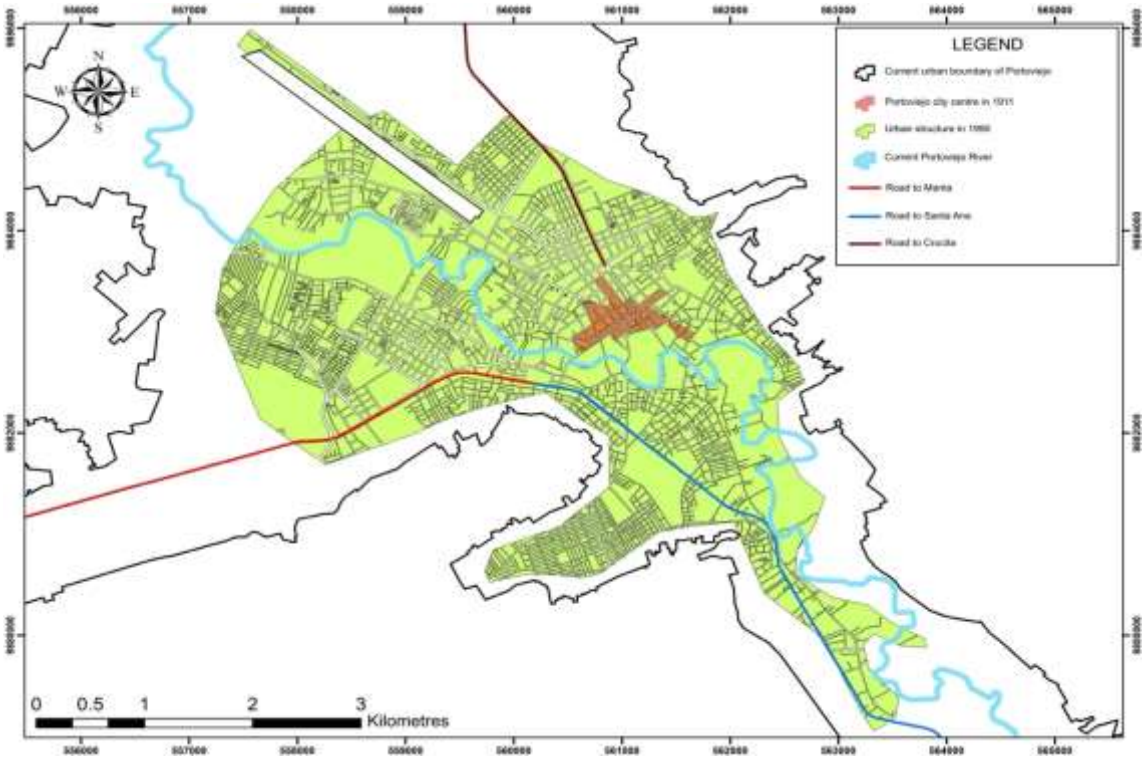

Figure 6. Urban Structure of Portoviejo In 1990. Based on Geographic Information System Data FromtThe Municipality of Portoviejo And *(Cedeño Zambrano Et Al., 2019).*

For better understanding, a map has been created to show urban growth and its boundaries over time. As can be seen, the central core maintains its grid structure, with the city expanding north and south, and with the central axes being Avenida 15 de Abril (the road to Santa Ana), Avenida Metropolitana (the road to Manta), and Avenida José María Urbina (the road to Crucita), respectively. See Figure 7.

In 2007, the Municipality implemented regulations to control and guide the expansion of the urban grid, allowing for the extension into agricultural land in the northern part of the city. This measure resulted in further urban development (Cedeño Zambrano et al., 2019). Real estate projects emerged in the northwest, placing additional pressure on the Municipality to extend basic services to this area.

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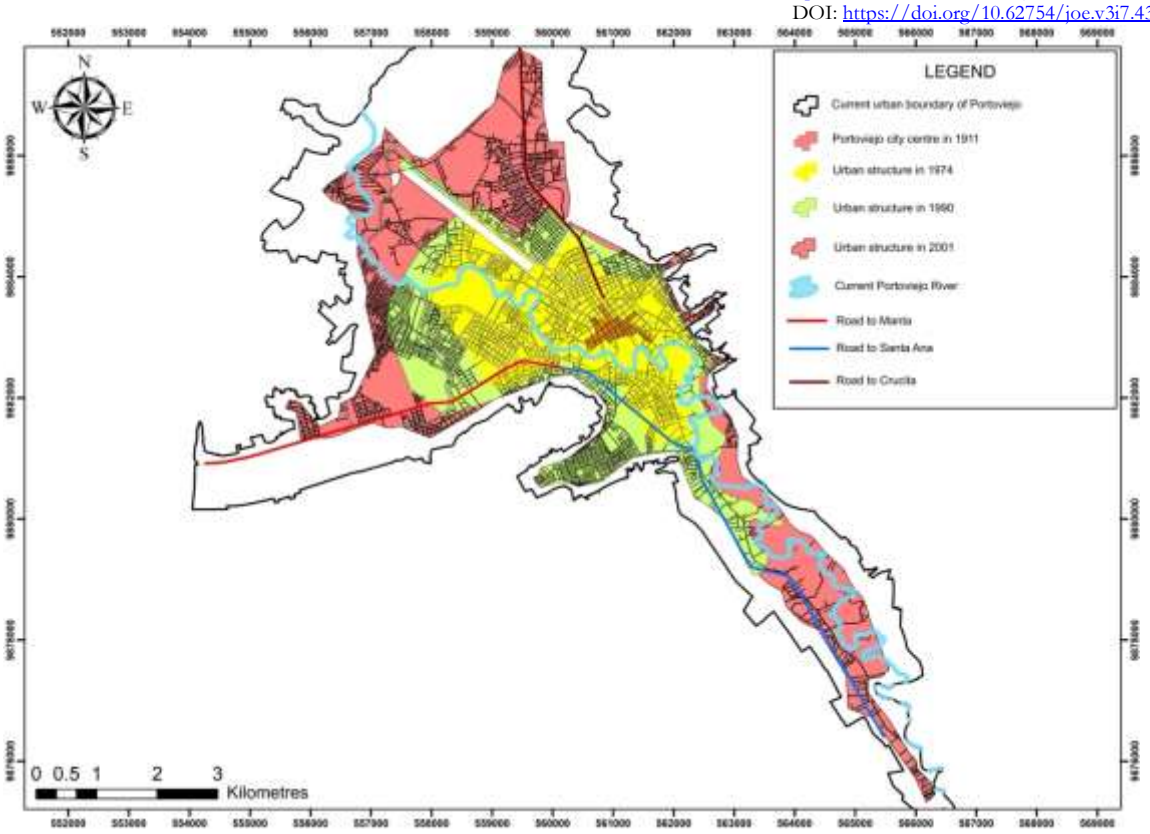

Figure 7. Urban Structure of Portoviejo In 2001. Based on Geographic Information System Data From the Municipality of Portoviejo And *(Cedeño Zambrano Et Al., 2019)*.

The Central Government introduced a new regulatory framework for territorial planning and land management in 2010, which stated that the responsibility for creating development and land management plans falls upon municipal governments at the start of each term.

In 2011, Portoviejo experienced the closure of the Reales Tamarindos Airport. The decision to cease operations came from former president Rafael Correa, who argued that the airport hindered the city's growth. Despite opposition, the closure proceeded. Since then, the grounds of the former airport have been repurposed for recreational activities and public events such as fairs, concerts, and other large-scale gatherings. In 2016, the site was used as a shelter for those affected by the April 16 earthquake. See Figure 8.

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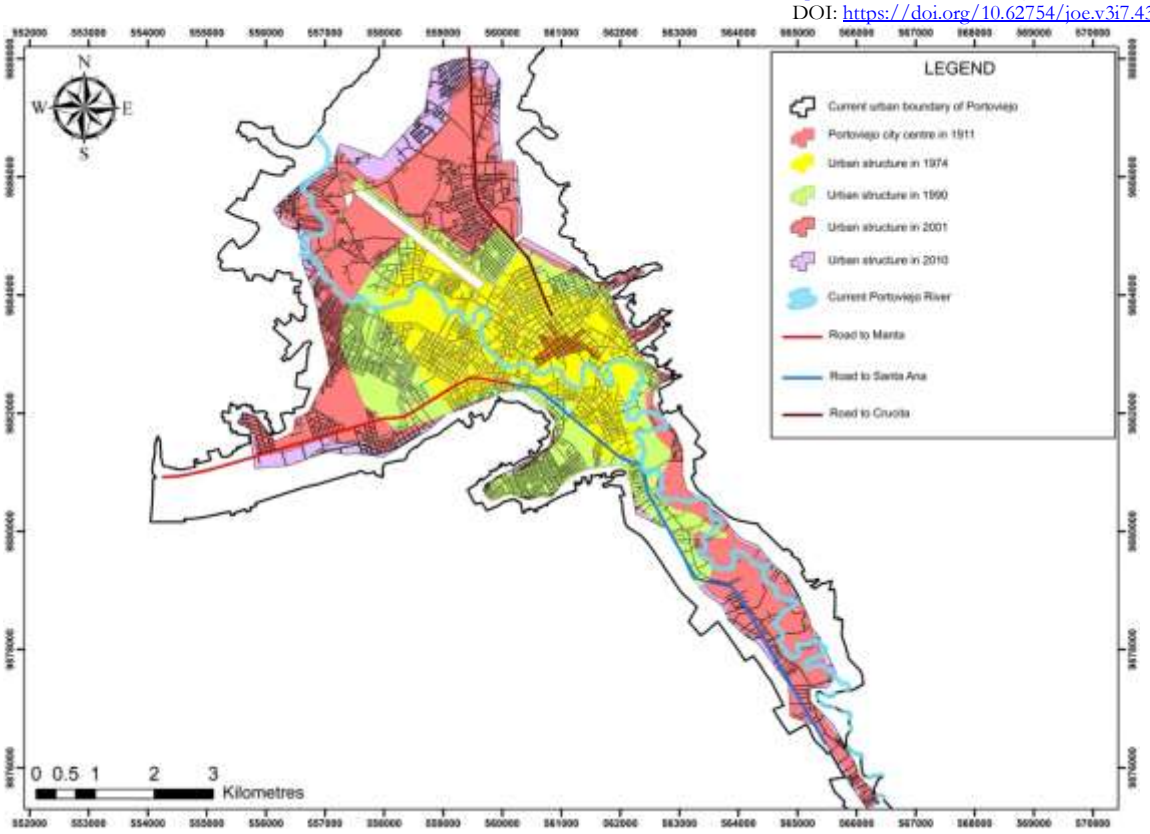

Figure 8. Urban Structure of Portoviejo In 2010. Based on Geographic Information System Data From The Municipality of Portoviejo And *(Cedeño Zambrano Et Al., 2019).*

In Figures 7 and 8, the city's development is shown expanding northwest, northeast, and southwest, extending both the urban structure and its boundaries. As the provincial capital, Portoviejo functions as the central political and administrative hub, with the historic city center housing most public services, facilities, and government offices. Following the devastating April 16, 2016, earthquake, the city center was designated a 'ground zero' due to the severe damage sustained. This led to public entities relocating to peripheral areas of the city until the construction of the government administrative building "Citizen Service Centre" on the road to Santa Ana, which contributed to the emerging of sub-centers and further extended the urban structure.

Over time, a pilot urban regeneration plan was implemented for the central area, particularly in the Historic Centre of Portoviejo, part of the post-earthquake 'ground zero' zone. This plan covers an area of 8.6 hectares, including a total of 11 city blocks, which have gradually materialized (López Giler, 2021).

Currently, with the project now completed, the intervention focuses on pedestrian-friendly urban design. Improvements include enhanced accessibility, increased greenery, and better signage, enriching the sensory experience of the area (Corrales Zambrano, 2021). However, concerns have been raised regarding road infrastructure, specifically about road dimensions, the removal of two-way streets, and the introduction of speed bumps in the city center. As these developments unfolded, broader urban planning initiatives were also taking shape.

At the end of 2016, the Organic Law on Territorial Planning, Land Use, and Management was enacted, and the Municipality drafted the Development and Territorial Plan, along with the Land Use and Management Plan. One of the most emblematic projects that marked a turning point in the city's public spaces was the construction of La Rotonda Park. This park, covering an area of 15.24 hectares, began construction on 20 February 2016—the same year as the earthquake. Despite the challenges, the project continued and was inaugurated on 29 September 2017. It is worth mentioning that a park with the same name already existed on this site, but it had been completely abandoned and unsafe for residents. The execution of this iconic

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project fostered social, cultural, and economic growth in the surrounding areas, as well as in the city as a whole. Today, it is one of the most visited places by both residents and tourists.

Six months after the earthquake, construction began on Las Vegas Park, another emblematic project that symbolized the rebirth of Portoviejo. In 1969, this area housed a performance center called "Las Vegas," which was once considered one of the best artistic venues in the country. However, the El Niño phenomenon caused river overflows and flooding, making it difficult to maintain Las Vegas, which eventually fell into neglect and turned into a waste collection site. The construction of Las Vegas Park began on October 26, 2016, and was inaugurated on January 19, 2018. Located next to the historic center of Portoviejo, the park spans 10.5 hectares and is considered the city's "lung," boasting 70% green spaces, over 1,500 trees, and a design intended to withstand and mitigate flooding from the Portoviejo River during the rainy season. Las Vegas Park is the first park built as part of the "River Corridor" project, included in Portoviejo's 2035 Development and Territorial Planning Plan (PDOT) (see Figure 9). This project consists of the construction of seven parks along the Portoviejo River and another in the "La Tomatera" sector.

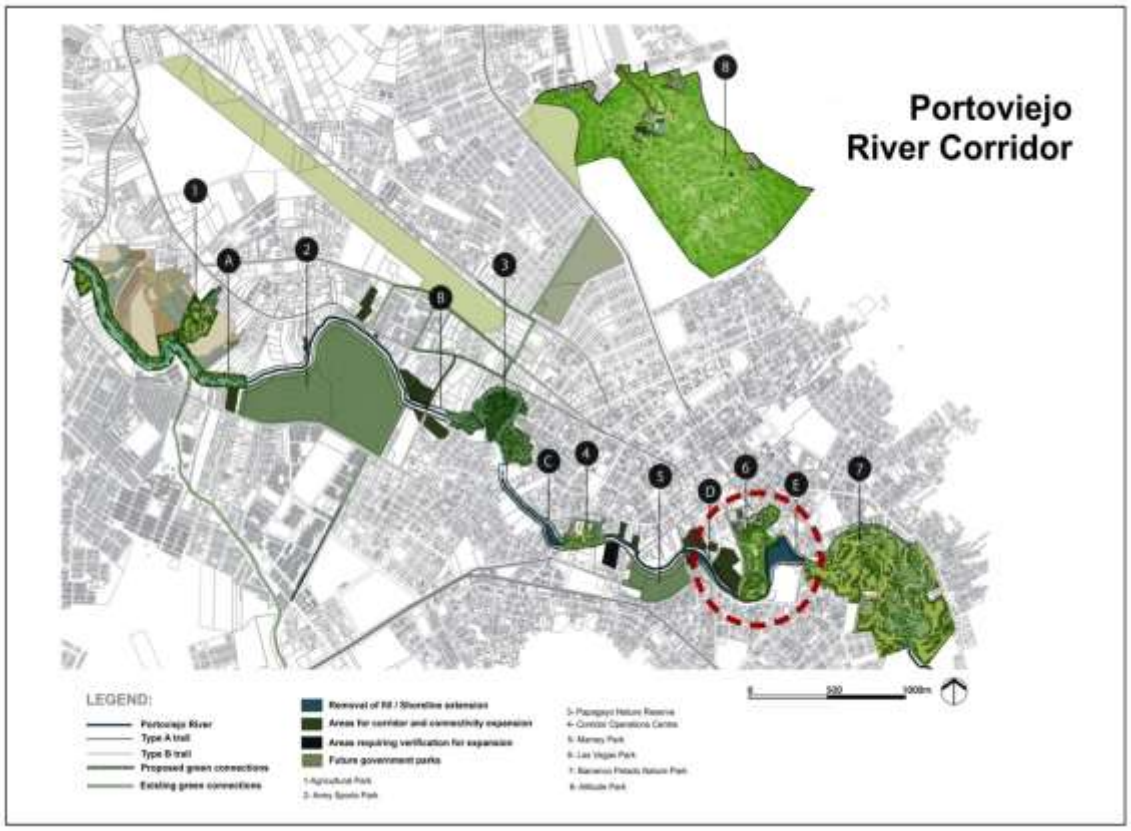

Figure 9. Portoviejo River Corridor. Based on Portoviejo 2035 Plan, Municipal Government of Portoviejo.

Territorial Planning is currently focused on strategic areas to enhance the city's urban development. Presently, the new urban park and business center called 'Villa Nueva' is being constructed on the site of the former Reales Tamarindos airport. The plan aims to integrate this vacant land into the existing urban network, with the goal of improving the current structure, facilitating mobility, circulation, and connectivity between the northeast and southwest sectors. The development of 'Villa Nueva' is being carried out in phases. To date, the connection of Avenida Periodista with Atanasio Santos Street has been completed.

Overall, the project aims to create a more functional, accessible, and connected urban environment. The incorporation of the land and the improvement of the existing urban fabric reflect a vision of growth and sustainable development. The focus on mobility and connectivity highlights an emphasis on quality of life and efficiency in residents' movement. See Figures 10 and 11.

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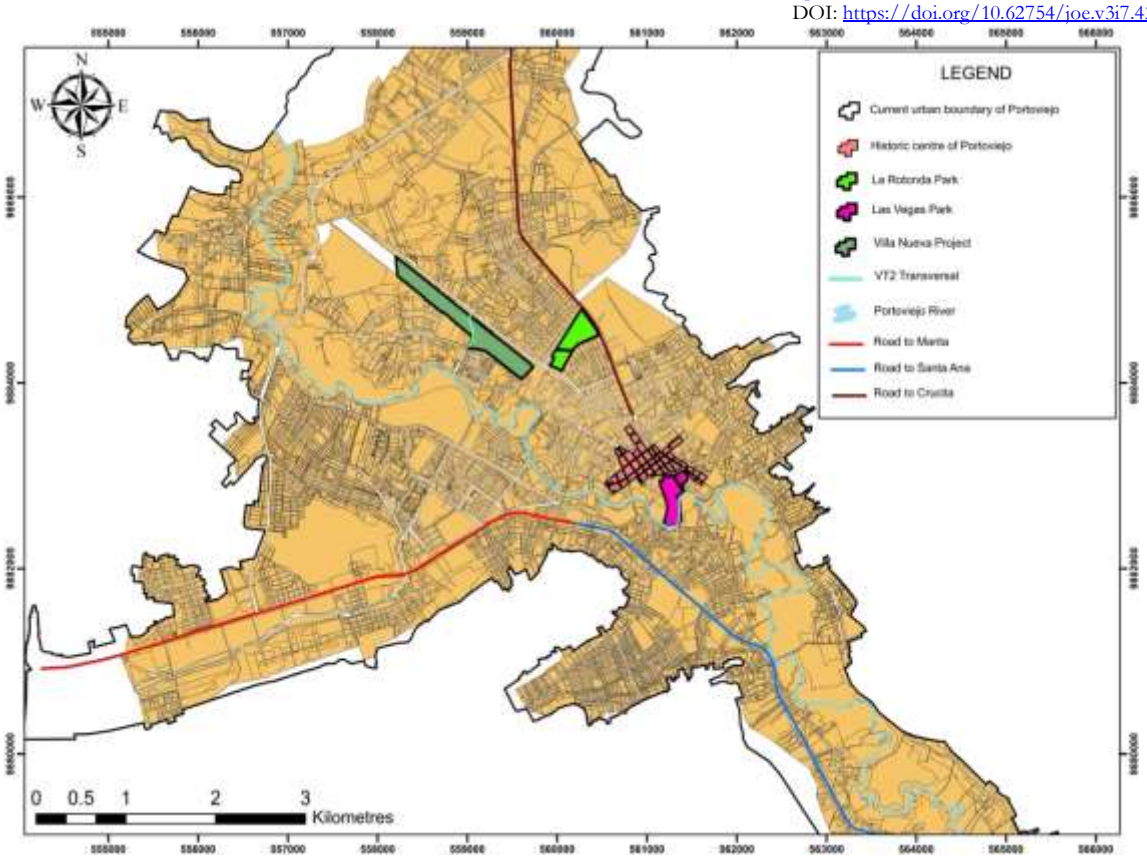

Figure 10. Location of "La Rotonda," "Las Vegas," And "Villa Nueva" Project Parks.. Based on Geographic Information System Data From The Municipality of Portoviejo.

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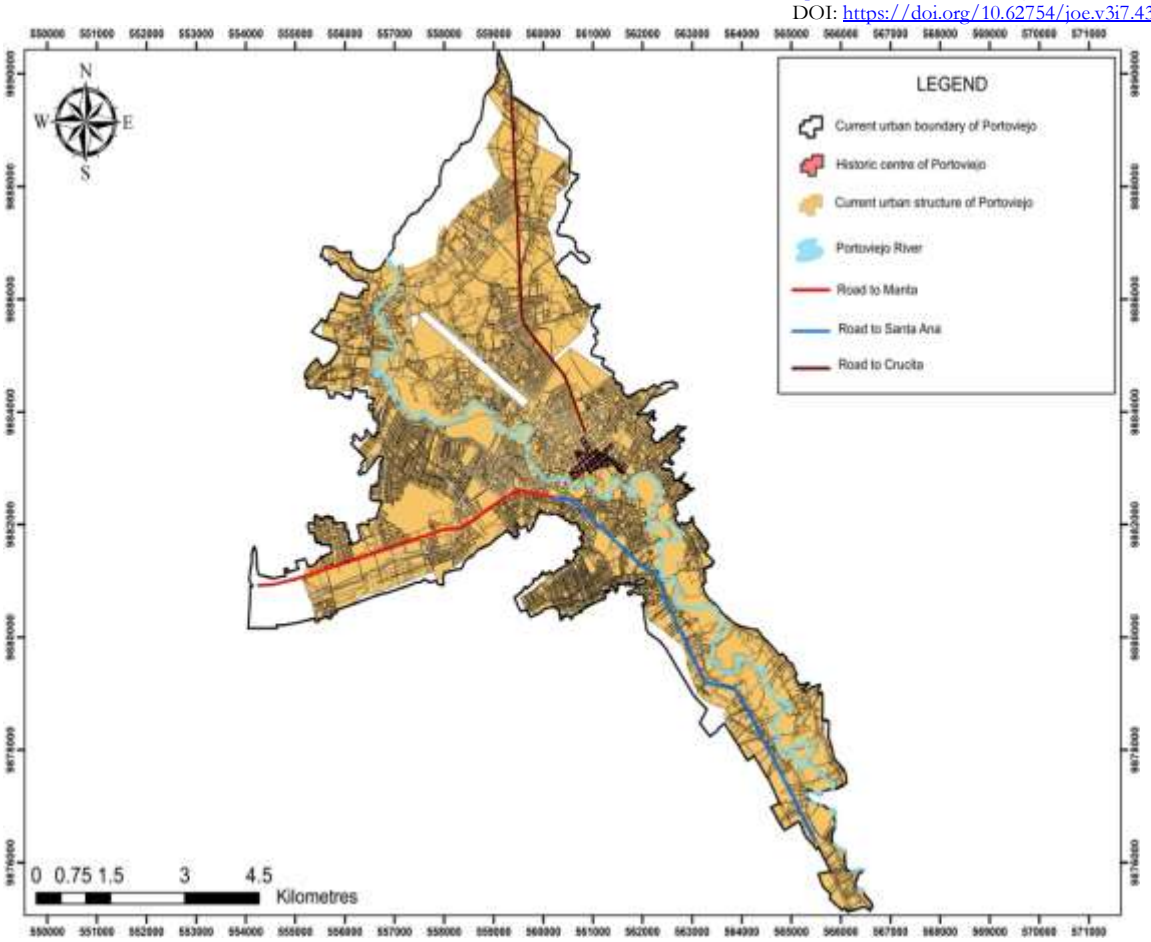

Figure 11. Current Urban Structure of Portoviejo. Based on Geographic Information System Data From the Municipality of Portoviejo.

Currently, Portoviejo has a land use classification system in place, which is designed to facilitate regulation and promote a more diverse and precise distribution, with an emphasis on sustainable conservation of land and water. However, these tools often fail to adequately consider historical processes as guiding criteria in decision-making for urban planning. Future research could explore how the history of the urbanization process might be better integrated into urban planning tools to ensure that the city's development aligns with its historical context.

Discussion and Conclusion

The findings from the case of Portoviejo resonate strongly with the broader literature on urban transformation, confirming that cities are shaped by a combination of socio-economic, environmental, political, and infrastructural factors. As the literature suggests, cities like Portoviejo evolve through the interplay of these drivers, but the historical trajectory of each city introduces nuances that make their transformations unique. The case of Portoviejo highlights the significant role of history in shaping its urban form, underscoring the need for urban planning strategies that are attuned to local contexts, as emphasized by de Terán (2009).

One key aspect is the impact of natural disasters on reorganizing urban spaces. As seen in cases of cities like Port-au-Prince (Petter et al., 2020), earthquakes and other disasters often force cities to rebuild and reconfigure their urban forms. In Portoviejo's case, the 1896 and 2016 earthquakes and other natural events, like fires, led to relocations and the emergence of informal settlements on the city's periphery. However, the specific way in which Portoviejo responded to these disasters—often with reactive rather than proactive

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planning—sets it apart from other cities that have incorporated, for instance, climate resilience into long-term strategies (Swart et al., 2021).

Another area of alignment between the findings and the literature is the role of transportation infrastructure in shaping urban morphology. Both Pratama et al. (2022) and Solikhah (2019) highlight how transportation networks, such as highways and railway stations, influence urban growth patterns. Similarly, the railway in Portoviejo in 1913 acted as a catalyst for the city's expansion, particularly in the Andrés de Vera area. This mirrors the experience of the placement of Ambarawa station and its role in shaping a compact city in Indonesia. In Portoviejo, the railway's introduction helped consolidate the city's core and enabled its structured expansion, indicating that the historical context in which transportation infrastructure is implemented can substantially influence outcomes.

While cities may share common drivers of transformation—such as natural disasters, infrastructure, policies, and economic forces—the specific historical trajectory of a city like Portoviejo introduces complexities that make it distinct. The colonial history of the city, its role as a provincial capital, and the administrative decisions made during key periods all contributed to its current urban structure, resonating Woo and Hui's (2011) argument that recognising historical continuity in urban structures can guide future development and help preserve a city's identity.

This study, while comprehensive, faces limitations. One of the key constraints is the reliance on historical documents and archival materials, which may not fully capture the informal and undocumented aspects of the city's development. Many of the processes that shaped Portoviejo, particularly the migration patterns, informal settlements, and spontaneous urban growth, are underrepresented in the formal historical record. Additionally, while Geographic Information Systems (GIS) were employed to analyze spatial patterns, the study's use of historical maps and data is limited by the availability and accuracy of older cartographic resources.

Future research should aim to fill these gaps by adopting a more integrated approach that includes ethnographic studies, oral histories, and participatory mapping techniques to gather insights from residents and local stakeholders. This would offer a more nuanced understanding of the city's expansion and social dynamics. Additionally, comparative studies of other cities in Ecuador or Latin America with similar colonial and republican histories could provide a broader context for understanding how historical forces shape urban forms.

In sum, historical knowledge is essential for guiding effective urban planning. Understanding the city's past helps planners identify the socio-political, economic, and environmental patterns that have shaped the current urban form, providing a framework for future development that aligns with the city's identity. Incorporating historical lessons into modern urban planning can help authorities to develop strategies that are not only more sustainable but also more responsive to the needs of the local population.

Author Contributions: Author 1: Conceptualization, software, formal analysis, investigation, data curation, writing—original draft preparation. Author 2: Methodology, software, validation, supervision. Author 3: Validation, formal analysis, writing—review and editing. All authors have read and agreed to the published version of the manuscript.

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