

# Habitat Unit



Urban  
Pathways



Urban  
Change Makers





**RETHINKING MULTIMODAL URBAN MOBILITIES**  
TU BERLIN - HABITAT UNIT - SOLUTIONS PLUS  
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# Urban Change Makers

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# 00. Terminology

## **BRT**

Bus rapid transport

## **BOTTOM-UP**

Grassroot lead process

## **CAR-CENTRISM**

urban planning focused on the priority of car use

## **CC**

Critical Cartography

## **EV**

Electric vehicle

## **E-BIKE**

Electric powered bicycle

## **E-CARGO BIKE**

Electric powered cargo bike

## **E-CARGO THREE WHEELER**

Electric powered cargo three wheeler

## **E-MOBILITY**

Electric mobility

## **FIG.**

Figure

## **GENTRIFICATION**

process where a housing or district renewal triggers the displacement of low-income residents through the arrival of higher-income ones.

## **HCQ**

Historic centre of Quito

## **HOLISTIC PLANNING**

a way of planning that considers the interrelation of components beyond the own discipline in a synergic process.

## **INFORMALITY**

unofficial work condition without conditions that safeguard the safety and integrity of the individual

## **INTEGRATED TICKETING**

Possibility of combining in a public transport journey different transport modes with a unique ticket

## **INTERMODAL HUB**

place where different transport means conclude and passengers can easily change between them.

## **LAST MILE CONNECTIVITY**

Final connection from the last public transport station to the final destination.

## **LEZ**

Low Emission Zone

## **MODERATE SPEED ROAD**

Road where vehicles do not exceed the 45 km/h

## **LOW-CARBON VEHICLE**

vehicle with small CO<sup>2</sup> emissions

## **MICRO MOBILITY**

small, lightweight vehicles reaching speeds typically below 25 km/h [bike, e-bike, cargo bike, e-threewheeler]

## **MIX-USE**

Diversity of land uses

## **NMT**

Non-motorized Transportation

## **NUA**

New Urban Agenda

## **PARTICIPATORY PROCESS**

an inclusive method where a wide set of actors is involved in the decision-making process

## **SDG**

Sustainable Development Goals

## **SOCIAL COHESION**

Linkage of members from different social groups.

## **SPATIAL SEGREGATION**

Visible or invisible division among the spaces that different social groups inhabit

## **SUSTAINABILITY**

Capacity of satisfying the present needs without damaging future generations integrating environmental, social and economical aspects

## **SWOT ANALYSIS**

Strengths, weaknesses, opportunities and threats' Analysis

## **TOD**

Transport oriented development

## **TOP-DOWN**

Process lead from above a vertical hierarchy, usually from the government without fully acknowledging the agency of further involved actors

## **TRANSDISCIPLINARITY**

academic strategy where inputs of diverse disciplines frame a holistic approach

## **URBAN CATALYST**

strategy that boosts urban developments

## **URBAN SPRAWL**

disperse city expansion, usually with non official urban planning

## **FIG. 1 COVER IMAGE**

Pedestrian bridge Quito during 'Al trabajo en bici' [cycling day implemented by Quito's municipality]

# Urban Change Makers

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**01. INTRODUCTION**

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- 1.1 Project Frame
- 1.2 Sustainable Transport
- 1.3 Solutions Plus + Partner Cities

# **01. Introduction**

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# 1.1 Project Frame

As the world is confronted with climate change and cities continue to spill beyond their boundaries, the Global Agendas uniformly recognise an urgent need for inclusive and sustainable urban development strategies.

The Urban Change Makers studio draws attention to current global transport challenges. Based on the notion that the provision of infrastructure promotes accessibility and that accessibility promotes equality, the studio has developed proposals for innovative urban mobility solutions in Quito and Pasig - two cities in the Global South that have been struck heavily by congestion and social divides.

In an aim to reduce individual transport modes in favour of higher public demand, the students investigate multi-modal networks. A series of reading sessions formed the theoretical basis for the spatial interventions. Reaching beyond the infrastructural challenges these two cities are faced with, the Urban Change Makers studio addresses local identity, informality and social marginalisation in an attempt to develop holistic place-making strategies for the public realm and its nearby communities.

Thus, what once was a divider can soon become a threshold, a moment for activities, exchange and community.



FIG. 2 TRAFFIC CONGESTION IN THE PHILIPPINES

# 1.2 Sustainable Transport

Transportation is a basic need for a meaningful and dignified life. Access to transport provides access to the labour market, health care, education and human interactions. Hence, transport mobility it is closely linked to social upward mobility.

The ability of a person to overcome spatial separation is conditioned by: income, gender, access to vehicles, physical ability, knowledge of transport and its path composition.

Pursuing the Global Agendas in transitioning towards sustainable transport, the following parameters be taken into consideration: access, equity, safety, efficiency, affordability, health and environment.

**“Transport: a pre-requisite for a life of meaning and value”**

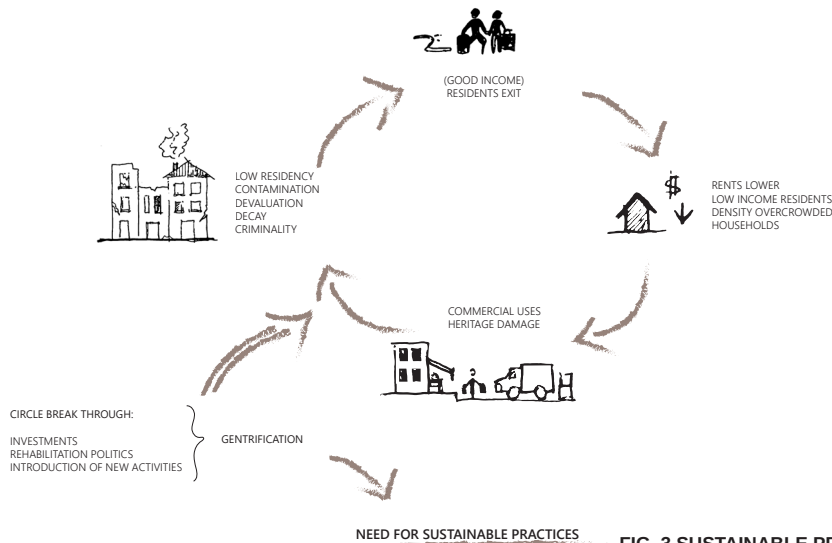


FIG. 3 SUSTAINABLE PRACTICE

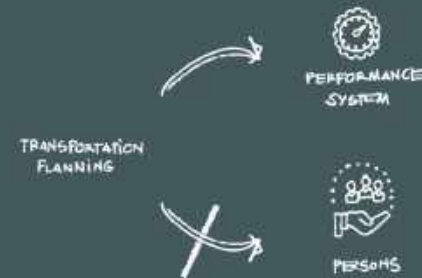


FIG. 4 PERFORMANCE-DRIVEN TRANSPORTATION PLANNING

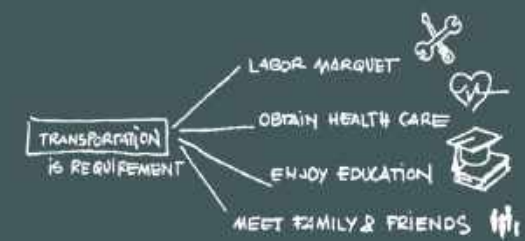


FIG. 5: TRANSPORT AS A REQUIREMENT

**23%**  
CO<sub>2</sub> emissions worldwide caused by transport

**4.2 MILLION**  
Deaths due to air pollution

**1-10%**  
National GDP lost in urban congestion

**75 MILLION**  
Cars purchased in 2019



FIG. 6: SUSTAINABLE TRANSPORT

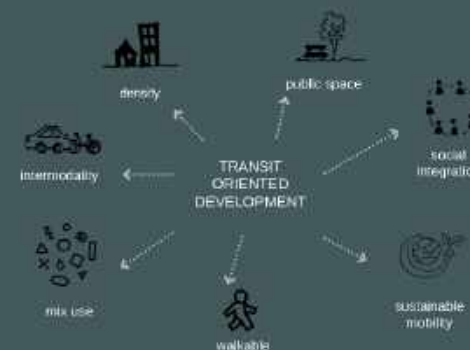


FIG 7: TRANSIT-ORIENTED DEVELOPMENTS

To reduce the share of private cars, Transit-Oriented Developments have found their way into city planning, whereby new developments or densification projects are located within walking distance of public transport hubs. Because offering a variety of transport modes will increase accessibility and the likelihood that people will choose public transport over private vehicles. While TODs do address problems relating to performance and feasibility, the perception of the end user, the human, is often sidelined in this approach.



# 1.3 SolutionsPlus

The studio 'Urban Change Makers' worked closely with the SOLUTIONSplus initiative, a global platform aiming to enable transformational change towards sustainable urban mobility through innovative and integrated electric mobility solutions. Through the lense of the Paris Agreement, the Sustainable Development Goals and the New Urban Agenda, SOLUTIONSplus fosters shared, public and commercial e-mobility projects in many partner cities across the world.

During the summer term of 2020, it was our task frame a low-emission mobility concept for specific zones of two partner cities: Quito and Pasig City. Throughout the process, we were in regular exchange with the SOLUTIONSplus experts' network and government representatives from both cities. The design output developed for each study case is now being considered by local actors and SOLUTIONSplus to trigger the implementation of electric and low-carbon mobility solutions in Quito and Pasig city.

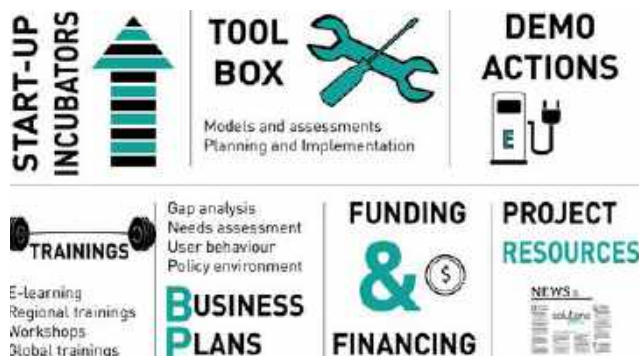


FIG. 8 ACTIONS SOLUTIONSPLUS



FIG. 9 PARTNER CITIES SOLUTIONS PLUS

„Solutionsplus fosters shared, public and commercial e-mobility solutions in many partner cities around the globe“

## **02. METROPOLITAN ANALYSIS QUITO 16-37**

- 2.1 Vision for Quito
- 2.2 Timeline
- 2.3 Basic Data
- 2.4 Mobility Systems
- 2.5 Metropolitan Urban Strategy

# **02. Metropolitan Analysis Quito**

## 2.1 Vision for Quito

As Quito's sprawl expands, it not only blurs administrative boundaries but also constantly re-figures the relations between its neighbourhoods and the infrastructures of mobility. Thus, we are now on the threshold of a new mobility era for Quito: the first metro line will be inaugurated by the end of 2020 and the administration envisions the Historic Centre [HCQ] to be the first low-carbon mobility zone of the region.

Within this framework, in the studio 'Urban Change Makers', we developed a concept for an intermodal mobility corridor around a main metro station in the HCQ. In the area also all other major public transport infrastructures of the city conclude within close proximity, offering ideal conditions to showcase the potentials of an intermodal, low carbon mobility hub. In this way, we envision that the metro connects with the BRT

lines and a well consolidated micromobility and pedestrian infrastructure that enable a high degree of intermodality.

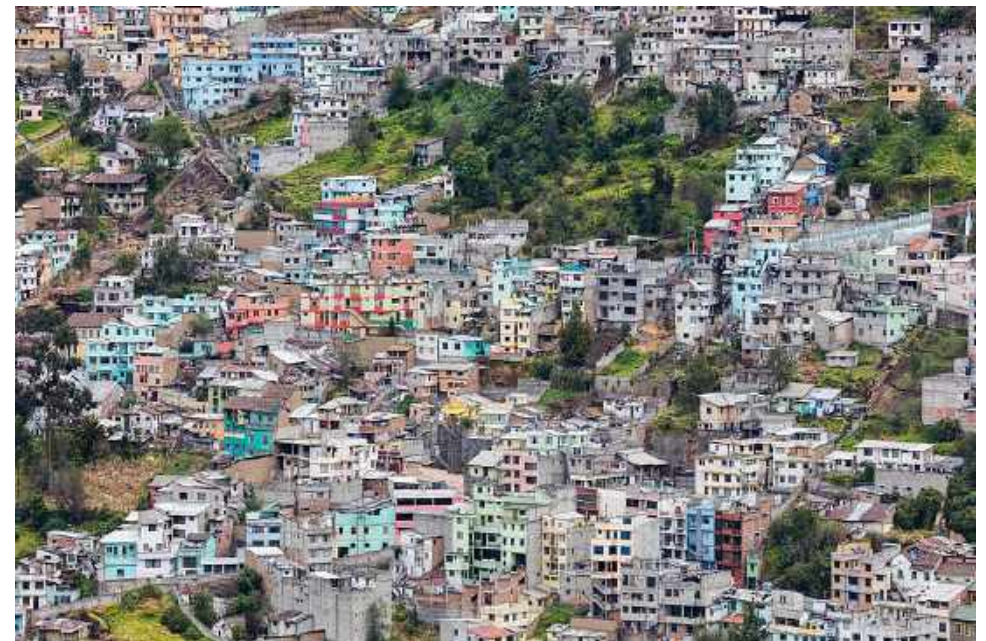
It is important to mention that the mobility transition is a major concern for the current city administration. Specifically for the study area [HCQ] the city developed recently a low-emissions ordinance to achieve the environmental goals of the global agendas and trigger

initiatives of this nature.

However, the HCQ faces serious socio-spatial problematics that must be taken into account in any design proposal. Although the central blocks of the HCQ have become a well-maintained world heritage site since 1978, its immediate neighbourhoods face high rates of poverty, criminality, and abandonment, which makes the area highly unequal.



**FIG. 10 VIEW HISTORIC CENTER**  
View of the 'heritage blocks' of Quito's Historic Center from Monte El Panecillo



**FIG. 11 EL PANECILLO**  
Neighbourhoods in extreme urban poverty in Quito's Historic Center





**FIG. 12 BRT CORRIDOR ECOVIA**  
Station Simon Bolivar  
BRT Line Ecovía

Consequently, many of its former inhabitants have left throughout the last decades and the population has decayed rapidly.

The HCQ, once the place where all the social groups dwelled, has become the border between poor neighbourhoods in the south, and middle and upper middle class neighbourhoods in the north. The study area: the station of 'San Francisco' lies right on the edge between the institutional & 'touristified' HCQ, and quarters in urban poverty conditions. Nevertheless, due to its geographic centrality and the presence of govern-

mental institutions, the HCQ remains to be an essential step in the daily life of a large section of citizens.

Moreover, We strive towards a world of non-fossil mobility and rapid infrastructural advances that reconfigure the HCQ as a still active, but safe and bewildering mediator between the city of the north and the city of the south. Through the low emissions mobility concept we framed this semester we aim to interweave the city through the line that segregates it today. Therefore, as much as we zoom out and look at systems and infrastructural networks, we would like



**FIG. 13 BIKE LANES QUITO**  
Citizens going to work with the bike  
Initiative 'Al trabajo en bici'

to zoom in and look at the user scale and understand their needs, concerns, and opportunities to interact and benefit from each other.

We look there, far beyond the infrastructural challenges, at the intersection between unequal communities and their accessibility to the city: what is purely functional can soon become programmatic and interactive, what once was a barrier and divider between two neighbourhoods can soon be a threshold, a moment for activities, exchange, and community. We would like to explore opportunities for inclusion through a new

network of low emissions infrastructure, where the heritage value of the built environment does not outshine the social dimension.

We are aware that mobility alone cannot solve all the problems of inequity, but it can be a way of ensuring that parts of society are not pushed to the periphery of the city. Instead, we aim to include them, interact with them and find ways to integrate a wide spectrum of social groups back into the image of Quito's Historic Centre.

## 2.2 Timeline

From the foundation of Quito in 1534, to the Independence in 1824, the city was ruled by Spanish crown. They gave birth to what we know today as the Historic Center with its characteristic andalusian architecture preserved until today.

However, with the various progressive governments since the Liberal Revolution [1895], the city's infrastructure was renewed due to the country's industrialization. In that period, also many important civil

rights were achieved by Ecuadorian society [universal suffrage, freedom of speech and institutional laicism]. Since those times Quito has grown greatly due to a considerable immigration from rural to urban and a high demographic growth.

In the 1970s, the rise of banana export and the emergence of the oil market brought a significant economical growth for Ecuador with some prosperous years. The construction of housing and infrastructure was boosted to such an

extent that after the boom, many years were a high internal and external debts followed. Linked to the economic boom, many development plans were carried on in order to structure Quito's growth.

In terms of mass transportation in more recent years Quito did great effort, being the second city in South America [after Curitiba] to implement a BRT system. Later on, further BRT lines were built along the main traffic arteries of the city. At present, Quito is due to open its first metro line.

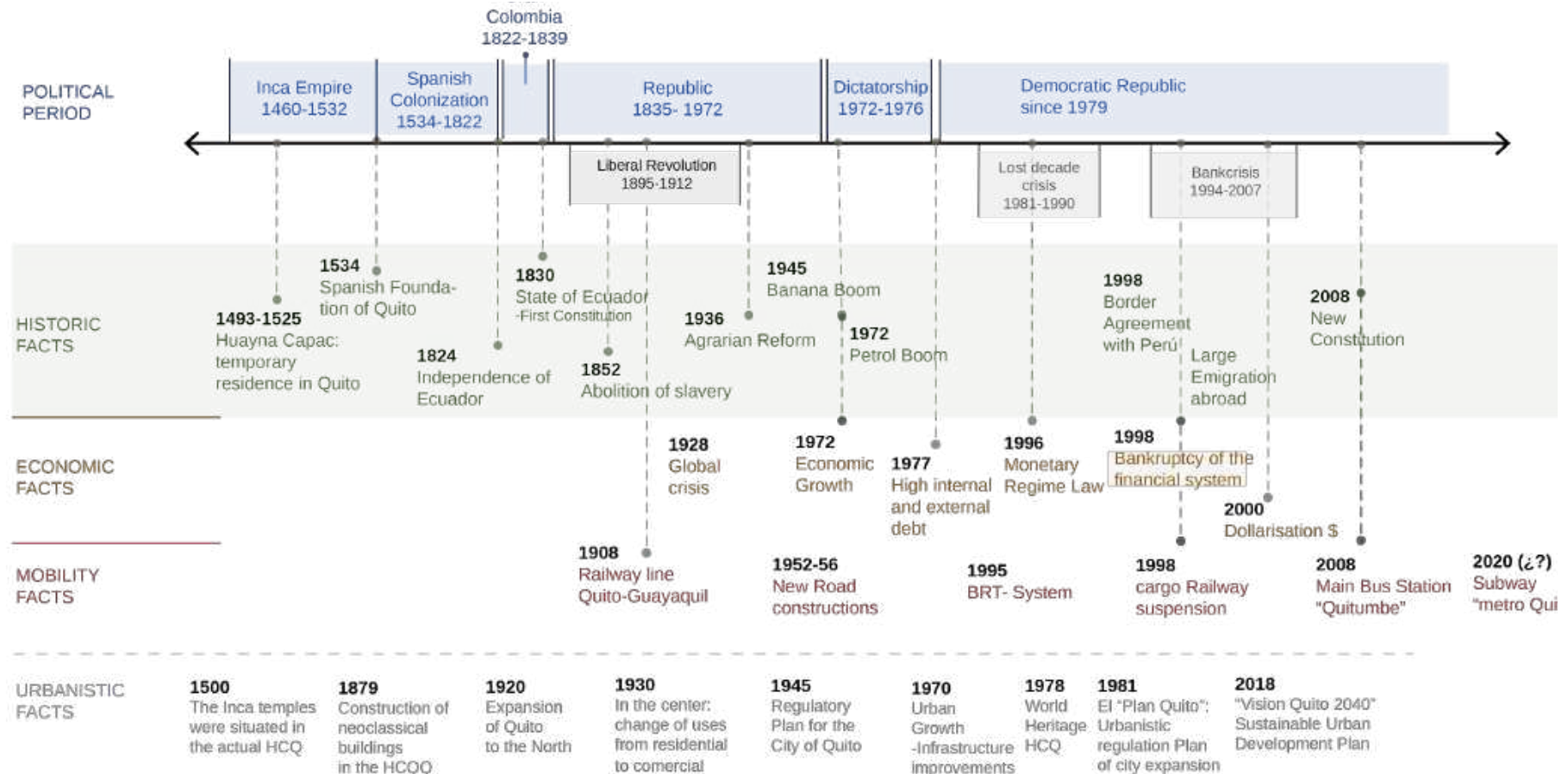


FIG.14 TIMELINE HISTORY OF QUITO

## 2.3 Basic Data

Quito is the capital of Ecuador and is the country's largest city with approximately 2.8 million inhabitants. Its geographical position has been strongly determinant for its growth: the city lies at 2.800m altitude in the valley of the Guayllabamba river between to mountain ranges in the east and west. Thus, the city has sprawled historically along the basin and is marked by a strong presence of the Andes, which form the city's unique landscape.

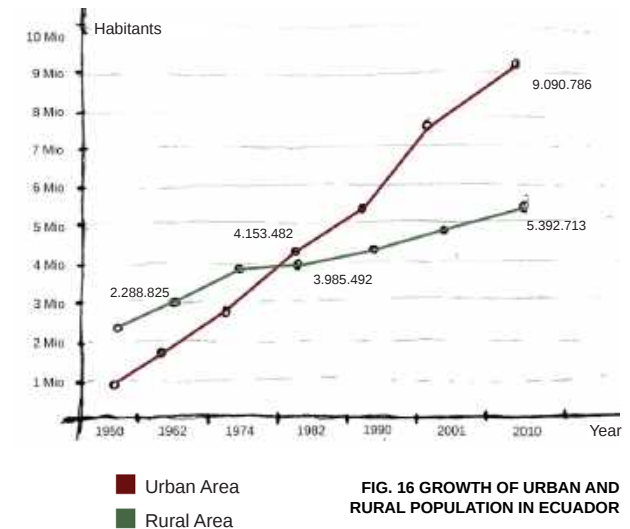
All in all, the work compiled in this booklet was oriented towards the area of the Historic Center [HCQ], which is one of the oldest, largest and best preserved in Latin America. Together with Krakow, Quito's HC was the first area to be declared a UNESCO World Heritage Site back in 1978. Besides being a strong cultural and well preserved architectonic compound, the HC still conglomerates many of the institutional powers and gives account of the city's social diversity.



FIG. 15 QUITO VERDE [1948],  
OSWALDO GUAYASAMÍN  
Quito's HC from the Eastern Andes

### Population Growth

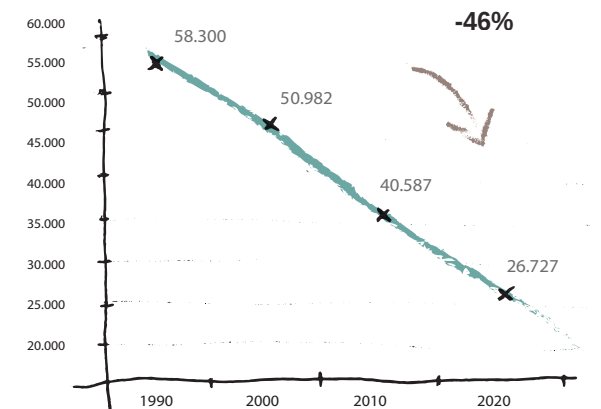
In Ecuador, urban population growth is steady. Since the early 1960s, it surpassed rural population and to our days the tendency is the same. Today, urban dwellers make up 64% of the country's population and reside mainly in Guayaquil and Quito. This growth has stressed urbanity strongly during the last decades. For instance, Quito gained ~2 millions of inhabitants over the last 50 years.



### Depopulation Historic Center of Quito

However, in the HCQ and the extended center of the city, the population is in decline. Only in the HC, 46% of dwellers have left the area over the last 30 years.

Some key facts for this tendency are the shift of land use from residential to commercial, high criminality rates, environmental and acoustic pollution and an overall decay of public and built space.





## Urban growth

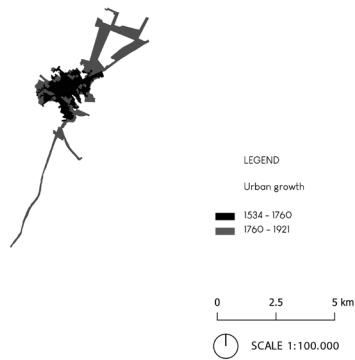


FIG. 18 URBAN GROWTH QUITO  
1534-1921

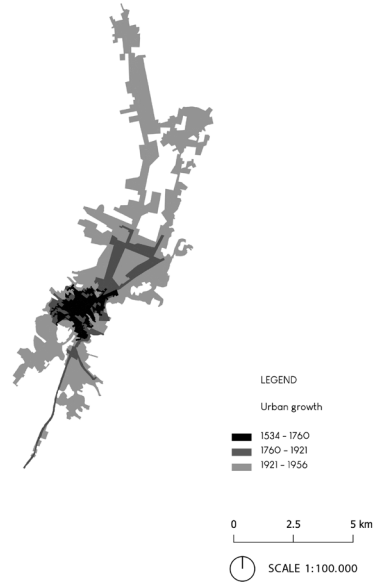


FIG. 20 URBAN GROWTH QUITO  
1534-1956

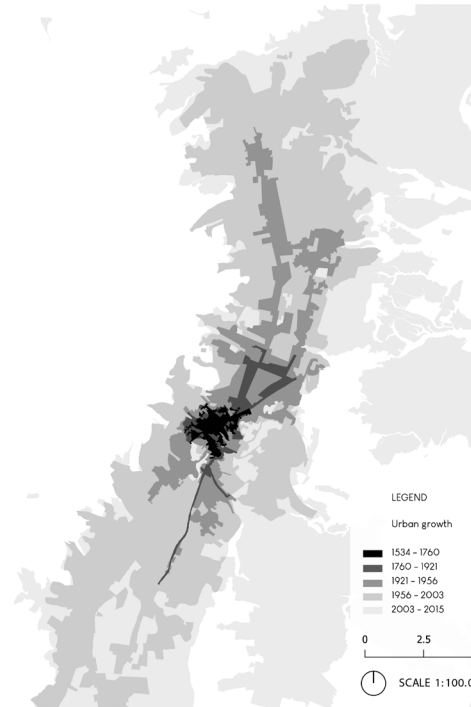


FIG. 22 URBAN GROWTH QUITO  
1534-2015

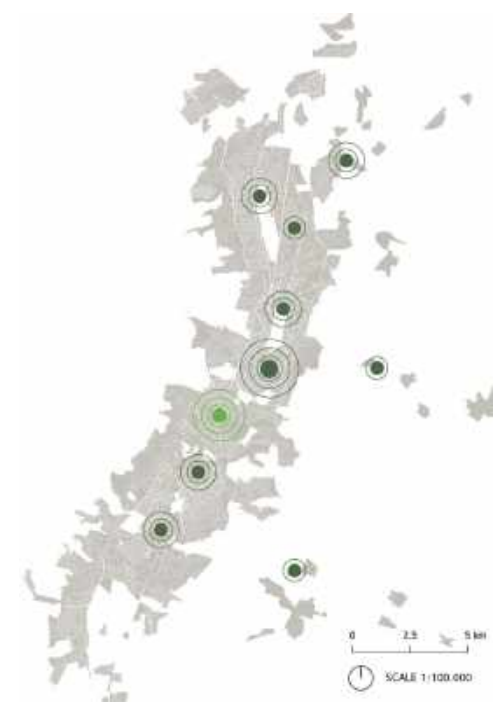


FIG. 24 CURRENT CENTRALITIES  
CITY OF QUITO



FIG. 19 DIAGRAM  
MONOCENTRIC GROWTH  
1534-1921



FIG. 21 DIAGRAM  
LINEAR GROWTH  
1921-1956



FIG. 23 DIAGRAM  
POLYCENTRIC GROWTH  
1956-2015



FIG. 25 DIAGRAM  
DISPERSE GROWTH  
1921-1956

The growth of Quito's fabric from its foundation in 1534 to the 1920s was very slow and concentrated around one urban core: the area of today's Historic Center.

Since the 1920's, with the country's industrialization the growth patterns have

changed: Ecuador's industrialization started and Quito was an attractive trade point being connected with the harbour of Guayaquil in the Pacific Ocean and the interior regions. As a result, a large migration from the countryside took place and the city grew linearly on the trade corridors [roads and railways].

Ultimately, since the 1970's new centralities arose along Quito's valley and the city gained a large number of new dwellers. The institutional powers were partly displaced to new framed centralities in the north, where the highest income groups dwell and in the south new retail and transport

centralities arose. Thus, the HCQ, lost part of its hierarchy, but remains still a key point in the the city.

As a result of the disperse growth, Quito is composed today of numerous centers distributed in and around its administrative boundaries.

## Density

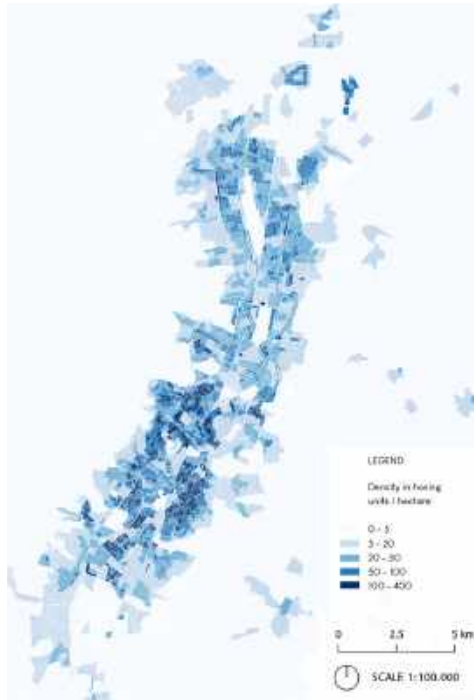


FIG. 26 DENSITY QUITO  
Data 2015

Over the last few decades, the densest areas of the city have tended to concentrate towards its north and south ends. The urban poor have settled in southern Quito, and the middle and upper middle class in the north. The result is a dense city in both poles [north and south], with large shrinking zones in the expanded city centre, as can be

## Shrinkage vs. growth



FIG. 27 URBAN GROWTH QUITO  
shrinking versus growing city

appreciated on Fig. 26. Thus, the tracing of the new metro line, which connects north and south represents a valuable opportunity to trigger urban renewal projects that enable the redensification of Quito's expanded centre.

## Ethnic self identification & schooling rates

The Ecuadorian population has an extremely diverse ethnic background. Also in Quito, there are large groups of African, European and Indigenous descendents. However, the different ethnic groups are highly segregated in the urban fabric as can be observed on Fig. 29. This fact is not only related to a different cultural background, but also to welfare and access to education, as can be seen on Fig. 27. This shows that ethnicity is strongly interwoven with education and income, which generates conditions of high inequality that have to be taken into account.

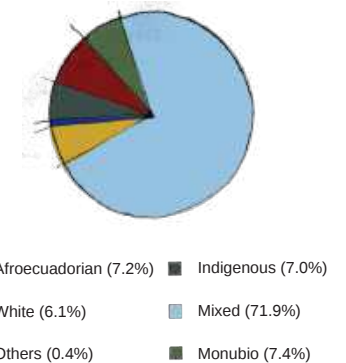


FIG. 29 ETHNIC SELF-IDENTIFICATION  
NATIONAL POPULATION

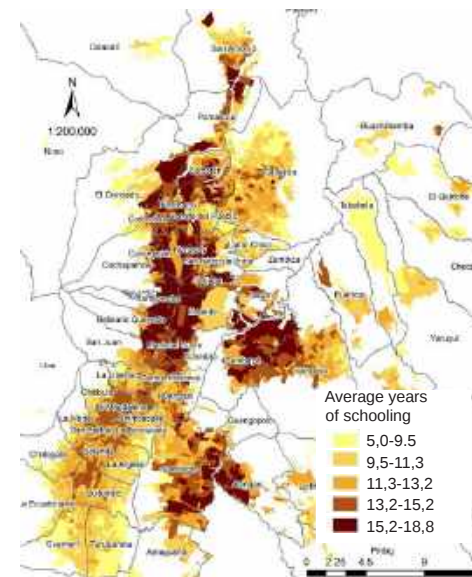


FIG. 28 SCHOOLING RATES  
CITY OF QUITO

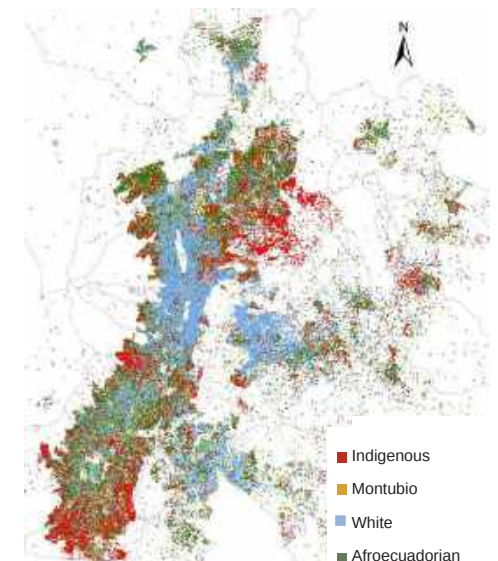


FIG. 30 ETHNIC SELF-IDENTIFICATION  
NATIONAL POPULATION

## 2.4 Mobility Systems

Quito's mobility is centered on motorized transport. As with many cities in the region, Quito has a growing traffic congestion problem, due to a rapidly increasing car fleet. The city has invested over the last decades great amounts of resources in developing a 'modern' car infrastructure, which makes today all displacements very time-intensive and polluting.

However, only 23% of the citizens use cars on a daily basis, versus 63% using the public transport, 15% walking and 0,3% cycling. The public transport infrastructure as well as pedestrian and cycling networks are deficient, swelling the number of car drivers every year.

**23% of citizens use cars, and cars use 80% of Quito's public space**

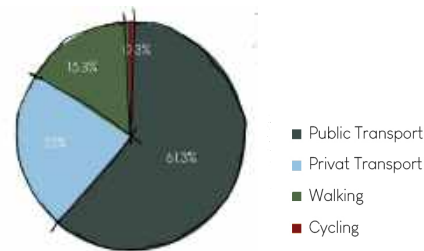


FIG. 31 DAILY TRAFFIC JAM IN ONE OF QUITO'S TRAFFIC ARTERIES



FIG. 32 PERCENTAGE USERS / TRANSPORT MODE QUITO

### Private cars

Overall obstacles car urbanism:

- > 15.000- 35.000 vehicles incorporated yearly
- > Growth rate of vehicles' fleet: 460% [2009- 2020]
- > 45% of motorized trips cross the HCQ [23.000]
- > Each citizen loses in average 173 h yearly in traffic congestion
- > Strong environmental & acoustic pollution



FIG. 33 DAILY TRAFFIC JAM IN THE HISTORIC CENTER

Nr. of vehicles

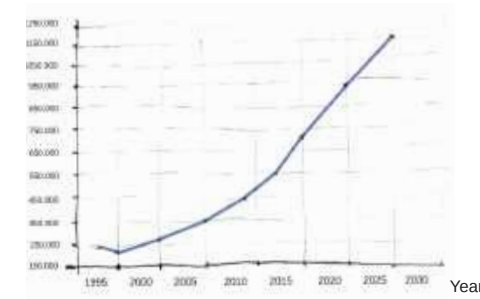


FIG. 34 GROWTH CAR FLEET QUITO 1990 - 2030 [Projection]

Nr. of vehicles / 1000 hab.

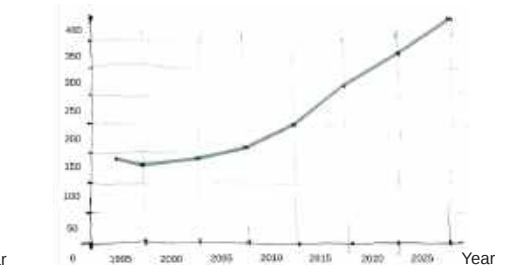


FIG. 35 VEHICLES PER HABITANT 1990 - 2030 [Projection]



## Pedestrian Infrastructure

Car-centric urban planning dominates the Quito's city landscape leaving little space for pedestrians. Besides that, there have been scarce investments in walking infrastructure over the last decades and the existing space is often in bad conditions. This situation of decay, summed to the high criminality rates makes walking unattractive for many citizens and sets lots of limitations for users with disabilities.

However, the last city administrations pedestrianized some streets in northern neighbourhoods and the Historic Centre. This sets an important precedent for future public space projects planned for Quito and marks a shift towards more inclusive public space planning practices.

**„From \$ 100  
invested in  
transport only  
\$ 3,3 go for  
pedestrian  
infrastructure &  
\$ 1,9 for biking  
infrastructure“**



### Overall problems pedestrian infrastructure:

- > Car-centric infrastructure
- > Institutionalized car-centric urban planning
- > Lack of quality infrastructure
- > Lack of investments
- > High criminality in public space
- > No barrier-free access
- > sexual harassment

FIG. 36 PEDESTRIAN CROSSING HISTORIC CENTER OF QUITO

## Cycling Infrastructure

In Quito there are approximately 60.000 daily bike travels, which represent 0,3% of the overall mobility displacements. The rare use of bike as a mean of transport is caused by the lack of proper infrastructure and a small [but growing] biking culture. As shown on the map [Fig. 36], the bike lanes figure only in central neighbourhoods of the city, which restricts greatly the potentials of this transport mean. Further, many of the existing bike lanes are deteriorated.

However, during the last years there has been a growing cycling tendency: in 2012 the city government introduced the 'Biciquito' bike-sharing system to foster bike culture & intermodality, and around 60km of bike lanes were built recently.

### Overall problems cycling infrastructure:

- > lack of infrastructure
- > safety concerns [criminality & bad infrastructure]
- > little bike culture

### Bikeshare system

- > "BICIKUITO" [since 2012]
  - ~ 40.000 Active Users
  - ~ 900 Bikes [300 E-Bikes]
  - 30 Stations [2016]

### Bikelanes

- ~ 65 km Bikelanes  
[concentrated in central & northern neighbourhoods]

FIG. 37 BIKELANES NETWORK QUITO, 2015



# Mass transport

Quito's public transport network has been based on bus transport over the last decades. Since 1995, three BRT lines connect the city from north to south. By the end of 2020, Quito's first metro line will inaugurate and the city plans future railway lines that connect the new metro tracing with the region. However, although the metro also crosses the city along the north-south axis, its tracing will enable a new set of opportunities for intermodal trips in combined stations with all BRT lines and the bike path network.



FIG. 38 BRT LINES QUITO [1]

Central BRT Corridor  
'TROLE'

Year of inauguration: 1995  
Passengers/day: 220.000



FIG. 40 BRT LINES QUITO [2]

Eastern BRT Corridor  
'ECOVÍA'

Year of inauguration: 2001  
Passengers/day: 120.000



FIG. 41 BRT LINES QUITO [3]

Western BRT Corridor  
'METROBUS'

Year of inauguration: 2005  
Passengers/day: 200.000



FIG. 42 TRACING METRO LINE

Subway  
Metro Quito

Year of inauguration: 2020  
Passengers/day: ~ 450.000

## 2.5 Metropolitan Urban Strategy

Quito is well connected from north to south via BRT and metro, but transversal east-west linkages are missing [see Fig. 42, 23]. However, transversality is crucial to enable intermodal mobility. Consequently, we propose in the city scale low emissions micromobility loops that provide east-west interconnection of all four mass transport lines with the neighbourhoods and further transport infrastructures. This with the aim of enabling intermodality and consolidating various existing centralities.

Moreover, the backbone of the low-carbon loops is the 'corredor ambiental', [marked in blue on Fig. 45], a longitudinal green corridor planned by the current city administration. Thus, the metropolitan strategy is interwoven with the environmental approach of Quito's municipality. Meanwhile, our design proposal focuses on the HCQ. Therein we explored in depth one of the intermodal loops and framed a low-carbon mobility concept.



FIG. 43 MASS TRANSPORT LINES



FIG. 44 TRANSVERSAL CONNECTIONS

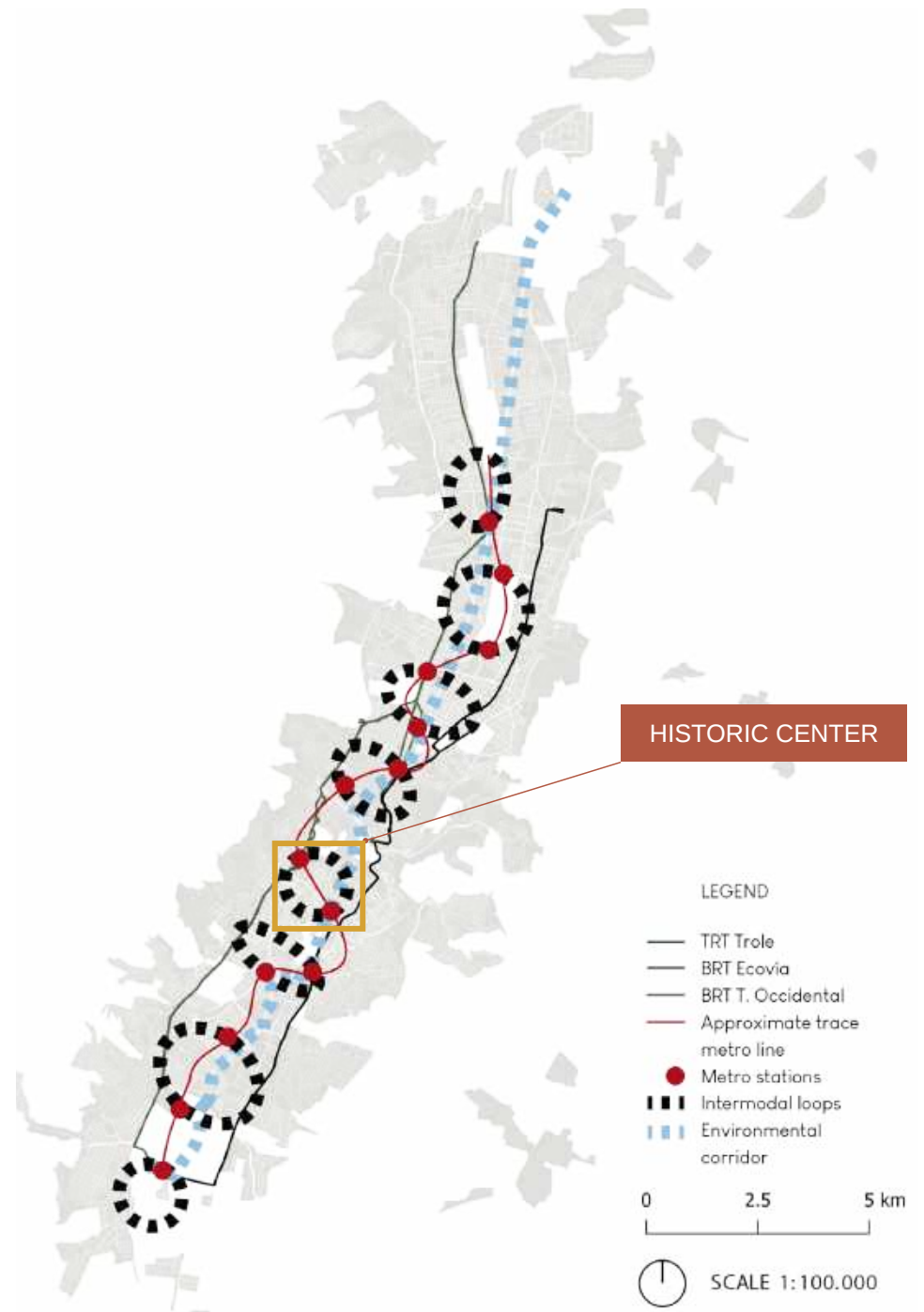


FIG. 45 URBAN STRATEGY



<b>03.</b>	<b>ANALYSIS HISTORIC CENTER</b>	<b>38-59</b>
3.1	Context	
3.2	Urban Network Analysis	
3.3	SWOT Analysis	
3.4	Actors & Drivers	

## **03. Analysis**

---

### **Historic Center**

# 3.1 Context

Throughout this chapter, the reader will be introduced to the Historic Centre of Quito [HCQ]. As aforementioned, the HC of Quito is one of the oldest and best preserved in Latin America. The area was even declared 'World Heritage Site' in 1978. Back then, the complete building complex of the HC was in relative decay and poverty. Since the restoration triggered by the UNESCO declaration two conditions have emerged, a very well maintained and touristified core [the heritage conservation area], surrounded by neighbourhoods in great urban decay and poverty.



**FIG. 46 PLAN HCQ**  
Dichotomy between heritage & non heritage neighbourhoods



**FIG. 48 PLAN CITY OF QUITO, 1805**  
**JUAN PÍO MONTÚFAR**  
Actual HC area



**FIG. 47 VIEW OF THE HCQ, 2017**  
In the background the 'Monte el Panecillo'



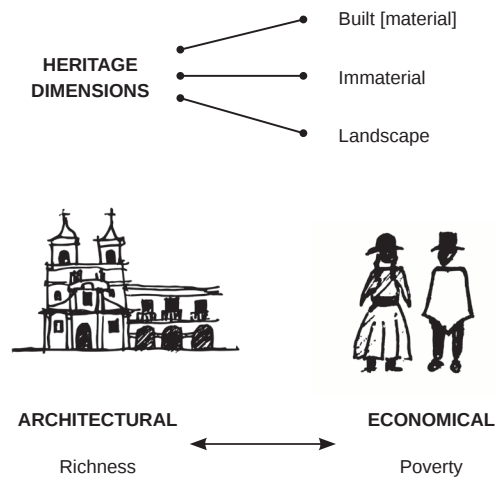
**FIG. 49 CITY OF QUITO, 19TH CENTURY, RAFAEL SALAS**  
In the background the 'Monte el Panecillo'



## Heritage

The building heritage of Quito's HC enriches the city with its vibrant atmosphere and well maintained colonial architecture. In terms of tourism, the HCQ is the city's main attraction.

However, the maintainance of the heritage building compound demands high financial costs and the social and landscape dimension of heritage are not addressed sufficiently: the HC is a zone of gross inequity and serious environmental issues.



**FIG. 50 THREEDIMENSIONALITY OF HERITAGE**  
Dichotomy HCQ: local poluation's poverty vs. architectural richness



**FIG. 51 PLAZA SANTO DOMINGO, HCQ**

### HERITAGE COMPLEXITIES

- > High Costs of buildings' rehabilitation & maintainance for local dwellers
- > Local dwellers not identified with the heritage condition
- > Low income groups living in great precarity
- > Vandalism
- > Poor government policies [no support for non heritage buildings / dwellers]
- > Regulatory framework for approving interventions: limited, slow and expensive

## Safety

The perception of constant insecurity is a main reason why many citizens decide not to spend more time than strictly necessary in the HCQ, or even completely avoid visiting the area. During the day, the HCQ is a highly commercial area attracting massive amounts people all over the city, which are also ideal conditions for small theft. Contrastingly, during the night, commerce closes, the center is completely empty and major criminal activity takes over the zone.

**“44% of HCQ's dwellers declare criminality / insecurity as their biggest concern”**

3 / 10 dwellers were victims of crime

8 / 10 women suffered sexual harassment

Day ↔ Night

[18-6h scarce & criminal street life]



### CAUSES FOR UNSAFETY

- > No night activity
- > shrinking number of residents [no eyes on the street]
- > Low income groups living in great precarity
- > Zone of illicit activities [drug dealing, robbery, prostitution]
- > Abandonment of the surrounding area from HCQ's heritage buildings compound
- > Absence of authority

**FIG. 52 EMPTY STREETS DURING THE NIGHT IN THE HCQ**



## Commerce

The southern section of the HCQ has been a highly commercial area since colonial times. In the area, the visitor can find some of the most important food and textile wholesale markets. Around them 'formal' and 'informal' vendors cluster. Furthermore, there is small retail inside and outside the boundaries

of the conservation area. Inside, small commerce is devoted to the touristic industry, and outside to the supply of residential areas. Thus, the HC is a key point in the logistics of the city, being it one of the biggest goods distribution hubs Quito and also a neuralgic economic pole.



FIG. 53 DISTRIBUTION MAIN ECONOMIC AREAS



FIG. 54 DISTRIBUTION SMALL RETAIL AREAS

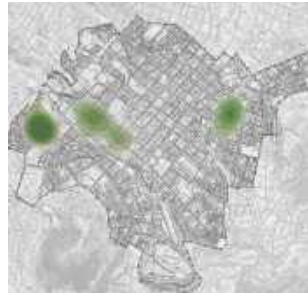


FIG. 55 DISTRIBUTION FOOD WHOLESALE MARKETS

FIG. 56 MARKET OF SAN ROQUE  
The market of San Roque is a major small retail area with large informal sectors



## Informality

The HCQ clusters daily approximately 8.000 informal workers. Due to the precarious economic situation of large sectors of society, many citizens face the necessity of having to work informally. The HC is strongly frequented, what makes it very attractive for street vending. There conclude various inflows of people: farmers selling their products to avoid intermediaries, Venezuelan migrants escaping the political crisis, and a large sector of further urban poor. The recent politics intending the 'regularization' of the sector ended up 'only' displacing the informal vendors temporarily in conflictive acts of violence.

**“46% of Ecuador’s population works informally” [2019]**



FIG. 57 STREET VENDING ON A SIDEWALK OF QUITO'S HC



### CAUSES FOR INFORMAL WORK:

- > Strong arrival of national & international immigrants
- > High unemployment rate
- > Low education rate [illiteracy, higher education]
- > Difficulty + regulations for a legal work contract
- > Precarious 'legal' working conditions

FIG. 58 STREET VENDING ON A MAIN ROAD'S TRAFFIC LIGHT OF HCQ



## 3.2 Urban Network Analysis

To address mobility in the HCQ we assessed the area with an Urban Network Analysis [UNA]. Therein, we recognized that the station of San Francisco is located in close proximity to four BRT stations: 'San Roque', 'Santo Domingo', 'Plaza Chica' and 'La Marin'. However, not only the BRT stations are close to the future metro station, but also key logistics areas cluster in the area: the food wholesale markets of 'San Roque', 'San Francisco' and 'Mercado Central', as well as the textile markets 'Ipiales' and 'Centro de Ahorro Montufar'. All the-

se facilities are located in a radius of no more than 1 km from the station of San Francisco.

Thus, in order to foster intermodal trips in the area we envision an intermodal loop that connects both systems: the passengers' stations' network and the logistic hubs through a low-emissions micromobility infrastructure. For the design proposal we focused on one section of the intermodal loop: a corridor starting at the market of 'San Roque' and ending at 'La Marin' BRT station.

### UNA: Massive Transport stations

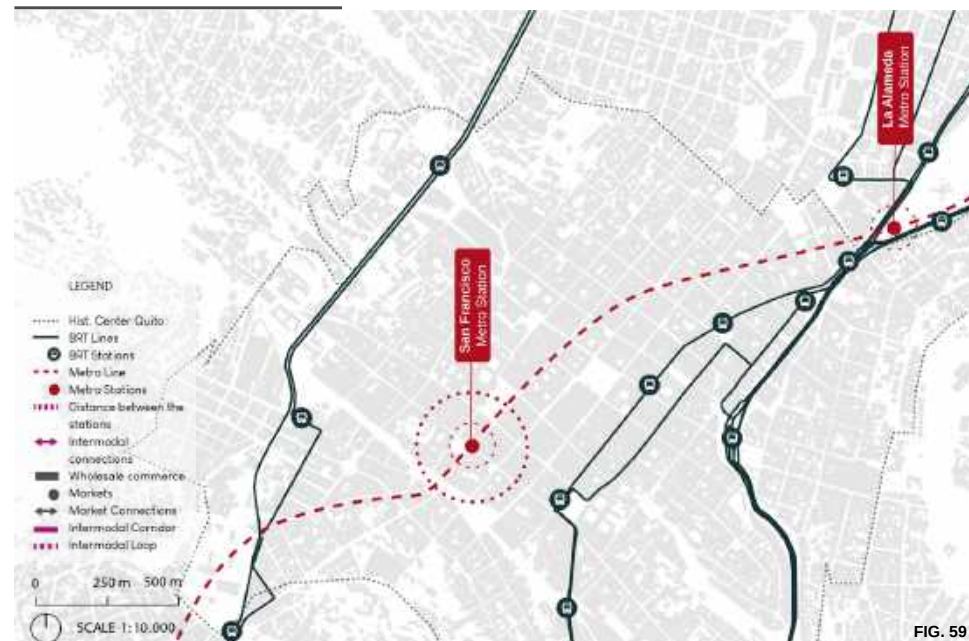


FIG. 59

### UNA: Wholesale markets & small retail

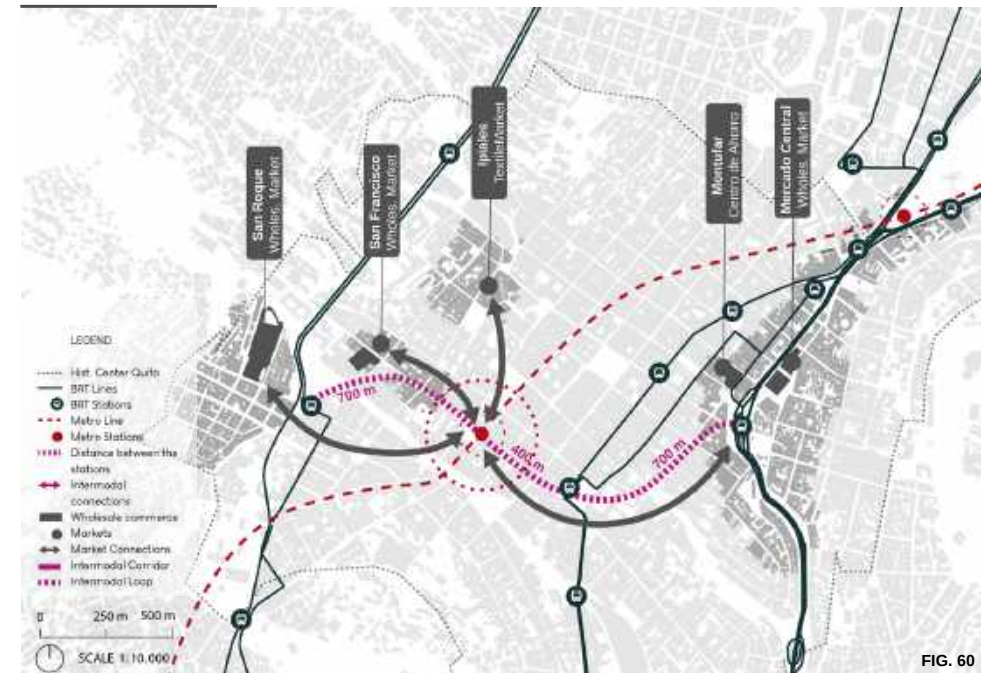


FIG. 60

### UNA: Intermodality potentials public transport

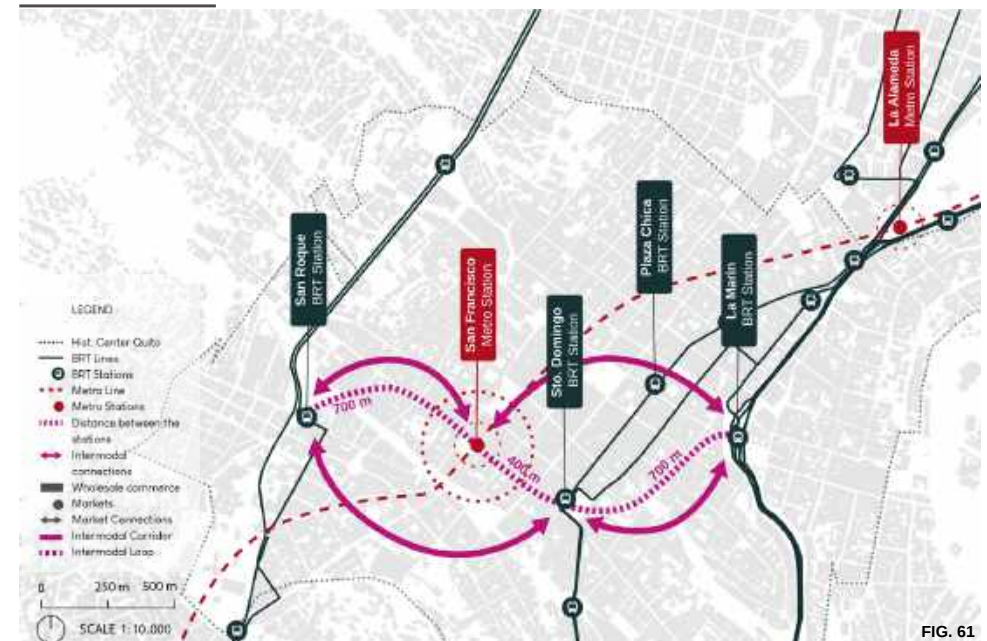


FIG. 61

# Low-carbon Mobility Corridor

## Micromobility Loop HCQ

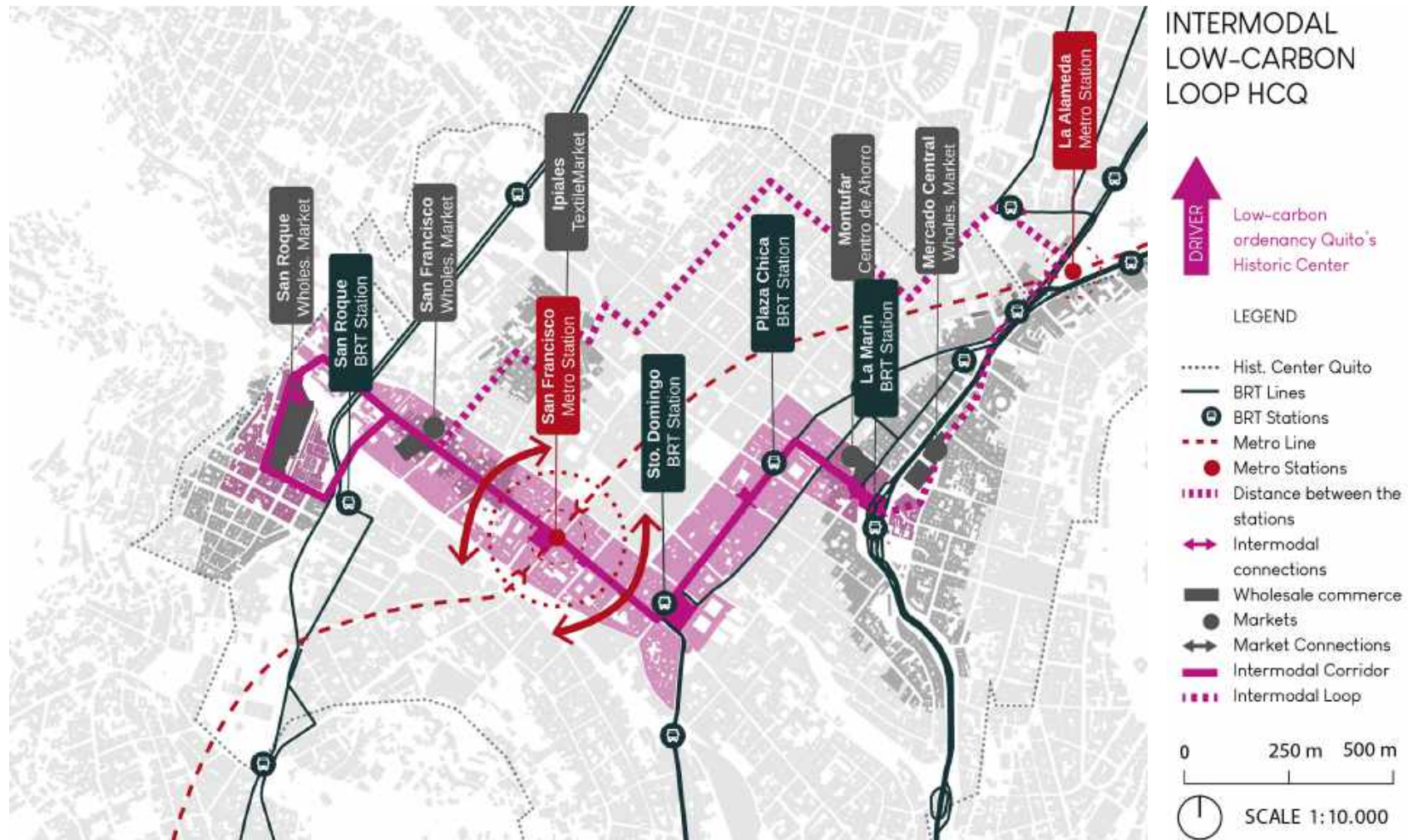


FIG. 62 MICROMOBILITY CORRIDOR Strategy



# 3.3 SWOT Analysis

With the aim of having a better grasp of the city of Quito in mobility concerns, but also in socio-economic matters, we realised a SWOT analysis. Therein, we identified the strengths, weaknesses, threats and opportunities in two different scales. First we analyzed the city in the metropolitan scale [macro-scale], and afterwards we dove into the study area

in Quito's HC [micro-scale].

With the knowledge gained by doing the SWOT Analysis, we were able to assess the city in a holistic way, having facts of very different nature put together in the four SWOT categories. To frame that dialogue and draw it in maps, enabled us to have a much deeper understand-

ing of Quito's urban realm. Thus, the SWOT analysis in both scales helped us embrace the urban complexity of the city of Quito and frame a proposal that is in strong compliance with the current necessities of the city in terms of mobility transition and the thereby involved environmental, economical, social and cultural fields.

## Macroscale

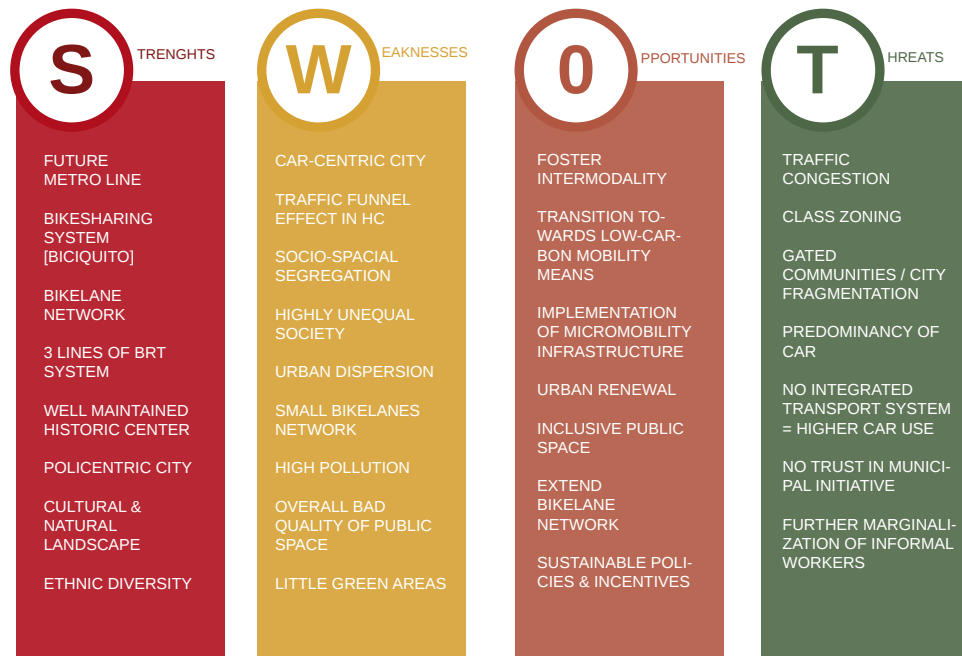


FIG. 63 METROPOLITAN SWOT ANALYSIS [MACRO-SCALE]

## Microscale

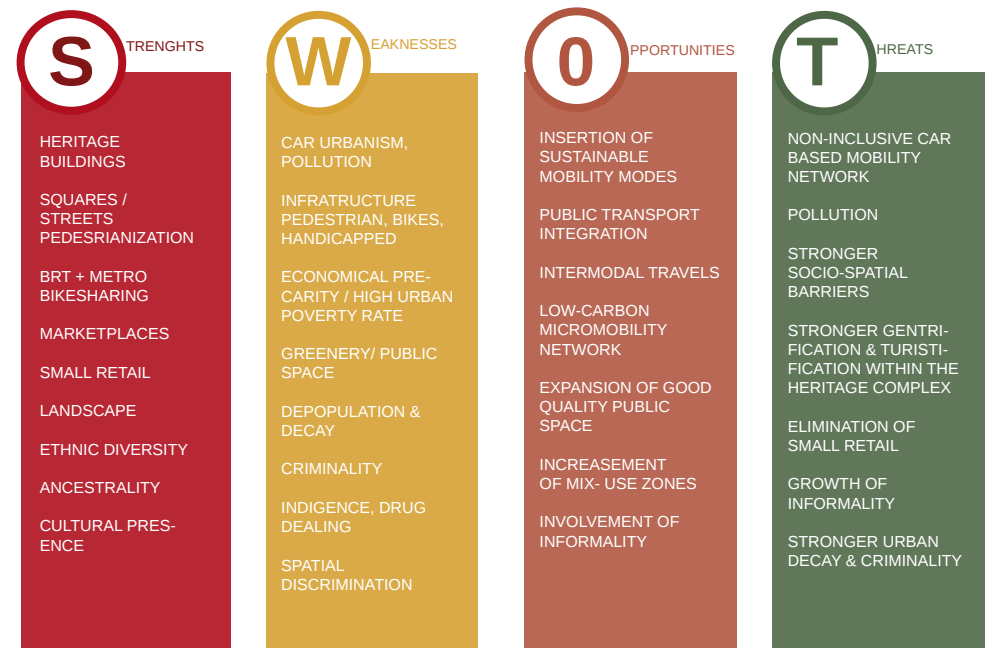


FIG. 64 SWOT ANALYSIS HCQ [MICRO-SCALE]





# Weaknesses

## Historic Center of Quito

The public space of the HCQ is mostly used by cars. This is a main cause for the scarcity and low-quality space for pedestrians and bike riders in the area. Further, on account of the growing car fleet, the HC faces often serious traffic congestion, causing long delays in public transport and high acoustic and environmental pollution.

Besides that, the HCQ is grossly unequal: rich and touristic in the core and poor in the periphery. This contrasting condition arises a wide set of conflicts around tourism, informal work and criminal activity, that summed to the car-centric urbanism ends up giving birth to strong spatial barriers.

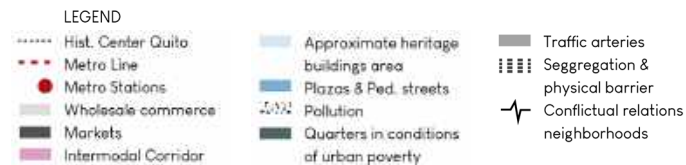
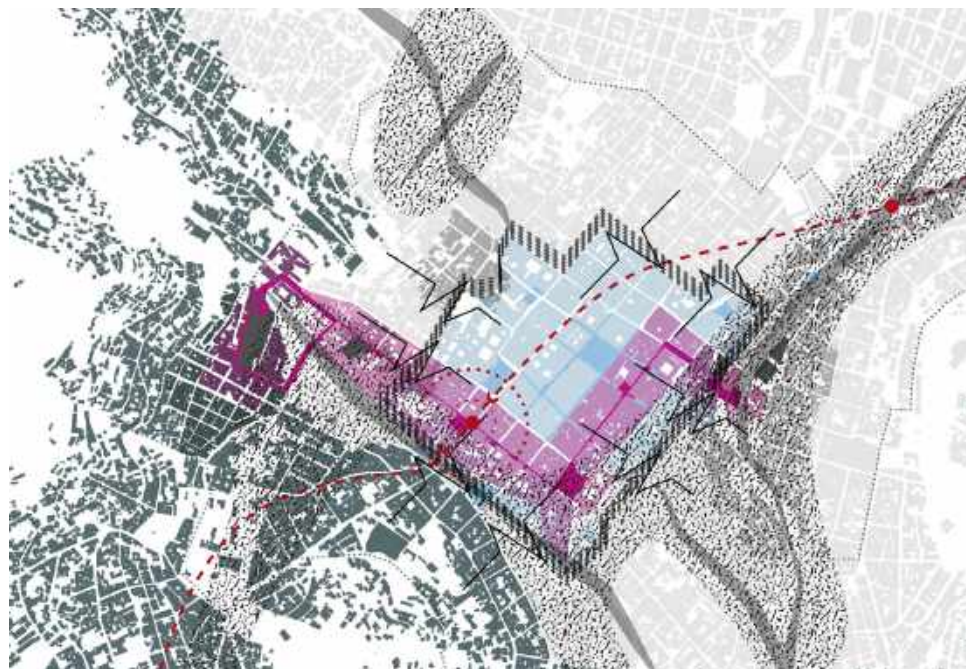


FIG. 73 SWOT WEAKNESSES

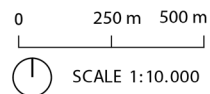


FIG. 74



FIG. 76

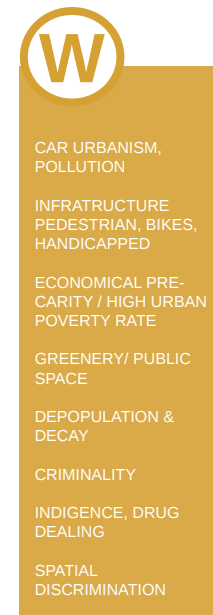


FIG. 77

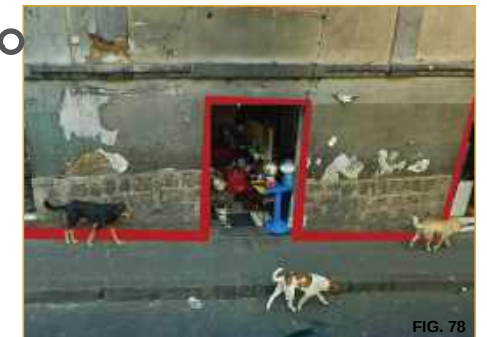


FIG. 78

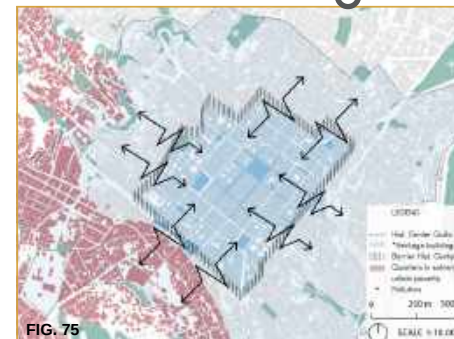


FIG. 75



FIG. 79



# Opportunities

## Historic Center of Quito

The proximity of the metro station to the BRT stations and the extent of commercial areas provides an opportunity to rethink cargo and passengers mobility. However, the intermodal loop we propose, would not only enable a sustainable exchange of goods and people, but is also conceived as a catalyst to

refigure the HCQ by renewing its public space and stimulating social inclusion and participation. Thus, we envisage that the inclusion of low-carbon and e-micromobility in the HCQ could become a cornerstone to kick start the transition towards a more inclusive and environmental approach to public space.



FIG. 80 SWOT OPPORTUNITIES



# Threats

## Historic Center of Quito

Throughout our research, the biggest threat we identified in Quito were the increasing spatial barriers dividing the heritage conservation area from the surrounding neighbourhoods of the HC. These barriers are configured by a large set of components of infrastructural, social and economic nature.

Following that tendency, a possible scenario for the future of Quito's HC might be the expansion of both: the touristic centre and the extremely poor periphery creating even harder spatial barriers between the institutional and touristic centre and urban poor.

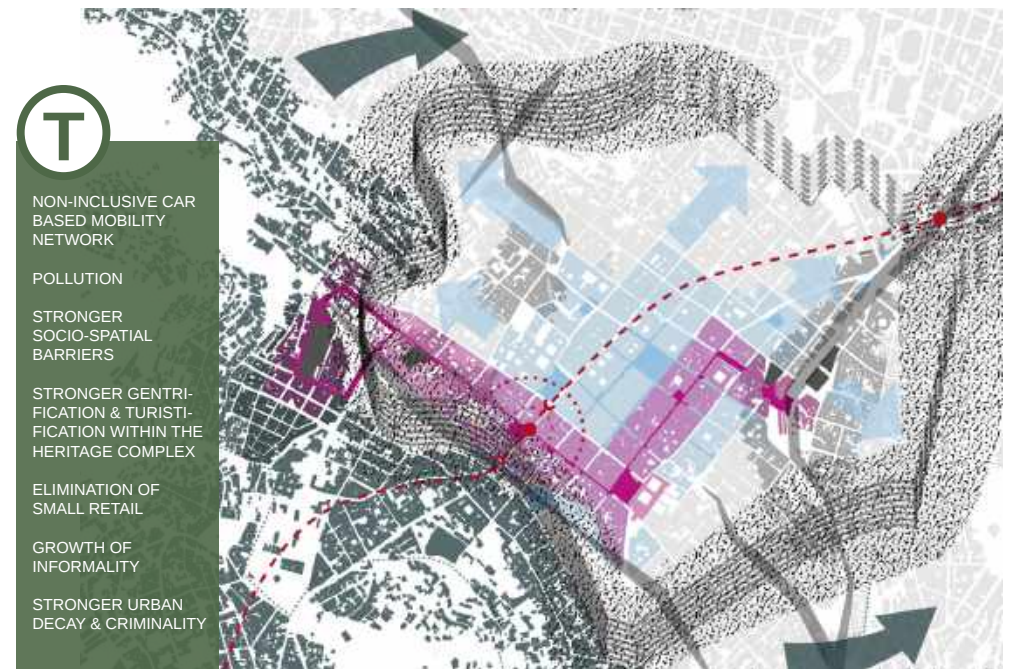
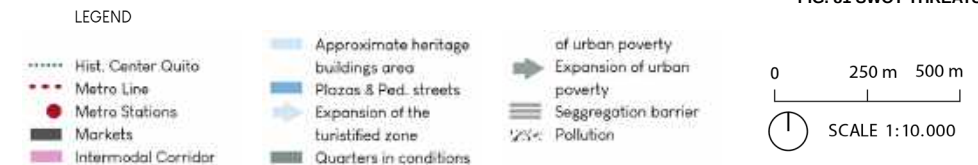


FIG. 81 SWOT THREATS



# 3.4 Actors & Drivers

To sum up, concerns of accessibility, environment, public space quality and social justice drive our mobility proposal for the HCQ.

Besides that, the users we foresee will be benefited the most by such an intervention are the cyclists, the pedestrians, the tourists, as well as the informal vendors, the residents and the merchants.

However, we are aware that if the project is implemented, there is a much bigger spectrum of actors at stake that has to be involved in the process of decision making and 'co-production' of urban space.

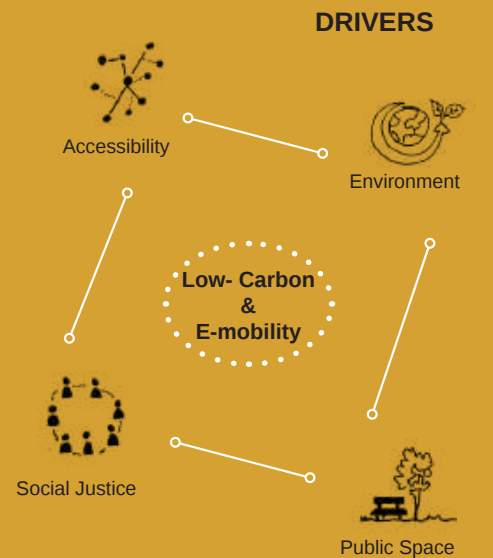


FIG. 82 PROJECT DRIVERS

## ACTORS

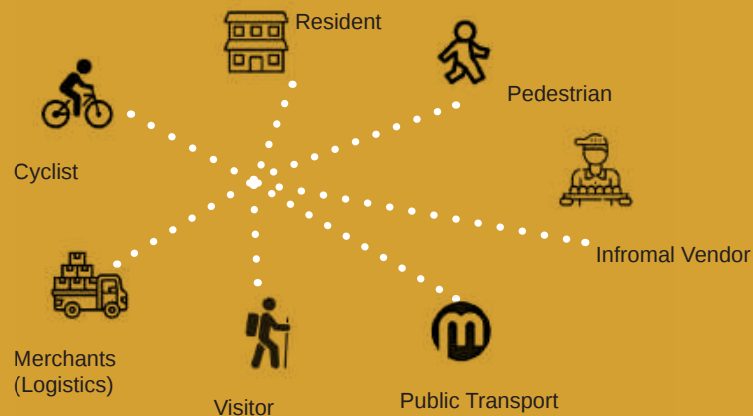


FIG. 83 BENEFITED ACTORS HCQ

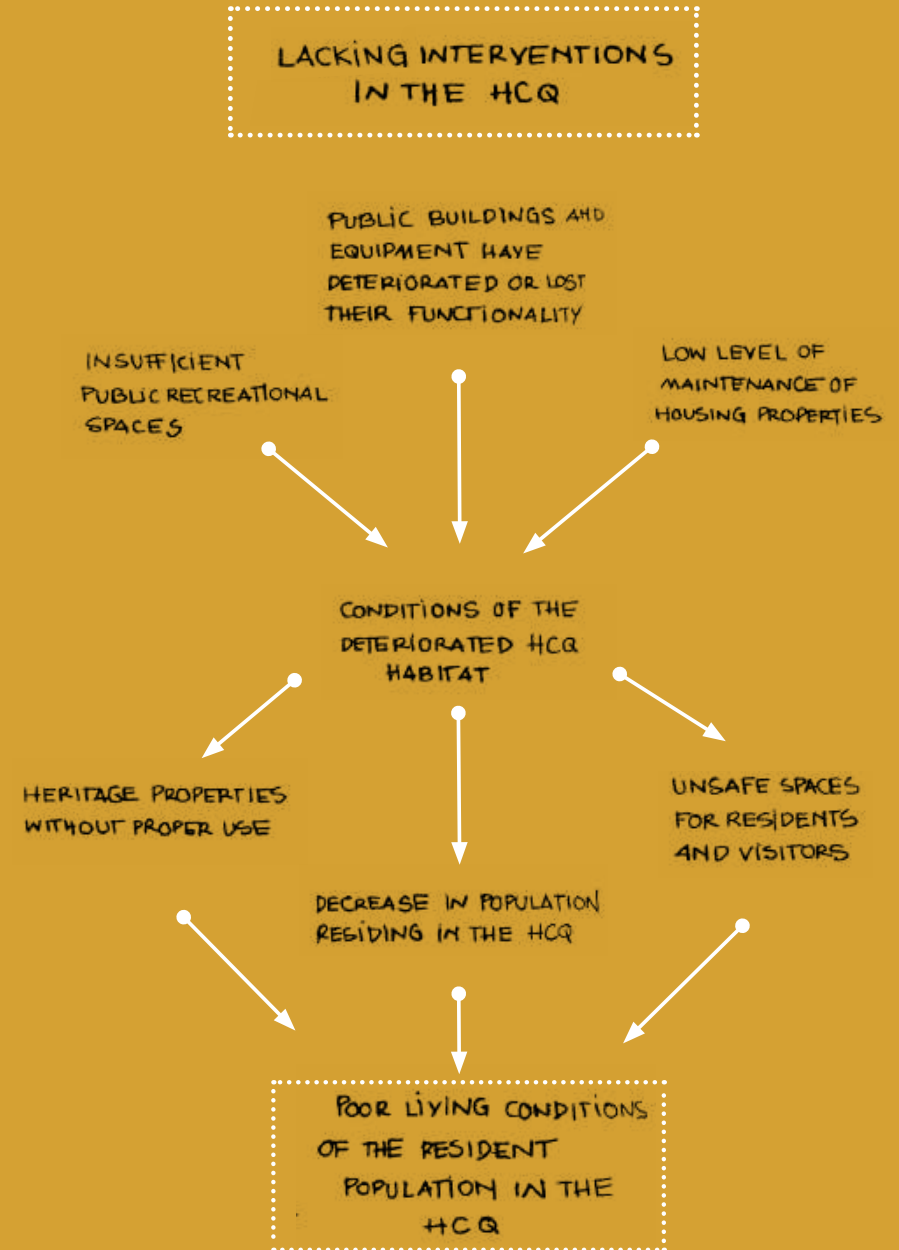


FIG. 84 PROBLEMATICS HCQ

## **04. MOBILITY CONCEPT** **60-77**

- 4.1 Passengers & Logistics
- 4.2 Suggested Vehicles
- 4.3 Street Sections
- 4.4 Mobility Islands
- 4.5 Policy & Incentives
- 4.6 Socio-spatial Conflicts

# **04. Mobility Concept**

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# 4.1 Passengers & Logistics

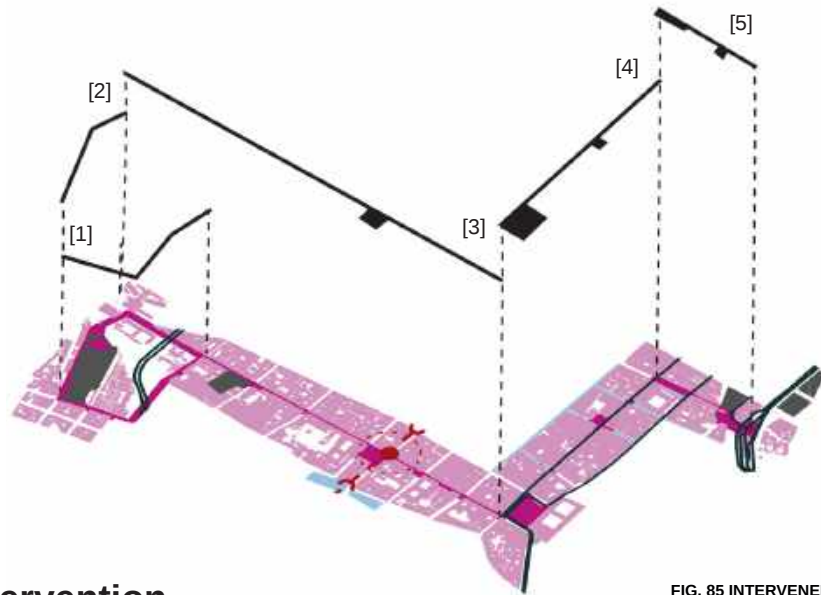


FIG. 85 INTERVENED STREETS

## Intervention

The streets intervened in the design of the intermodal corridor are from left to right [1] the **calle Quiroga** and the pedestrian bridges crossing the AV. 24 de mayo, [2] the **calle Cumandá**, [3] the **calle Rocafuerte**, [4] the **calle Guayaquil** and the [5] the **calle Mejía**. All the streets are old colonial streets with a section of 6-7 m. Further, we planned 7 key intermodal hubs along the corridor, which relate to both mobility systems: passenger transport and cargo logistics.

The passenger system, which the reader can observe on the upper scheme, consists of station based mobility hubs distributed every 250 to 350 m. Their lo-

cation was determined by the proximity to the main public transport stations and commercial / logistic areas. On the other hand, the cargo logistics hubs are mainly based on the market areas. We foresee the arrival of the majority of food supply via trucks to the wholesale market of San Roque, and the further distribution of the goods via three-wheelers and e-cargo bikes along the corridor with some secondary stations. The e-three-wheelers system would be centrally managed from the market of San Roque and only operating during labour hours, whereas the cargo bikes are conserved as part of the bikesharing stations' inventory.

## Station based passengers' intermodal mobility hubs

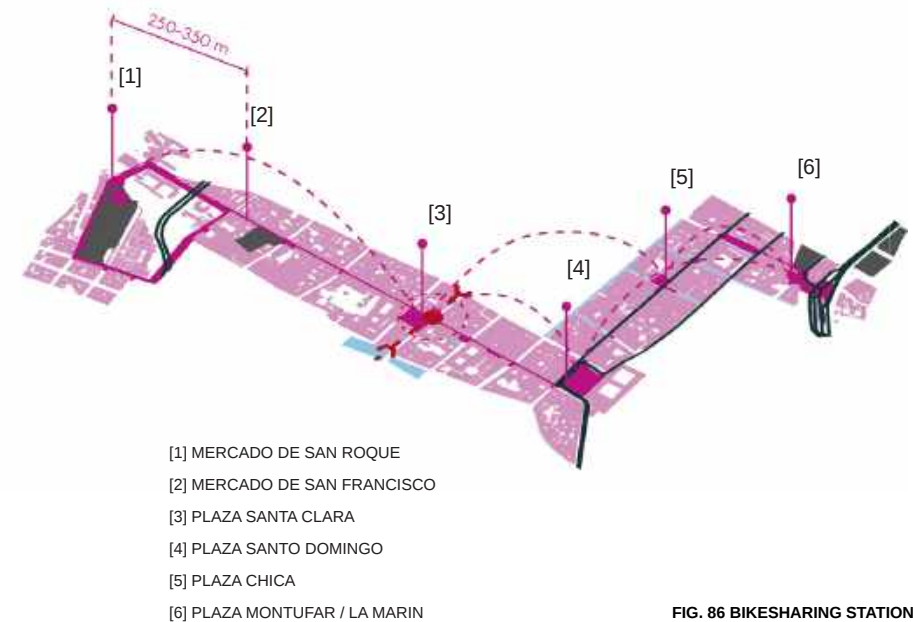


FIG. 86 BIKESHARING STATIONS

## Markets' based cargo intermodal mobility hubs

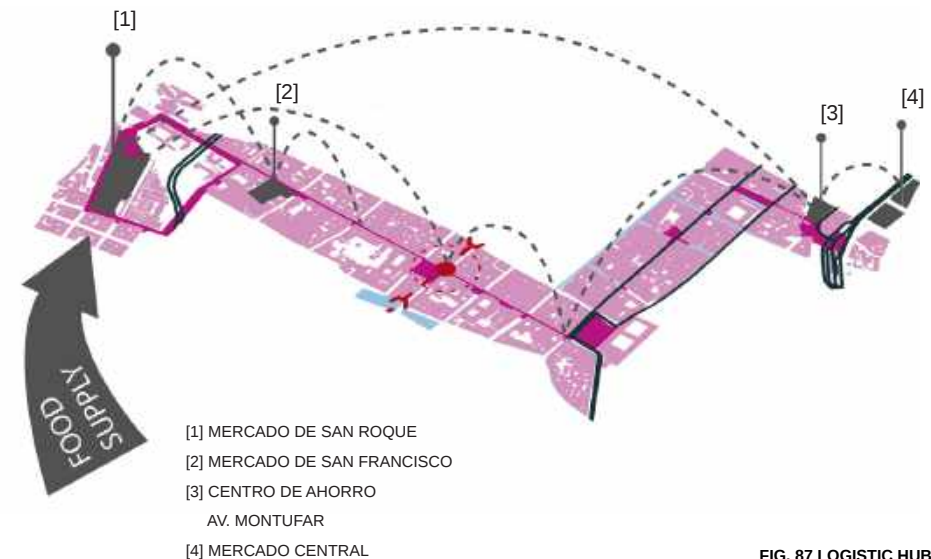


FIG. 87 LOGISTIC HUBS

# 4.2 Suggested Vehicles

In our concept traditional bikes & e-bikes and also traditional & e-cargo bikes would be integrated into the offer of the bikesharing stations. This with the aim of making them much more attractive. Further, the bikeshare system is thought as part of an integrated public transport ticketing system with differentiated access fares. On the other hand, the cargo e-three-wheelers would operate in a separate system based in the

wholesale market of San Roque due to the difference in their cost, space and speed requirements.

Further, we plan to implement a bike-sharing as a modular station-based system. Such a system tends to last longer, gives the users the option to choose the bike that fits best to their necessities and gives non-smartphone users alternatives to access it.

## Passenger Vehicles

### BIKESHARE BICIQUITO



FIG. 88 PUBLIC BIKES BICIQUITO

**USERS:** public transport users, residents

**SPEED RANGE:** 10 - 20 km/h

**STORAGE:** modular bikesharing stations [24h]

**BATTERY RANGE:** mechanic traction

**LANE WIDTH:** 90 - 120 cm

### E-BIKE-SHARE



FIG. 89 PUBLIC E-BIKES BICIQUITO

**USERS:** public transport users, residents

**SPEED RANGE:** 10 - 20 km/h

**STORAGE:** modular bikesharing stations [24h]

**BATTERY RANGE:** 60 - 160 km / charging cycle

**LANE WIDTH:** 90 - 120 cm

### E-BIKE BABY SIT



FIG. 90 BIKE WITH KID SIT

**USERS:** public transport users, residents

**SPEED RANGE:** 10 - 15 km/h

**STORAGE:** modular bikesharing stations [24h]

**BATTERY RANGE:** 60 - 160 km/charging cycle

**LANE WIDTH:** 90 - 120 cm

## Station based system



FIG. 91 MODULAR, SOLAR POWERED BIKETOWN RACKS

**LONGEVITY**  
[heavy public space intervention]

**RIDER CHOICE**  
[city bikes, e-bikes & E-cargo bikes]

**RELIABILITY**  
[no internet needed, smartphone alternative]

**AFFORDABILITY**  
[integrated to transport system ticketing, differentiated memberships to increase access]

**HIGH CAPITAL COSTS**  
[infrastructure and maintainance]

**FINANCIATION**  
[possibilities of advertising]

**PROBLEM**  
[Bike / dock availability]

## Cargo Vehicles

### CARGO BIKE



FIG. 92 TRADITIONAL CARGO BIKES

**USERS:** PUB. TRANSPORT USERS, RESIDENTS,

**SPEED RANGE:** 10 - 20 km/h

**STORAGE:** modular bikesharing stations [24h]

**BATTERY RANGE:** mechanic traction

**LANE WIDTH:** 100 - 150 cm

### E-CARGO BIKESHARE



FIG. 93 E-CARGO BIKES WUPPERTAL

**USERS:** public transport users, residents, retailers

**SPEED RANGE:** 10 - 20 km/h

**STORAGE:** modular bikesharing stations [24h]

**BATTERY RANGE:** 60 - 80 km / charging cycle

**LANE WIDTH:** 100 - 150 cm

### E-THREE-WHEELERS



FIG. 94 E-THREEWHEELER

**USERS:** cargo logistics guild

**SPEED RANGE:** 25 - 30 km/h

**STORAGE:** logistic hubs, only daylight use

**BATTERY RANGE:** 50 km / charging cycle

**LANE WIDTH:** 140 - 180 cm

# 4.3 Street Sections

For the intermodal corridor we project a moderate speed street section, between pedestrianisation and car-use. We envisage two types of sections: one shared by the BRT line and low-carbon & e-micromobility [**Section A**] and a second one exclusively devoted to sustainable micromobility [**Section B**]. Besides that, both sections are conceived without private car traffic lanes.

For the **Section A** [Fig 95, 96] we plan a 30 km/h lane for the trolley and the e-cargo vehicles, as well as a bike lane and wider sidewalks on both street sides. For the **Section B** [Fig 97, 98], we envisage a single-level street used by cargo threewheelers, pedestrians and cyclists. Therefore we plan wider sidewalks with greenery on one street side, a wide bike lane and a 30 km/h zone for the transit

of electric cargo threewheelers. In addition, as shown on the '**flexible section**' [Fig. 98] the 30 km/h lane can be used by pedestrians during the market's closing hours. This way the sidewalks gain space temporarily. In the event that a car needs to pass eventually, it can use one bicycle lane and the 30 km/h speed cargo-threewheeler lane.

## Section A, C. Guayaquil

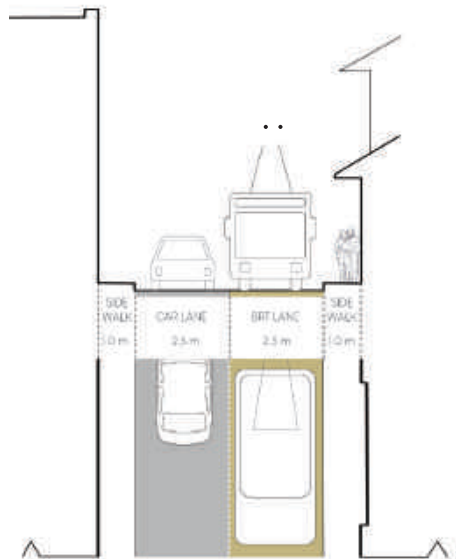


FIG. 95

Current street section  
Calle Guayaquil

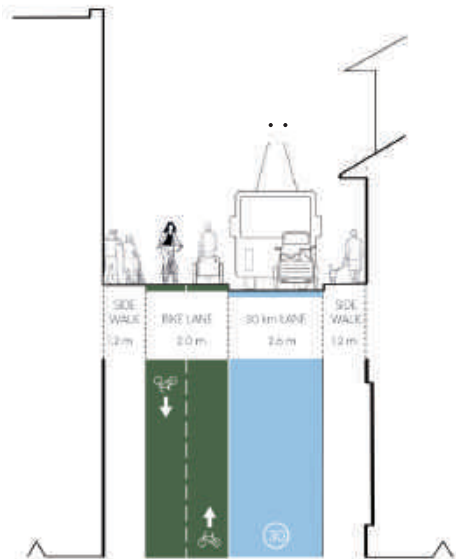


FIG. 96

Planned street section  
Calle Guayaquil

## Section B, C. Rocafuerte

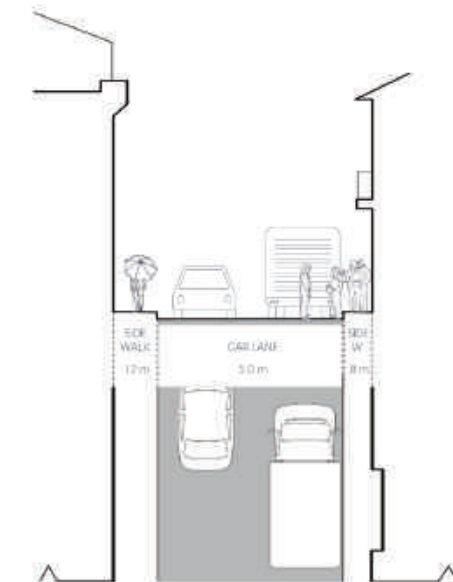


FIG. 97

Current street section  
Calle Rocafuerte

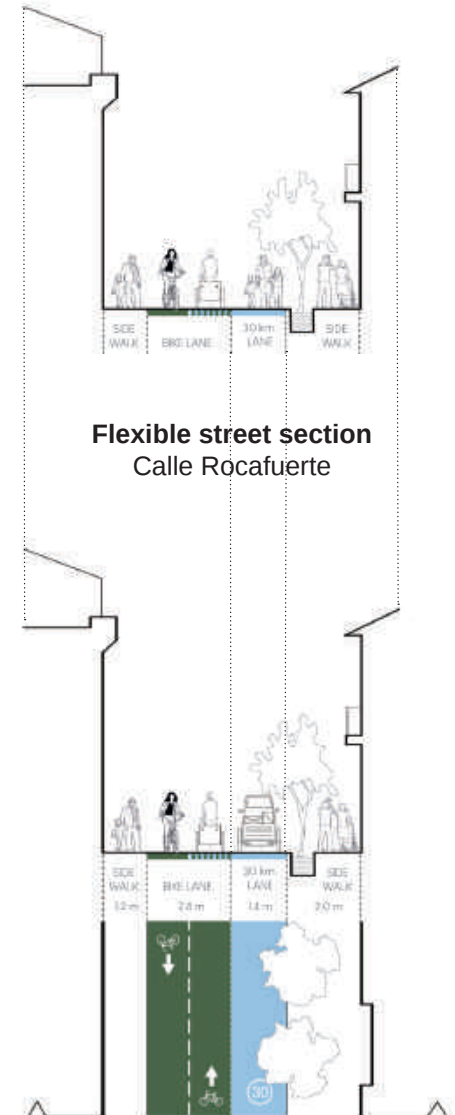


FIG. 98

Planned street section  
Calle Rocafuerte



# 4.4 Mobility Islands

## The concept

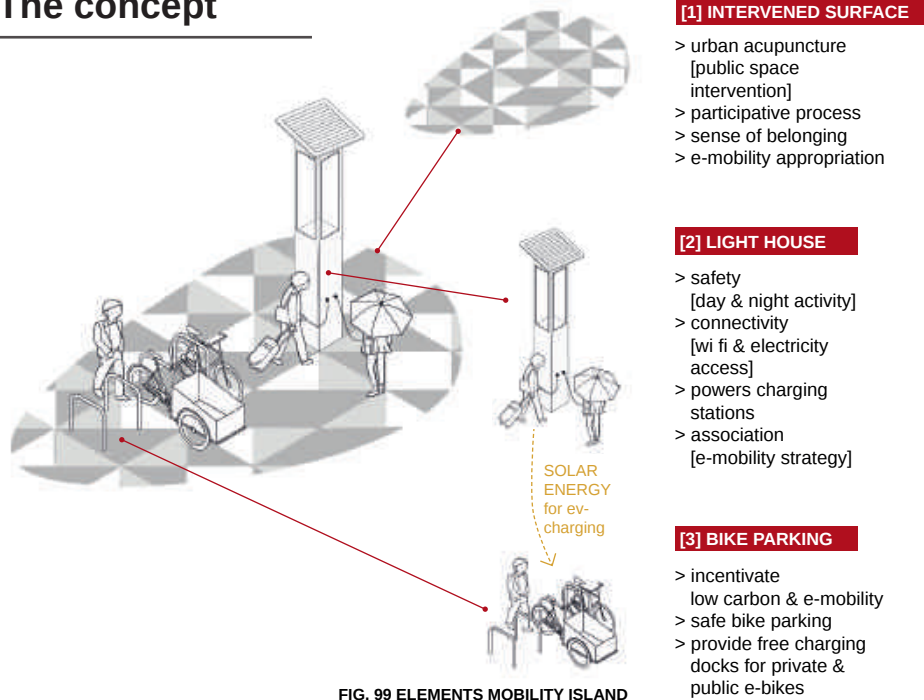


FIG. 99 ELEMENTS MOBILITY ISLAND

The 'mobility island' is our approach to the specific design of the intermodal hubs. In our proposal, each 'hub' is configured by one or more 'mobility islands'. The 'islands' were conceived to tackle not only the mobility challenge, but also to overcome very specific necessities of the social and cultural sphere. Thus, we strive towards kick starting a holistic mobility transition as an integral part of a much wider change touching environmental and technological aspects, but also social, cultural and safety problematics identified throughout the SWOT analysis.

In terms of design, each 'mobility island' has three grounding elements. **First**, a painted surface intervened by the community in a participative process, which aims to foster inclusivity and create a sense of belonging to the mobility transition. **Second**, a lighthouse powered by solar energy, which illuminates the night creating better safety conditions, fosters connectivity by providing wi-fi access to the citizens and powers the electric bike charging slots. **Third**, numerous, comfortable & safe bike parkinging slots. This way, we aim to make micromobility visible and attractive.

## Typologies mobility islands

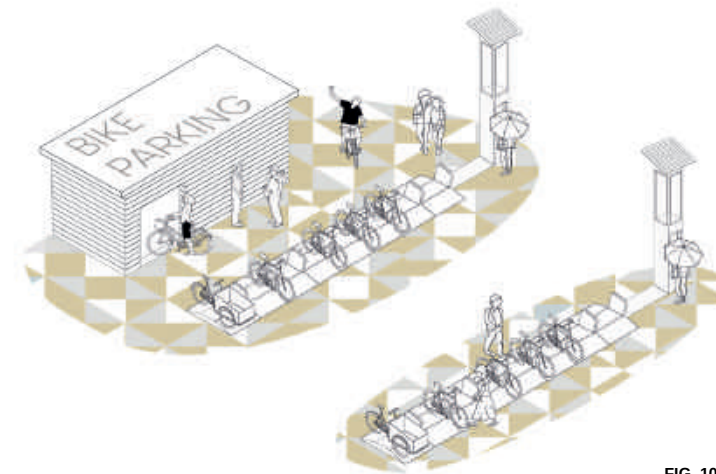


FIG. 100

### [1] Bikesharing stations

#### SWOT aspects tackled

- > improve transport integration
- > increase intermodal trips
- > improvement of cycle users & pedestrians access
- > transport emissions' reduction
- > expansion & qualification of public space

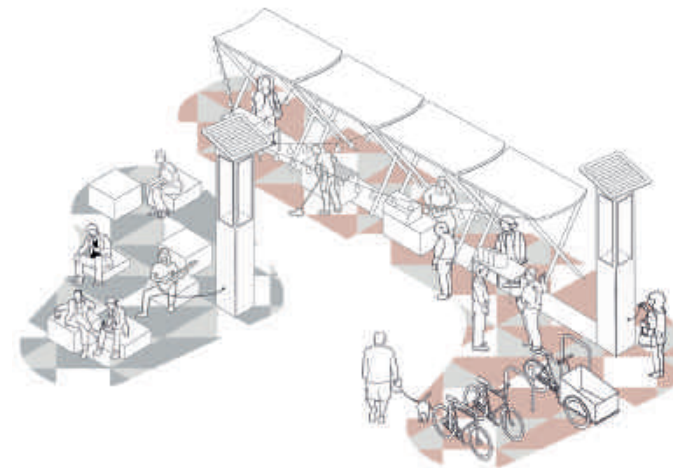


FIG. 101

### [2] Informal vendors

#### SWOT aspects tackled

- > inclusive use of the historic center [informal vendors]
- > income generation
- > revitalization of zones in decay conditions
- > reduction of gentrification
- > improvement of cycle users & pedestrians access
- > expansion & qualification of public space

# Typologies mobility islands

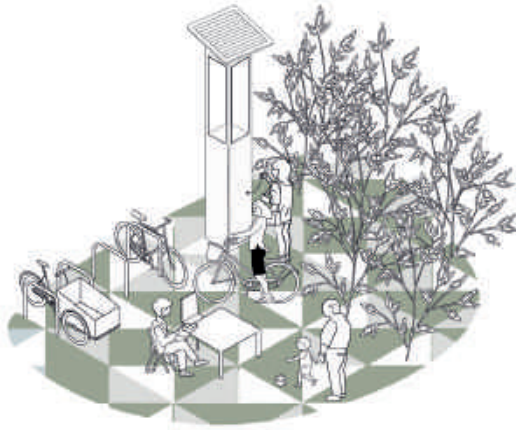


FIG. 102

## SWOT aspects tackled

- > access to greenery
- > improvement of cycle users & pedestrians access
- > expansion & qualification of public space
- > public spaces of permanence [increase of safety]
- > increase intermodal trips

## [3] Urban oasis

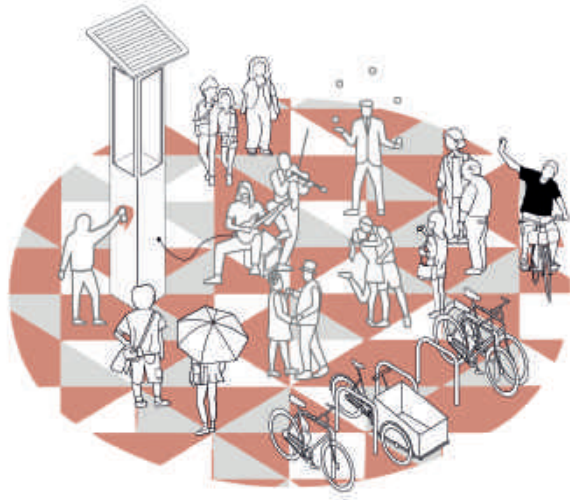


FIG. 103

## SWOT aspects tackled

- > public space for local activities and encounter
- > spaces for interaction between local communities and tourism
- > improvement of cycle users & pedestrians access
- > expansion & qualification of public space
- > public spaces of permanence [increase of safety]

## [4] Cultural space

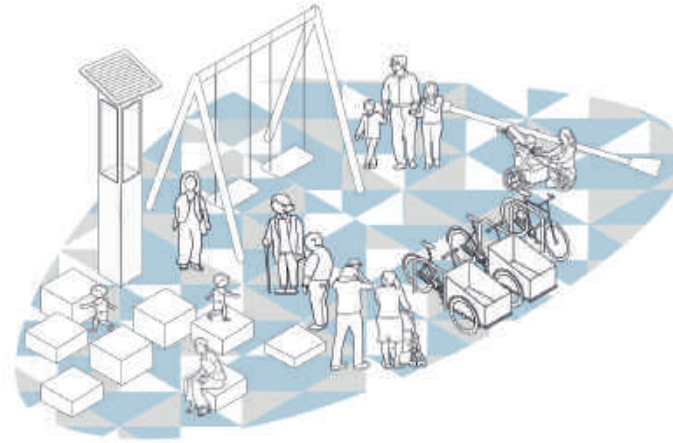


FIG. 104

## SWOT aspects tackled

- > inclusive use of the Historic Center [families & children]
- > expansion of heritage conception to social spheres
- > improvement of cycle users & pedestrians access
- > improvement of cycle users & pedestrians access
- > increase intermodal trips

## [1] Playground [children]



FIG. 105

## SWOT aspects tackled

- > inclusive use of the Historic Center [artisans]
- > expansion of heritage conception to social spheres
- > income generation
- > revitalization of public space in decayed zones
- > reduction of gentrification
- > improvement of cycle users & pedestrians access

## [2] Artisan museum [Ecomuseo]



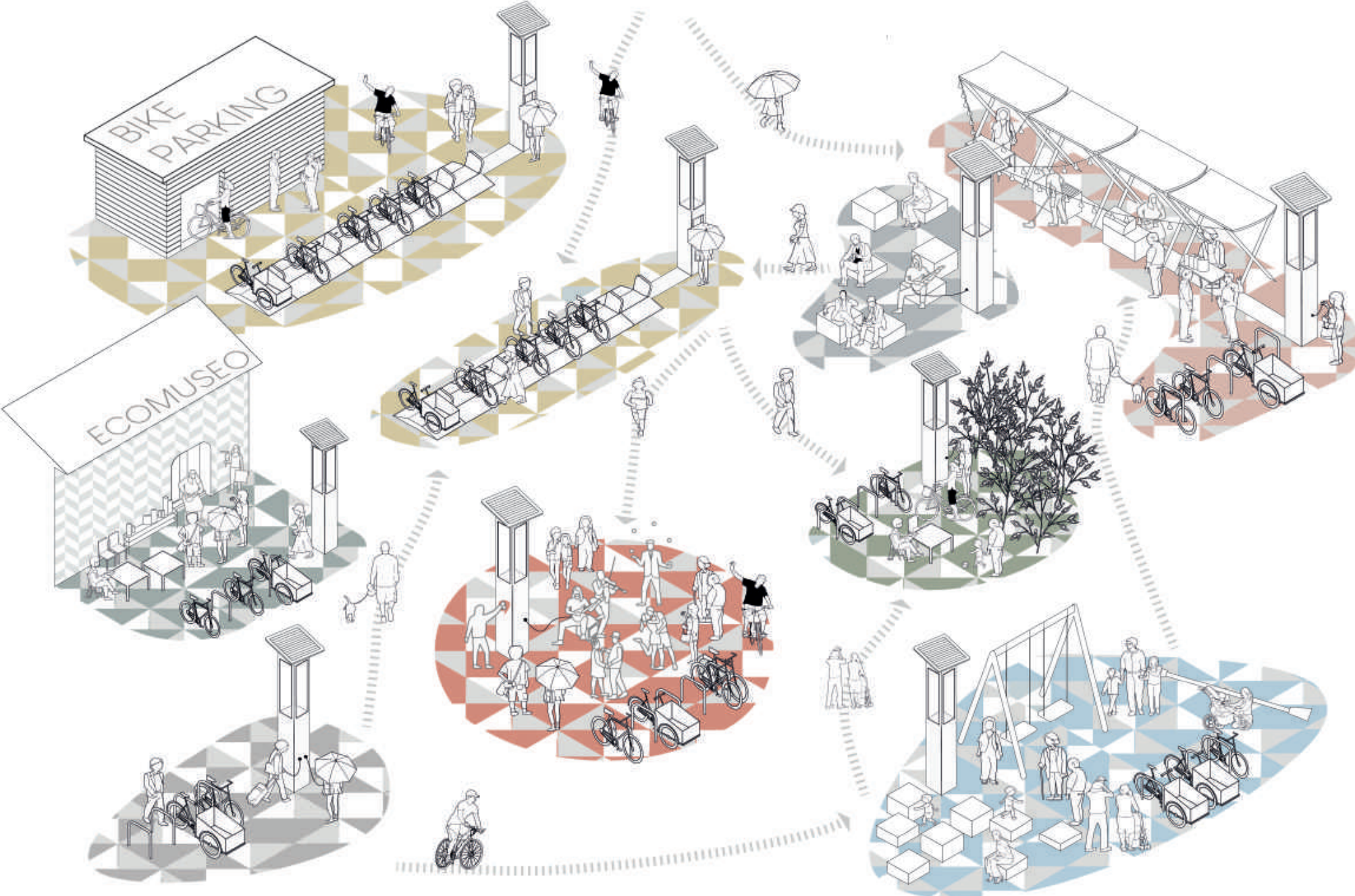


FIG. 106 MOBILITY ARCHIPELAGO



# 4.5 Policy & Incentives

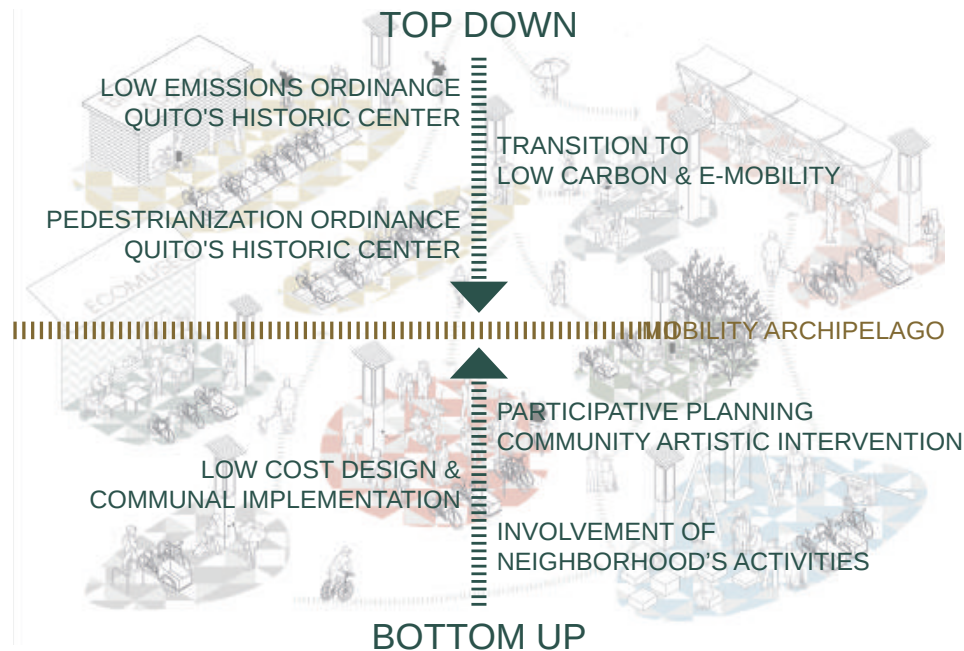


FIG. 107 POLICY APPROACH

We imagine a mobility archipelago devoted to low-carbon modes of transport popping up in Quito's HC. We aim to create a new infrastructural network that connects the fabric interweaving explicitly local dynamics and all income classes by public space devoted to low emissions micromobility.

Currently, Quito's city administration is implementing this transition via top-down political tools as the 'low emissions ordinance' and the pedestrian-

ization of many streets of the HC's architectonic heritage conservation area. Nevertheless, the implementation of these approaches caused many conflicts between dwellers, merchants and city government. Thus, we consider that implementing a wide set of 'low-carbon mobility islands' programmed by the dwellers as part of a participative approach, could provide a major opportunity for the involvement of communities in stake in the mobility transition. Such a participative approach could trigger sig-

## POLICIES

- > LOW EMISSIONS' ORDINANCE
- > PARTICIPATIVE PLANNING [DIALOGUE TABLES]
- > INTEGRATED TICKETING SYSTEM FOR [ALL] PUBLIC TRANSPORT MEANS
- > DIFFERENTIATED FARE FOR LOW INCOME GROUPS
- > SUBSIDIES TO BUY LOCALLY PRODUCED E-VEHICLES
- > ADVERTISING FOR FUNDING OF THE PUBLIC BIKESHARE SYSTEM
- > TOURISM TAX HISTORIC CENTER OF QUITO TO FUND MOBILITY TRANSITION IN THE AREA [REFERENCE: OFICINA DEL HISTORIADOR; LA HABANA]

## INCENTIVES

- > CO-PRODUCTION OF NEIGHBORHOOD'S PUBLIC SPACE
- > INCREASE INCOME ACCESS FOR LOCAL COMMUNITIES ALONG THE INTERMODAL MOBILITY CORRIDORS
- > BIKESHARE MEMBERSHIPS [AS BICIQUITO TODAY]
- > LOW COST CHARGING POSSIBILITIES FOR PUBLIC & PRIVAT E-VEHICLES / BIKES
- > LOWER PRICE FOR EV-INSURANCE
- > LOCAL PRODUCTION OF ELECTRIC VEHICLES IN ECUADOR [AS FUNDED CURRENTLY BY SOLUTIONSPUS]

FIG. 108 POLICIES AND INCENTIVES

nificant improvements in the life quality of communities as shown throughout the previous section and become a mediation space between municipality and dwellers. This way, the mobility transition would involve both bottom-up and top-down approaches that could help better negotiate the conflicts arising throughout the planning and implementation process catalyzing the expansion of this mobility approach to other parts of the city. All in all, we consider that acupunctural, low-cost and programmatic inter-

ventions are a key to achieve a smoother transition towards the low-carbon city of tomorrow.

Lastly, we developed a list with valuable political instruments and incentives that we found by revising the literature and could be useful to achieve a successful mobility transition. There, we focused mainly on aspects related to the system's funding, the strengthening of the local economy and the joint and inclusive production of public space.

## 4.6 Socio-spatial Conflicts

In the process of revising the literature and speaking with mobility experts of Quito, we noticed that it was also necessary to account in more detail for the socio-spatial conflicts and the impact they might have on planning and implementation of the design for the mobility proposal.

The alternative geographic knowledge approach of critical cartography proved to be useful to show this, as it aims to visualize precisely these socio-economic aspects which mere metrics (e.g. wealth index) do not show. The narrative of the map is based on a critical assessment of the 'heritage zone' in the HCQ.

As aforementioned, the city of Quito addresses heritage mainly from the built space perspective while neglecting the deep socio-economical dimensions. The spatial consequences of this problematic are an institutional and overpriced touristified area in the heritage building's complex with strong gentrification processes going on, surrounded

closely by extreme poverty and urban decay. Thus, clear physical boundaries have emerged. In such way, the critical cartography shows some important elements framing the ongoing tensions and struggles as well as physical barriers in the HCQ.

Adding to the tensions shown on the map, there is a serious problematic on the inclusion of informal vendors in any design concept for HC. They are usually expelled from the HCQ using police force. Besides that, also the local population and traders are mainly against their stay in the HC and link them with the rise of criminality and drug trafficking. Despite this, we designed a 'mobility island' devoted to their inclusion. They are integral part of the image of the HCQ and many of them even dwell in the area. Thus, we consider that the transition towards a new mobility era in Quito should not leave them outside and might also refigure their place and value in society by providing inclusive dialogue spaces that make them integral part of the transition.

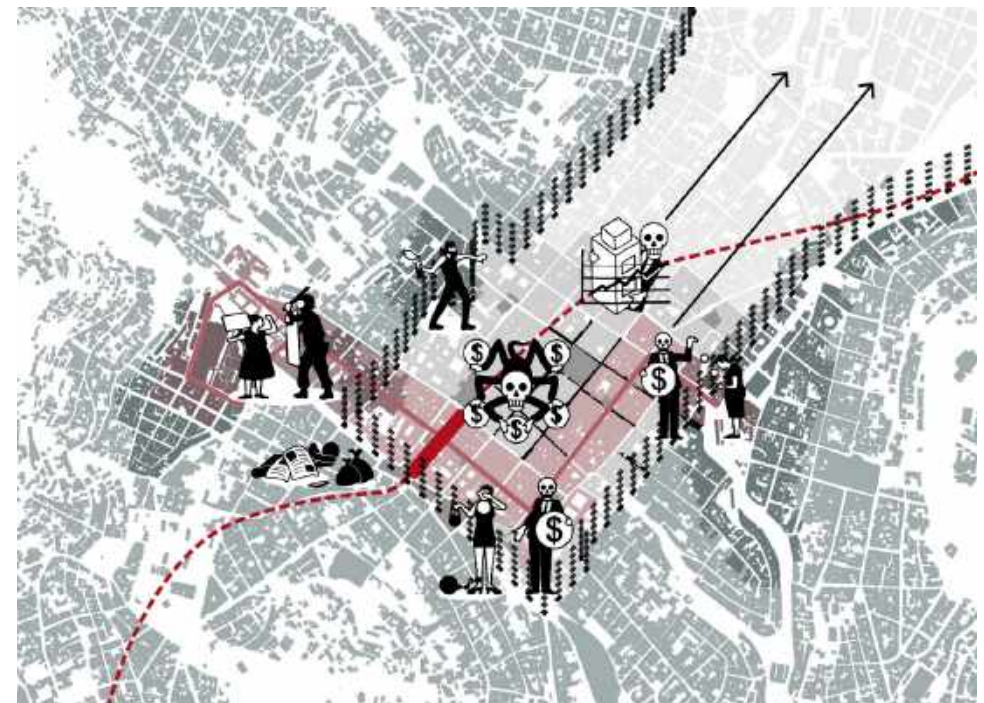
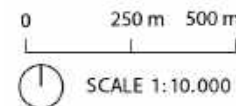


FIG. 109 CRITICAL CARTOGRAPHY HCQ

### SOCIAL DISPARITIES HISTORIC CENTER QUITO (HCQ)

#### LEGEND

- Metro Line
- Station San Francisco
- Intermodal corridor
- Building blocks
- Main commercial areas (Wholesale markets + small retail)
- Historic squares
- Pedestrianized streets
- Approximate heritage buildings area / touristic area
- Touristified zone's expansion
- Approximate area neighbourhoods in conditions of urban decay & poverty
- Socio spatial barrier



### SOCIO SPATIAL PROBLEMATICS

- Concentration of wealth
- Growing investments
- Ongoing gentrification processes
- Constant political protests due to presence of institutional powers
- Growing homeless population
- Police eviction of informal vendors & urban poor from HCQ.
- Strong inequality
- Main area for drug trade, sexual work & child trafficking

**05. SPATIAL REPRESENTATIONS 78-93**

- 5.1 Suggested solutions
- 5.2 Conclusion
- 5.3 Appendix: budget draft

# 05. Spatial representations



# 5.1 Suggested Solutions

## a Scenario Plaza Santa Clara

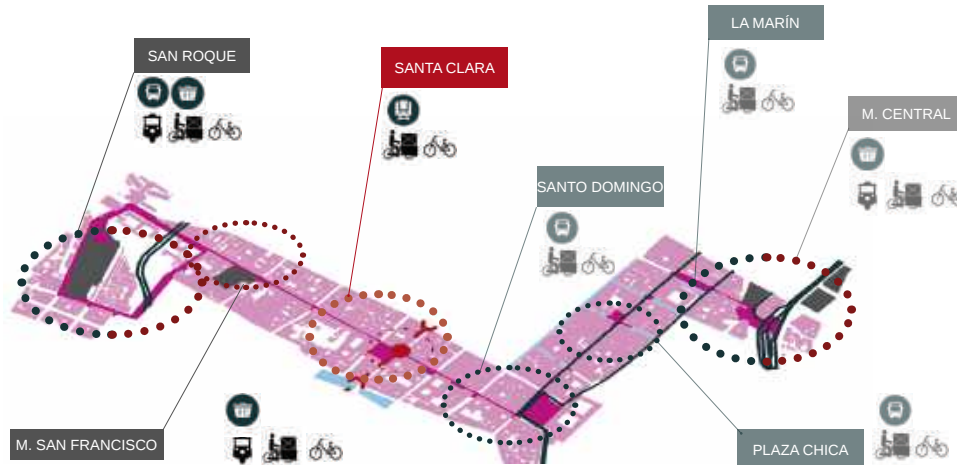


FIG. 110 SUGGESTED INTERMODAL MOBILITY HUBS

On the upper map, the reader can observe once again the low emissions mobility corridor with the seven cargo & passenger's intermodal hubs. In this last chapter, we will present the spatial representations of three intermodal hubs: [a] the Plaza Santa Clara, which is in the middle of both metro exits and the wholesalesmarket of San Roque, which has 2 components: [b] the cargo hub inside the market and [c] the passengers hub on the calle Cumandá.

[a] On the Plaza Santa Clara following mobility islands would be included: a bikesharing station with e-cargo bikes right on the exit of the metro station,

a space for informal vendors, a playground for children and a space for artistic and cultural happenings

[b] In the market of San Roque we suggest a parking space for the cargo three-wheelers. On the big explanade in front of the entrance we include a mobility island for bikesharing with an urban oasis, and a space for informal vendors.

[c] On the corner connecting the pedestrian bridges with the intermodal corridor following mobility islands would be placed: a bikeshare station with cargo and non-cargo bikes, an urban oasis and a space for informal vendors.

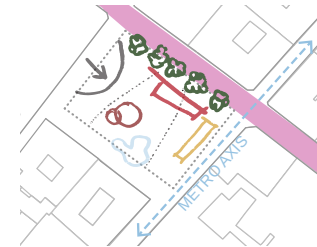


FIG. 111 FLOORPLAN PLAZA SANTA CLARA



FIG. 112 STATUS QUO PLAZA SANTA CLARA

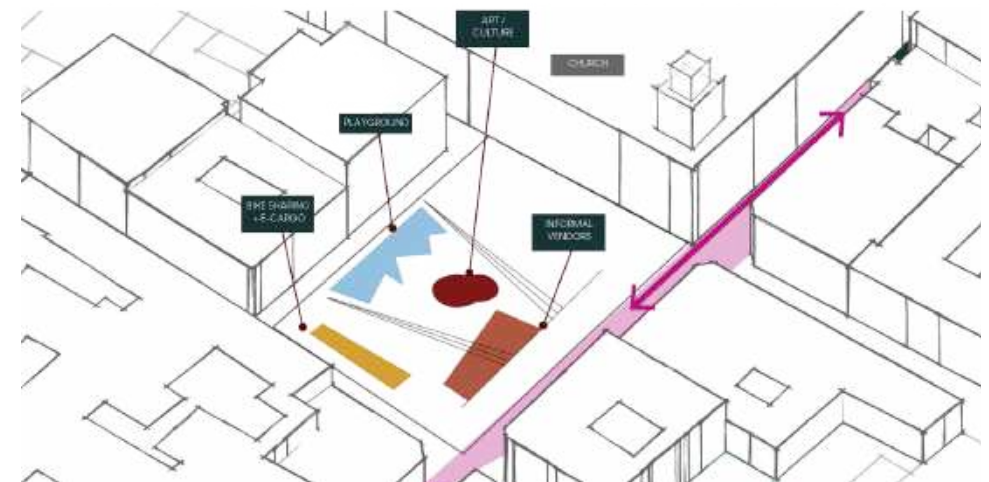


FIG. 113 INTERVENTION STRATEGY PLAZA SANTA CLARA

## a Plaza Santa Clara

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FIG. 114 COLLAGE MOBILITY HUB  
PLAZA SANTA CLARA [1]



a Bikesharing station Plaza Santa Clara



FIG. 115 COLLAGE MOBILITY HUB  
PLAZA SANTA CLARA [2]



## b Mobility hub Mercado de San Roque

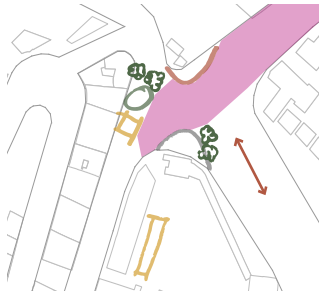


FIG. 116 FLOORPLAN ENTRANCE  
MERCADO DE SAN ROQUE



FIG. 117 STATUS QUO ENTRANCE  
MERCADO DE SAN ROQUE

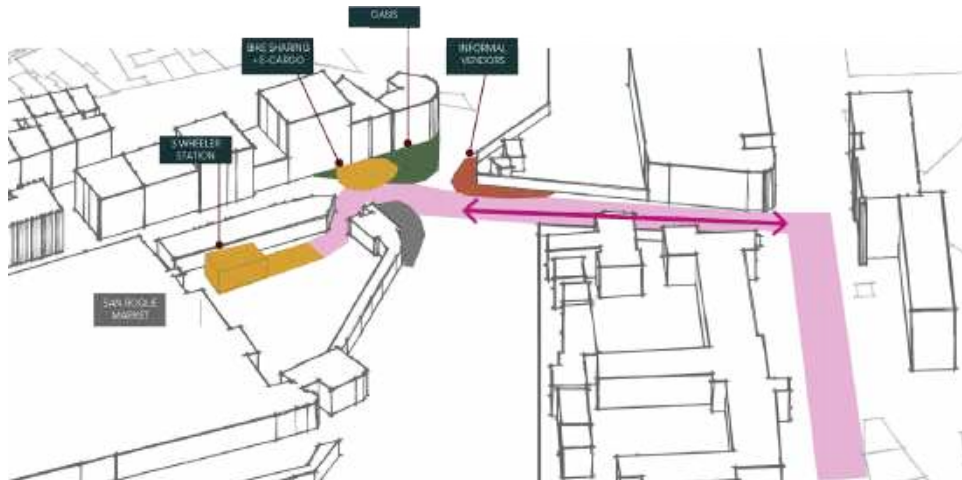


FIG. 118 INTERVENTION STRATEGY  
MARKET OF SAN ROQUE

## c Mobility hub San Roque / Quiroga

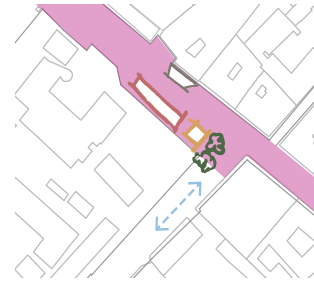


FIG. 119 FLOORPLAN  
INTERSECTION CALLE ROCAFUERTE  
& CALLE QUIROGA



FIG. 120 STATUS QUO  
INTERSECTION CALLE ROCAFUERTE  
& CALLE QUIROGA



FIG. 121 INTERVENTION STRATEGY  
INTERSECTION CALLE ROCAFUERTE  
& CALLE QUIROGA

a Entrance Mercado de San Roque



FIG. 122 COLLAGE MOBILITY HUB  
ENTRANCE MERCADO SAN ROQUE





FIG. 123 COLLAGE MOBILITY HUB  
VIEW ON MOBILITY CORRIDOR  
CALLE ROCAFUERTE



## 5.2 Conclusion

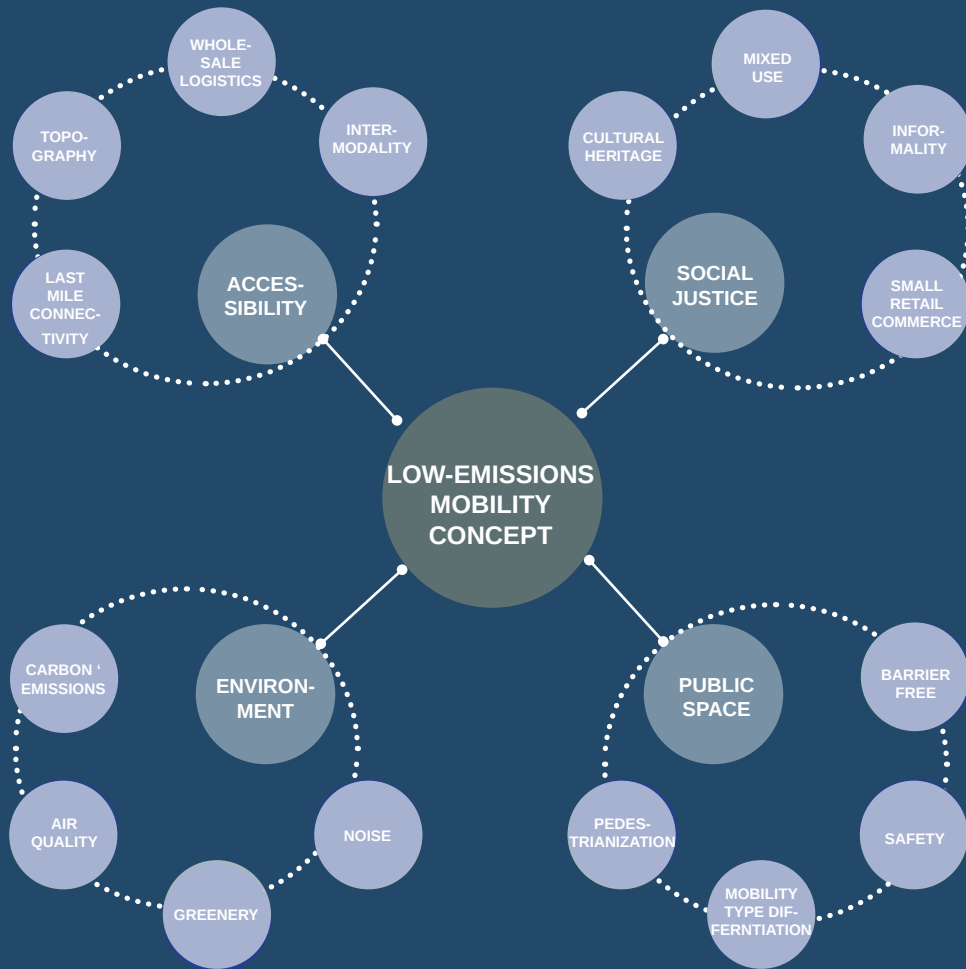
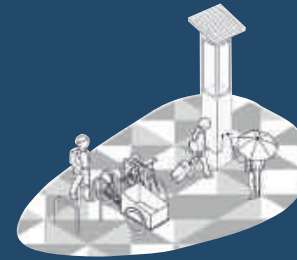


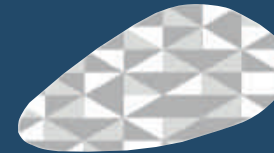
FIG. 124 MENTAL MAP CONCLUSION

## 5.3 Appendix: Budget Draft



The financial budget required for each mobility island depends strongly from the final material solution of the 'lighthouse' and the involvement of community in the implementation process.

Below, we list some orientation values that give the planner an idea of basic component's costs. The financial figures rely on a small digital research on the Ecuadorian market. Thus, if the project is implemented, all figures should be double checked.

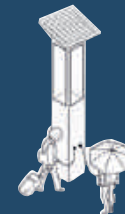


### [1] Painted surface

Approximate price / gallon exterior painting: USD 17  
Approximate area performance / gallon: 20 m2

**Costs 100 m2 painting: USD 85**

[These costs are calculated without transport and workers expenses]



### [2] Lighthouse

**Solar panel 400 Watts: ~ USD 200**

Lighthouse: budget depends strongly from the materiality and type of computer integrated.

[These costs are calculated without transport and workers expenses]



### [3] Bike parking slots

**Inverted U bike rack / unit: ~ USD 150 - 250**

[These costs are calculated without transport and workers expenses]

FIG. 125 DIAGRAM BUDGET



# 06. References

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## **Urban Change Makers**

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# RETHINKING URBAN MOBILITIES

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As the world is confronted with climate change and cities continue to spill beyond their boundaries, the Global Agendas uniformly recognise an urgent need for inclusive and sustainable urban development strategies.

The Urban Change Makers studio draws attention to current global transport challenges. Based on the notion that the provision of infrastructure promotes accessibility and that accessibility promotes equality, the studio has developed proposals for innovative urban mobility solutions in Quito and Pasig - two cities in the Global South that have been struck heavily by congestion and social divides.

In an aim to reduce individual transport modes in favour of higher public demand, the students investigate multimodal networks. A series of reading sessions formed the theoretical basis for the spatial interventions. Reaching beyond the infrastructural challenges these two cities are faced with, the Urban Change Makers studio addresses local identity, informality and social marginalisation in an attempt to develop holistic place-making strategies for the public realm and its nearby communities.

Thus, what once was a divider can soon become a threshold, a moment for activities, exchange and community.