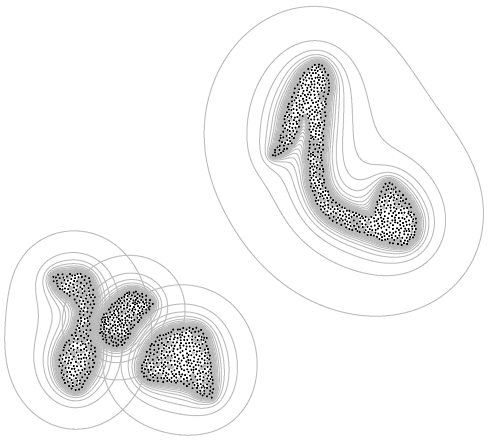
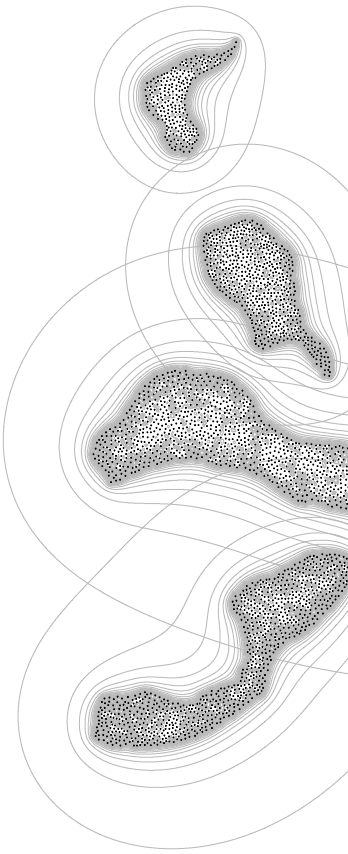
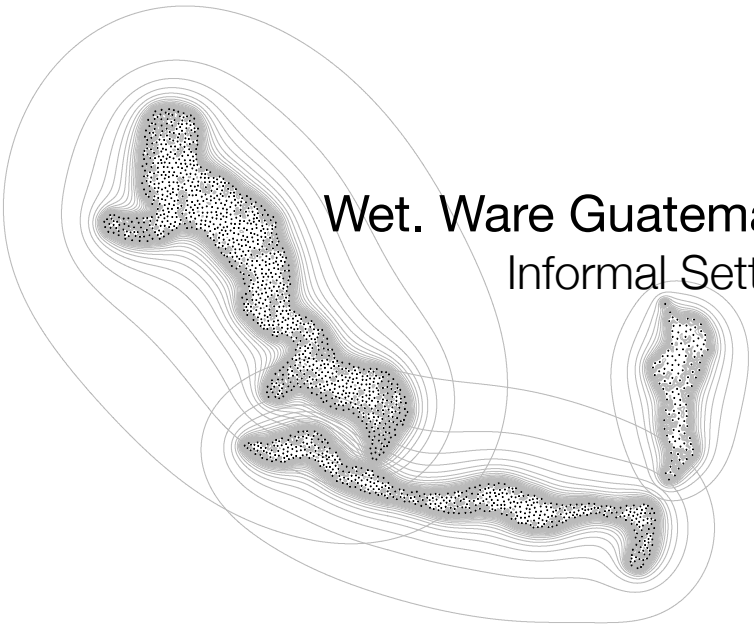






Wet. Ware Guatemala City
Informal Settlements

Introductory Studio
Design for the Experience Age

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Chapter 1
Historical Context

At the beginning of the 20th century the city had 100,000 inhabitants, and began to show the effects of a modernisation programme, initiated by the liberal revolution, especially in the acceptance of foreign lifestyles. The city was destroyed by the 1917 earthquake. The reconstruction did not destroy its form but did affect its pattern development.
In the mid-20th century, attempts at modernisation by the state led to new sources of employment in the city, leading to immigration of rural populations
In 1954 the country underwent a brusque change when the state put an end to the agrarian reform programe, which together with an increase in socio-economic problems accelerated the migratory process. As a result the population of the city grew from 285,000 inhabitatnts in 1950 to 573,000 in 1964.



Guatemala City map

The exodus from the rural areas increased as a result of the social effects of the 1976 earthquake, and socio-political conflicts. In order to deal with the immigration caused by the earthquake, the government built temporary shelters for the affected families which remained for almost a decade. The Growth of Guatemala city has been more horizontal than vertical. This means that there are peripheral areas as mush as 20 km from the city center, and the new precarious settlements have had to locate further and further away.



Metropolitan Growth of Guatemala City

At the beginning of the 21st century the city is characterised by a large horizontal expansion, with peripheralcommercial sub centres, an inefficient public transport system, a proliferation of precarious settelments, a free market economy and a decrease in state attention to housing needs. Of its 2.5 million inhabitants, approximately a third live in precarious settlements.

Informal Settlement

Areas where groups of housing have been constructed on land that the occupants have no legal claim to, where housing is not in compliance with current planning and building regulations.



Living conditions of Informal Settlements in Guatemala City

Also referred to as champas or asentamientos, the Arrabales are an important element of the Guatemalan urban fabric. According to the Population Reference Bureau, about 43% of Guatemala's urban population live below the poverty line and in some form of alternative housing with varying degrees of infrastructure and permanence. They are highly variable, ranging from small single house settlements to large and complex neighborhoods.



43% OF GUATEMALA'S POPULATION
LIVES IN INFORMAL SETTLEMENTS

18 INFORMAL SETTLEMENTS
IN A 400 SQUARE KILOMETERS
AREA



AREA OF 9.1
SQUARE KILOMETERS

3%

3% OF GUATEMALA CITY

Statistics of Informal Settlements

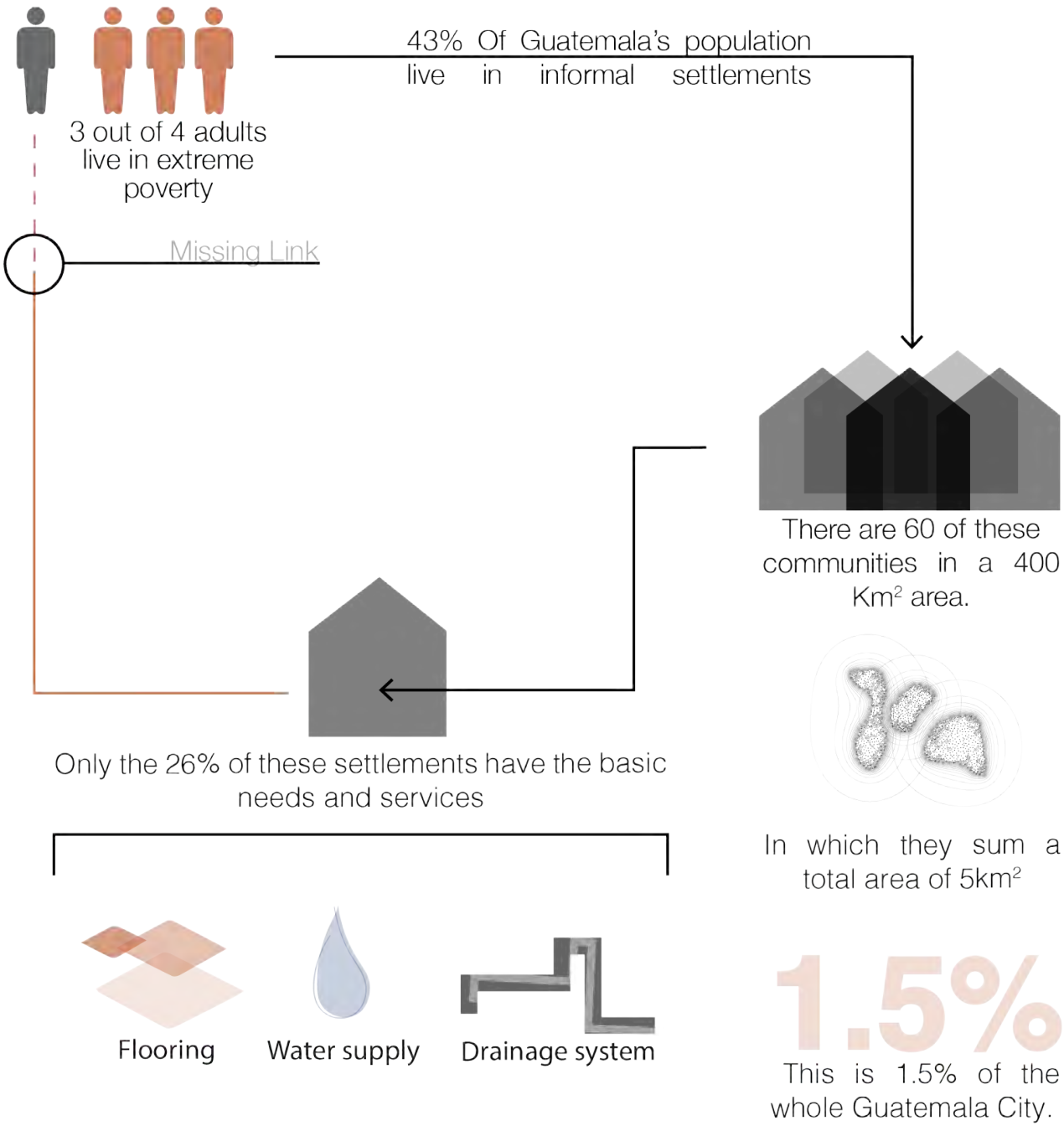
They appear in places where the population is unable to maintain a quality of life due to various reasons such as shortage of employment opportunities, etc.
These settlements can be found across the city, and tend to form in areas that are considered undesirable to live in due to a lack of infrastructre and connectivity and the proximity to waste management facilities and other simmilar services.

Informal Settlements are a manifestation of large socioeconomic problems as the appear in places where the population is unable to maintain a quality of life due to social inequalities, Lack of employment opportunities and social seggregation. Some of them have formed in areas that were, or have become waste lands. People that live in these communities often work on these sites searching for metals and other items that they can sell as a resource.



Guatemala's Socio-Economic conditions according to the Population Reference Bureau

This represents a great sanitary threat for the people who do this for a living as they are exposed to larque quantities of pollutants and dangerous materials, that put them at risk and pottentially reduce their life expectancy.
Due to the geographical distribution of the informal settlements, as well as the lack of connectivity infrastructure amongst the settlements, the communities that inhabit these areas tend to have a low quality of life.



Graphic Missing link for a good quality of life

The diagram above illustrates how the social seggregation experience by these communities decreases their quality of life by preventing them access from basic services and infrastructure.

Chapter 2
Focus area definition



Areal image of Guatemala City - Google Maps

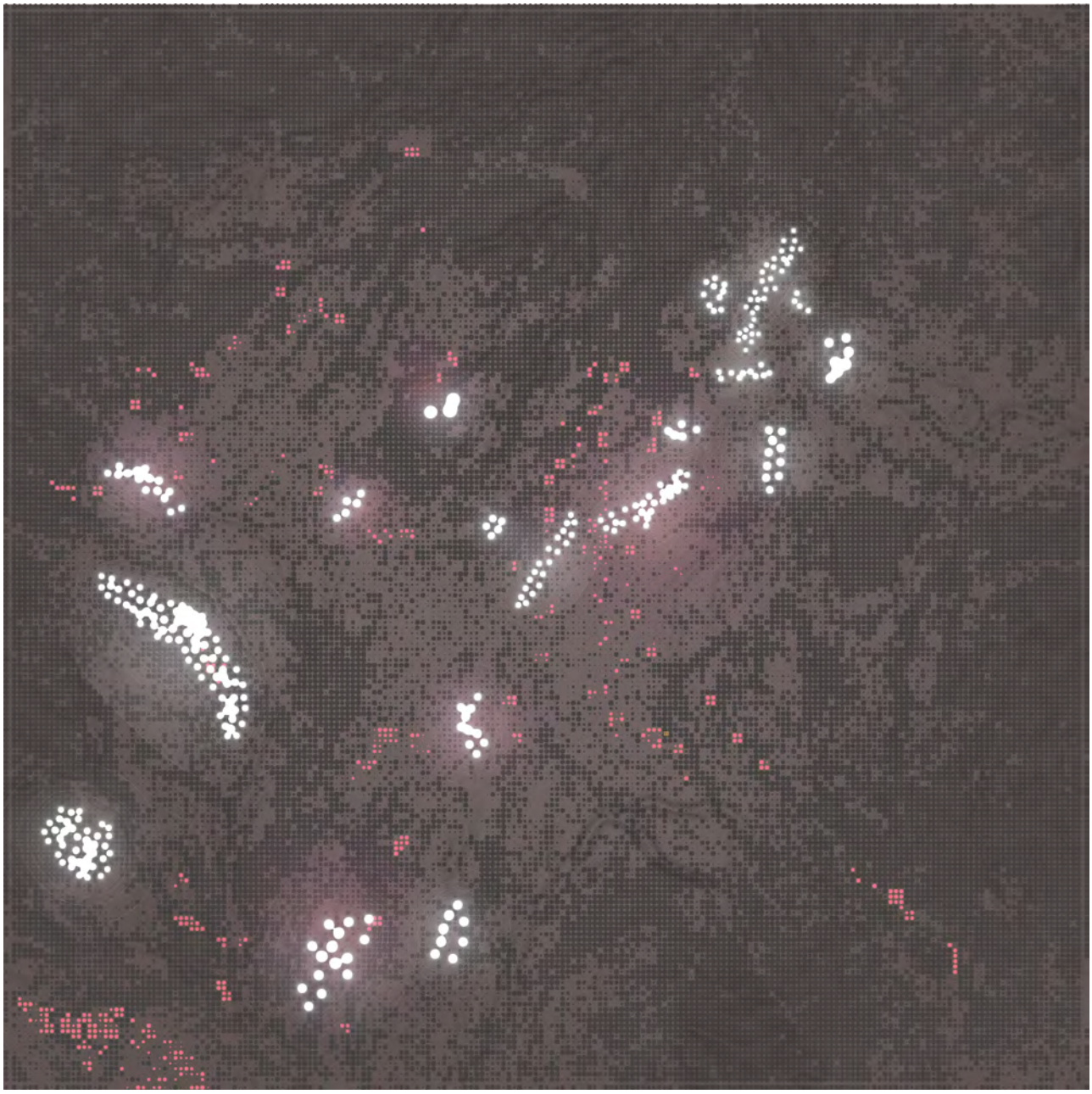
The selected area shown on the right measures 20km by 20km, and it contains the greater extents of the Guatemala City metropolitan area.Within this area it is posible to find areas 4 to 12 on a North - South orientation and zones 8 - 16 on West to South. It was selected as it shows various changes in topography and degrees of urbanization. This area will be used to analize the distribution of Informal settlements in terms of their seggregation from the metropolitan areas and the lack of services required to improve the quality of life of these communities.

Distribution



There is a correlation between the topographical features of Guatemala City and the distribution of informal settlements. These settlements are indicated by the white circular grids, ad it is possible to see a clustering pattern where smaller settlements tend to form in close proximity to settlements of larger sizes. Most of the informal settlements in Guatemala City are located in areas that are not accessible due to the topographical distribution or due to a lack of connectivity.

Waste Cycles



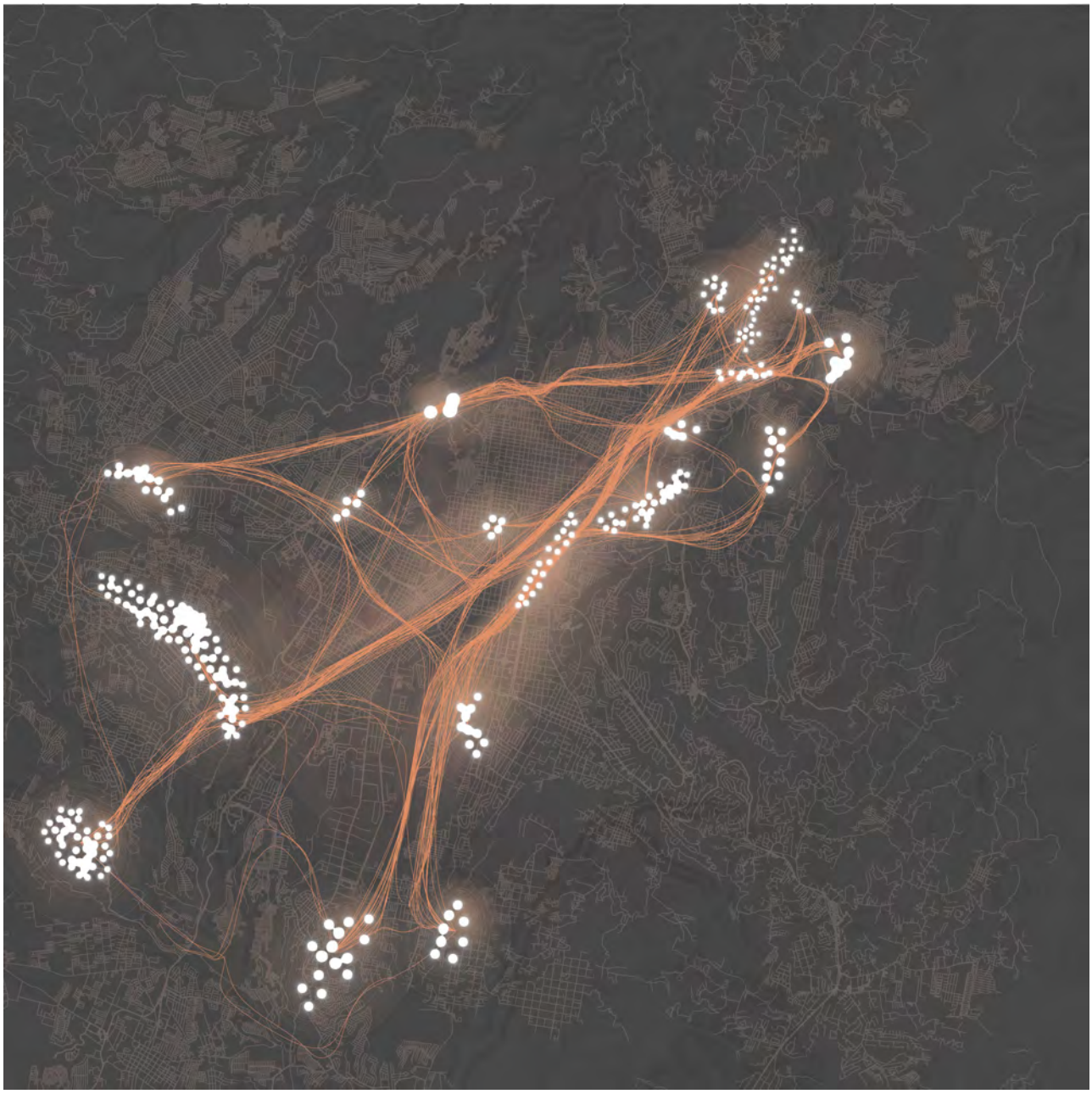
The pink areas on this map represent areas that are wastelands, landfills, waste processing plants, illegal embankments and other areas of waste deposit and accummulation.
In relation of the road map, it is clear that these areas are created away from densely populated or developed areas, often in close proximity to the informal settlements, affecting the quality of life of these communities.

Connectivity Network



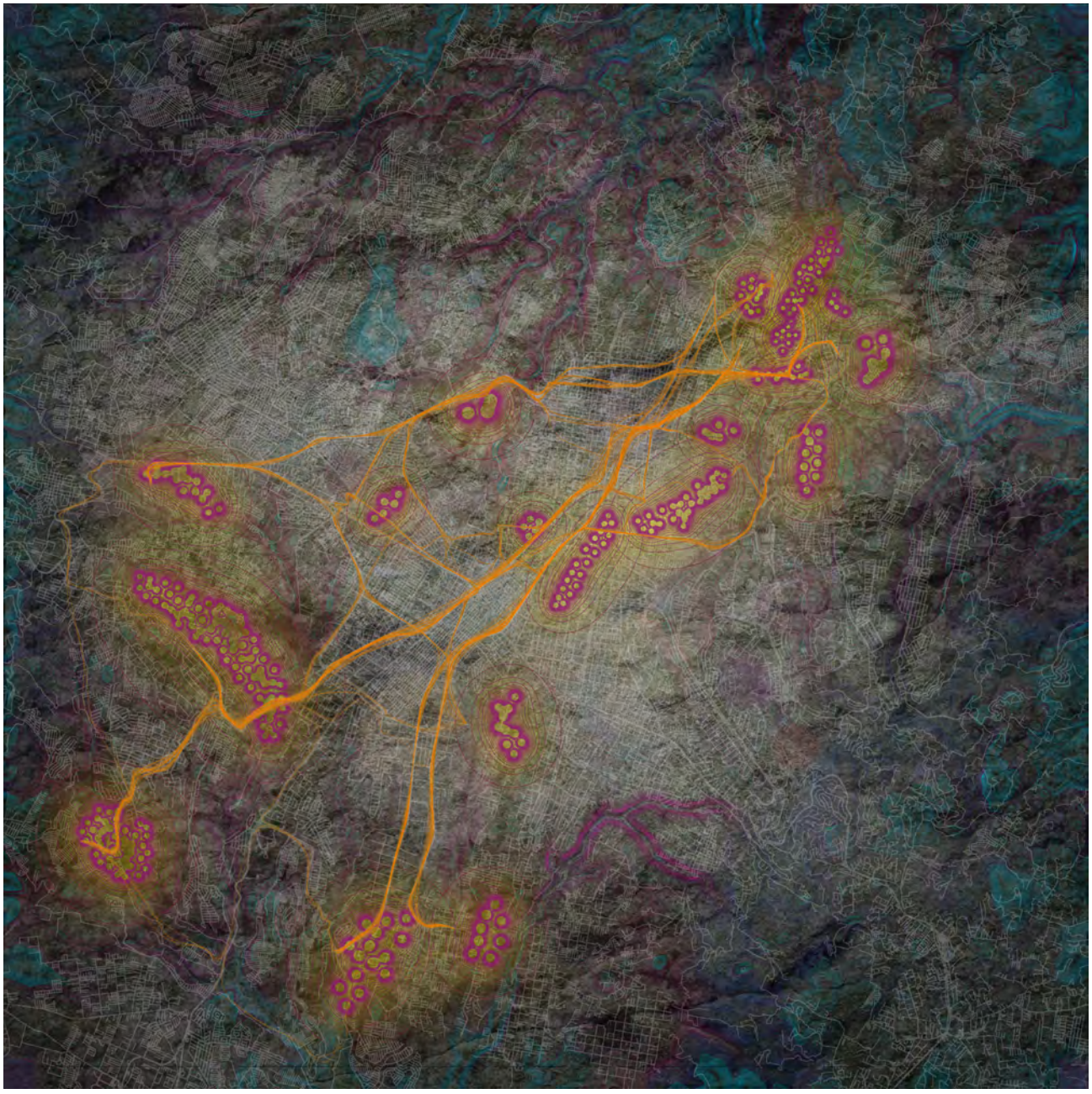
While informal settlements are seggregated form the rest of the urban areas, the clustering formation of these settlements suggests the prescence of a network that could be for connectivity, resources or other reasons. The map above attempts to identify the possible network through the creation of proximity paths that connect the 18 informal settlements in this region through the existing road map.

Communicative Network



The pink areas on this map represent areas that are wastelands, landfills, waste processing plants, illegal embankments and other areas of waste deposit and accummulation.
In relation of the road map, it is clear that these areas are created away from densely populated or developed areas, often in close proximity to the informal settlements, affecting the quality of life of these communities.

Service Accessibility



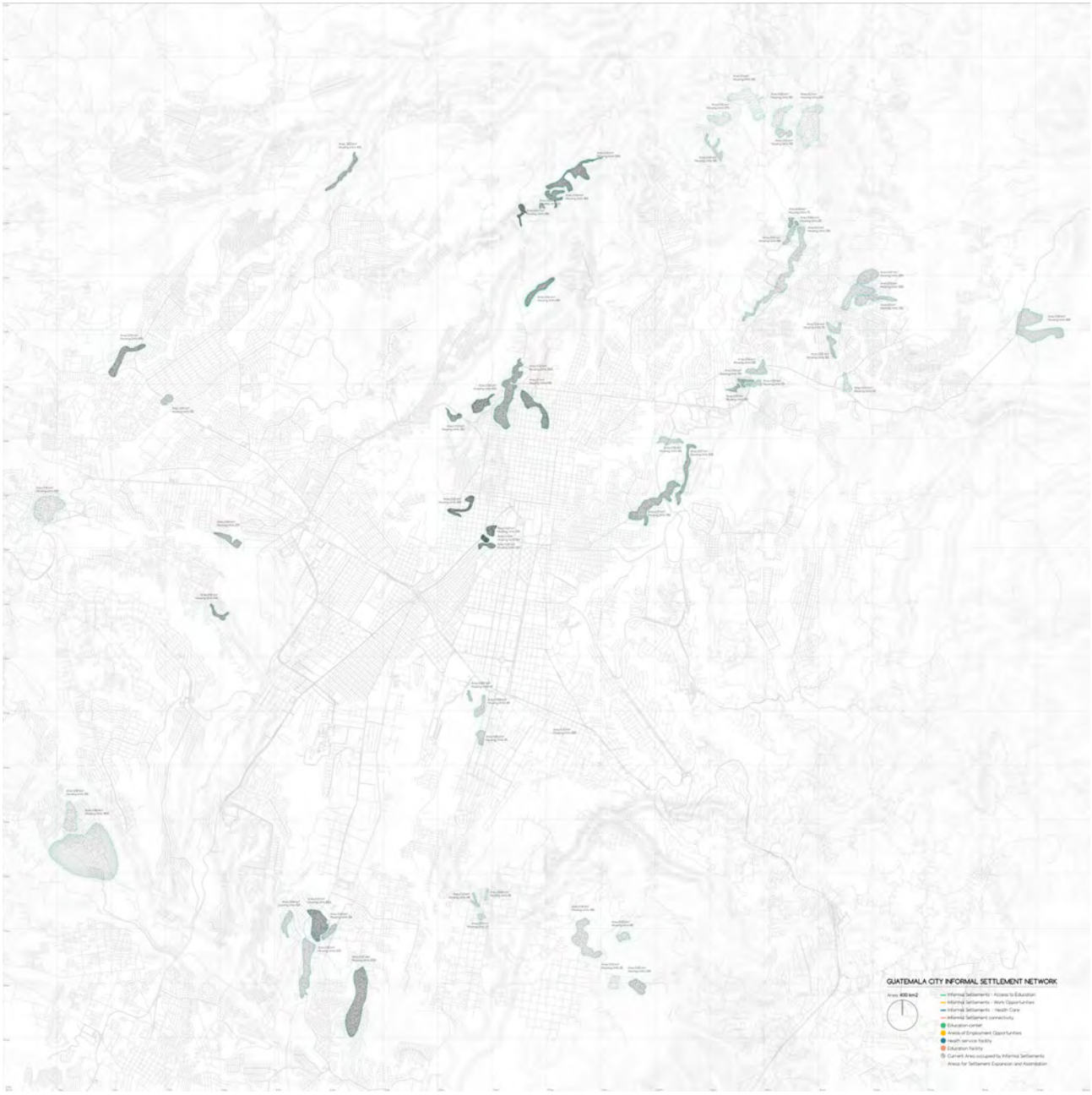
This map shows the representation of the layers of the first analysis which identifes the prescence of various types of services, infrastructure and opportunities (Work, Education and Health facilities) that are essential to imporve the quality of life of each community. These services are present across the city, however due to the road network and connectivity services are isolated from the Informal Settlemements.

Chapter 3
Project Strategy

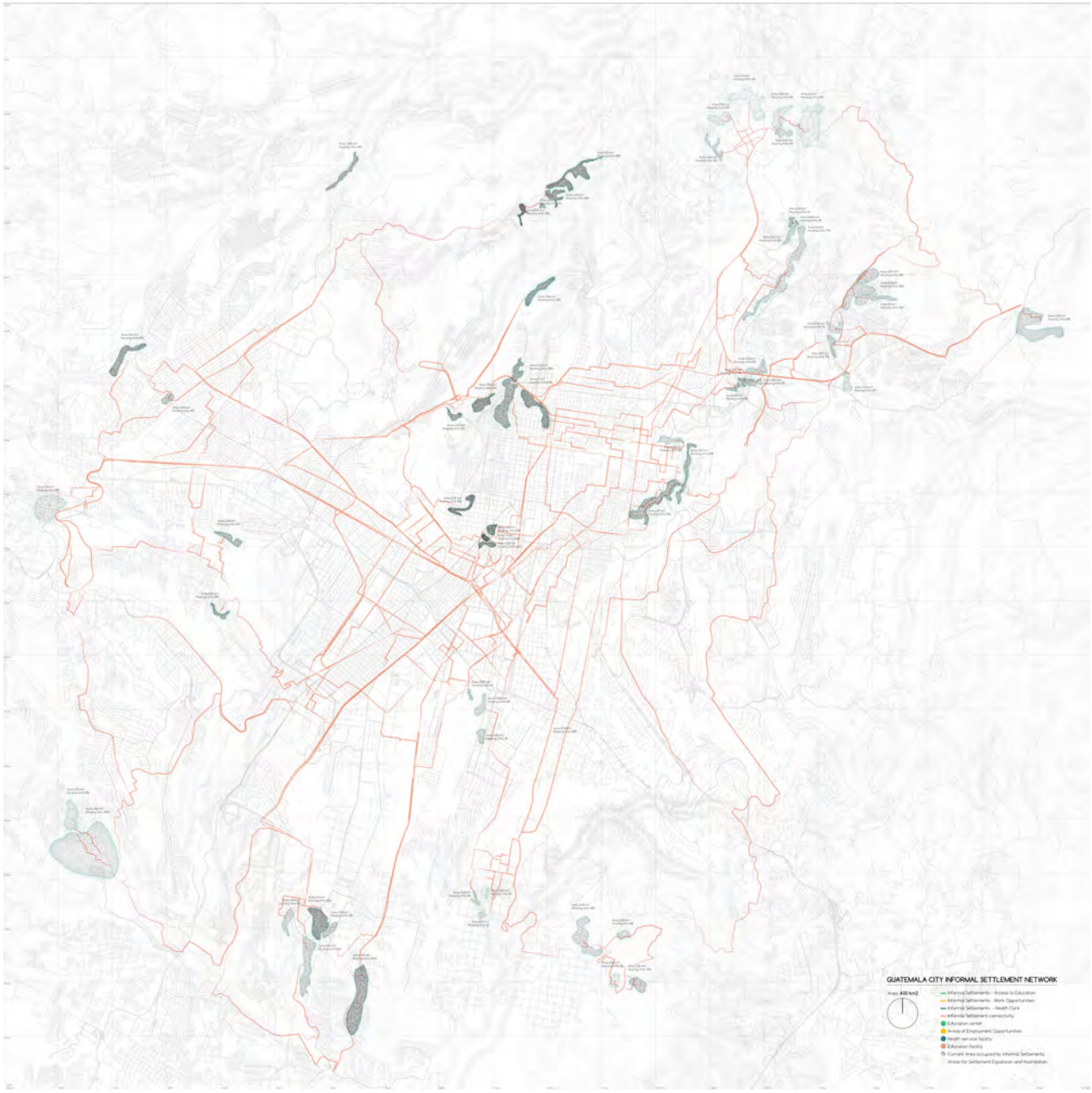
Identify the intangible network between the Informal Settlements to understand their formation, Location and relation with one another in order to identify their growth potential

By identifying the missing services in these areas and locating them as points in the connectivity network in order to make them more accessible, it is possible to improve the quality of life of the inhabitants of these communities, and ultimately help these settlements develop and its inhabitants assimilate to society.

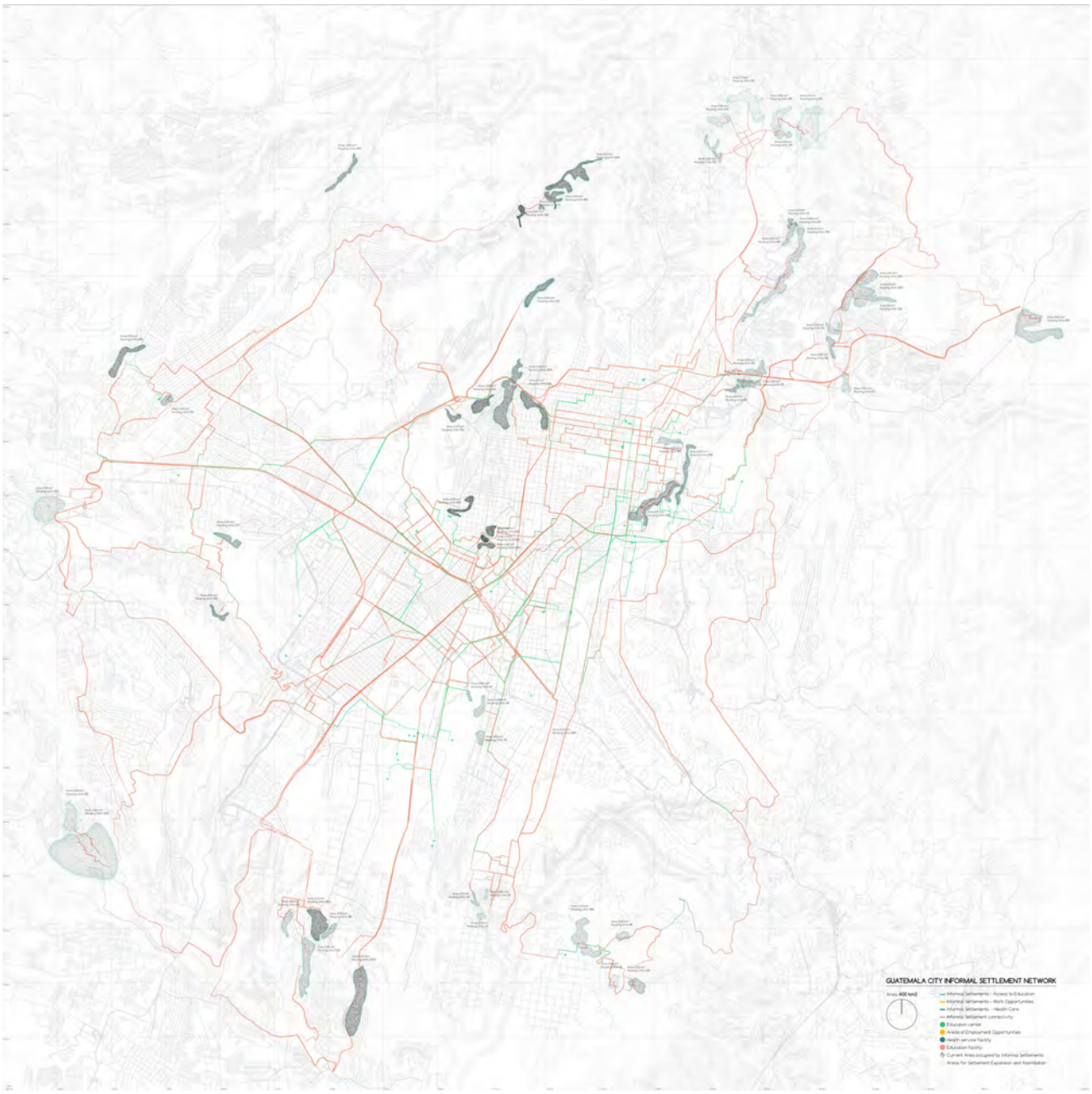
This map represents the focus area selected for our research. The 400km2 sector holds the greater extents of metropolitan Guatemala city. This topographical map has the base information for our project strategy; The topography information, as well as the road network provide the base to analyze connectivity and its lack of across the city.



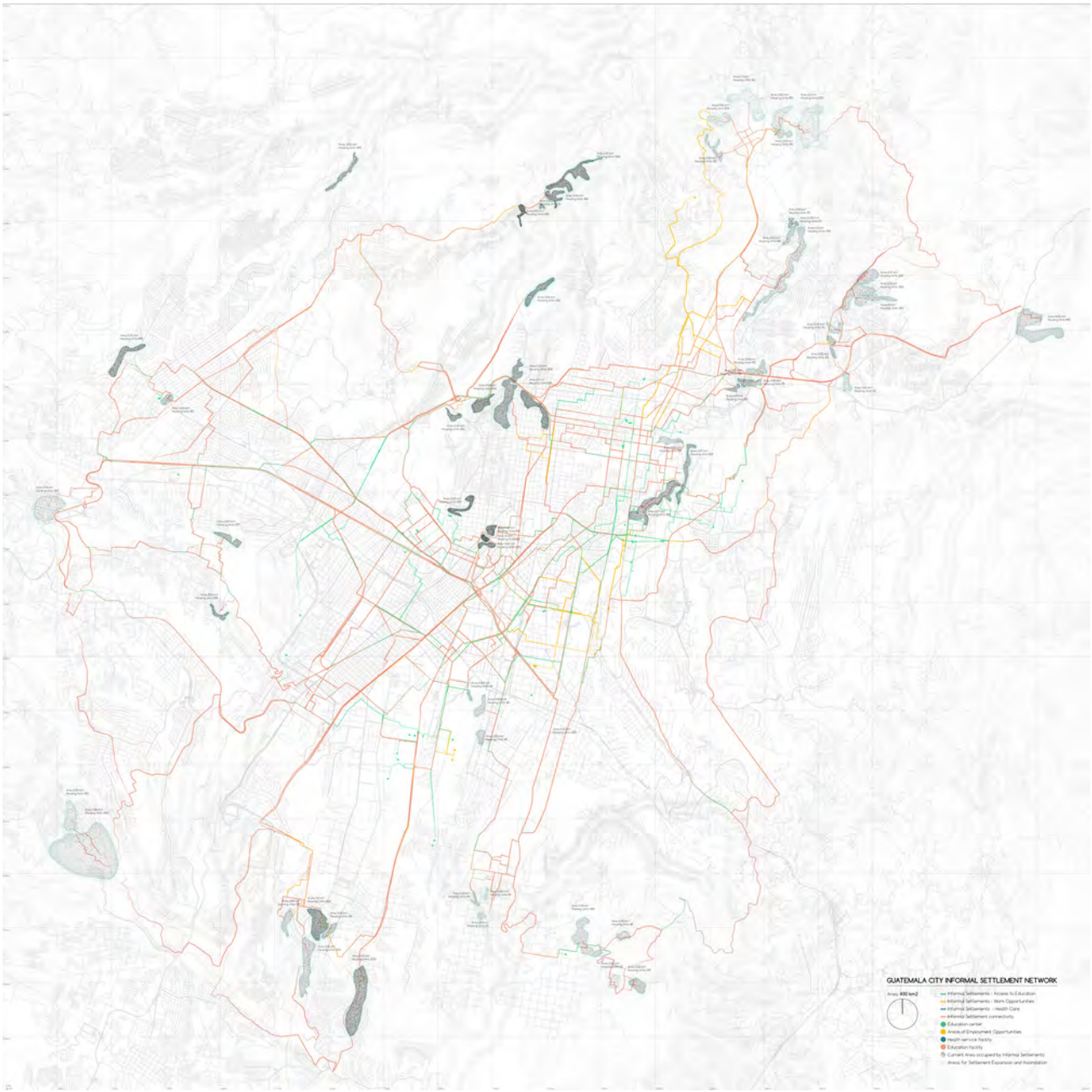
This map shows the location of all the 60 Informal settlements that are found within our focus area. Each of the settlements varies in size and building density. An approximate count of the housing modules of each of these settlements ws provided and it represents a point within the designated area. The cyan meatballs are used to suggest the potential growth as well as the fission of smaller settlements to form larger ones.



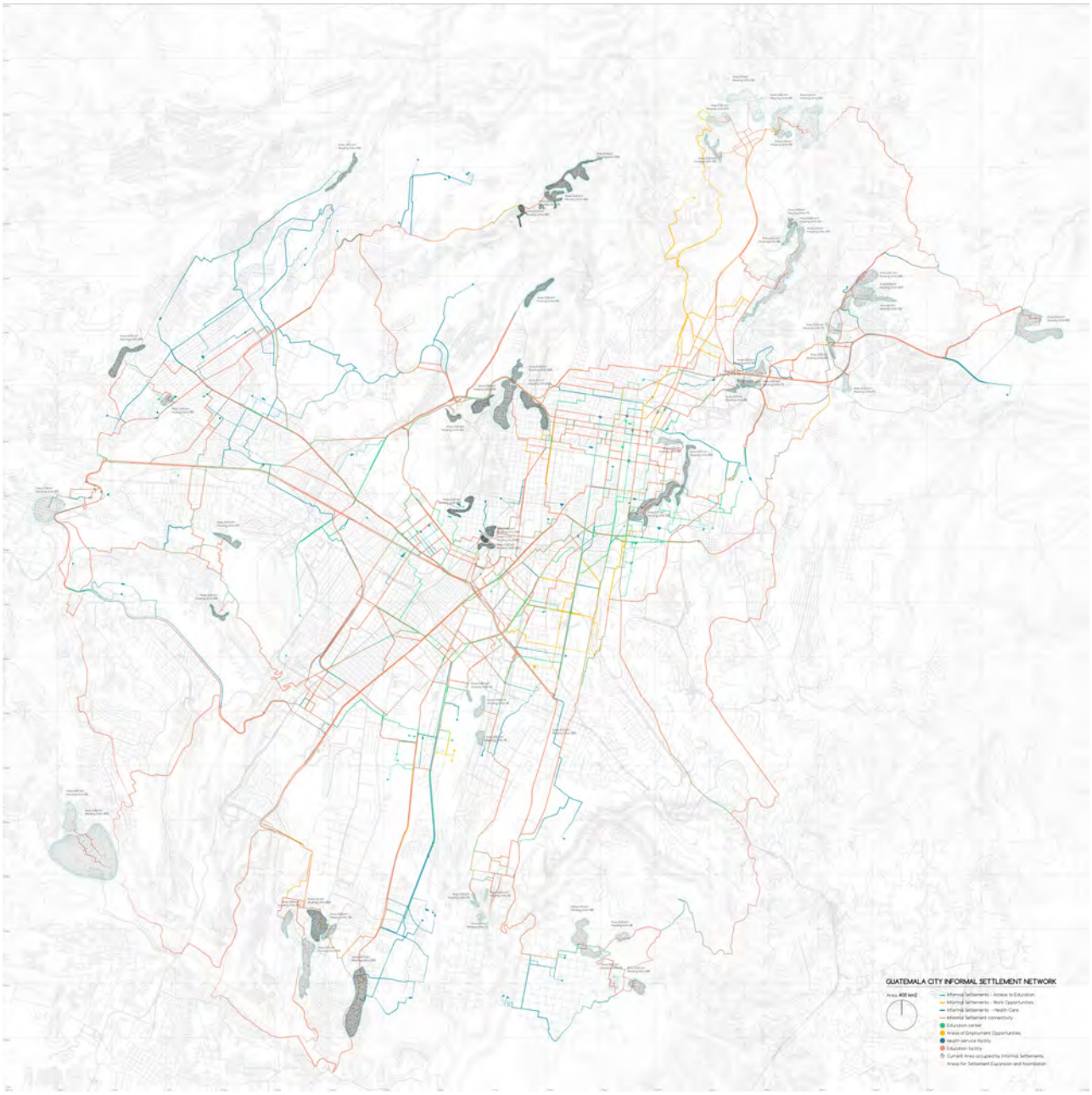
The clustering distribution of Informal Settlements suggests that there is a connection between settlements providing resources or benefits for one another resulting to the formation of settlements in close proximity.
We used the road information of Guatemala City to try to find an intangible network that links all the different settlements together. The pink grid shows the various paths that conform this connection.



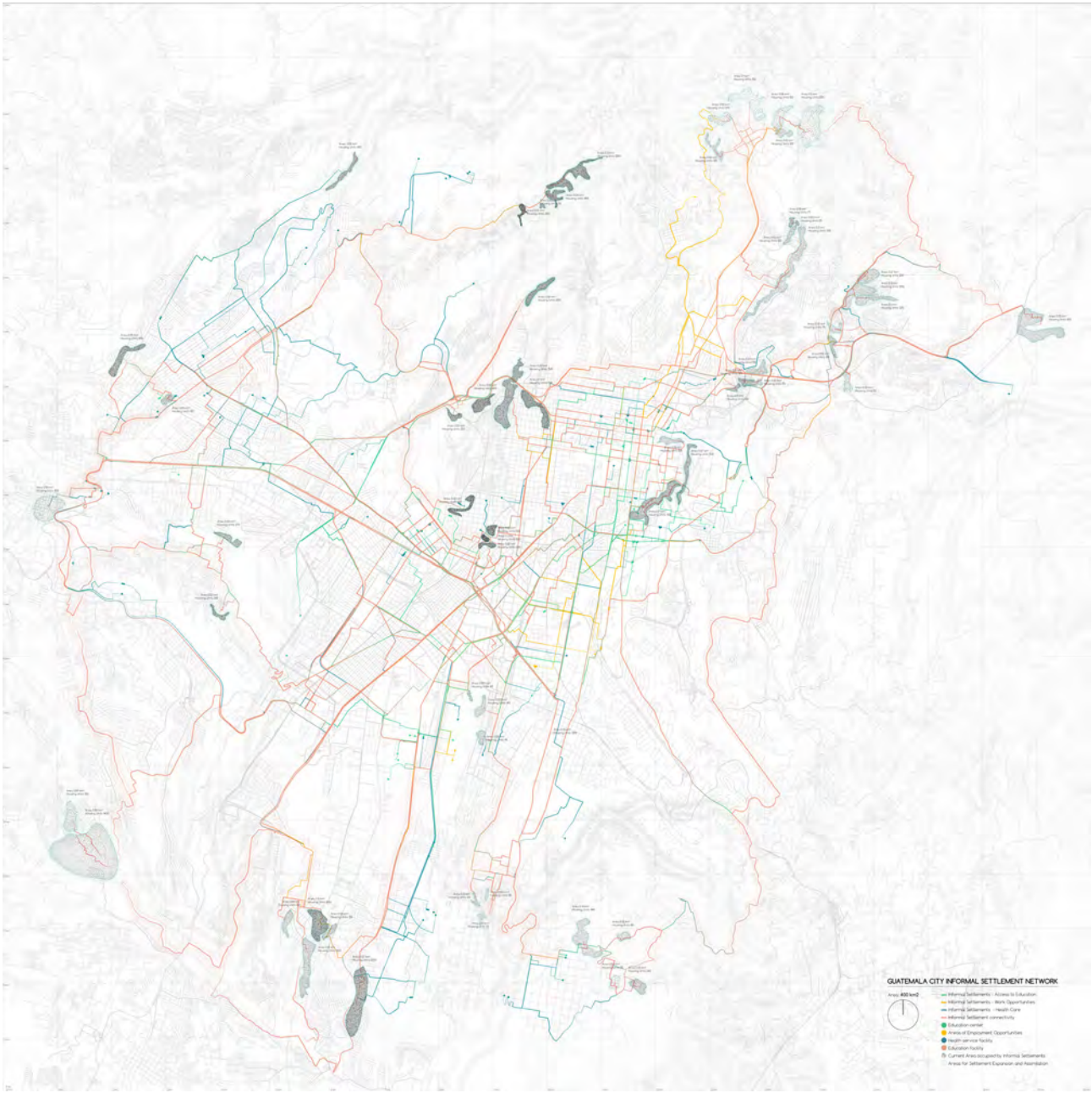
Education is one of the major factors that we identify as essential services required for an improved quality of life. Through education its is possible to secure better jobs and protect the children who inhabit these communities. The education network shows and green in our map identifyies the various education facilities across the city, as well as their proximity to the informal settlments in a 2 km radius.



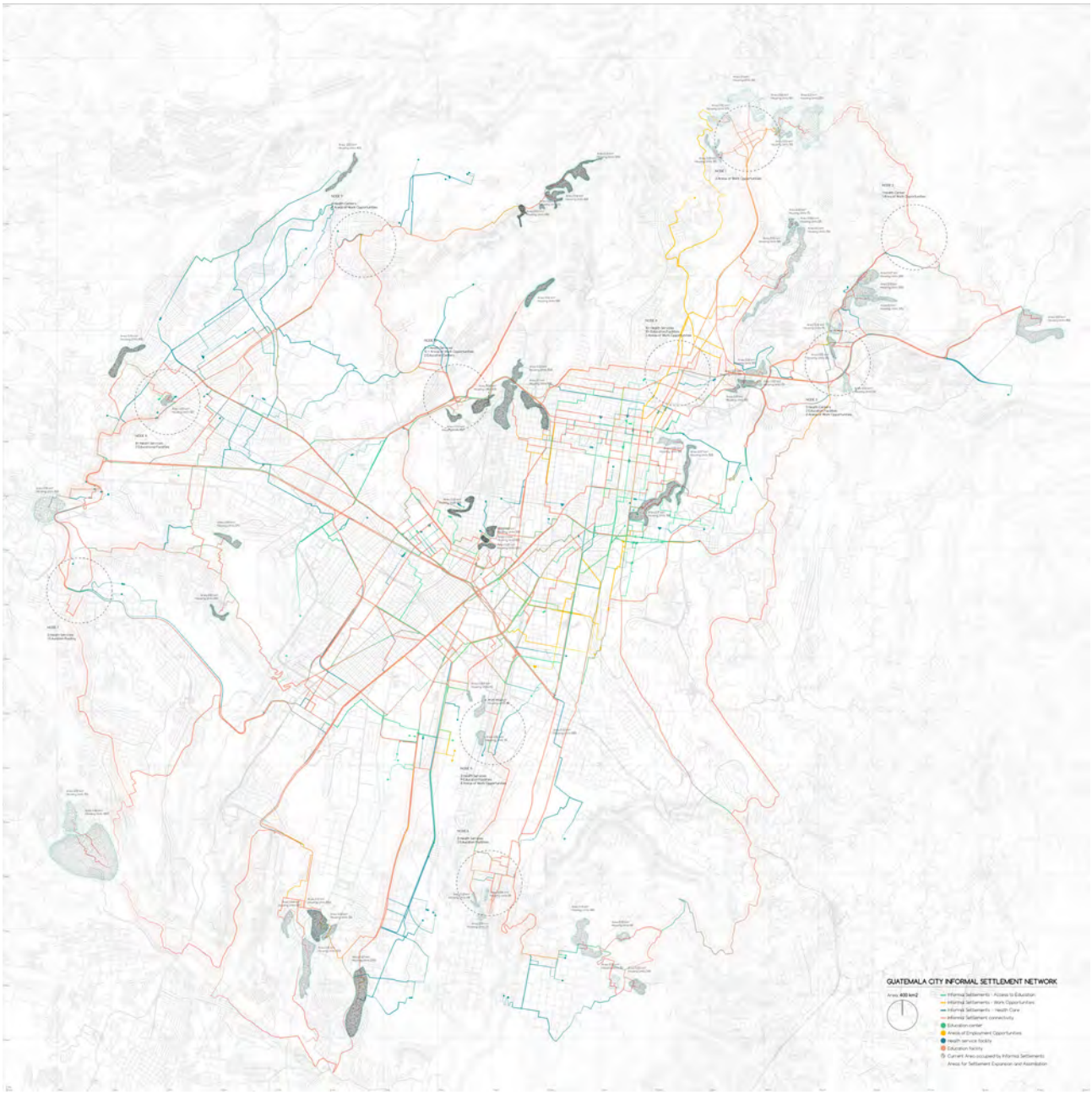
Segregation and social inequalities are on the main factors responsible for the formation of informal settlements, This map attempts to identify the major areas of potential work opportunities by defining a network through the areas with greatest employment opportunities to identify the proximity to the settlements. These areas have been connected to areas of employment that are 5km away from each settlement.



Access to health care was identified as another major aspect that is essential for improving the quality of life of the community. Accesss to healthcare does not only relate to proximity to hospitals and medical centers but also to the access to pharmacies for antibiotics, vaccination, contraceptives and other basic requirements such as personal hygiene products.



This map a meatball rout path with represents the strongest connections within our system that connect to the most services and provider the best connectivity for the Informal Settlements. These areas marked by the pink meatballs and points surgest the growth direction of potential that these settlements will experience as they develop.
The growth that is represented in these paths is no longer the characteristic unplanned growth of these settlements, but rather the planned growth that would occur as the community improves resulting in areas of better infrastructure and accessibility.



This final map identifies 10 nodes within the focus area. These nodes are regions where different growth paths intersect to identify the reasons why this growth occurs in this region the access points from each of this node are labeled to show the way an improved connectivity network between communities and services result in social and economic improvements for the city.

References

Reeves, Benjamin. "The Humanitarian Crisis in Guatemala City's Immense Garbage Dump." Vice, 25 Mar. 2014, www.vice.com/en_us/article/vdpbxm/the-basurero-is-burning-life-at-the-gates-of-hell-in-guatemala-city.

Quintal, Becky. "Serious Question: Should We Call Them Slums?" ArchDaily, ArchDaily, 30 Sept. 2018, www.archdaily.com/902930/serious-question-should-we-call-them-slums.

Haugen, Matt. "Touring the Slums of Guatemala City." Twin Cities Habitat for Humanity, www.tchabitat.org/blog/touring-the-slums-of-guatemala-city

OpenContent. "Guatemala. Living on the Edge of the Abyss." International Alliance of Inhabitants, www.habitants.org/news/local_info/guatemala._living_on_the_edge_of_the_abyss.

"La Limonada." Lemonade International, www.lemonadeinternational.org/about/la-limonada/.

The World Bank. 2008b. "Local Gains from Global Opportunities: Improving Central America Investment Climate."

Finance and Private Sector Unit, Poverty Reduction and Economic Management, Latin America and the Caribbean Region. The World Bank, Washington DC.
United Nations Development Project. Human Development Report 2007/2008.

The World Bank. 2008a. "Guatemala Investment Climate Assessment." Finance and Private Sector Unit, Poverty Reduction and Economic Management, Latin America and the Caribbean Region. The World Bank. Washington DC.

Perry, G. E.; Arias, O.S.; Lopez, J.; Maloney, H.; and Serven, L. 2006. "Poverty Reduction and Growth: Virtuous and Vicious Circles." The World Bank

The World Bank. 2005c. "Guatemala Country Economic Memorandum."

"Young People Living in Slums Are Guatemala's Future." Www.efe.com, 26 July 2016, www.efe.com/efe/english/world/young-people-living-in-slums-are-guatemala-s-future/50000262-2995859.