

ISLAND URBANISM

Combined Analysis

Ecology

**Jamaica's diverse ecosystem is essential for its development.
However, anthropogenic-driven development increasingly
jeopardizing the ecosystems the population critically depends on.**

Jamaica: World's Biodiversity Hotspot

Jamaica has the 5th highest concentration of endemic species on the planet

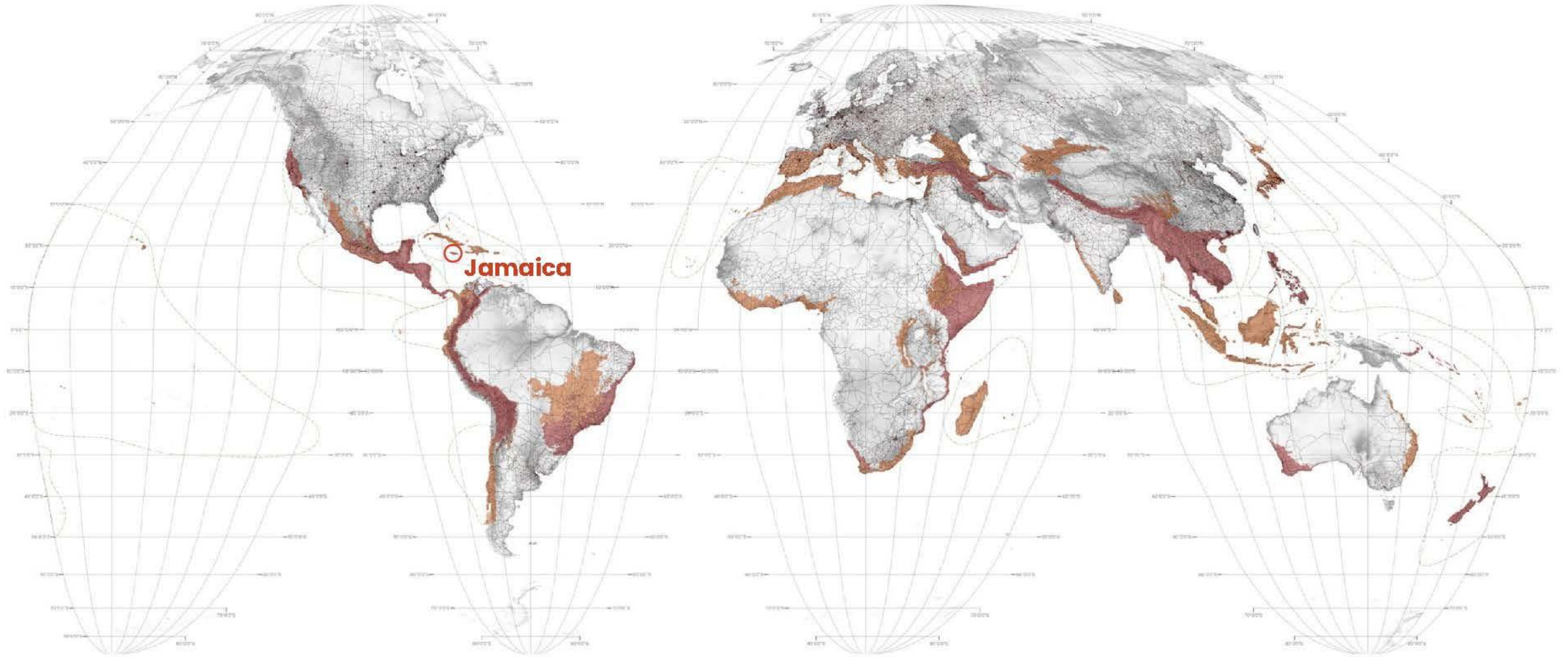


Figure: The world's biodiversity hotspots



**MARINE
ECOSYSTEM**

**TERRESTRIAL
ECOSYSTEM**

**FRESHWATER
ECOSYSTEM**

High Socio-Economic Dependence on Marine Biodiversity

30%

GDP

TOURISM

US\$32M

**in Flood Risk Reduction
Benefits/Year**

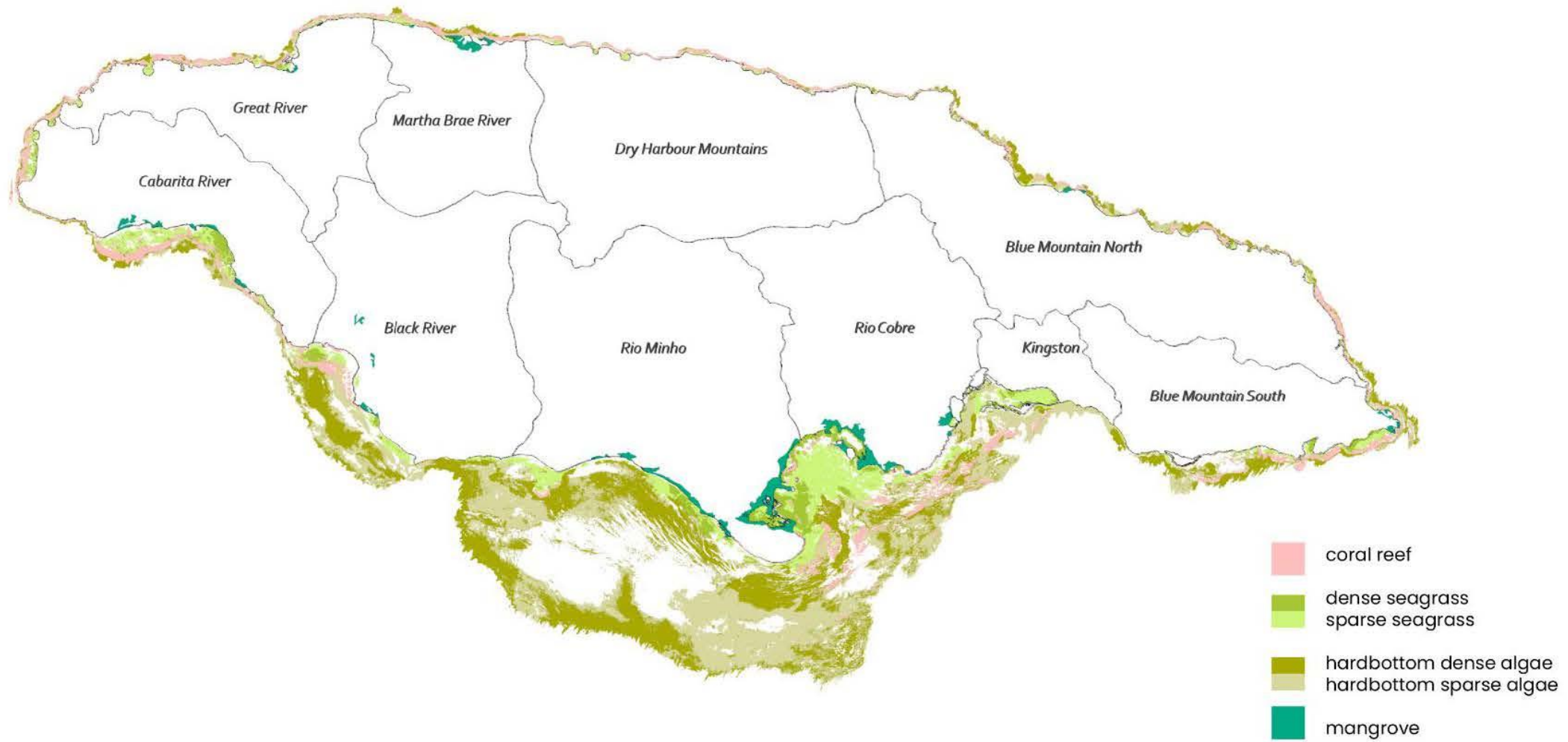
**PROTECTION AGAINST
NATURAL DISASTER**

US\$50M

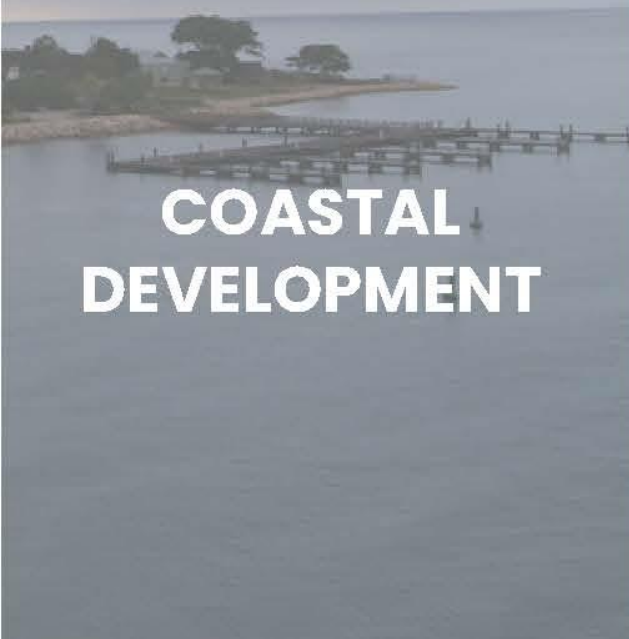
Revenue/Year

FISHERY

Marine and Coastal Resources



Current Threats to Marine & Coastal Ecosystem:



**COASTAL
DEVELOPMENT**



OVERFISHING



**WATERSHED
-BASED
POLLUTION**



**MARINE-BASED
POLLUTION**

Projected Warming Trend

-Coral Bleaching



Parrotfish

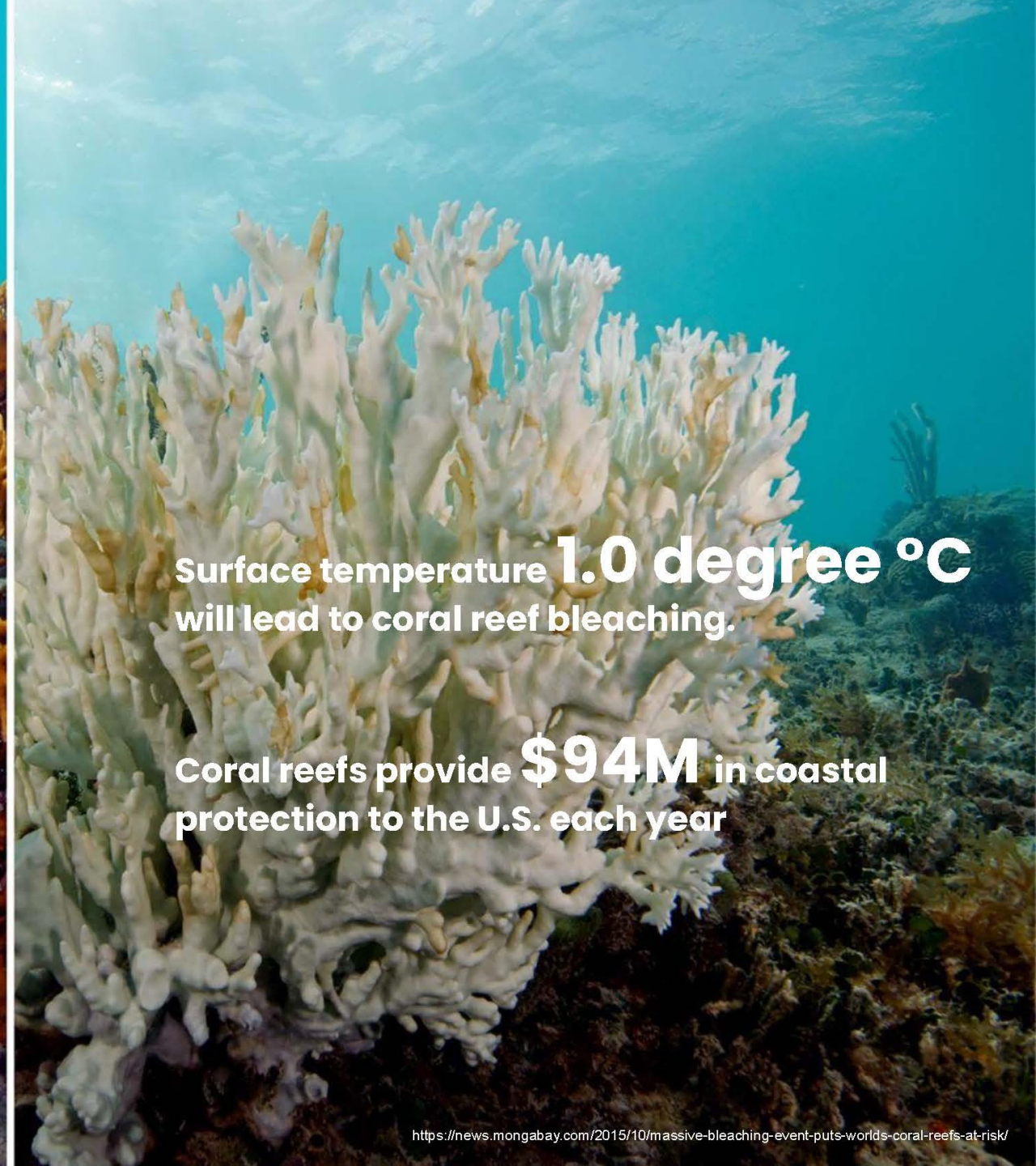
Green Turtle

Brown Pelican

Pederson Cleaner
Shrimp

Queen Conch

Flamingo Tongue
Snail



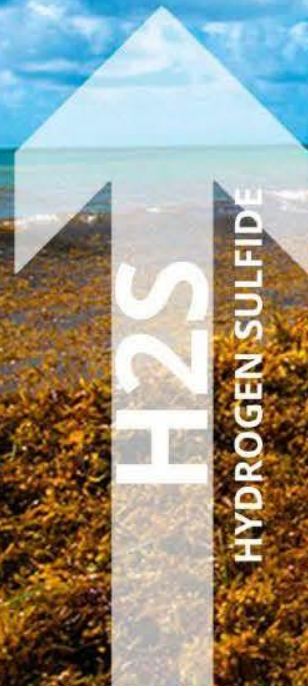
Surface temperature **1.0 degree °C**
will lead to coral reef bleaching.

Coral reefs provide **\$94M** in coastal
protection to the U.S. each year



Projected Warming Trend

-Sargassum seaweed proliferation



Tourism 30% GPD
Clean-up Cost \$120M(us)



Smothering habitats
Causing entanglement



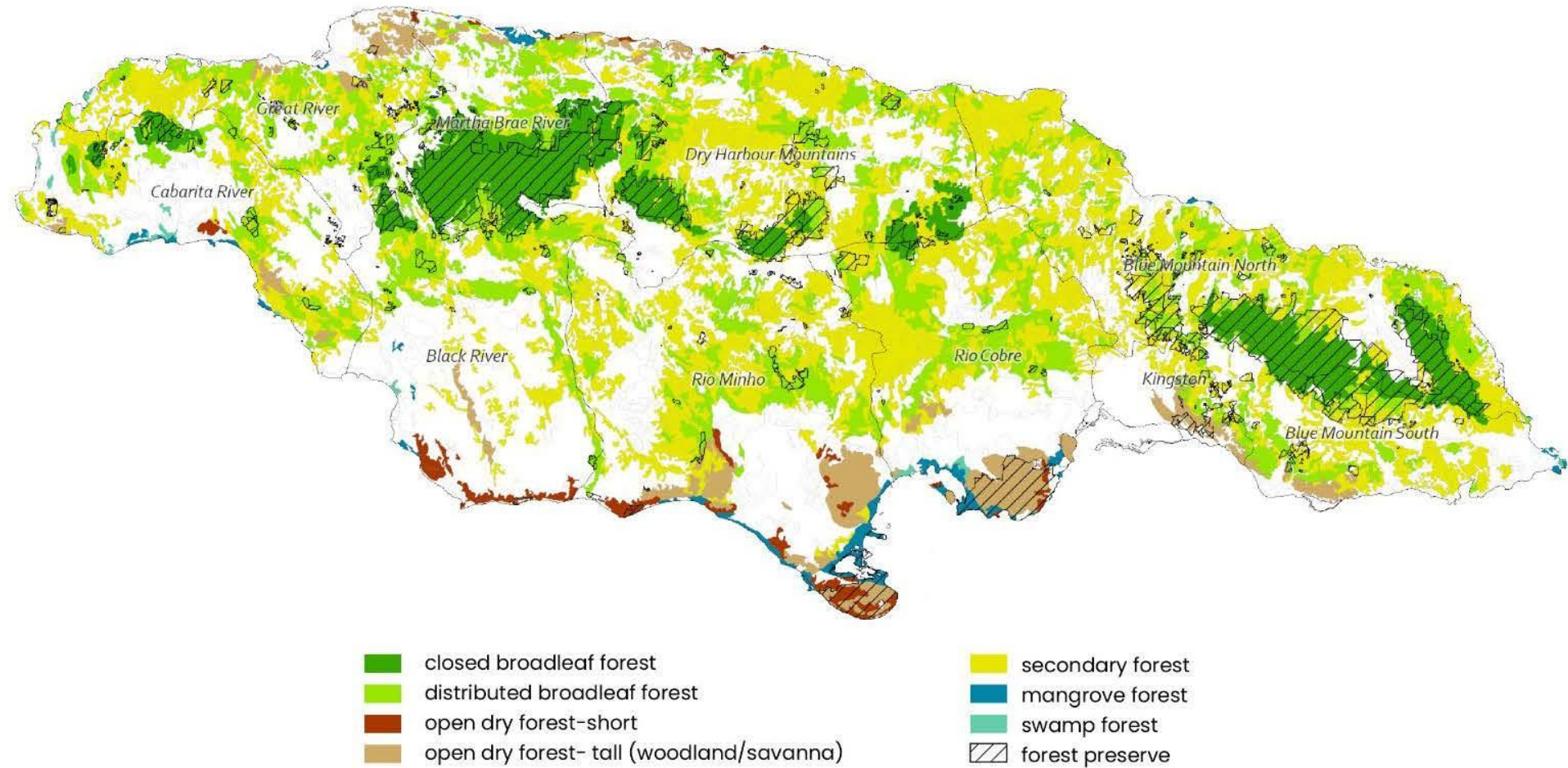
The image features three circles arranged horizontally. The leftmost circle is white with a thin grey border and contains the text 'MARINE ECOSYSTEM' in grey. The middle circle is a solid, vibrant yellow and contains the text 'TERRESTRIAL ECOSYSTEM' in white. The rightmost circle is white with a thin grey border and contains the text 'FRESHWATER ECOSYSTEM' in grey.

**MARINE
ECOSYSTEM**

**TERRESTRIAL
ECOSYSTEM**

**FRESHWATER
ECOSYSTEM**

Terrestrial Resources



High socio-economic dependence on terrestrial biodiversity



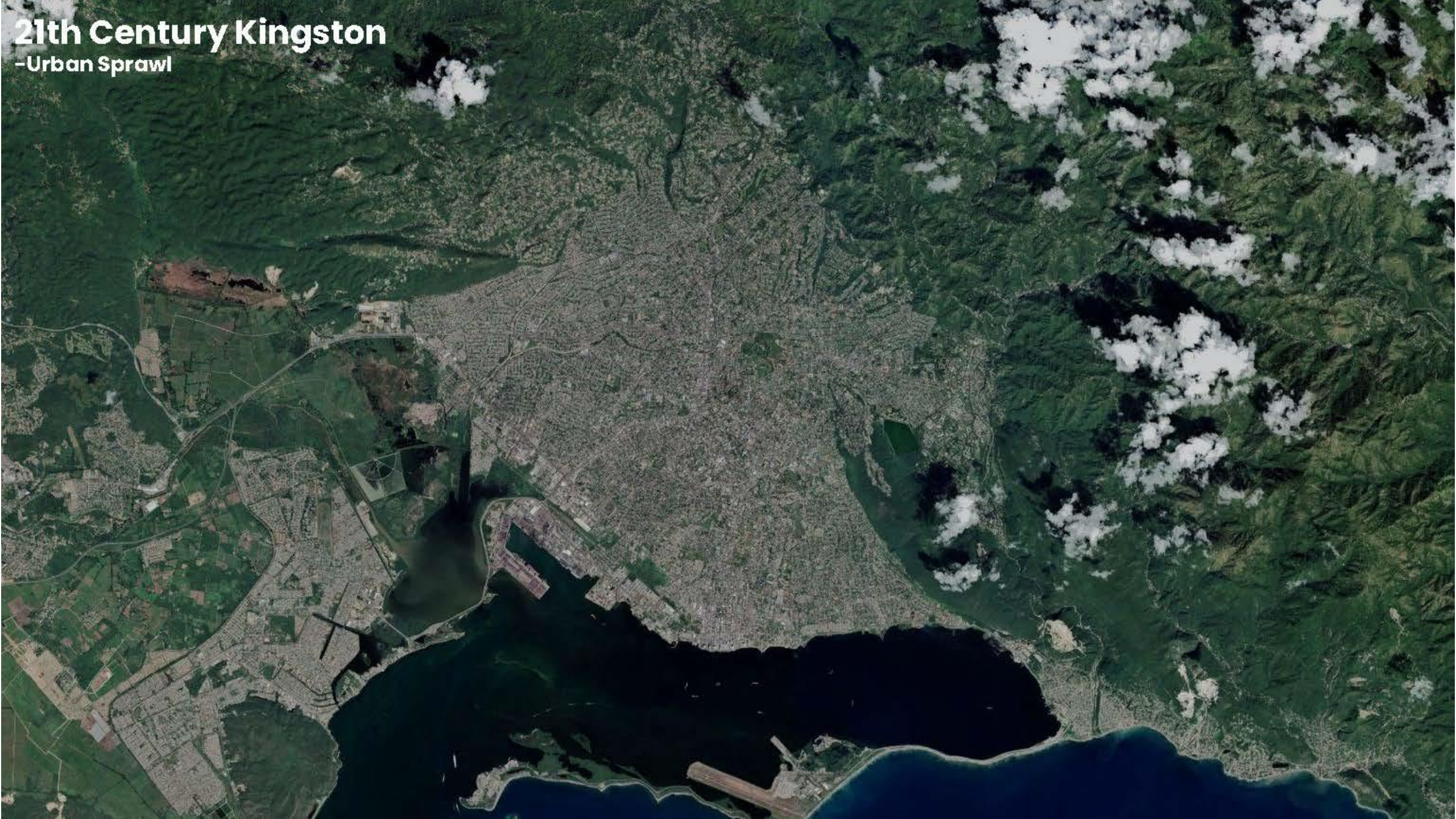
Current Threat: Slope Farming

>170,000 farmers
<245,000 hectares of land





17th Century Kingston
-Green Lush



21th Century Kingston

-Urban Sprawl



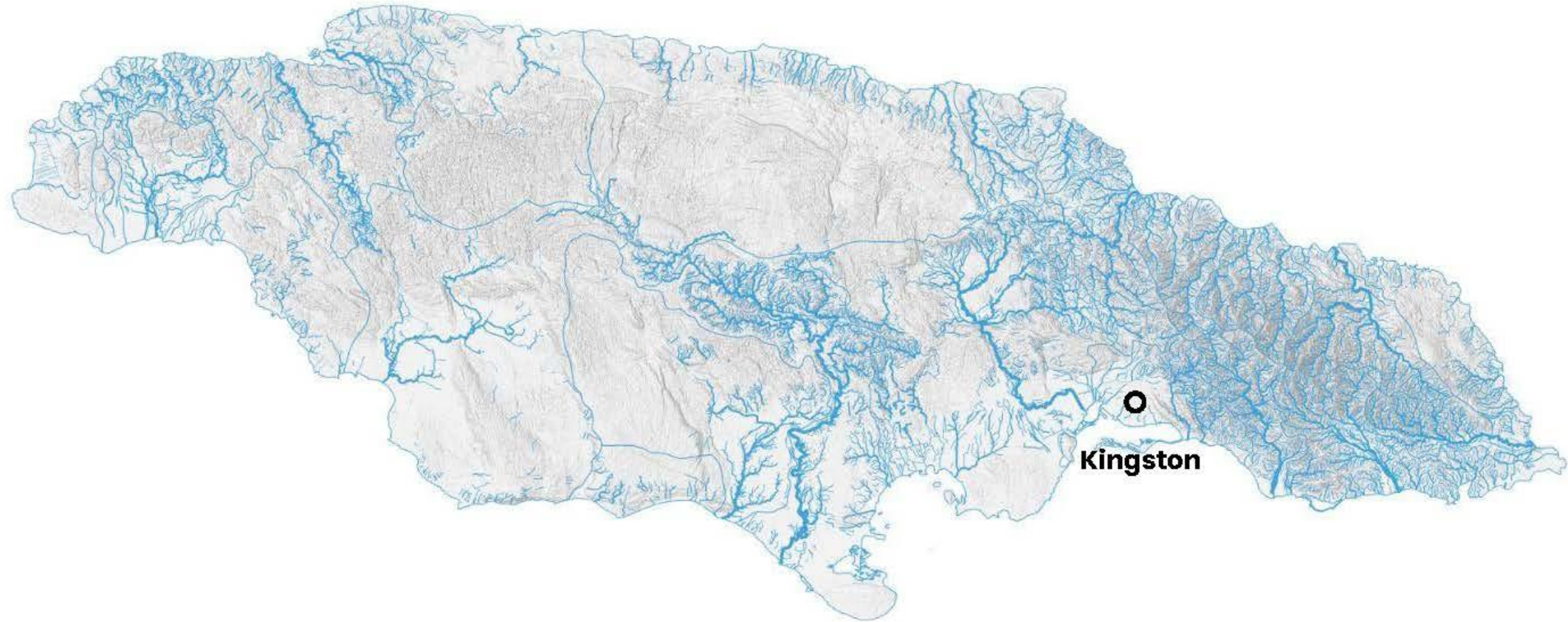
**MARINE
ECOSYSTEM**

**TERRESTRIAL
ECOSYSTEM**

**FRESHWATER
ECOSYSTEM**

Freshwater Resources: 16% from surface water

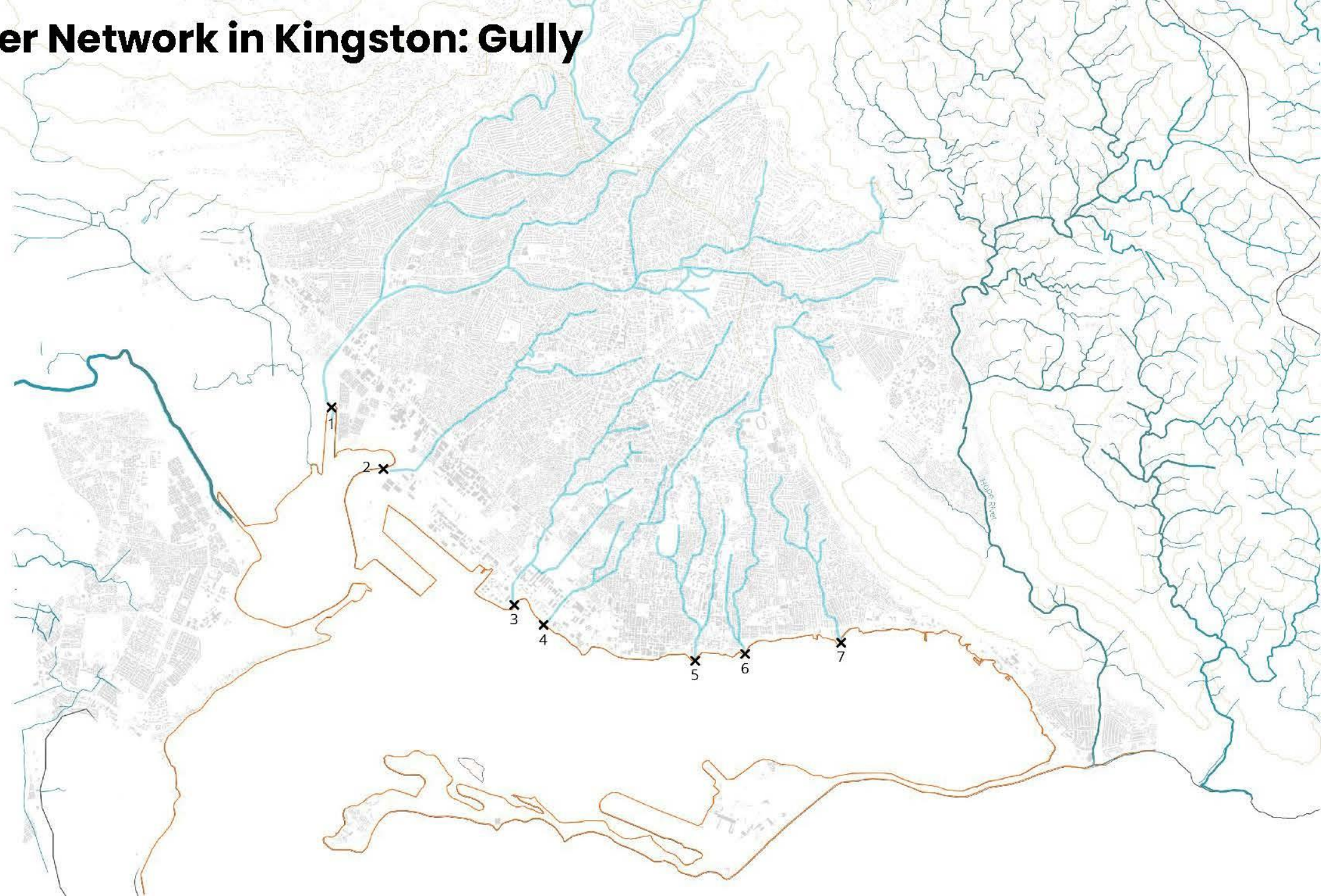
-Surface drainage dominates on the blue mountain side



Surface Water Network in Kingston: Gully

- 1 Sandy Gully
- 2 Jew Gully
- 3 Shoemaker Gully
- 4 Jones Town Gully
- 5 Barnes Gully
- 6 Franklyn Town Gully
- 7 Mountain View Gully

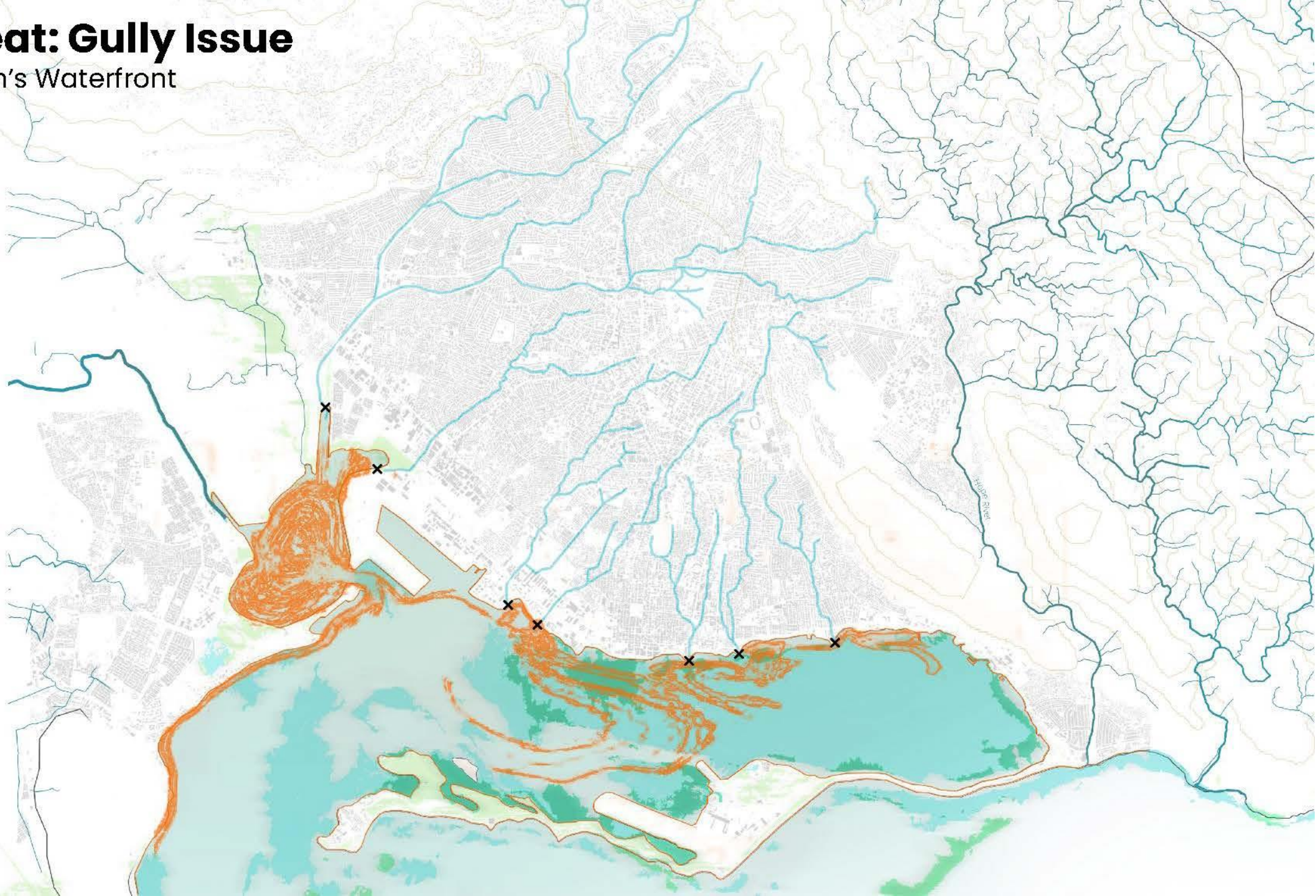
✕ drainage outflow point
— gully



Current Threat: Gully Issue

-Attacks to Kingston's Waterfront

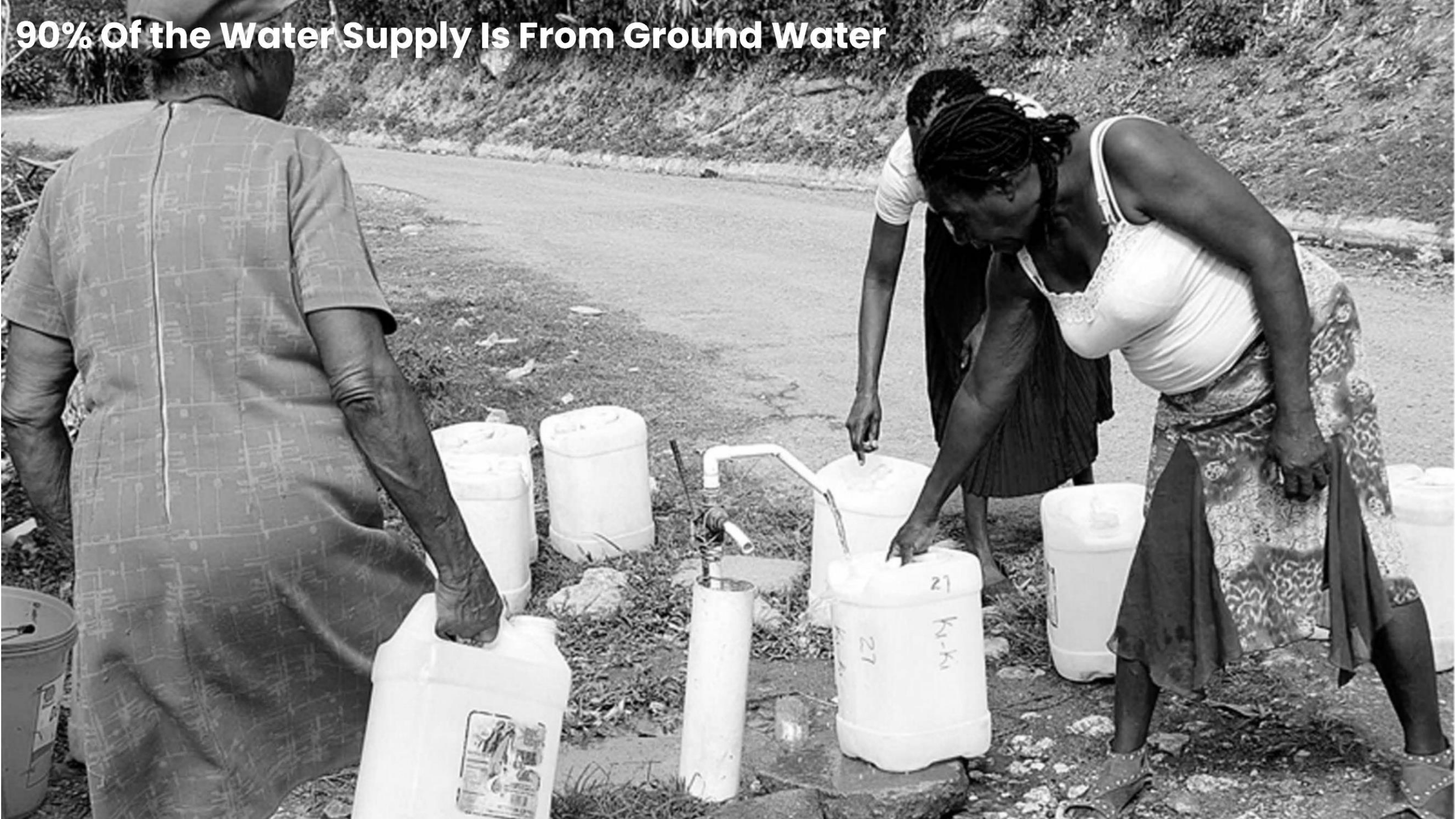
- garbage inflow
- mangrove
- dense seagrass
- sparse seagrass
- × drainage outflow point
- gully



Current Threat: Gully Issue

-Kingston





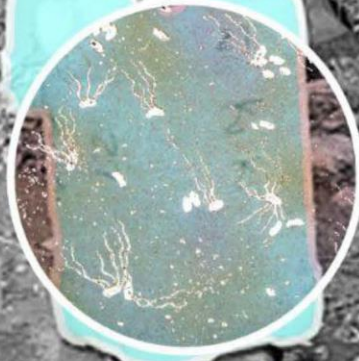
90% Of the Water Supply Is From Ground Water



Drought Trends Escalate Regional Vulnerability



Cholera

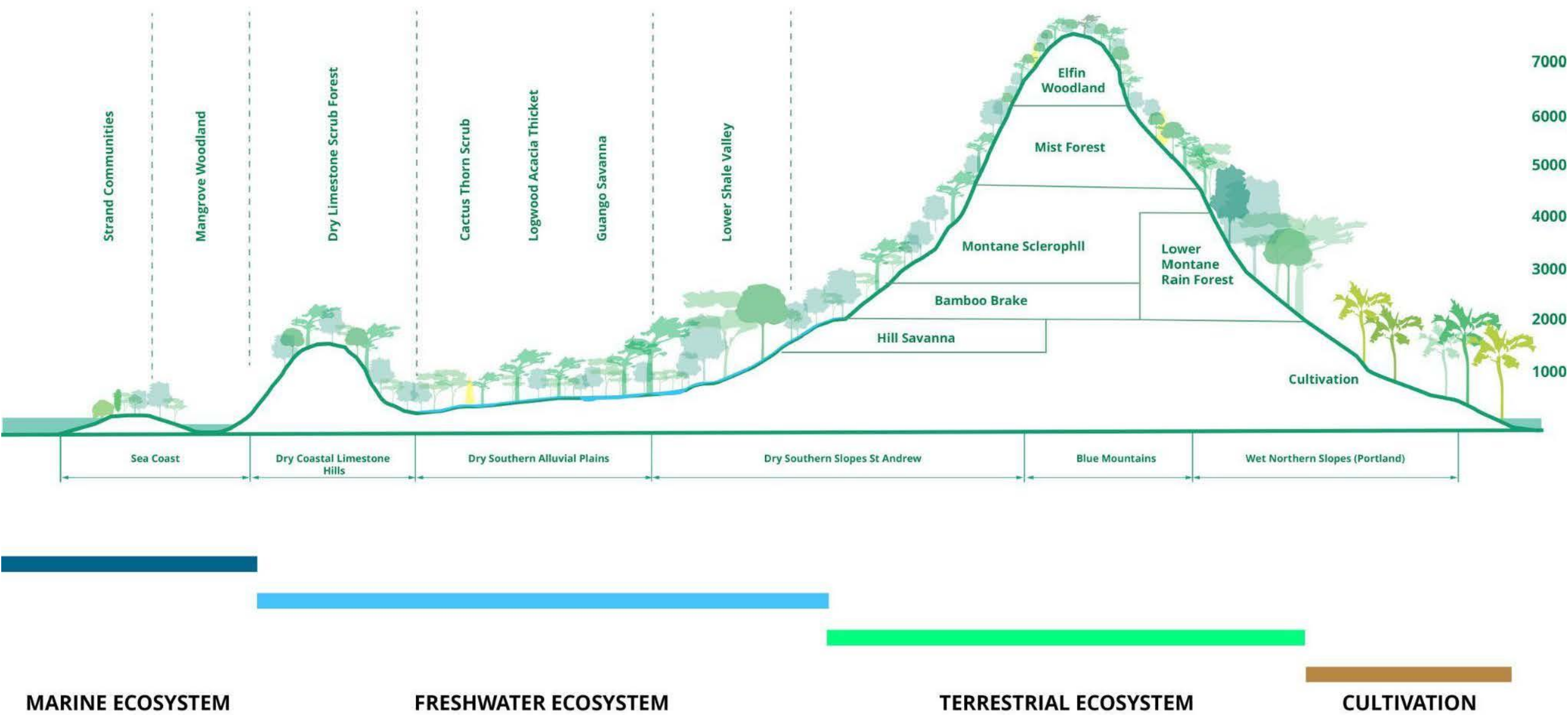


Typhoid



Intestinal parasites

Diverse Ecosystem in Sectional View



Culture And Politics

Culture And Politics

Economy

Development

Transit

Ecology

Pre-history - 18th CE: AN ISLAND IN TRANSITION: COLONIAL ESTABLISHMENT



18th - 20th CE: REVOLT! SLAVE REBELLIONS, MAROON RESISTANCE, & PAN-AFRICAN UNION



1728-1740 & 1795

First & Second Maroon War

Jamaican Maroons communities around the Blue Mountains fight off British colonial authorities with guerilla warfare. The Wars end either in peace treaties or bloody stalemates.

1807

End of slave trade

British Parliament passes laws to improve conditions of slaves and eventually abolishes the slave trade (though the institution still remained).

1838

Emancipation of slavery

British Parliament outlaws slavery in its empire and declares full emancipation of slavery in Jamaica.

1845-1854

The British begins to import indentured servants from India, China, and Sierra Leone to supplement the labor shortage.

1914

Marcus Garvey (prominent trade unionist, Pan-Africanist, and proponent of Back-to-Africa movement) finds the **Universal Negro Improvement Association and African Communities League** (UNIA) - a nationalist organization that aims to unite all of Africa and African diaspora communities around the world.

1930s

A new religious **Rastafari movement** emerges from disenfranchised Afro-Jamaican communities, focusing on Afrocentric ideology and Ethiopianism. The crowning of Haile Selassie I as the Emperor of Ethiopia is seen as fulfilling a Biblical prophecy.

BRITISH COLONIAL PERIOD

1940s - 1970s: A ROAD TOWARDS INDEPENDENCE



1934-1939

After WWII in the midst of the Great Depression, sugar economy across the Caribbean declines and massive social unrest spreads across the British West Indies. Jamaican uprisings began in Westmoreland and quickly spreads to Kingston, demanding economic development from British colonial rule. Rising sentiments of nationalism and self-determinism spreads through the island.

1938-1943

Alexander Bustamante captures popularity amongst militant urban working class and forms the **Jamaican Labour Party (JLP)**.

Norman Manley forms the **People's National Party (PNP)**. It adopted socialist principles and is supported by educated members of the upper middle class.

1962

Jamaica attains full **independence** on **August 6, 1962**. The new state still retains its membership in the Commonwealth and adopts a Westminster-style parliamentary system. Bustamante (JLP), at 78, becomes Jamaica's first prime minister.

Late-1960s

Evolving from ska and rocksteady, **reggae** gets popularized with the use of bass as a percussion. The music is deeply rooted in Rastafari ideologies and often used to spread its gospel throughout the world.

Rude boys were associated with these music styles in street culture. Influenced by gangster/outlaw films of that time, they wore sharp suits, thin ties, and pork pie or Trilby hats.

JLP and PNP were paying off rude boys to engage in turf warfare with political rivals, forming garrisons and escalating urban political violence.

BRITISH COLONIAL PERIOD

JAMAICAN INDEPENDENCE

1970s - 1980s: WAR, LOVE & PEACE?



1972

Michael Manley (PNP) is elected as Prime Minister. Under Manley, the government enacted various social reforms (minimum wage, free education, land reform, women's equality) and openly supported democratic socialism, praising Communist figures like Fidel Castro and opposing the apartheid regime in South Africa.

1976

In the 1976 election, political parties began forming paramilitary divisions and hundreds of people were murdered. Rivalry between JLP and PNP intensifies, and gang-related political violence grows significantly.

1978

One Love Peace Concert is held at The National Stadium in Kingston to unite the opposing parties during the political civil war. Bob Marley & The Wailers perform "Jamming" to unite rivals Manley (PNP) and Seaga (JLP).

1980

Edward Seaga (JLP), a conservative and anti-Communist, wins the general election of 1980. The election was marked by over 800 murders preceding the vote. Seaga immediately reverses social programs from his predecessor, aims to privatize industry, and forms closer relations with the US.

1980s

The use of sound systems, accompanied with the developments in musical technology and disc jockeys, give rise to **dub**, **ragga**, and **dancehall music**.

Dancehall music gained popularity with people from the inner city who could not participate in dances uptown. Because radios were fairly conservative and did not play popular music, dancehall was often played outside with sound systems. Artists like *Shabba Ranks* and *Chaka Demus and Pliers* gain international popularity.

JAMAICAN CIVIL WAR

1990s - Present: DREAD BEAT AN' BLOOD: JAMAICAN POLITICKING



1989-1992

Michael Manley (PNP) wins re-election, this time moderating his leftist politics towards the center and focusing on liberalizing the economy towards a free market. Manley continued to maintain social welfare programs and increased housing provisions to protect consumers.

1993-2006

P.J. Patterson (PNP) succeeds Manley in the following 1993 & 1997 general elections. He further strengthened social programs, modernized infrastructure, and increased investment in tourism, mining, ICT, and energy sectors.

Early-2000s

Dancehall explodes in the international mainstream pop scene, where major Jamaican dancehall artists chart in US, Europe, Canada, Australia, and Africa music charts.

2007-2008

Jamaican sprinters (like Asafa Powell, Usain Bolt, and Shelly-Ann Fraser) begin dominating world records and double the country's total gold medal count in the 2008 Summer Olympics in Beijing.

2010

Tivoli Incursion

An armed conflict between Jamaica's military and police forces with the Shower Posse drug cartel of Tivoli Gardens (led by Christopher "Dudus" Coke & linked with JLP) ignited civil unrest in Kingston - killing 73 civilians and wounding 35 others with over 500 arrested.

PM Bruce Golding (JLP) was called to resign for his handling of the incident.

2011-present

PNP and JLP continue to flip elections based on "turf politics" and political pay-offs in garrison communities.

JAMAICAN GOLDEN AGE?

Election Results 2011

POLITICAL PARTIES





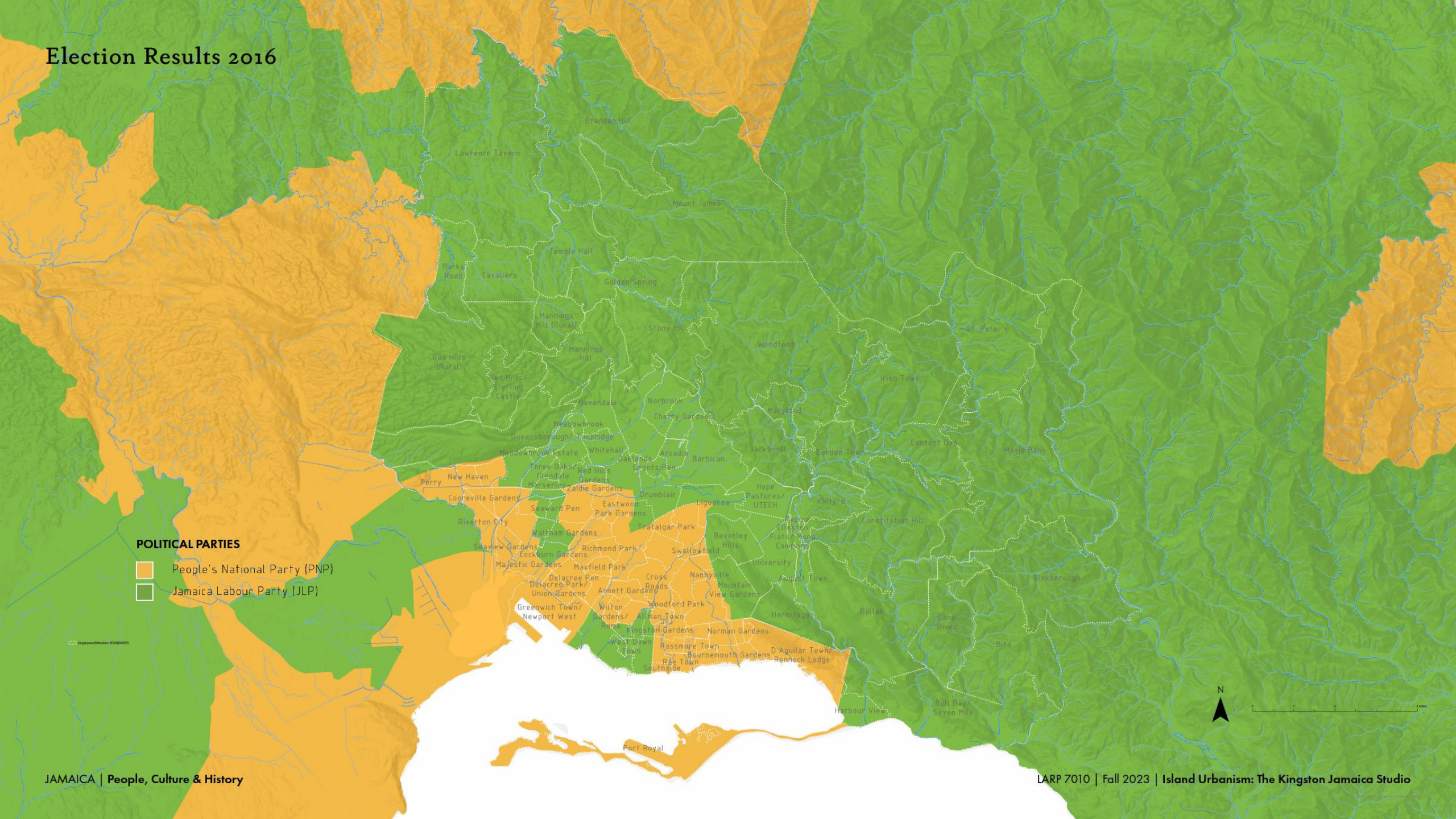
People's National Party (PNP)

Jamaica Labour Party (JLP)

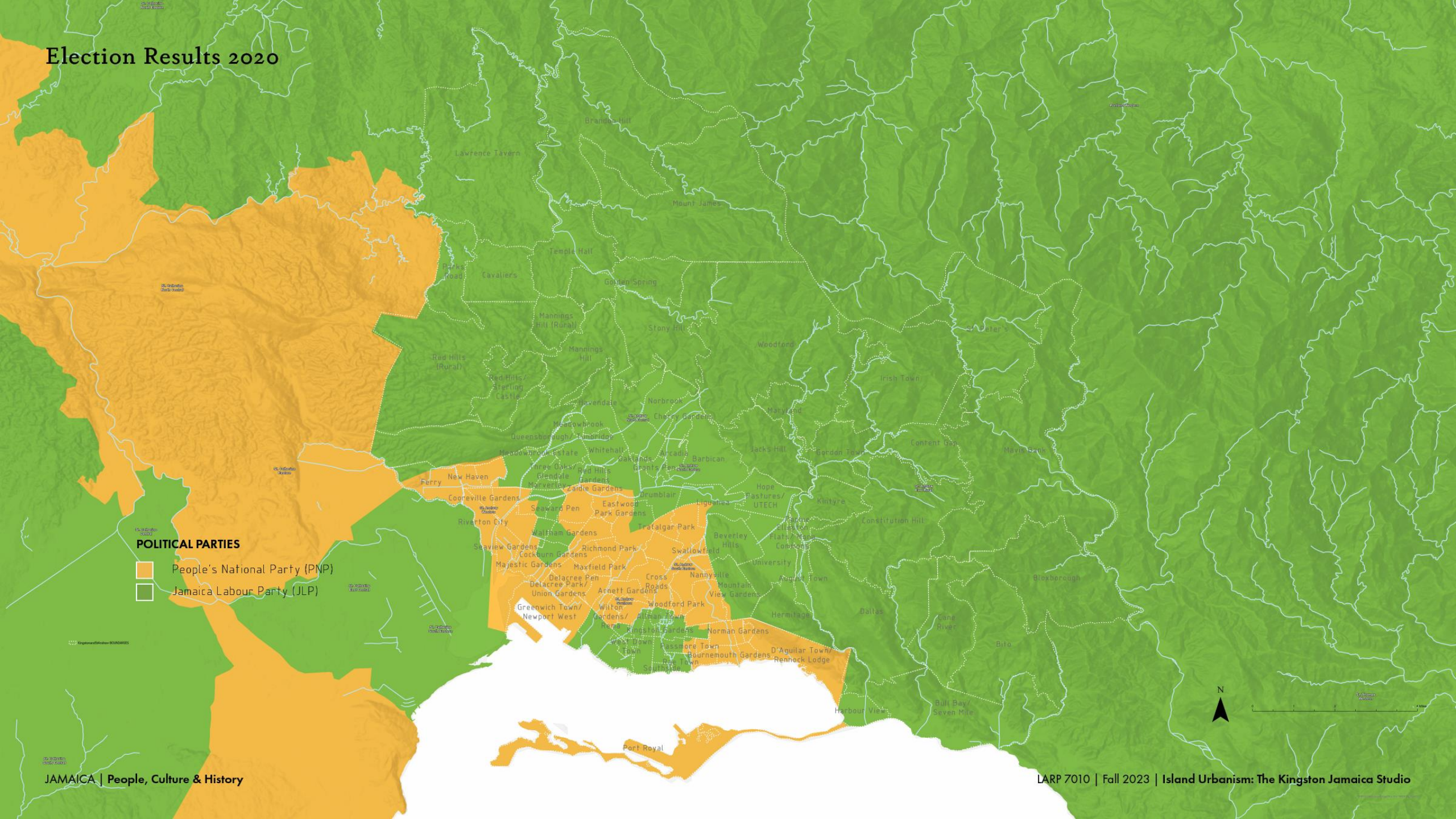
Election Results 2016

POLITICAL PARTIES

-  People's National Party (PNP)
-  Jamaica Labour Party (JLP)



Election Results 2020



Economy

ECONOMIC TIMELINE

1500's - 1900's

AGRICULTURE

- Agriculture dominates the economy, with exports mostly of **sugar, bananas & tobacco**
- Imports of **Enslaved People** from Ghana, Nigeria / Central Africa

1900 - 2000

INDUSTRY

- Exports: **Bananas, bauxite, textiles**
- Economic Free Zone
- As markets globalize manufacturing and agriculture suffer -> **Turn to Tourism**

2000 - Future

SERVICES

- Economic Strategy: **Reforms to Improve private sector** & encourage Development + foreign investment
- Investment in Blue Economy & Sustainable Development



PRE-COLONIAL

SPANISH RULE

BRITISH COLONIALISM

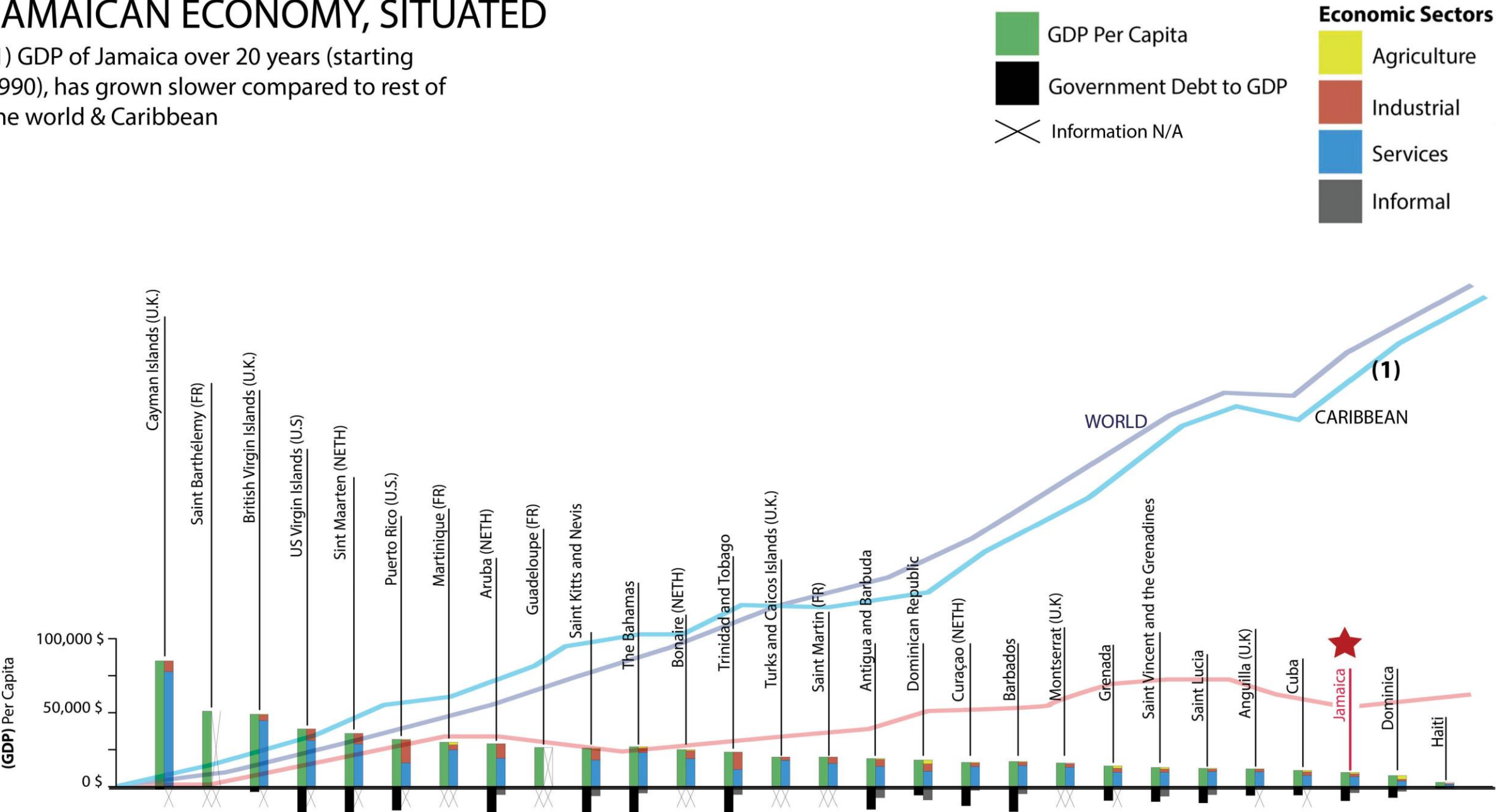
JAMAICAN INDEPENDENCE

GDP ANALYSIS

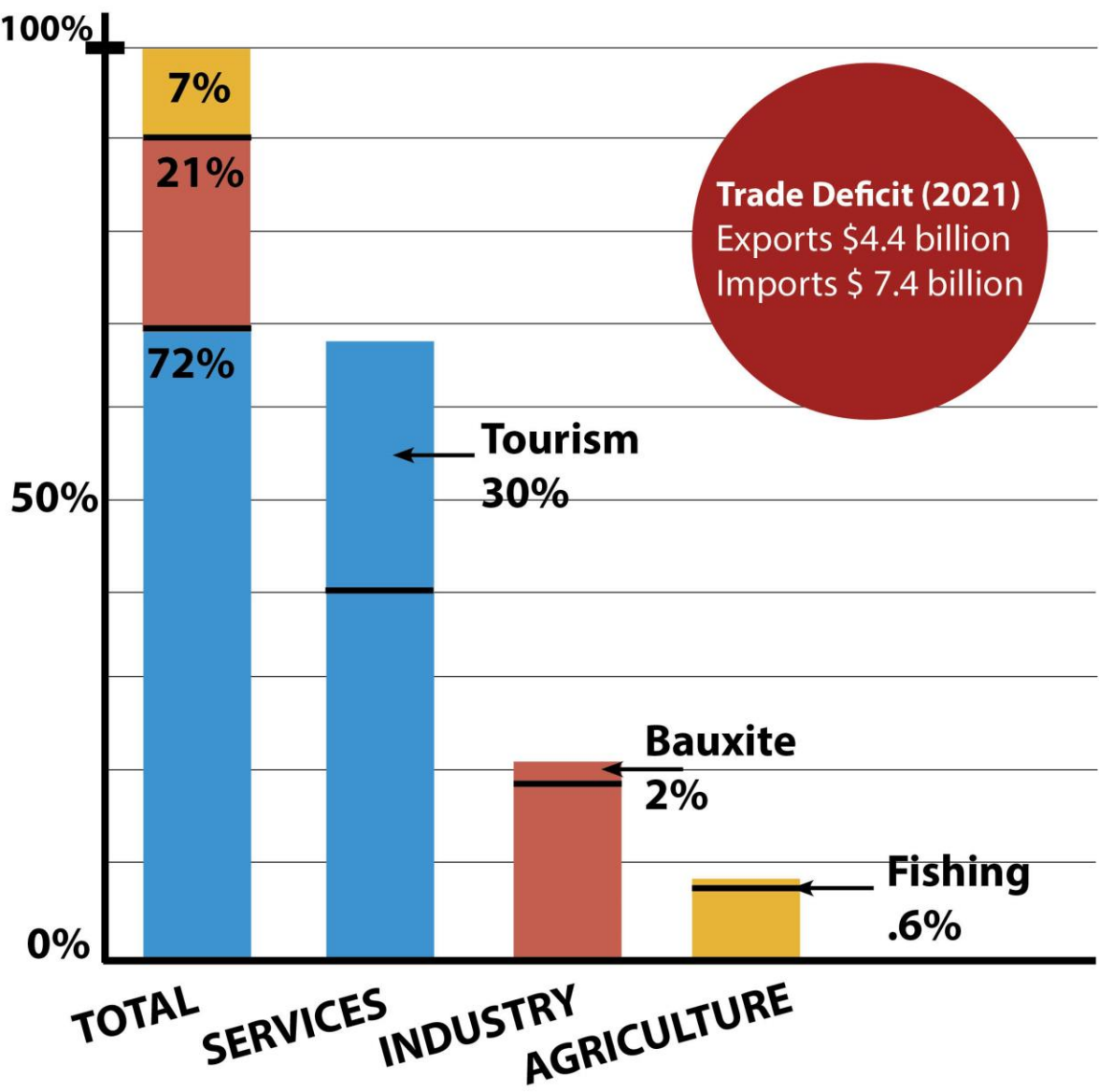


JAMAICAN ECONOMY, SITUATED

(1) GDP of Jamaica over 20 years (starting 1990), has grown slower compared to rest of the world & Caribbean



SECTOR ANALYSIS



Farming **Agriculture**

Aquaculture **Fishing**

Mining Industry

Concrete Tobacco Factories

Production **Logistics Hub**

Petroleum Refinery

Services

Banking

Arts

Tourism

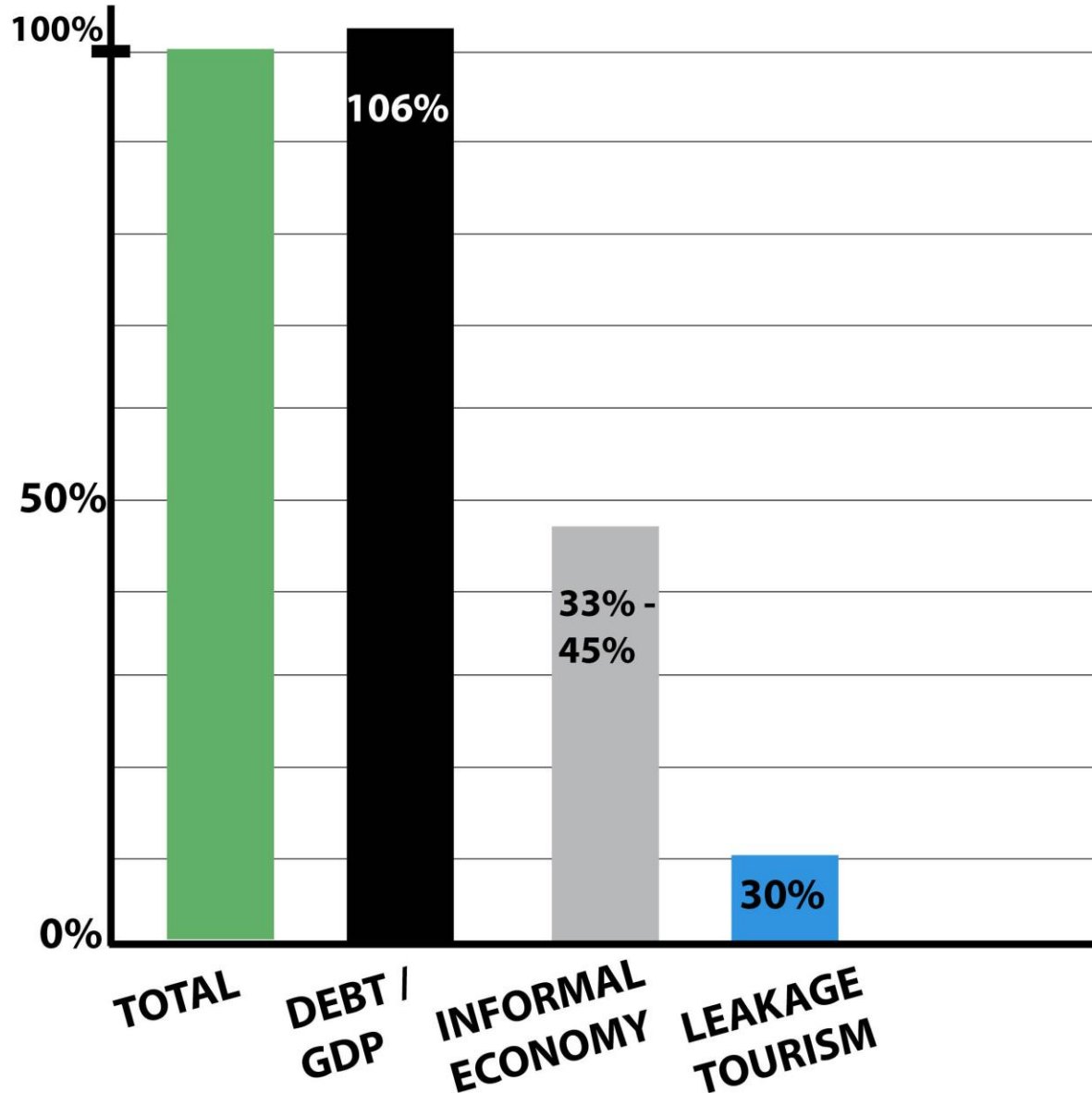
Transportation

Retail

Hospitality

Health Care

LEAKAGE & SPENDING



Debt / GDP Ratio

-Jamaica has a high debt ratio, as well as a high ratio of foreign debt

Informal Economy

-In 2001, **informal activities represented around 43%** of GDP
-60% work in wholesale/retail trade or agriculture

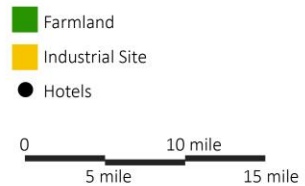
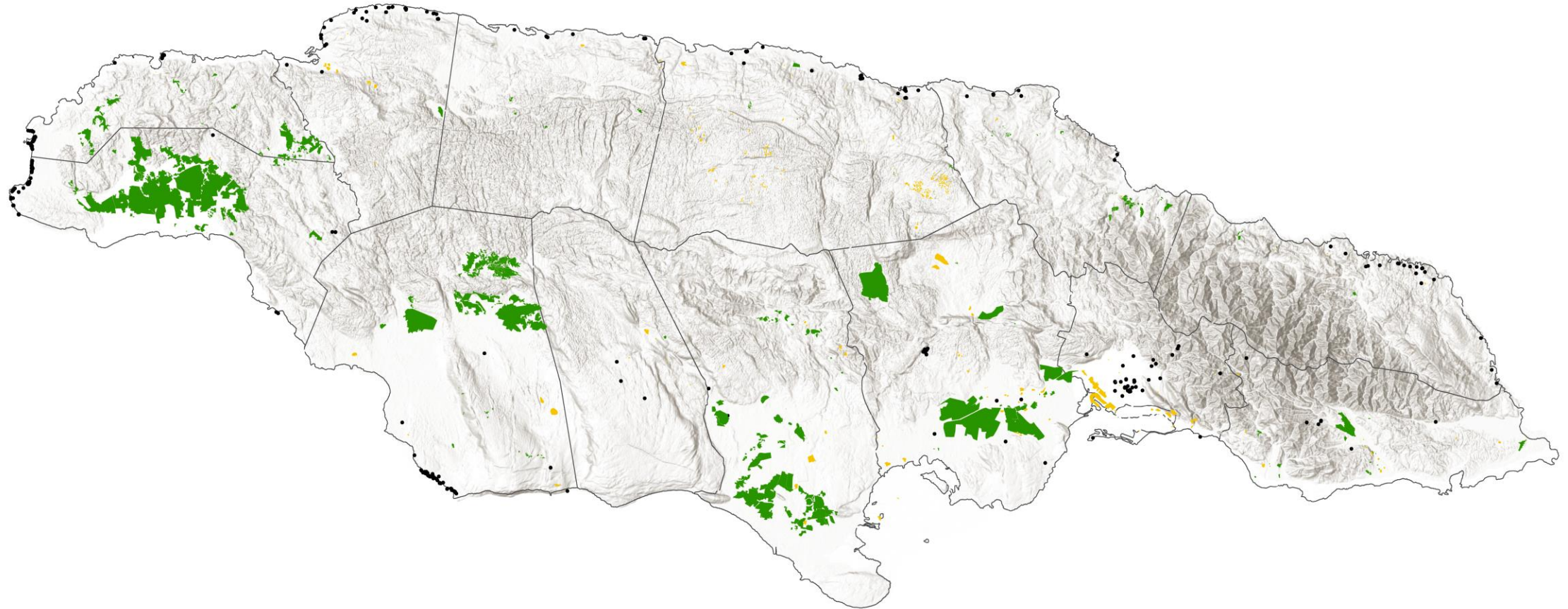
Tourism Leakage

-30% tourism revenue is "leaked out" of Jamaica"
-Main causes of leakage in Tourism: **Foreign ownership** of hotels, employment of foreigners in higher-up positions, Imported materials/food.
-**50% food imports are supplied to hotels** + restaurants

Sectors Distribution Map

Sectors

Most of hotels are located on beach – limited tourist experience
Cultural tourism?



Hotles and Beach, Island-wide

Total Population: 831,383

Round Hill Hotel and Villas



S Hotel Jamaica



Jewel Grande Montego Bay



Ocean Eden Bay



Breathless Montego Bay



Zoëtry Montego Bay Jamaica



Hilton Rose Hall Resort



Couples Sans Souci



The Trident Hotel



Panorama



Geejam Hotel



Grand Lido Negril



Couples Negril



Azul Beach Resort Negril by Karisma



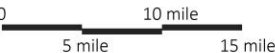
Hideaway at Royalton Negril



Ivy's Cove

● Beach

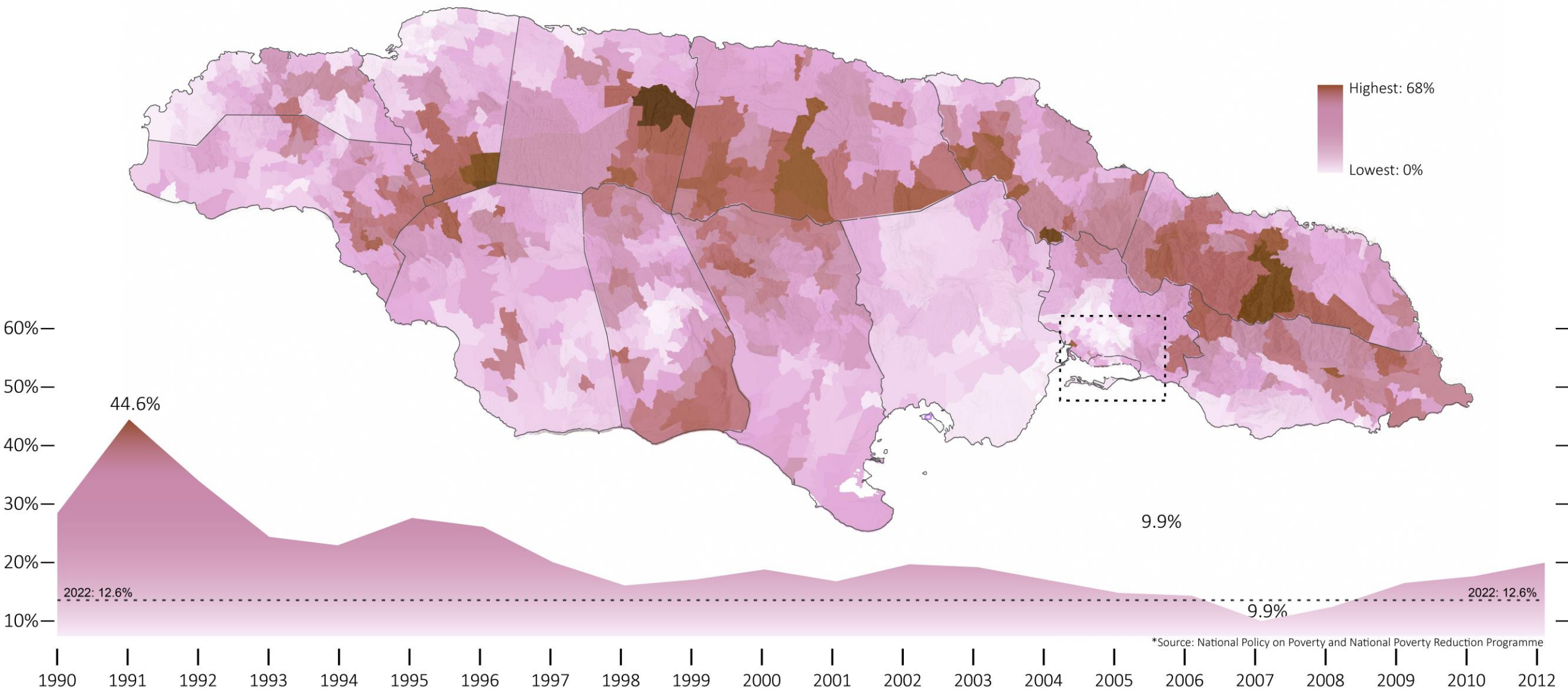
● Hotels



Jamaican's access to the beach is limited because of the privatization of the beach

Poverty Map of Jamaica

Proverty line: JMD 285/person/day



Poverty Map of Kingston

Proverty line: JMD 285/person/day



Household Map of Kingston

Kingston's Minion Wage: JMD 9,000/week

From 2023.6.1 it has been increased to JMD13,000/week



Highest: \$5277/day

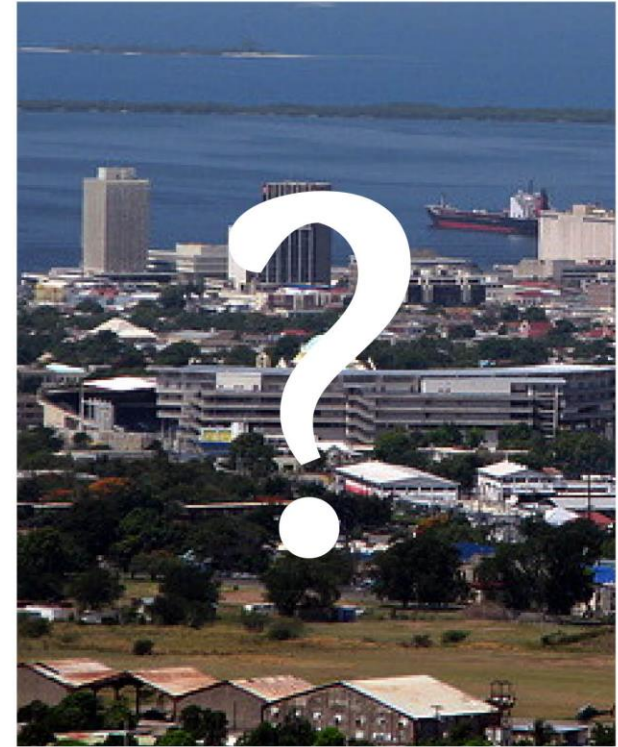
Lowest: \$370/day



Eco Tourism



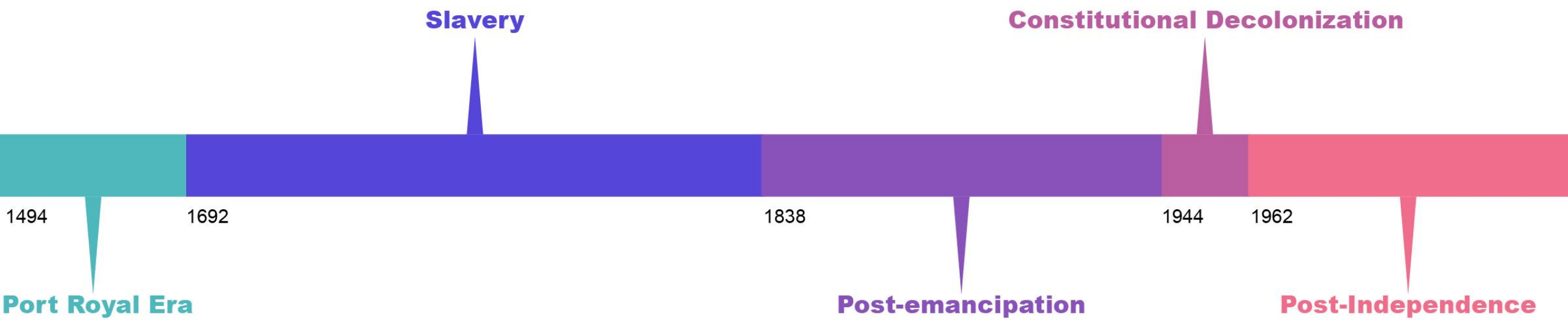
Eco Tourism



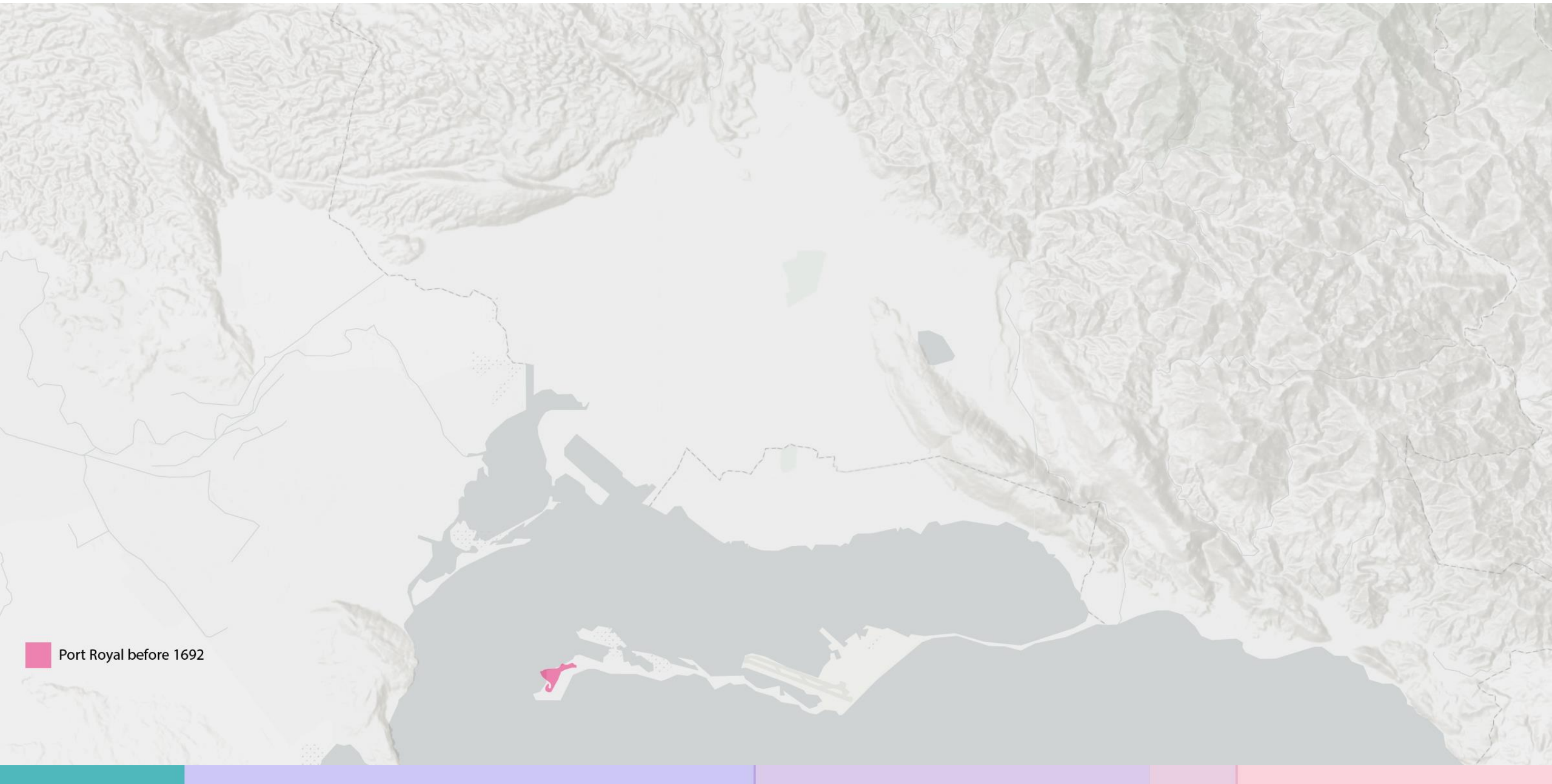
Cultural Tourism

- Jamaica's tourism is narrow-focused
- Huge cultural tourism opportunities within Kingston wait to be developed

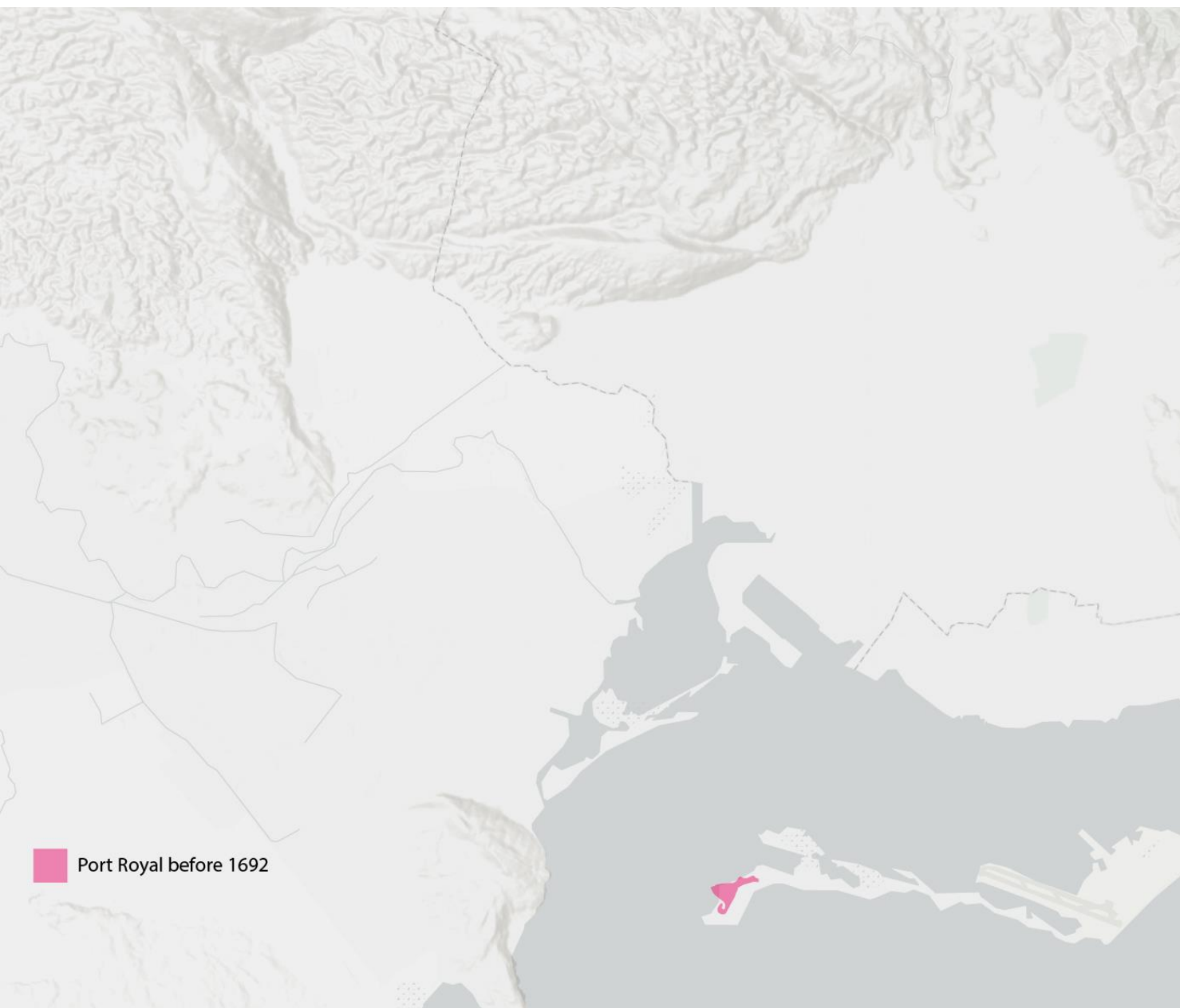
Urban Development



Port Royal Era 1494-1692



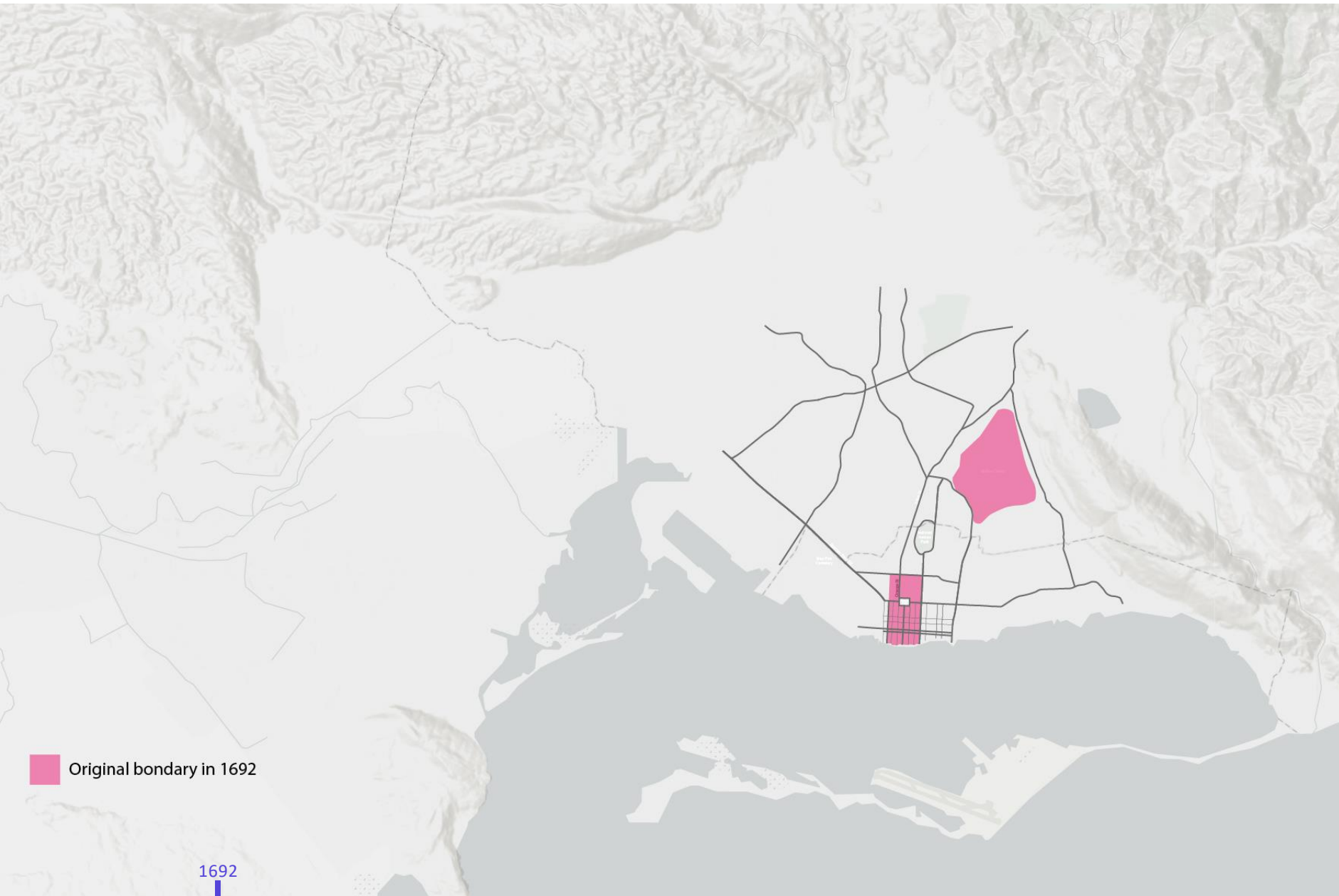
Port Royal Era 1494-1692



17th century Dutch illustrator Jan Luyken's engraving of the Port Royal earthquake. 17th-century

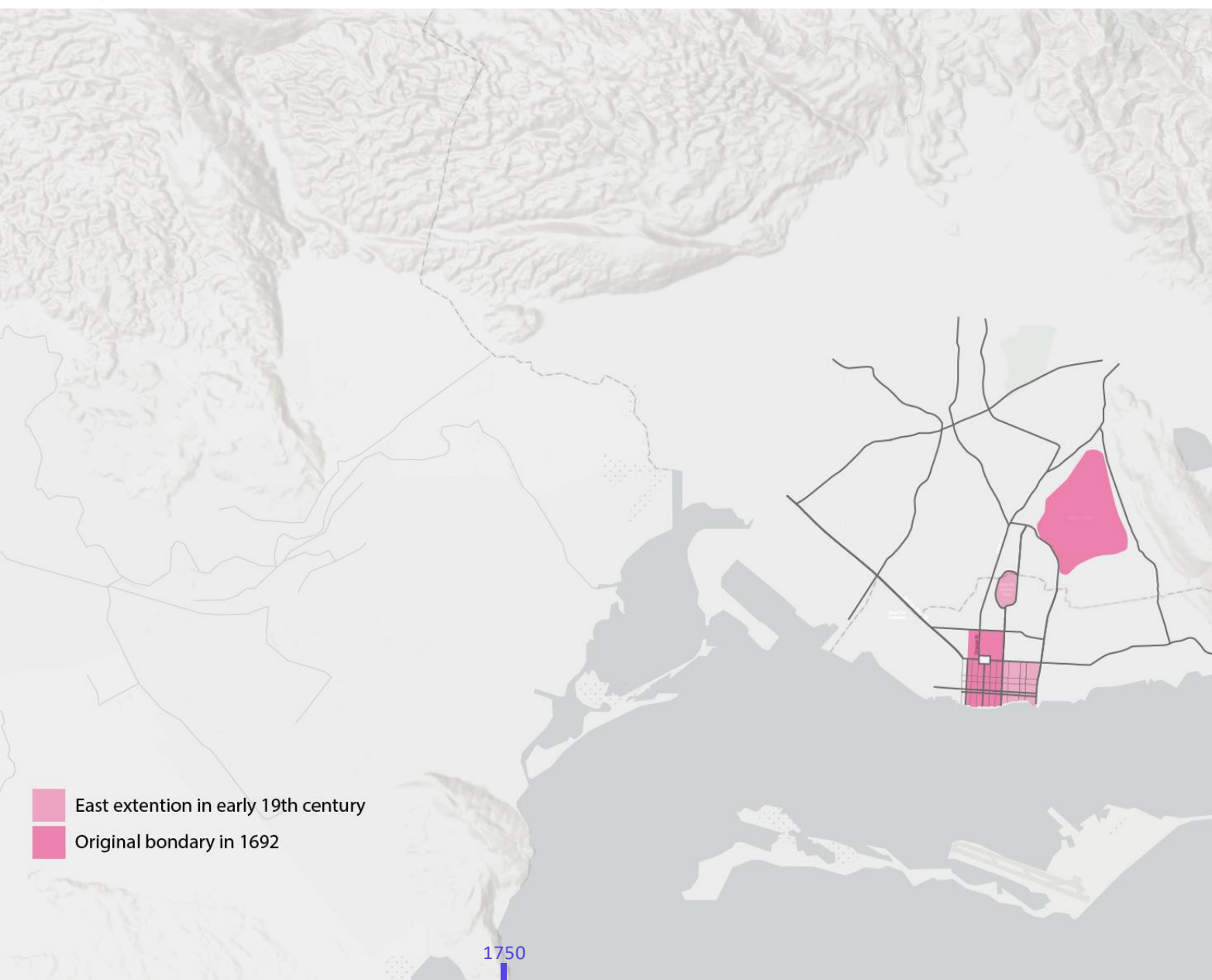
Port Royal before 1692

Kingston under Slavery 1692-1838



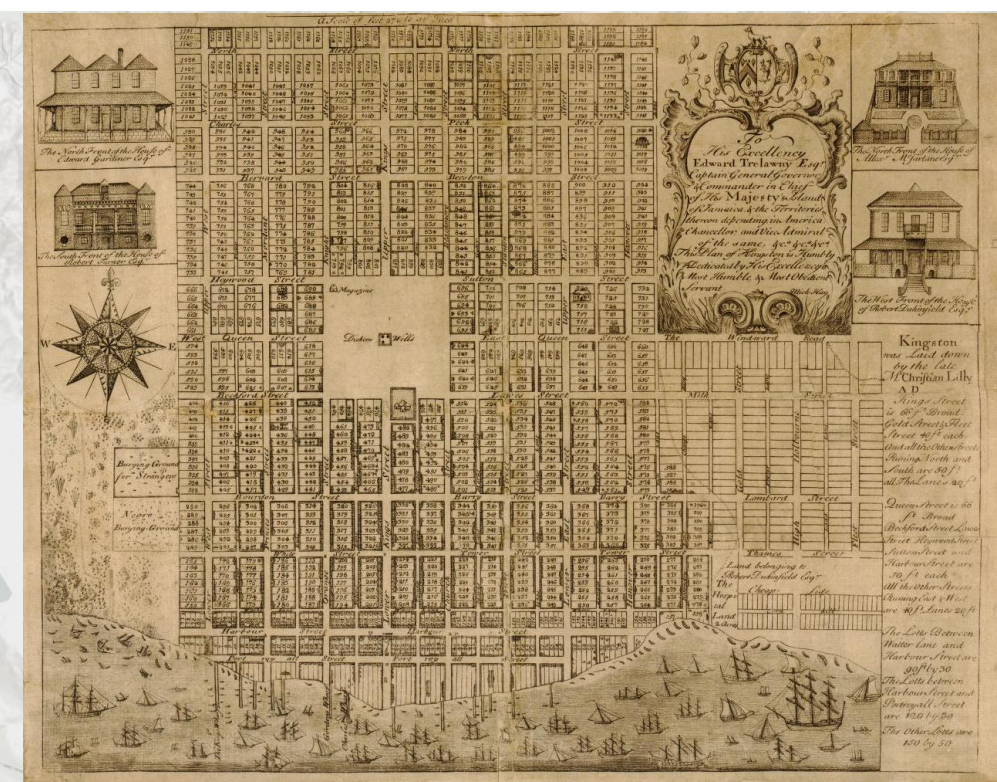
1702 Map by Christian Lilly, "A Plan of Kingston"

Kingston under Slavery 1692-1838



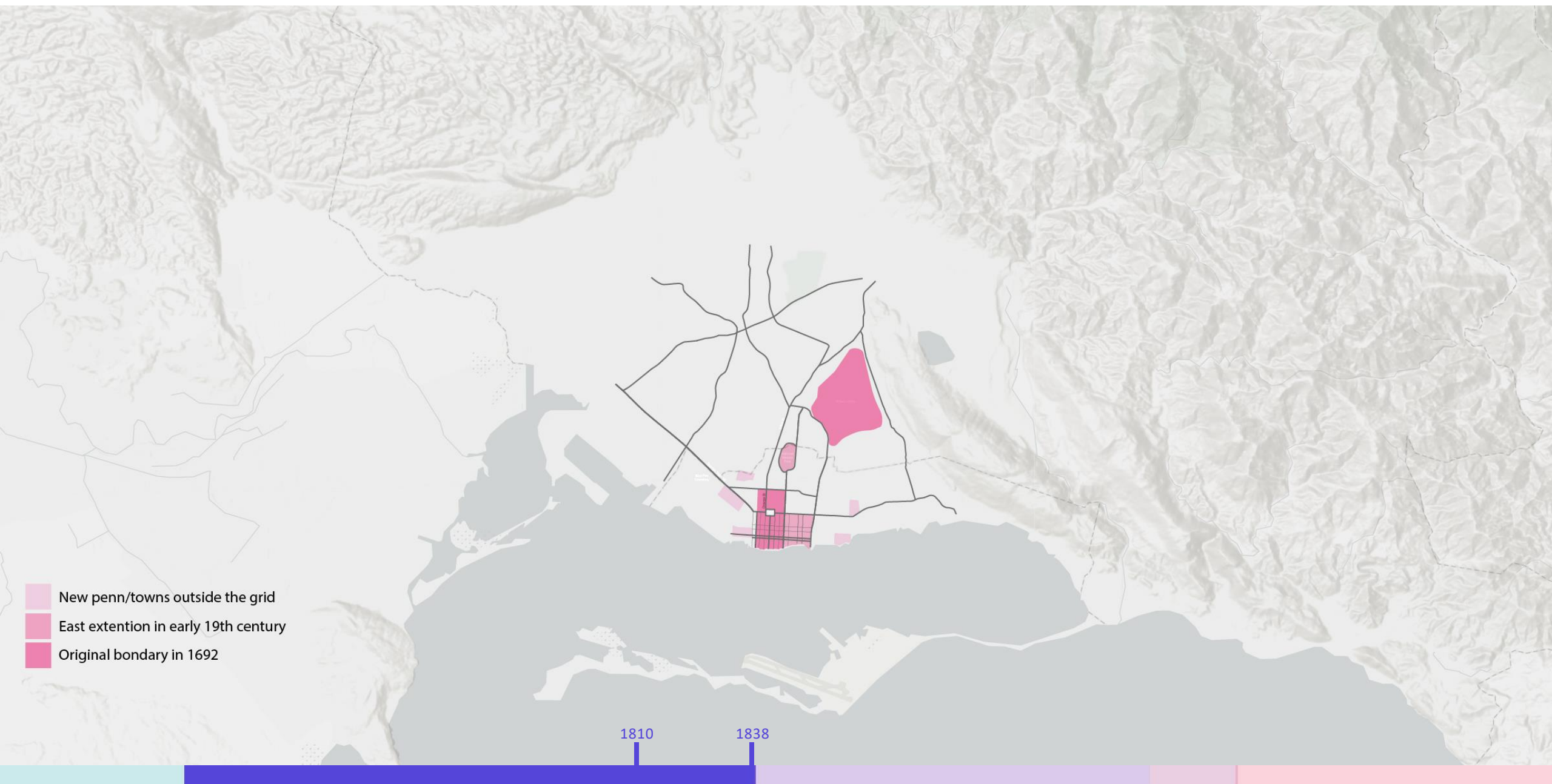
East extension in early 19th century

Original boundary in 1692



Michael Hay's map of Kingston from 1740. Illustration: Library of Congress

Kingston under Slavery 1692-1838



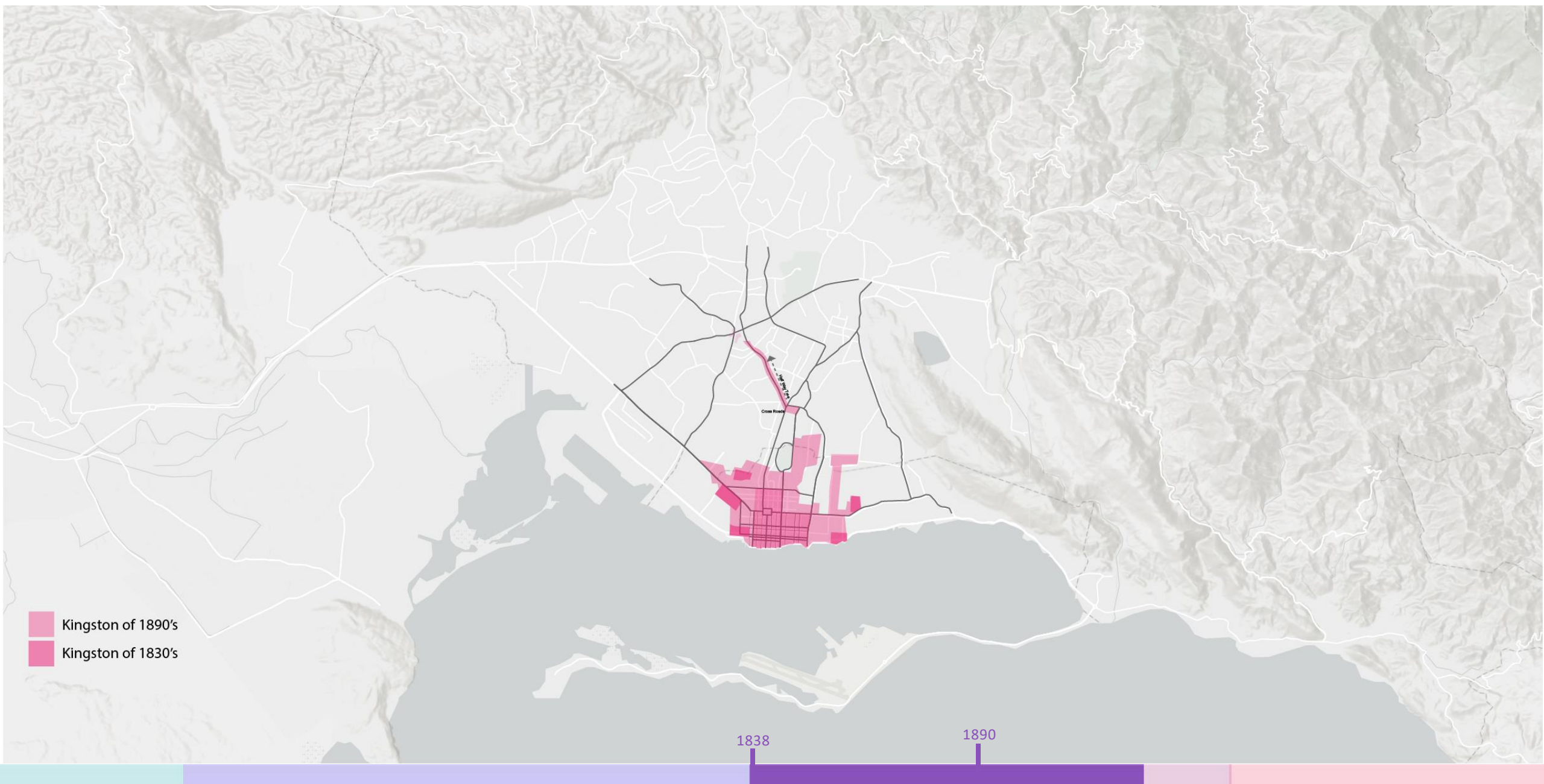
Kingston under Slavery 1692-1838

Pen/Penn: a type of landholding or estate, similar to the concept of a "plantation." However, while plantations were primarily large agricultural estates focused on crops such as sugar, cotton, or coffee, "pens" were **usually livestock estates or cattle ranches**.

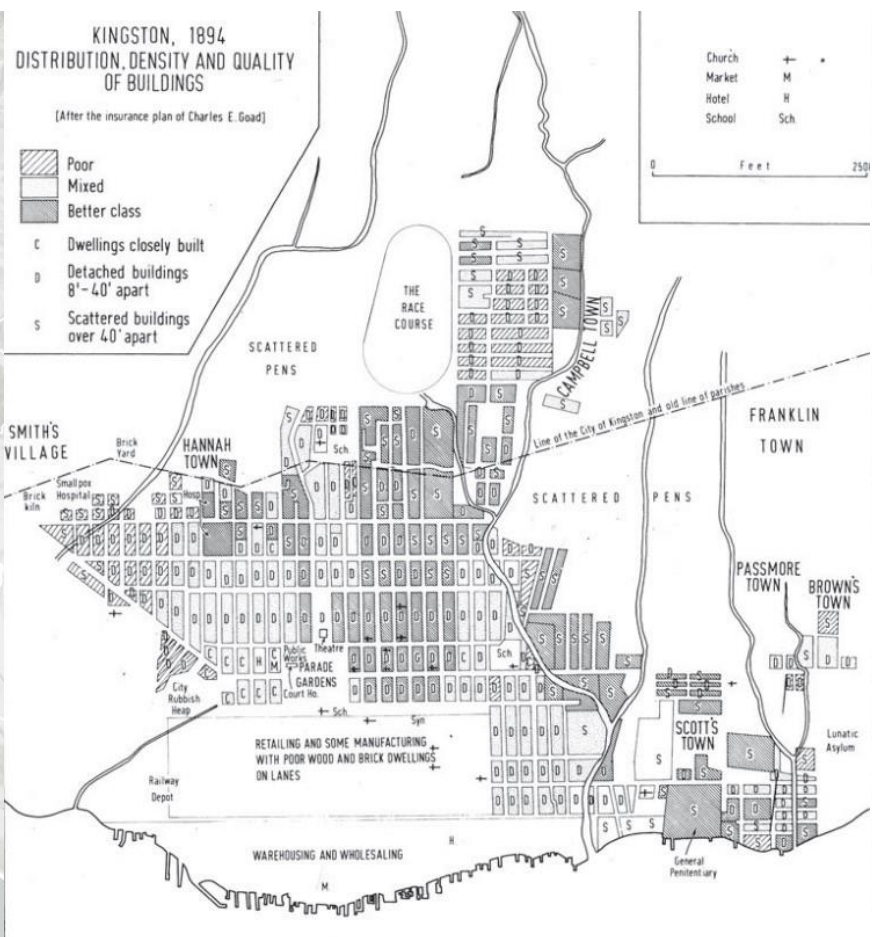
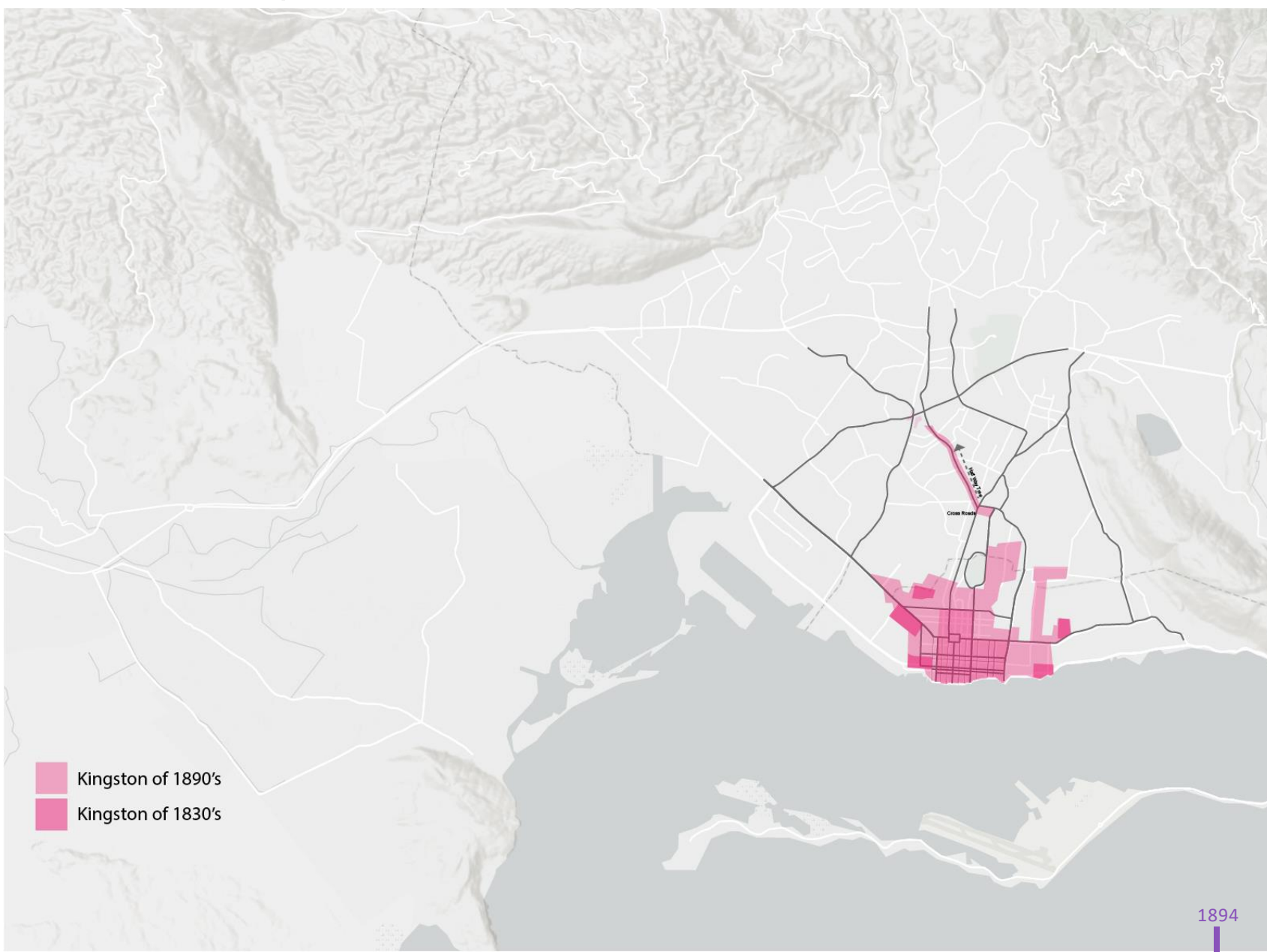


Harbors of Port Royal and Kingston, 1774

Post Emancipation 1838-1944

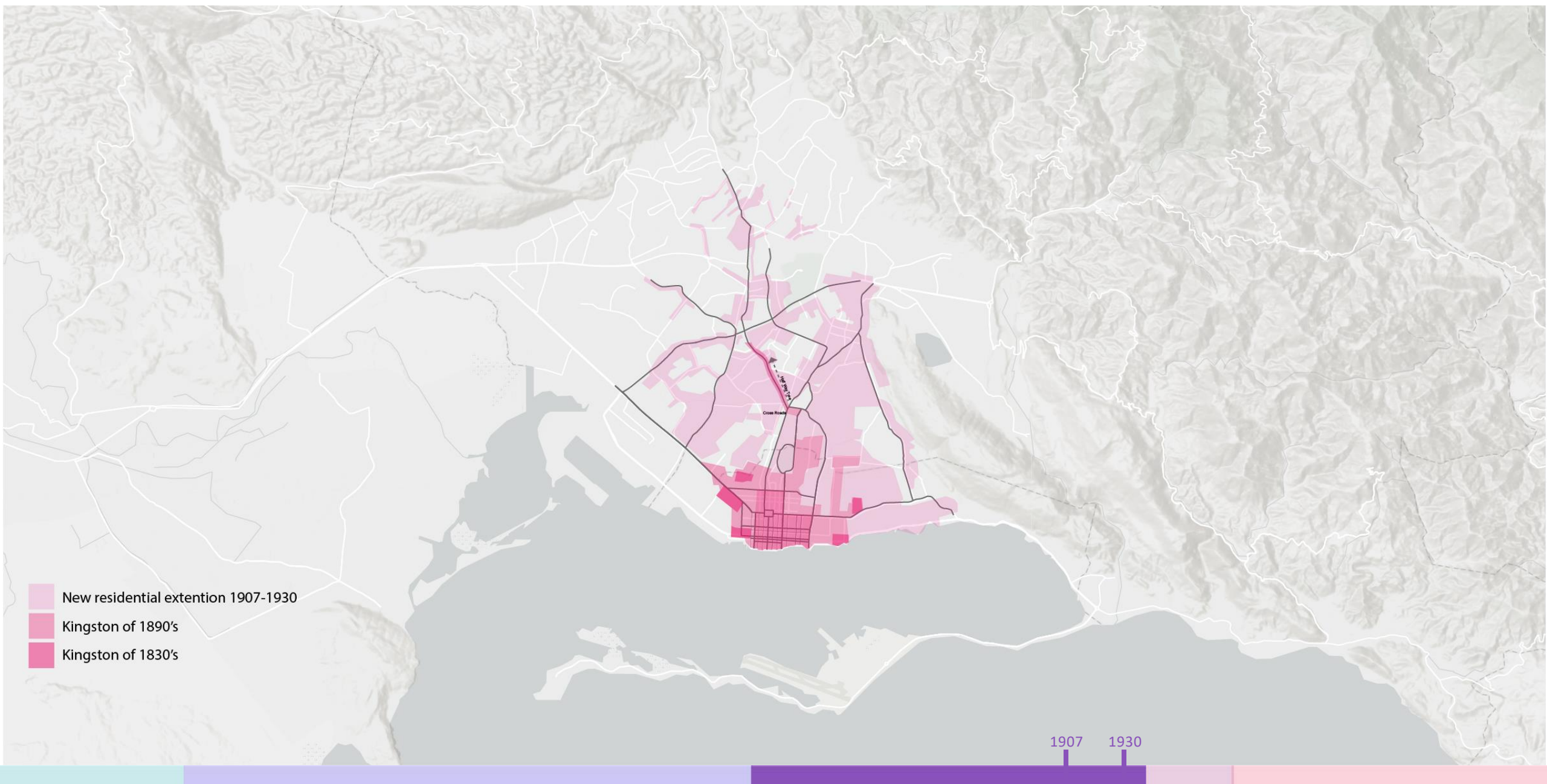


Post Emancipation 1638-1944

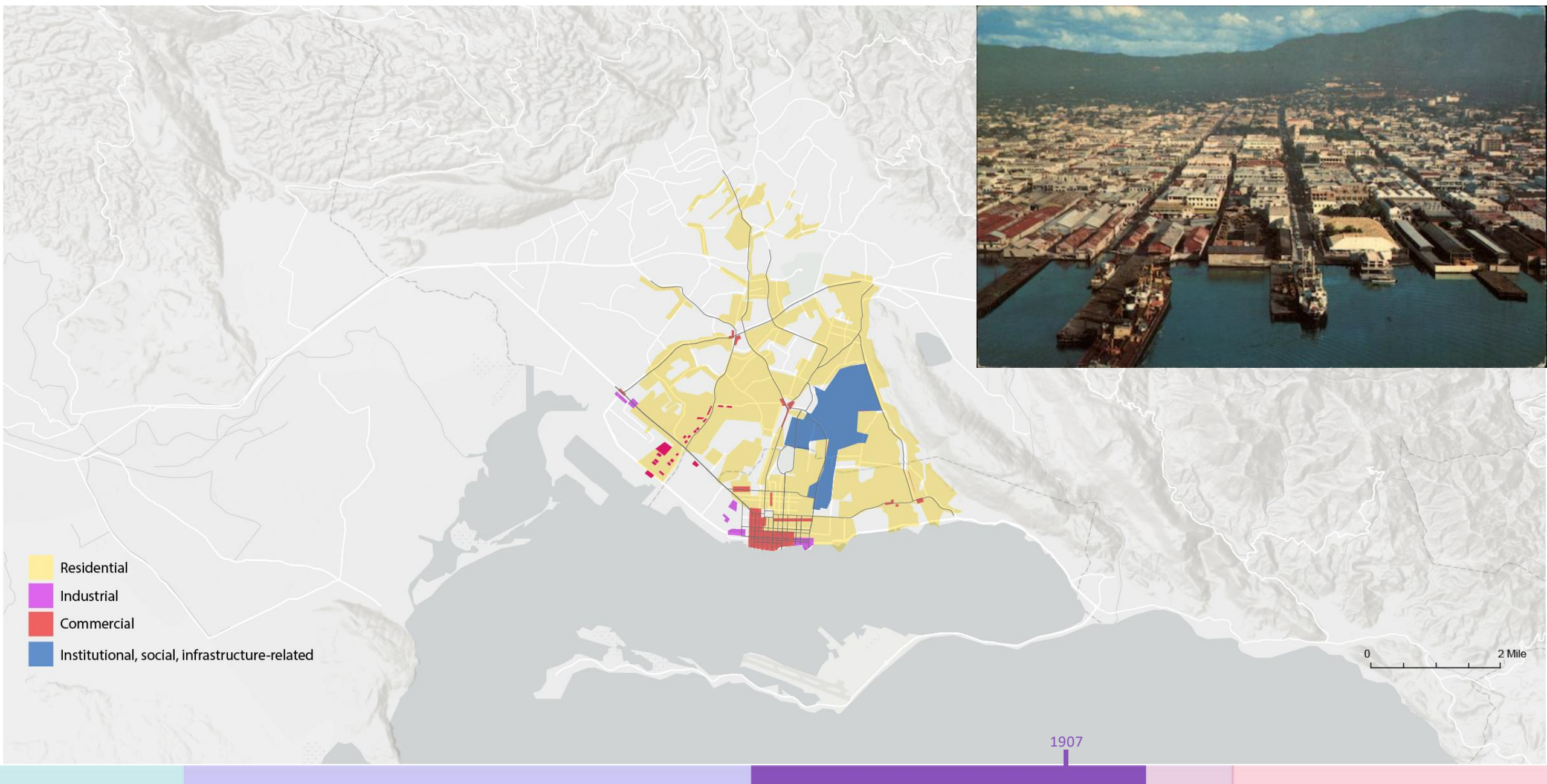


Distribution, density, and quality of buildings, 1894
(Charles E. Goad's insurance plan)

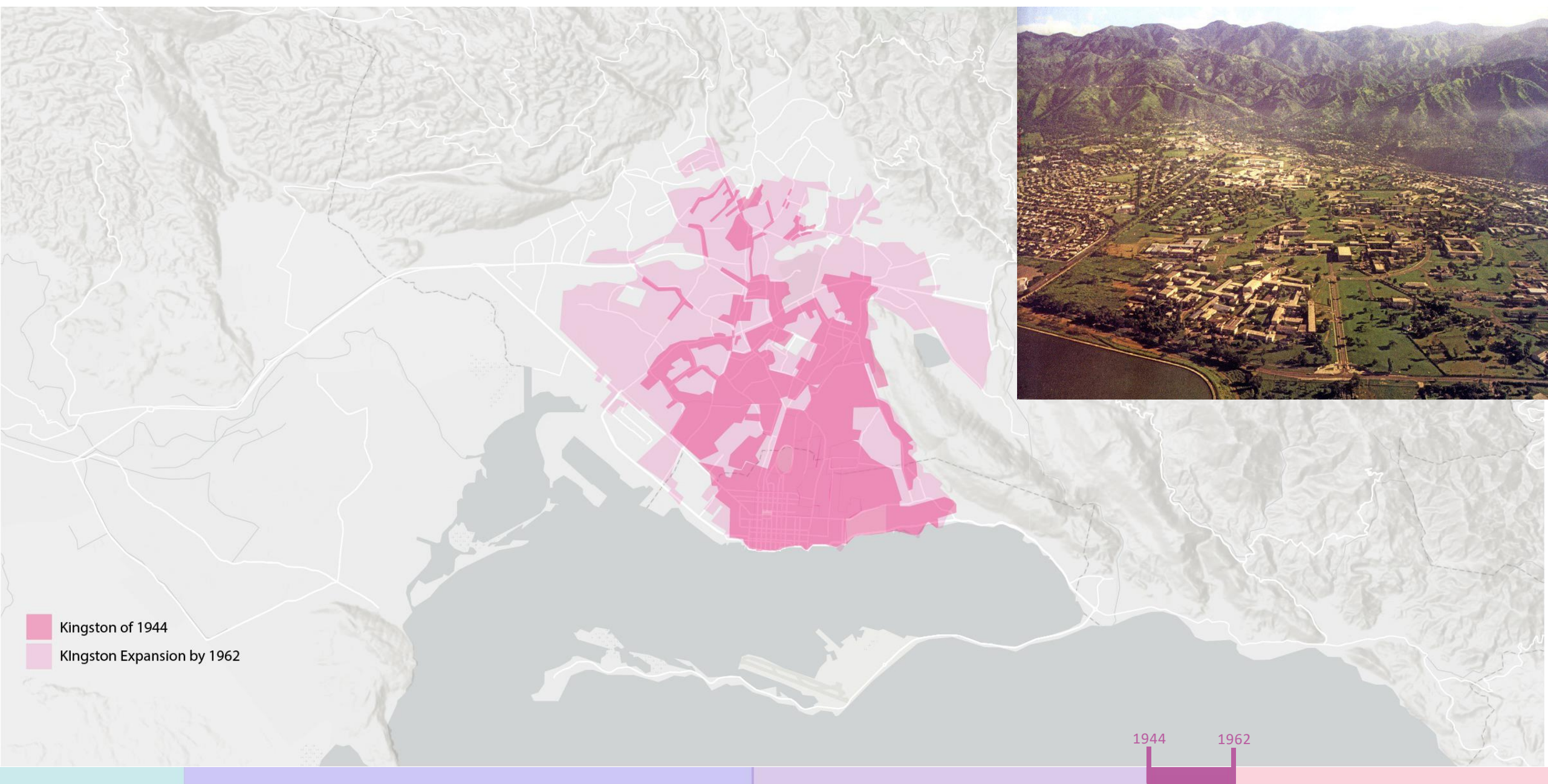
Post Emancipation 1838-1944



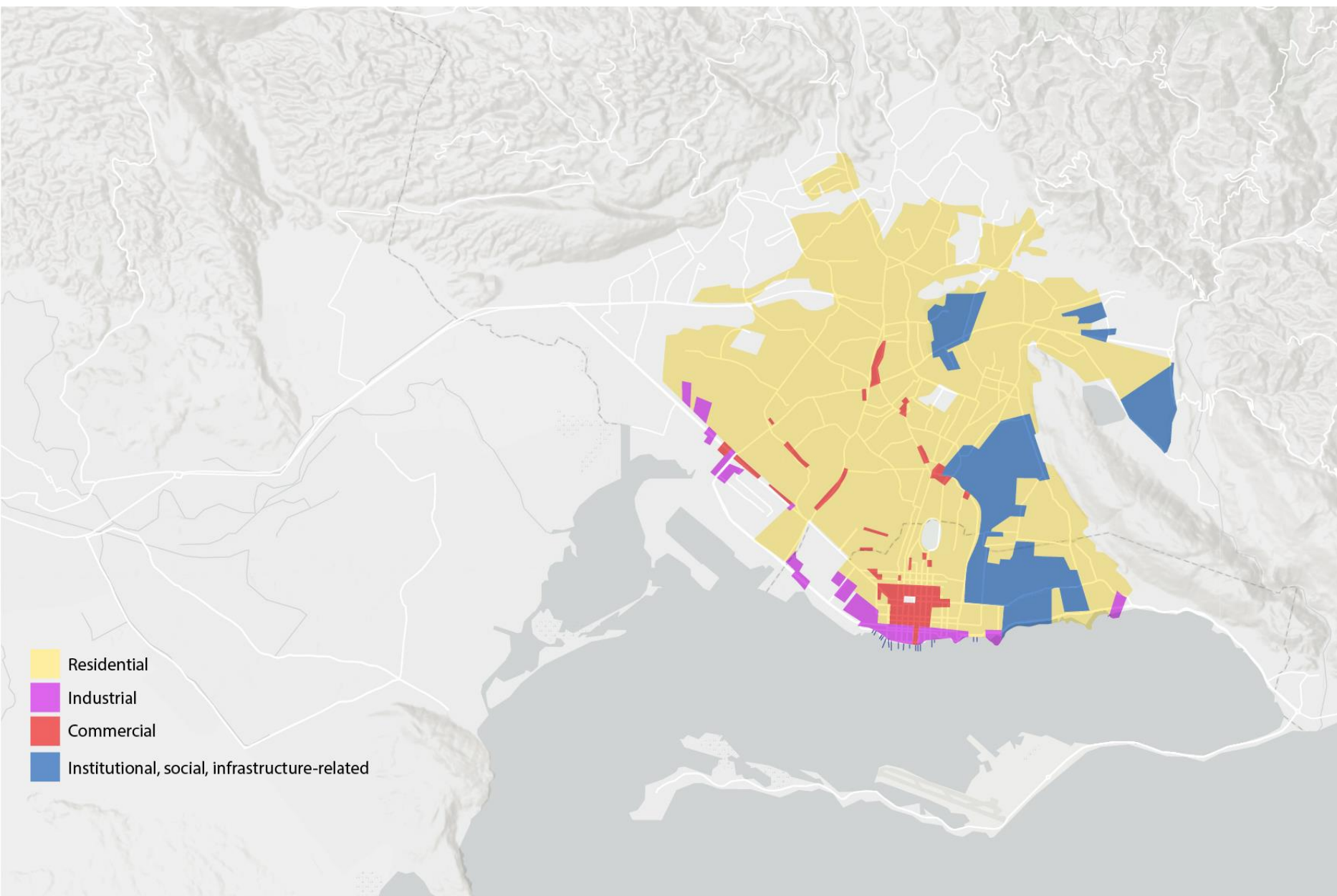
Post Emancipation 1638-1944



Constitutional Decolonization 1944-1962



Constitutional Decolonization 1994-1962



Kingston Refinery



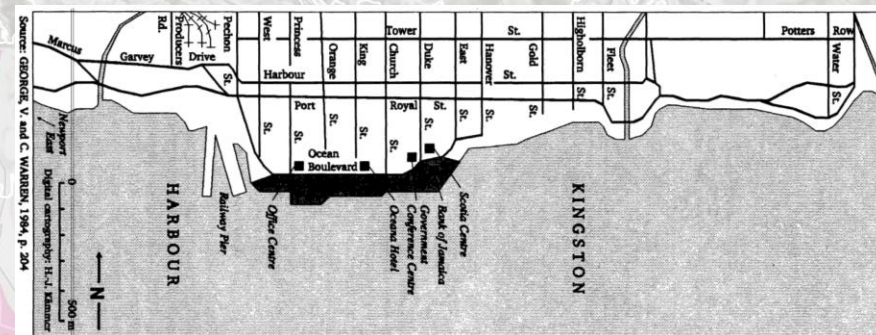
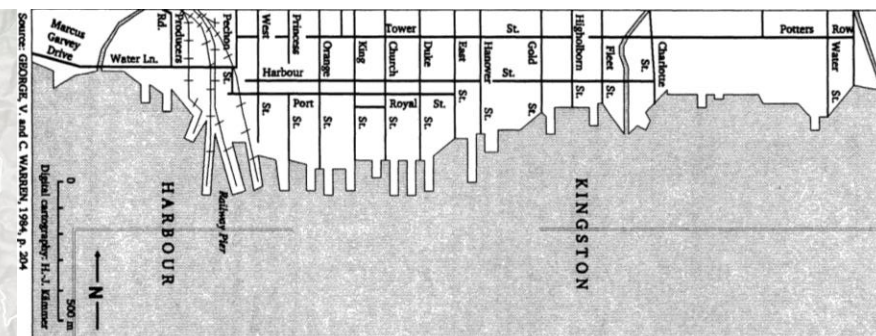
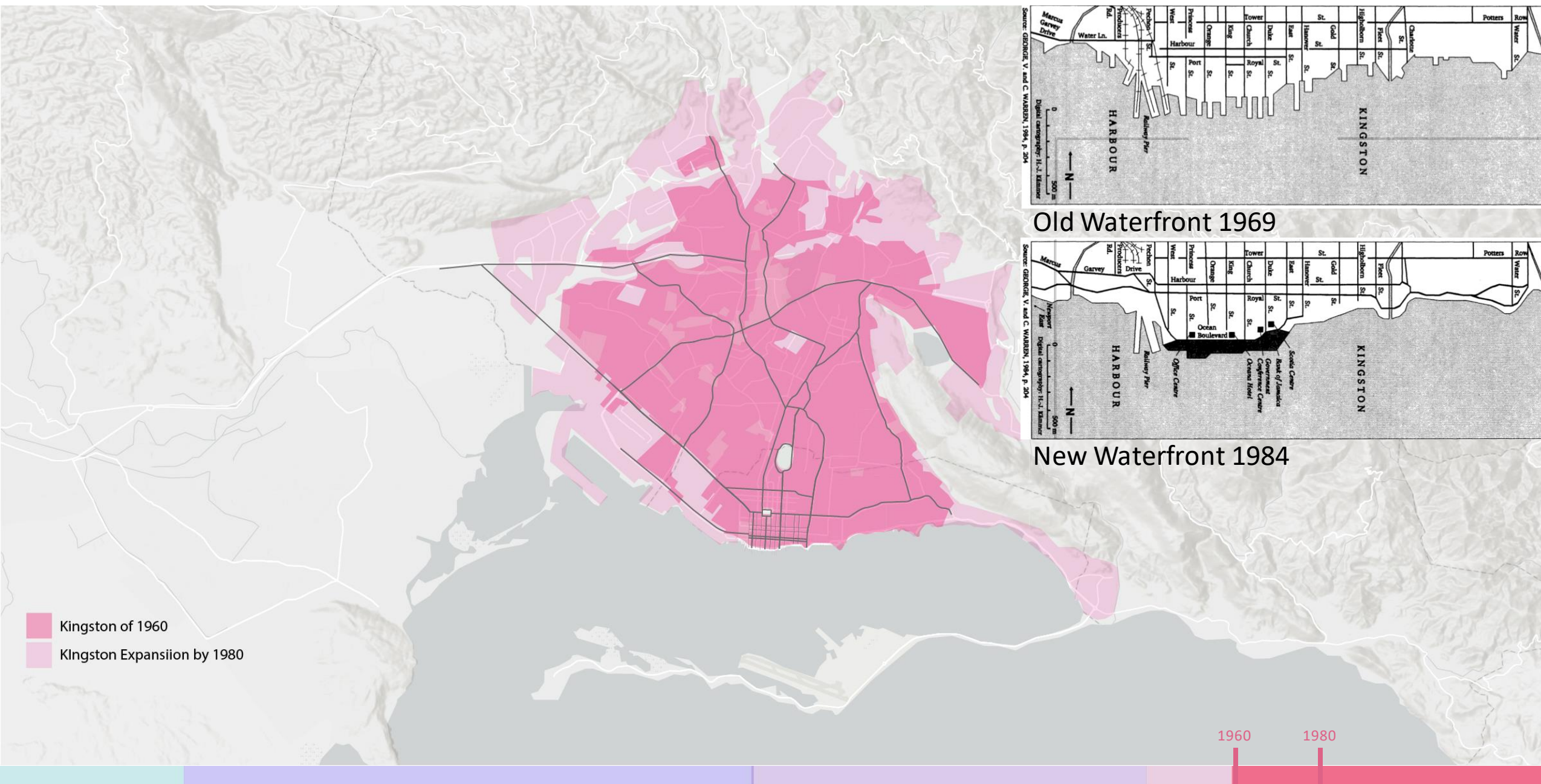
Container Port

0 2 Mile

1944

1962

Post-Independence 1962-now



Post-Independence 1962-now



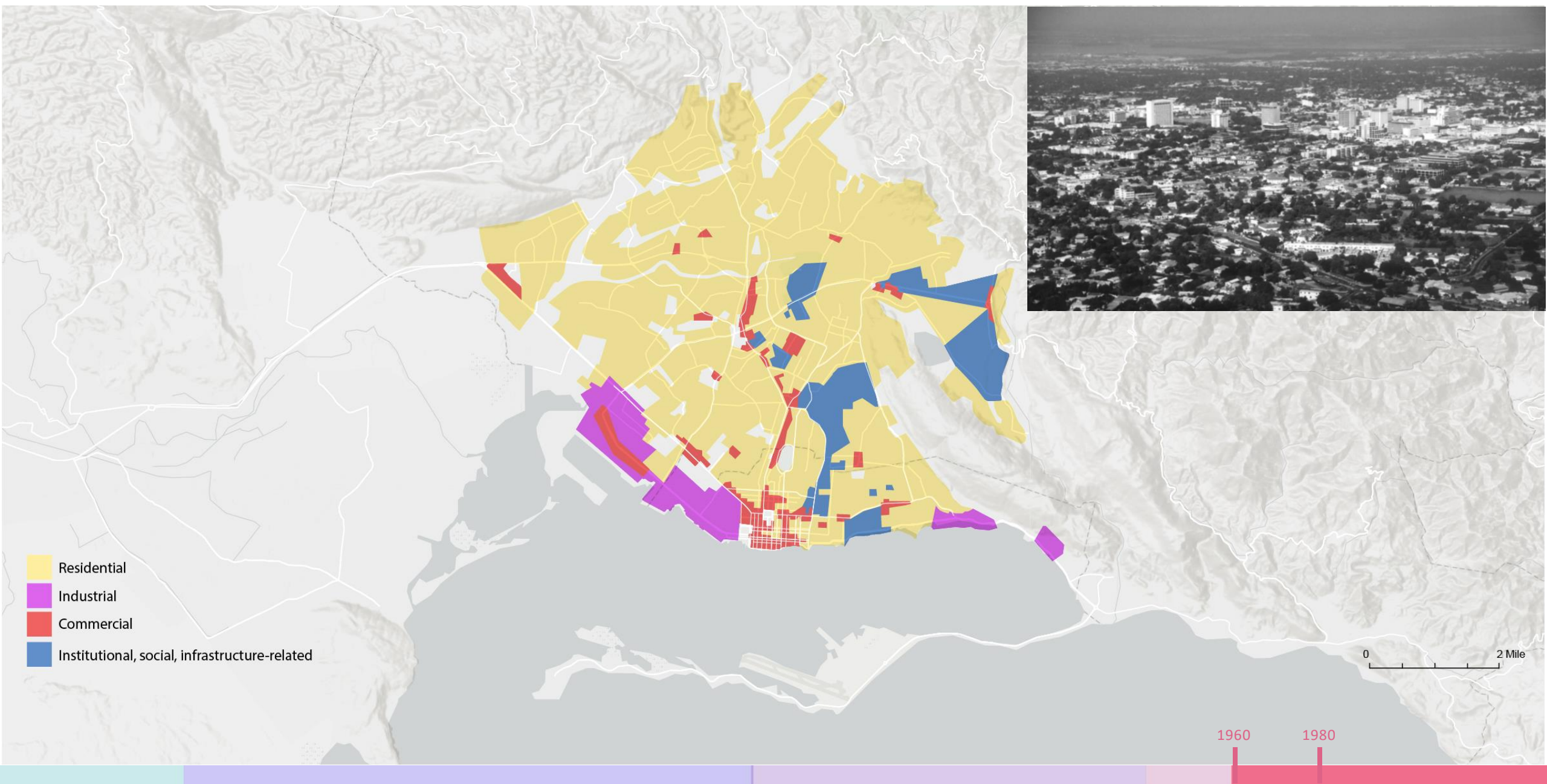
Photo 2: Aerial View of Kingston's Waterfront Prior to Redevelopment, 1964/*Luftbild des ehemaligen Hafenbereichs, 1964*
Source/*Quelle*: Urban Development Corporation, Photographer: J.S. Tyndale-Biscoe



Photo 3: Aerial View of the Redeveloped Waterfront, 1984/*Luftbild des sanierten Hafenbereichs, 1984*
Source/*Quelle*: Urban Development Corporation, Photographer: J.S. Tyndale-Biscoe

1060s

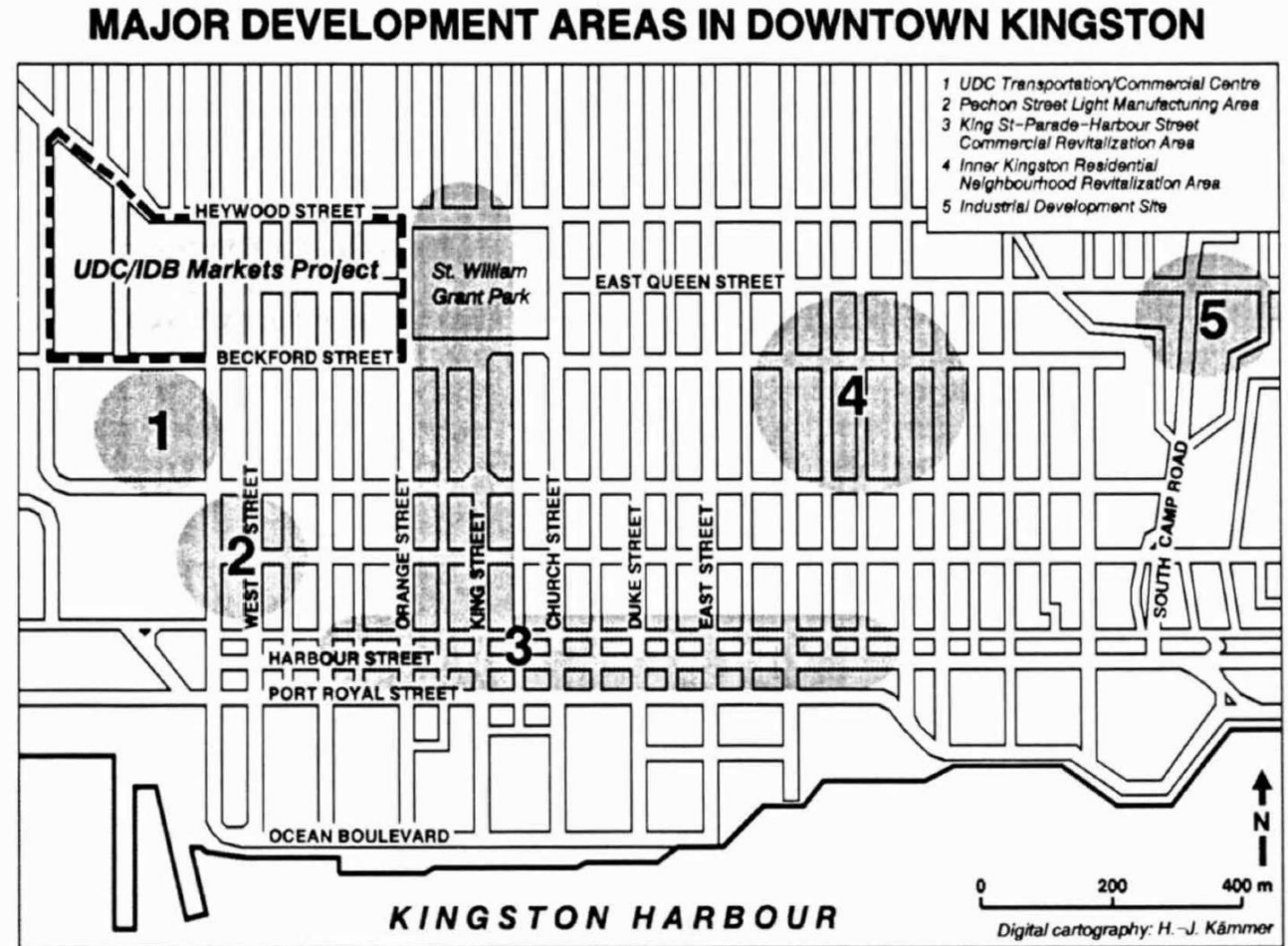
Post-Independence 1962-now



Inner Downtown Redevelopment Plan was initiated in 1986

To revitalize downtown Kingston's **economy**
To provide badly needed **jobs** for the unemployed in the surrounding area

The West Kingston Market Redevelopment is people-orientated and aims at **improving earnings** opportunities for groups of **lower socio-economic** status.



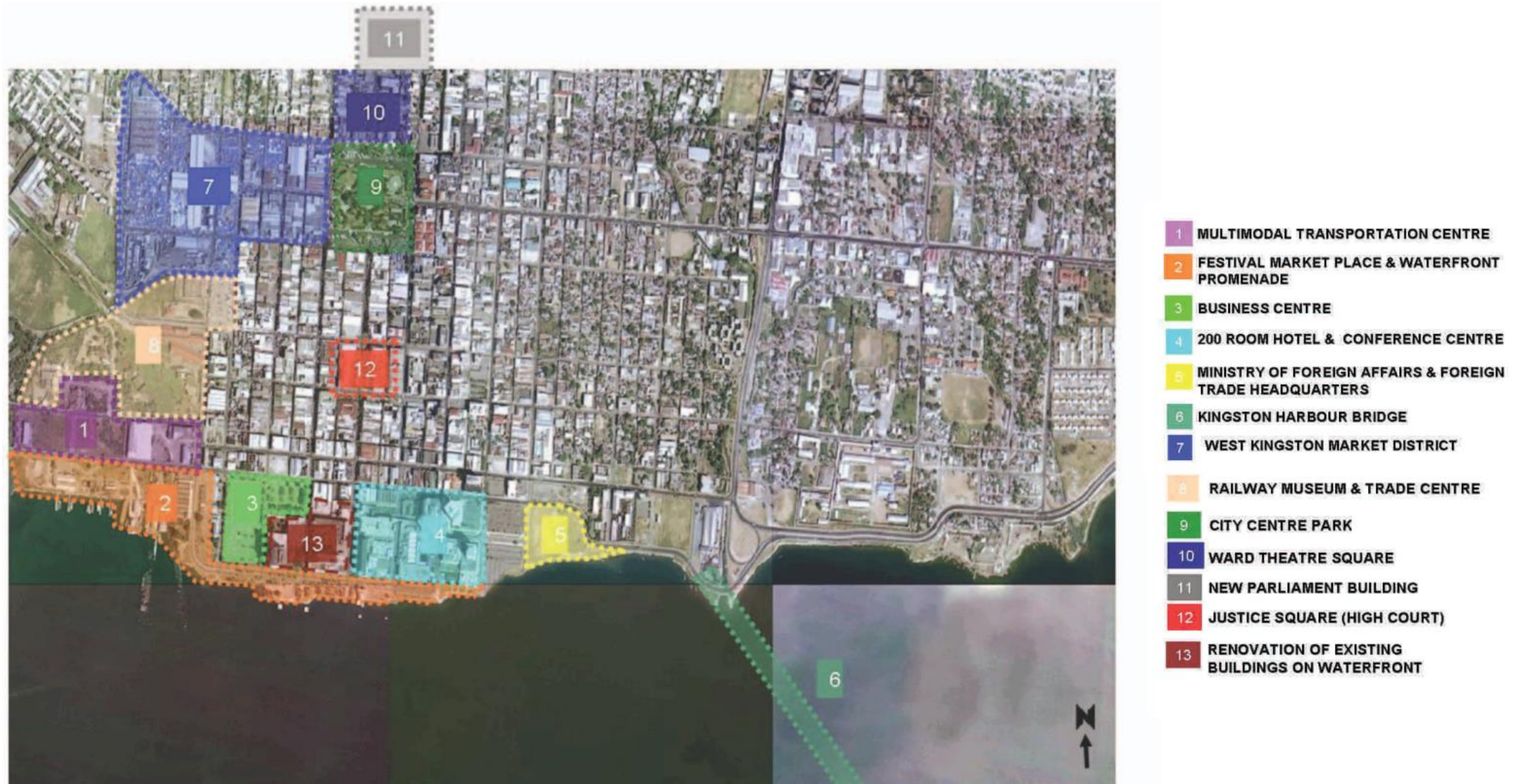
Source: KINGSTON RESTORATION COMPANY LIMITED, Annual Report 1987-1988, p. 23

Fig. 4: Key Development Areas in Downtown Kingston/Wichtige Planungsgebiete in der Innenstadt von Kingston
Source/Quelle: Kingston Restoration Company Annual Report 1987 - 1988, p. 23

1986

Post-Independence 1962-now

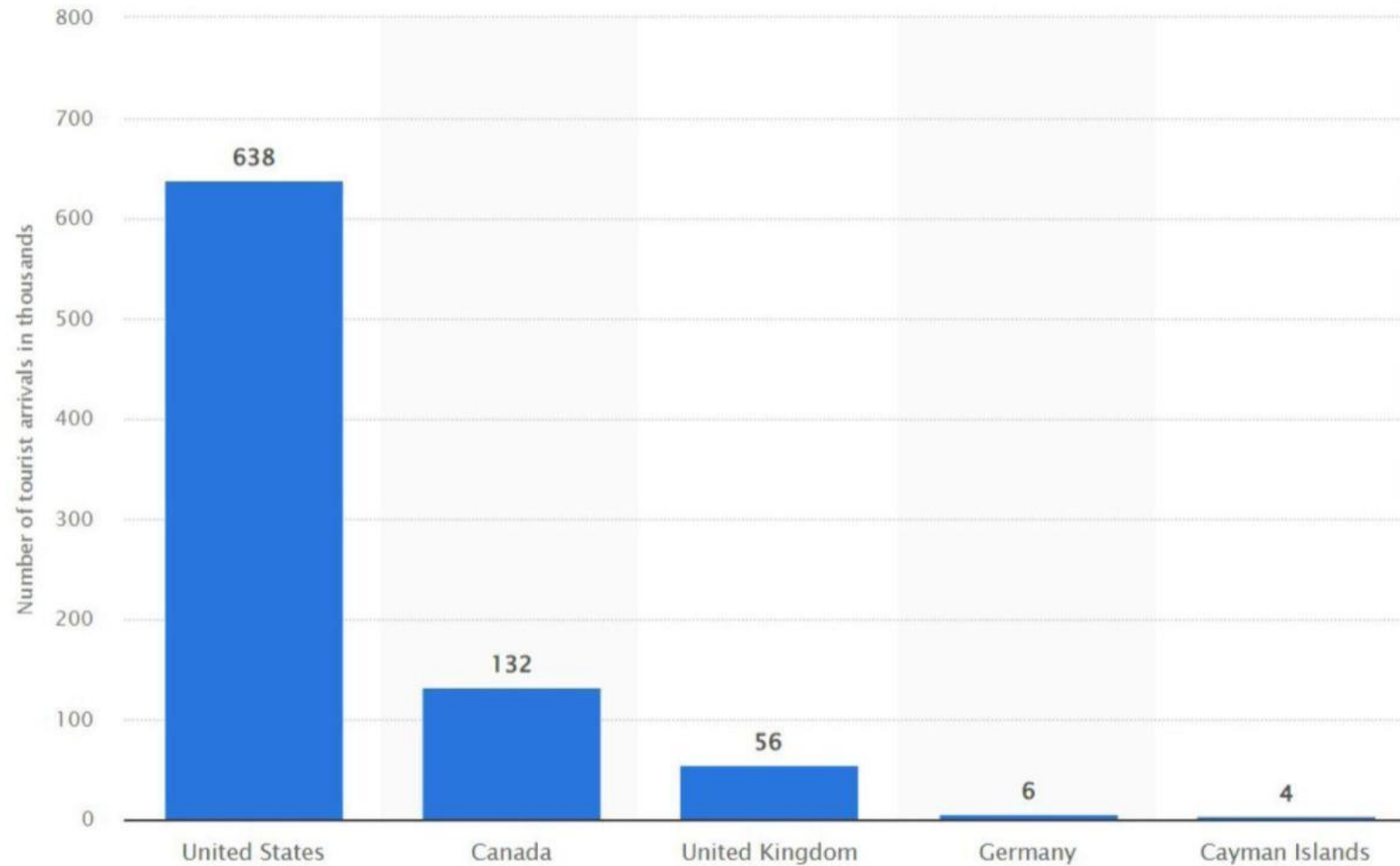
Downtown Kingston Redevelopment Plan 2008



2008

Transit

Jamaican tourism is heavily dependent upon the U.S.



Kingston's airport facilitates Intra-Caribbean transit



Montego Bay's airport facilitates tourism



Cruise ships avoid Kingston



● Cruise Ports by No. Port Calls

0 25 50 100 Kilometers



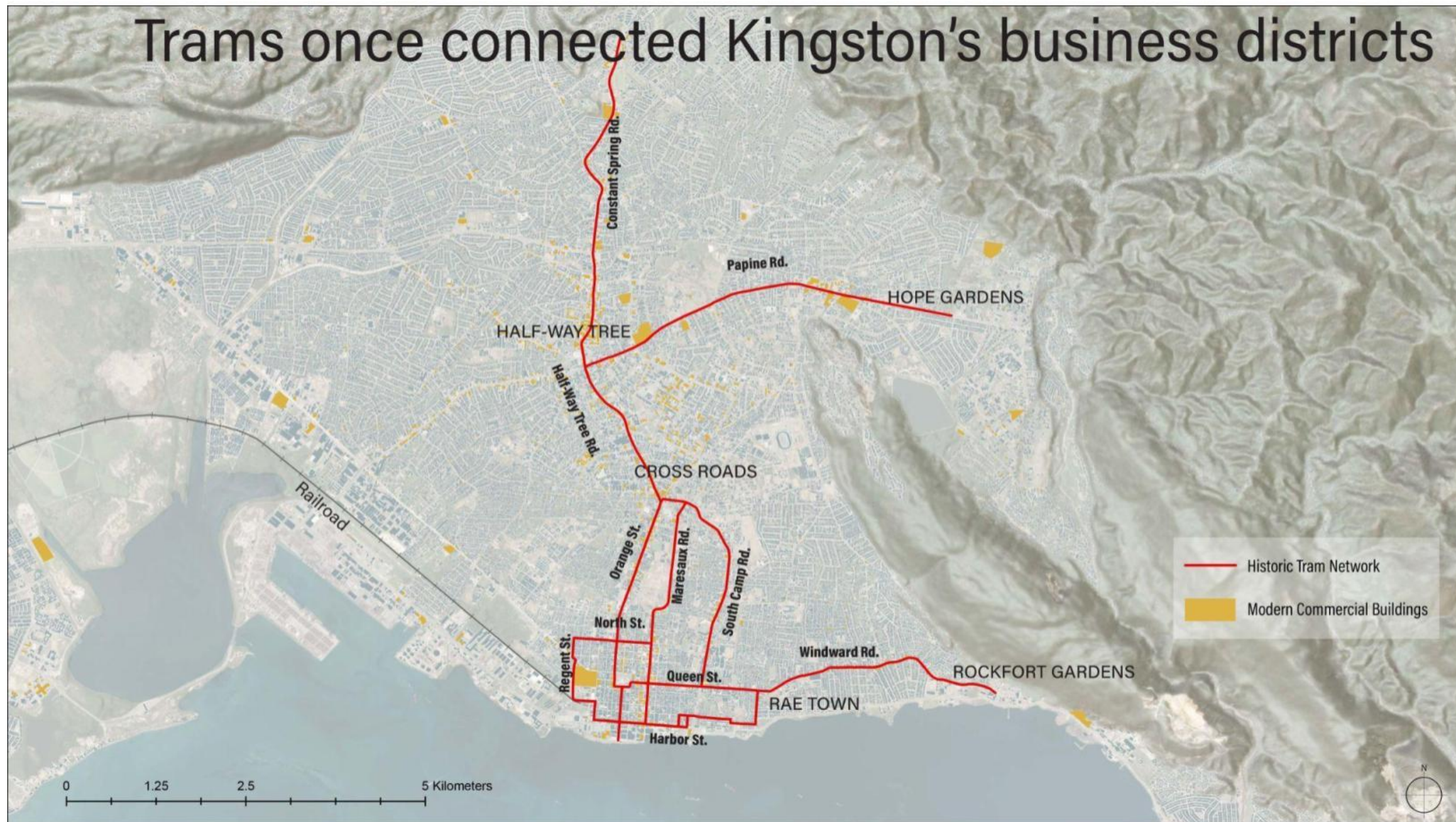
Rail once connected Kingston and Montego Bay



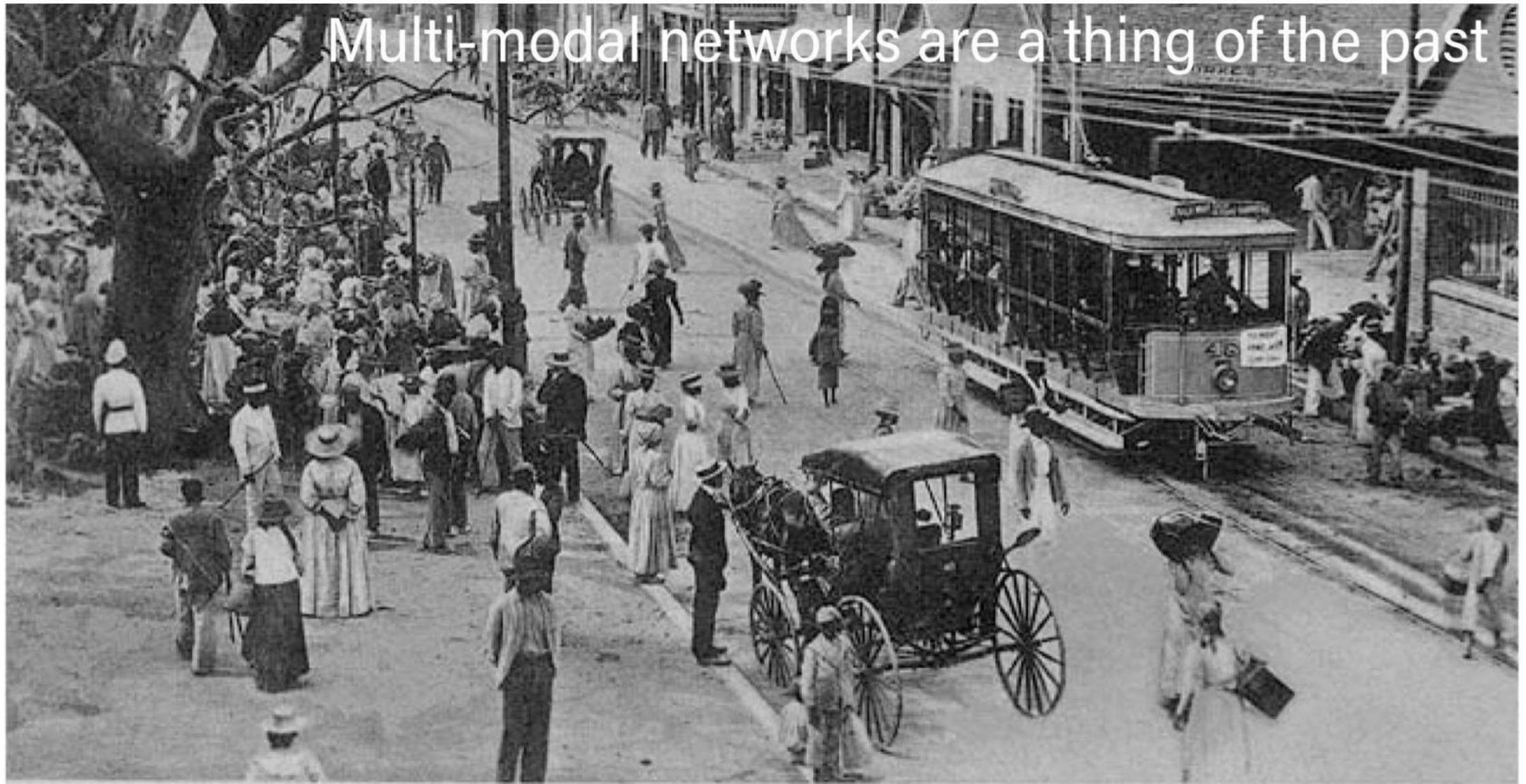
The Kingston to Montego Bay connection is lost



Trams once connected Kingston's business districts



Multi-modal networks are a thing of the past



Jubilee Market, Kingston.

Kingston's streetscape deprioritizes pedestrians

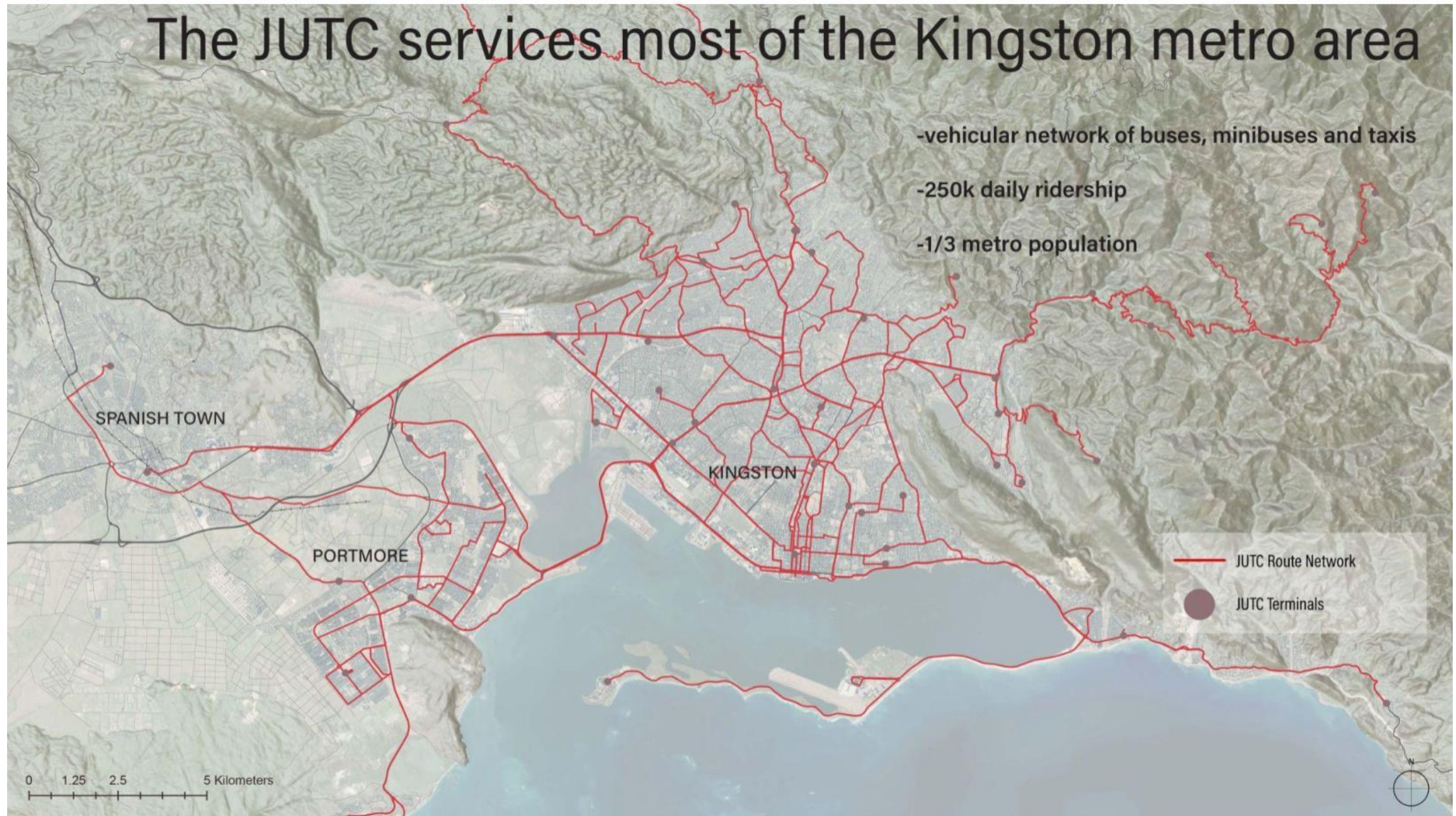


The JUTC services most of the Kingston metro area

-vehicular network of buses, minibuses and taxis

-250k daily ridership

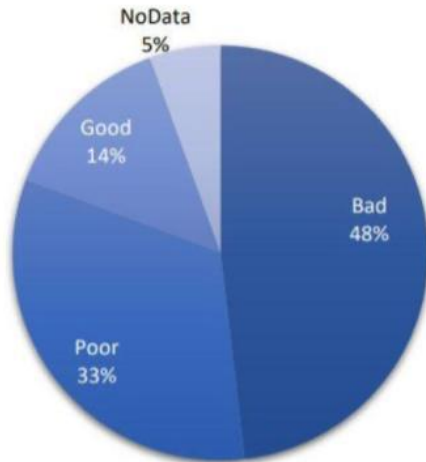
-1/3 metro population



Kingston's traffic is highly concentrated



Figure 1. Condition classification of Jamaica's main roads



Source: Data from NWA Road Condition Survey, 2011.



Students left stranded as Trelawny taxi operators protest road conditions



JAMAICAobserver.com

@JAMAICAobserver



Traffic conditions stifle Jamaica's economy

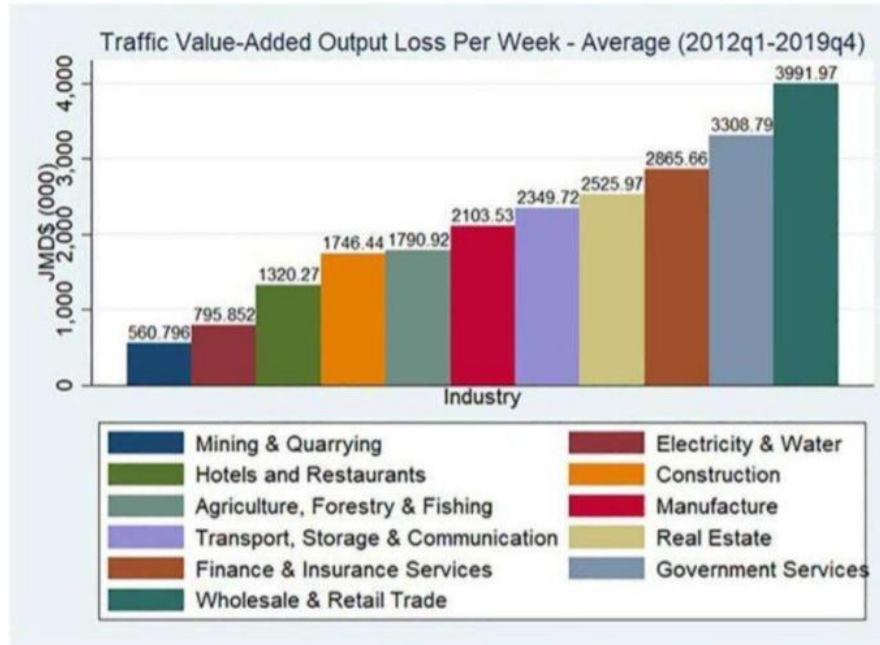


Figure 1.2:1 Traffic Value-Added Output Loss Per Week – Average(2012q1-2019q4) – Author's Calculation from STATIN's Data

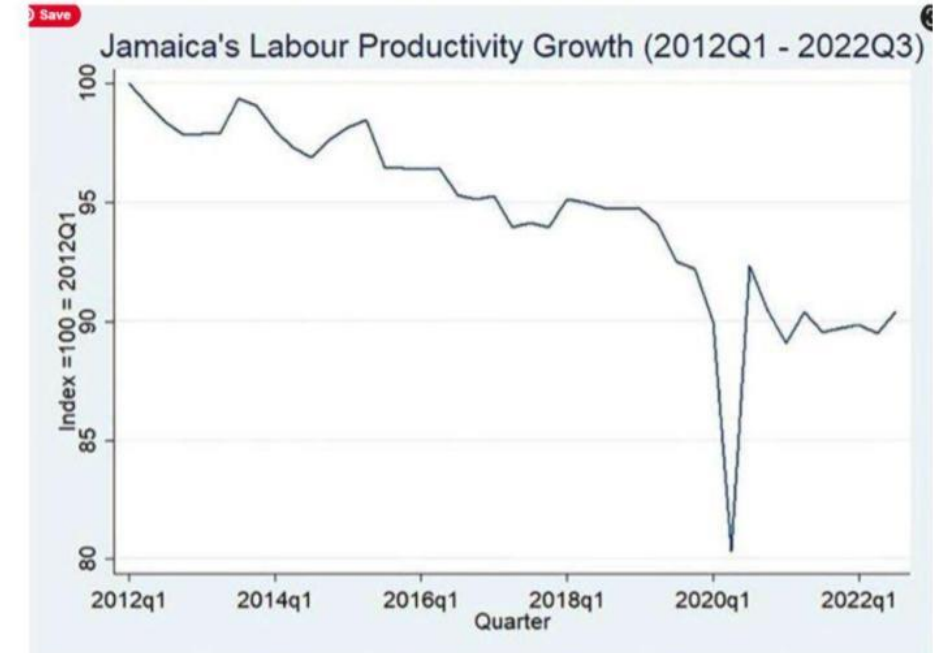
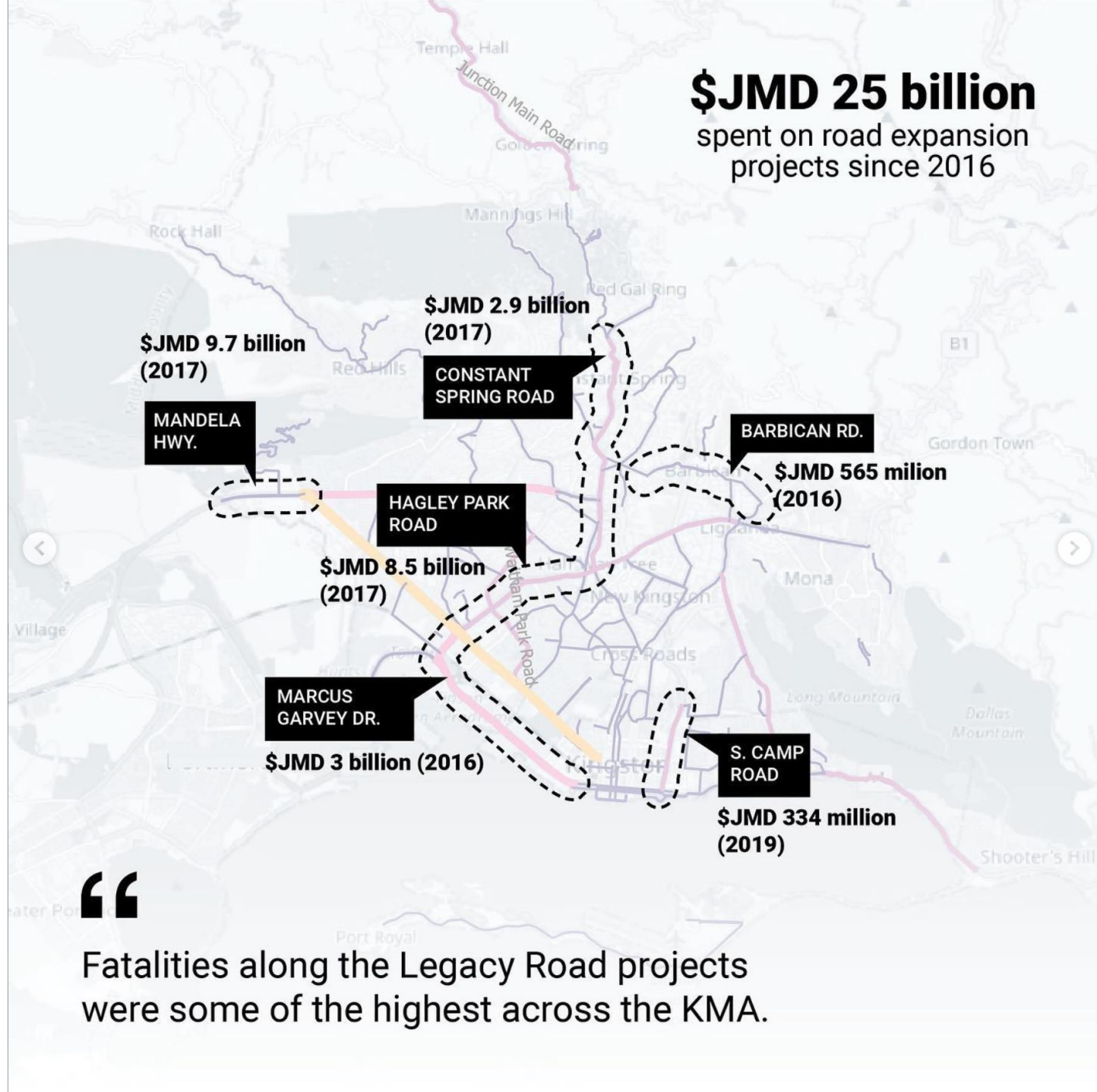


Figure 1.2 Jamaica's Labour Productivity Growth (2012 Q1 - 2022Q3). Source: Statistical Institute of Jamaica, Author's Calculation

A survey conducted by the Human Resource Management Association of Jamaica (HRMAJ) in 2018 – which found that Jamaica's working population spent conservatively 90 minutes per day in one-way in traffic, or at most three hours daily in two-way, resulting in lost productive hours – was at the centre of the Jamaica Economy

Panel's (JEP) forum in May.

Source: <https://www.jamaicaobserver.com/business/>



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Like many in Jamaica, we have been concerned about the current trends in road traffic fatalities. In the last couple of years, our friends at the Road Safety Unit have done incredible work collecting detailed crash data that has shed light on the fundamental issues that lead to the staggering loss of life each year. Above we unpack the data to understand road fatalities, specifically in Kingston & St. Andrew.

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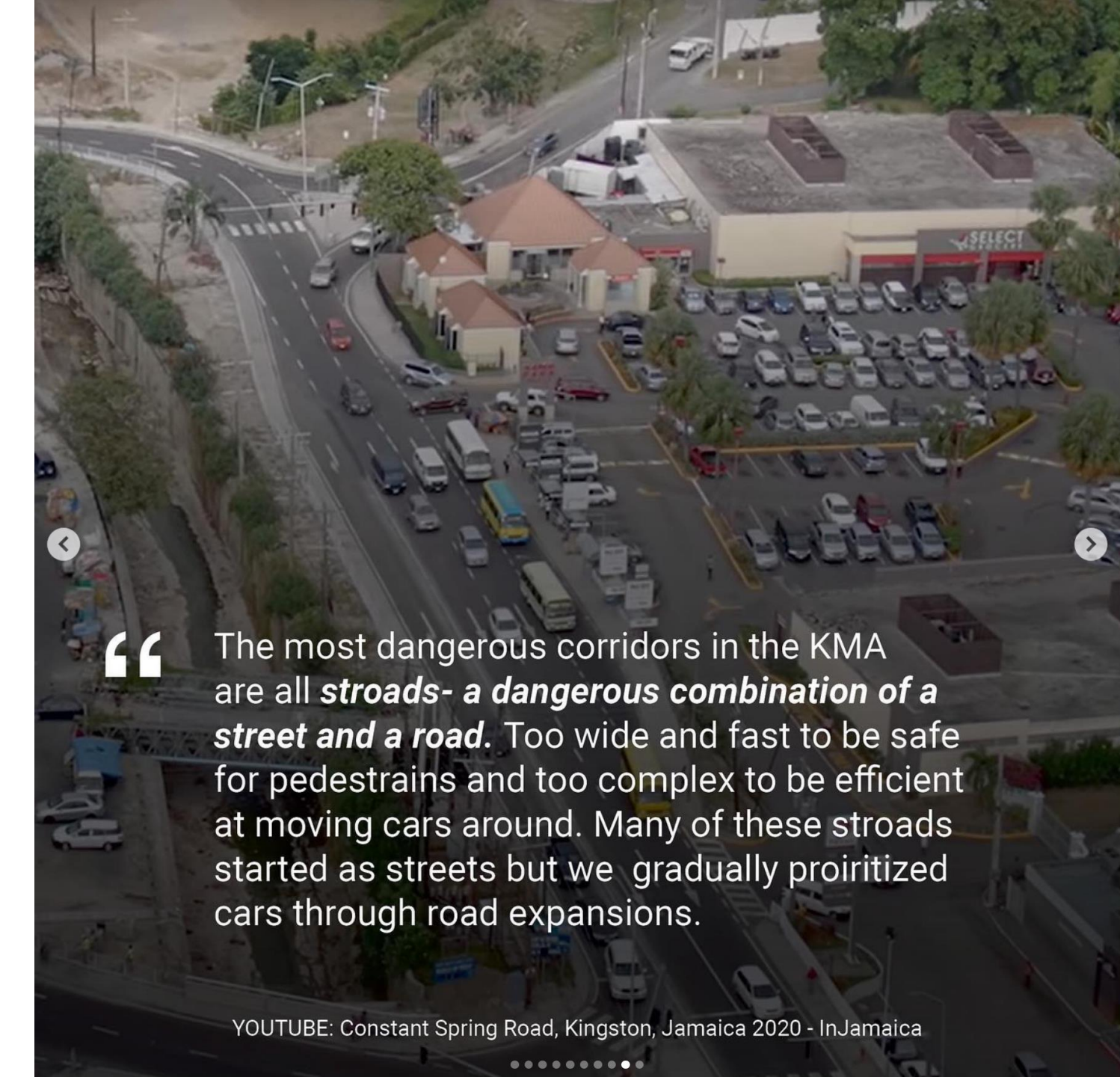
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“ The most dangerous corridors in the KMA are all ***stroads- a dangerous combination of a street and a road.*** Too wide and fast to be safe for pedestrians and too complex to be efficient at moving cars around. Many of these stroads started as streets but we gradually prioritized cars through road expansions.

YOUTUBE: Constant Spring Road, Kingston, Jamaica 2020 - InJamaica



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A fundamental problem is that we are designing roads where streets should be. Wide lanes, broad & smooth corners and concrete barrier medians are typical safety features along our highways that create a **forgiving environment** for the common mistakes motorists could make while encouraging high speeds.

However, in the complexity of a city, these features create a **hostile environment** for pedestrians.



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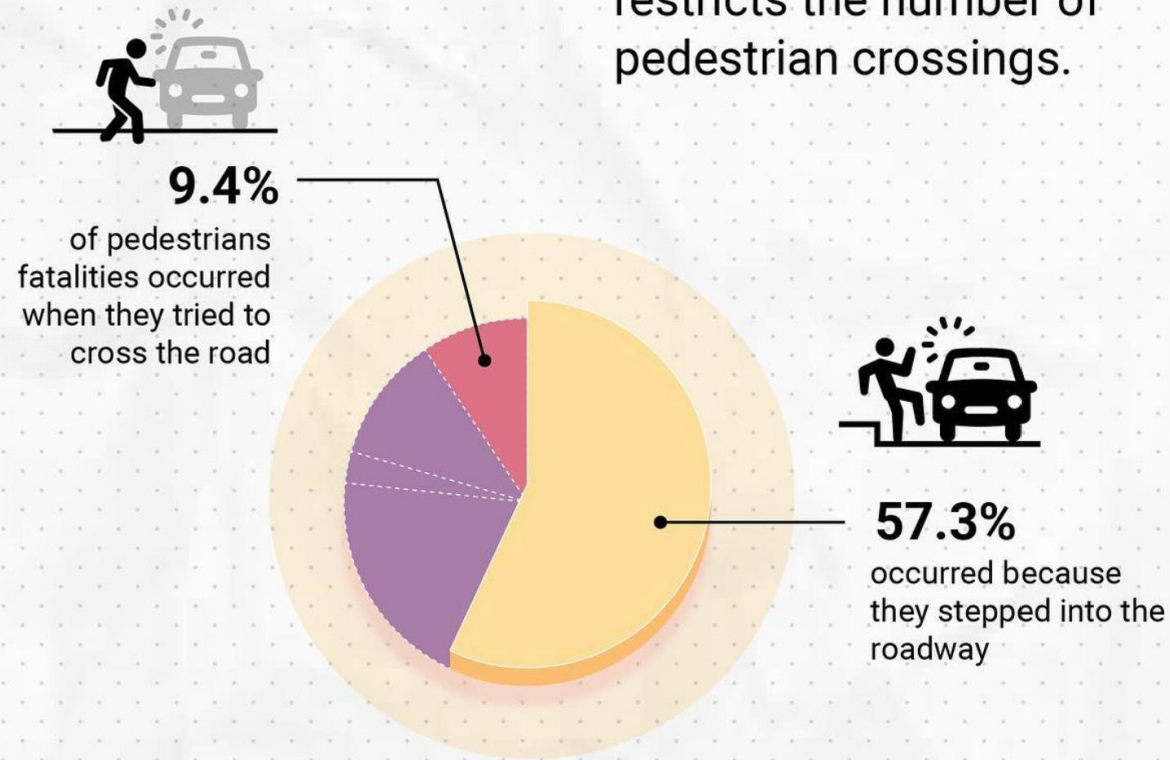


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In the KMA car-dependent development patterns force pedestrians to walk in the streets and also restricts the number of pedestrian crossings.



Causes of Pedestrian Fatalities
Road Safety Unit (2017 - 2021)



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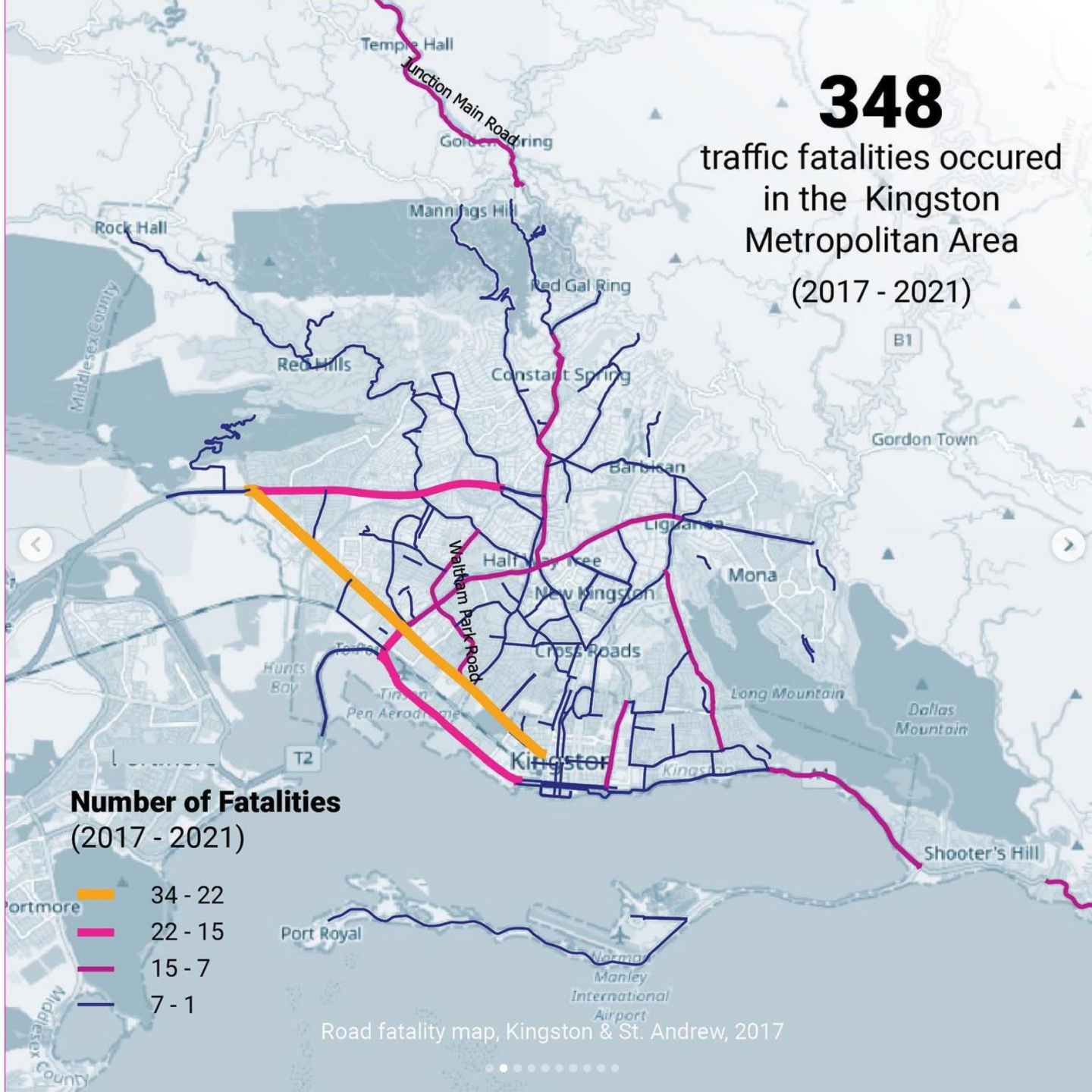


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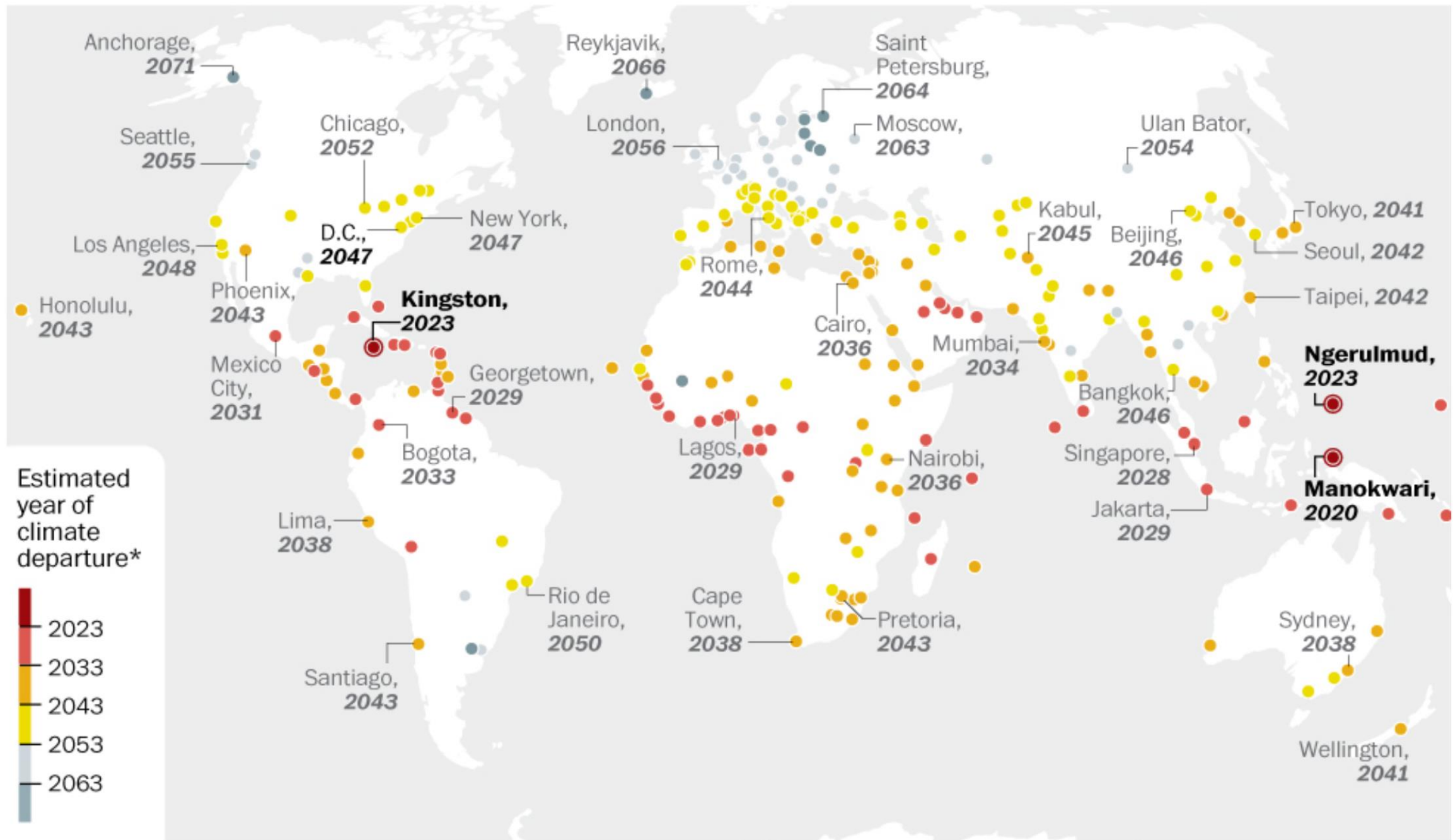
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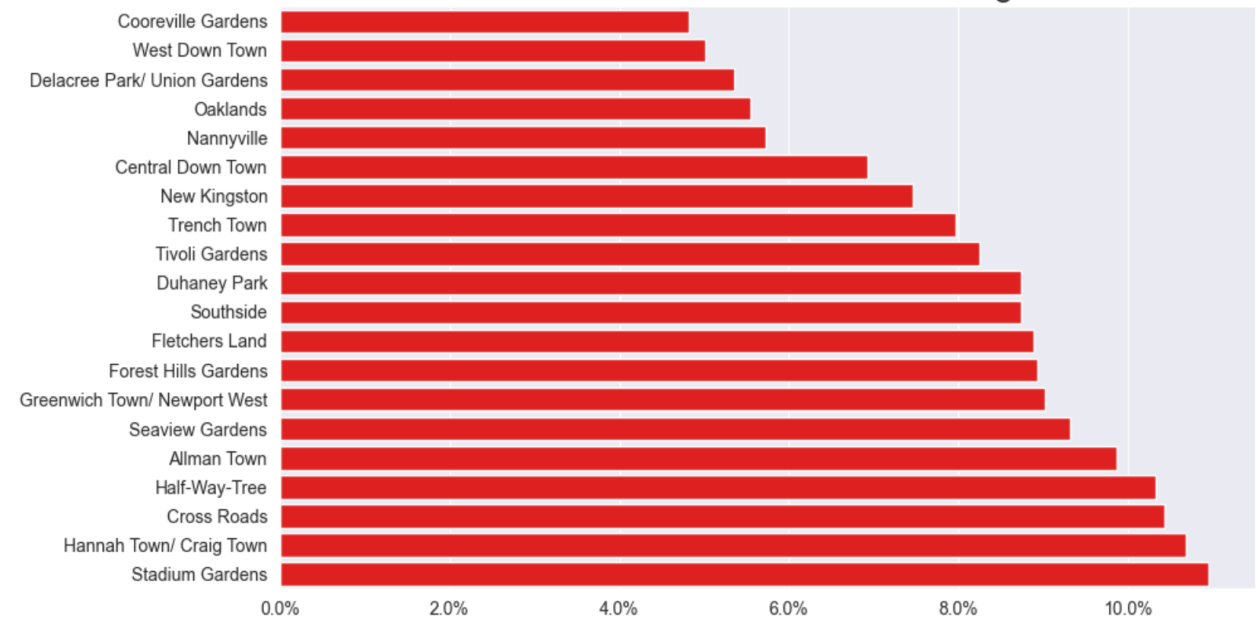
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Global warming map shows predicted dates that temperatures in selected cities will exceed historical norms.

Communities with the Least Tree Coverage in KSA



Average Tree Coverage by Community in KSA

