Resilient Urban Development
Saint Vincent and the Grenadines

# Urban Transportation Planning

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## Technical Workshop for Arnos Vale and Kingstown

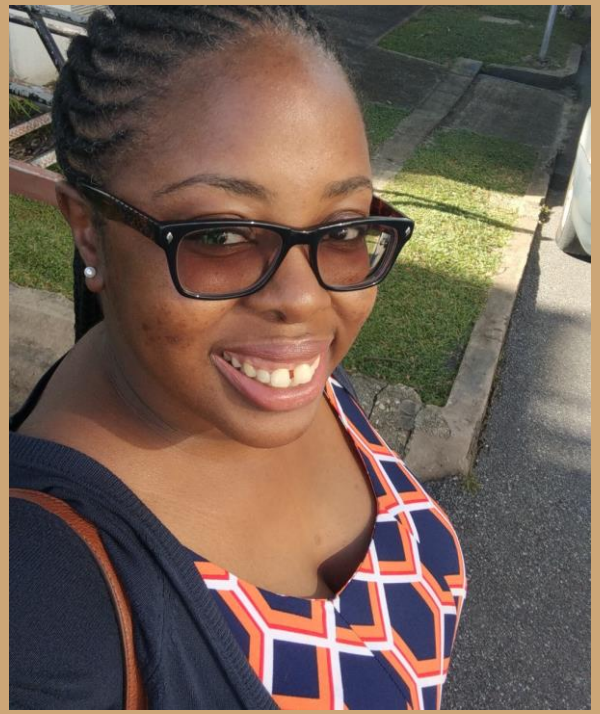
March 20 – 21, 2019 | NIS Building | Kingstown, SVG

# Onika Morris-Alleyne

Transportation Policy, Planning and Engineering
Sustainable Urban Mobility

Practice areas: public transport, sustainable urban transport, transport policy, land use/transport interaction, transport infrastructure

Research areas: urban street design, Mobility as a Service (MaaS), sustainable development through transport, Small Island Developing States



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# Outline

**1.** What is transportation planning?

**2.** How does transportation planning connect to urban development?

**3.** What are the techniques used in transportation planning?

**4.** What are the opportunities for Arnos Vale?

# 1

# What is transportation planning?

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Transportation planning is the practice of balancing demand for and supply of transportation resources, for the present and the future.

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# Concept

# Objectives of transportation planning

- to efficiently and effectively provide capacity, connectivity and safety for all users of the transportation system, including motor vehicle operators, cyclists, pedestrians and those using public transport.
- to reduce harmful impacts of transportation system on the public purse, private purse and the environment.
- to ensure that the transportation system contributes to, rather than taking away from, economy and productive capacity.

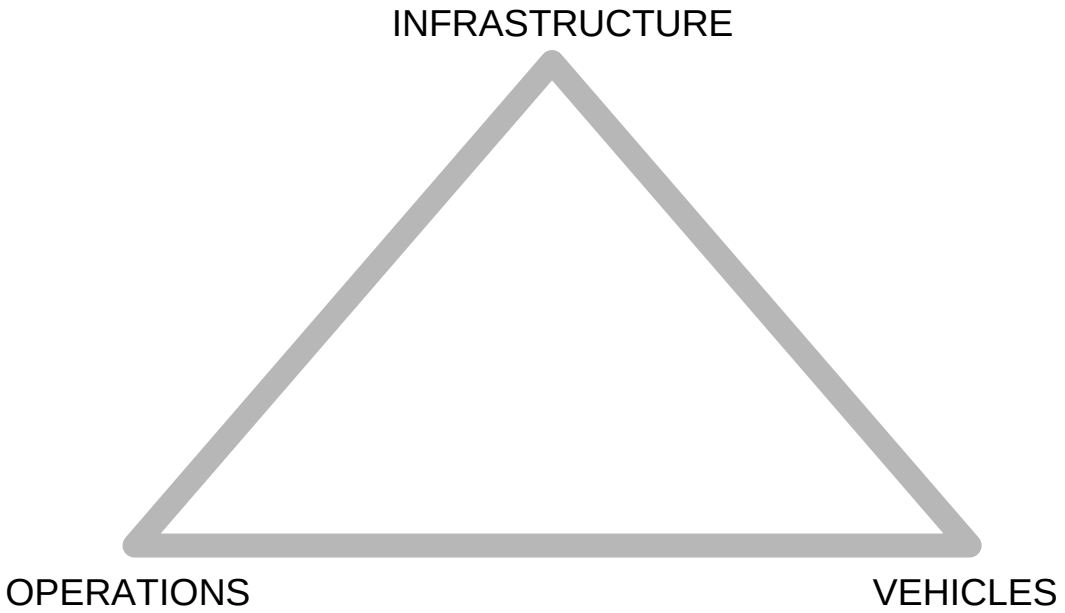
# Supply

Transportation consists of three basic interconnected elements:

Infrastructure: roads, rails, cables, terminals, parking etc.

Vehicles: cars, buses, trams, trains, boats, bicycles, wheelchairs, human body etc.

Operations: rules, fares, regulations, administration, enforcement, etc.

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# Demand

Transportation is a ‘derived demand’

- Who/what do we need to move?
- When do we need to move?
- Where/how far do we need to move?
- Why do we need to move?
- How do we move?
- Can the move be virtual, or must it be physical?

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# Why balance supply and demand?

Systems out of balance, where supply exceeds demand, or demand outstrips available supply, create issues referred to as ‘externalities’.

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# Context

# Urban transportation policy goals

**Efficiency**
There are unexploited opportunities to improve societal welfare.

- Reduce environmental externalities
- Increase economic benefits
- Prevent accidents and ill health

**Equity**
There is the need to address unequal outcomes.

- Redress uneven distribution of merit goods
- Address social exclusion

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# Setting the agenda: values, vision and empathy

Values determine the headspace in which planning takes place.

VIsion guides the policy that emerges from that headspace.

Empathy develops the culture of mobility created by following that policy.

# Guiding principles: Making MAS

**M**obility: movement

**A**ccessibility: connection

**S**ustainability: stewardship

# 2

# How does transportation planning connect to urban development?

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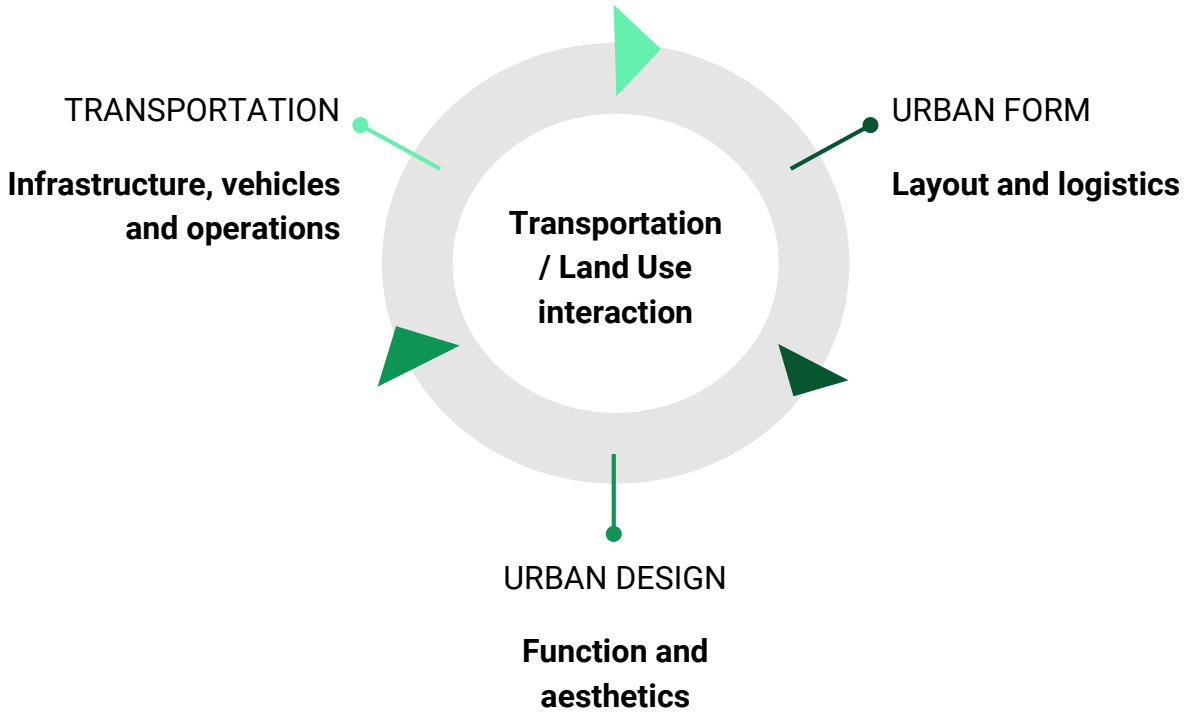
# The cycle

Urban form and urban design can support and inform transportation decisions.

Transportation decisions can also support and inform urban form and urban design.

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# Urban form
# (the 30 minute trip)

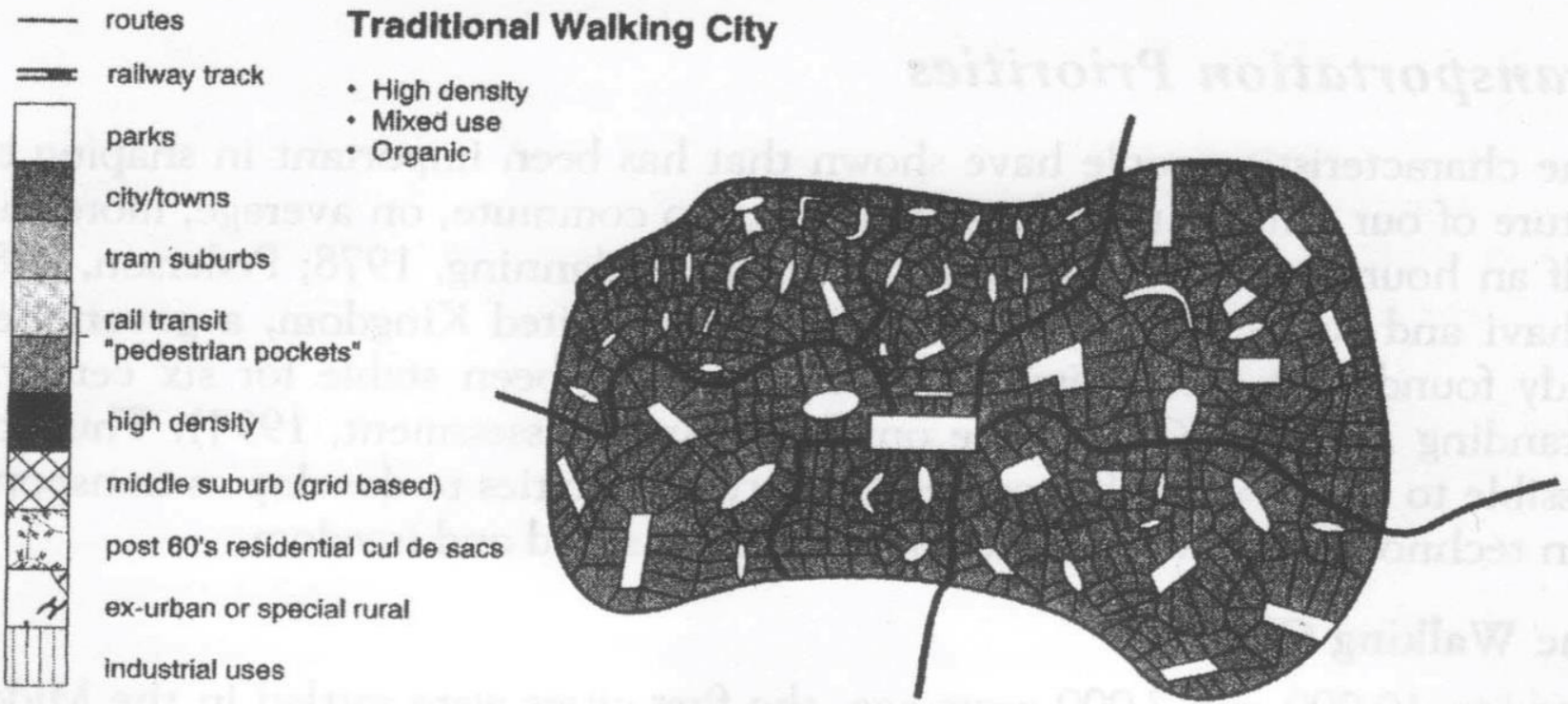


***Figure 2.1*** Traditional Walking City

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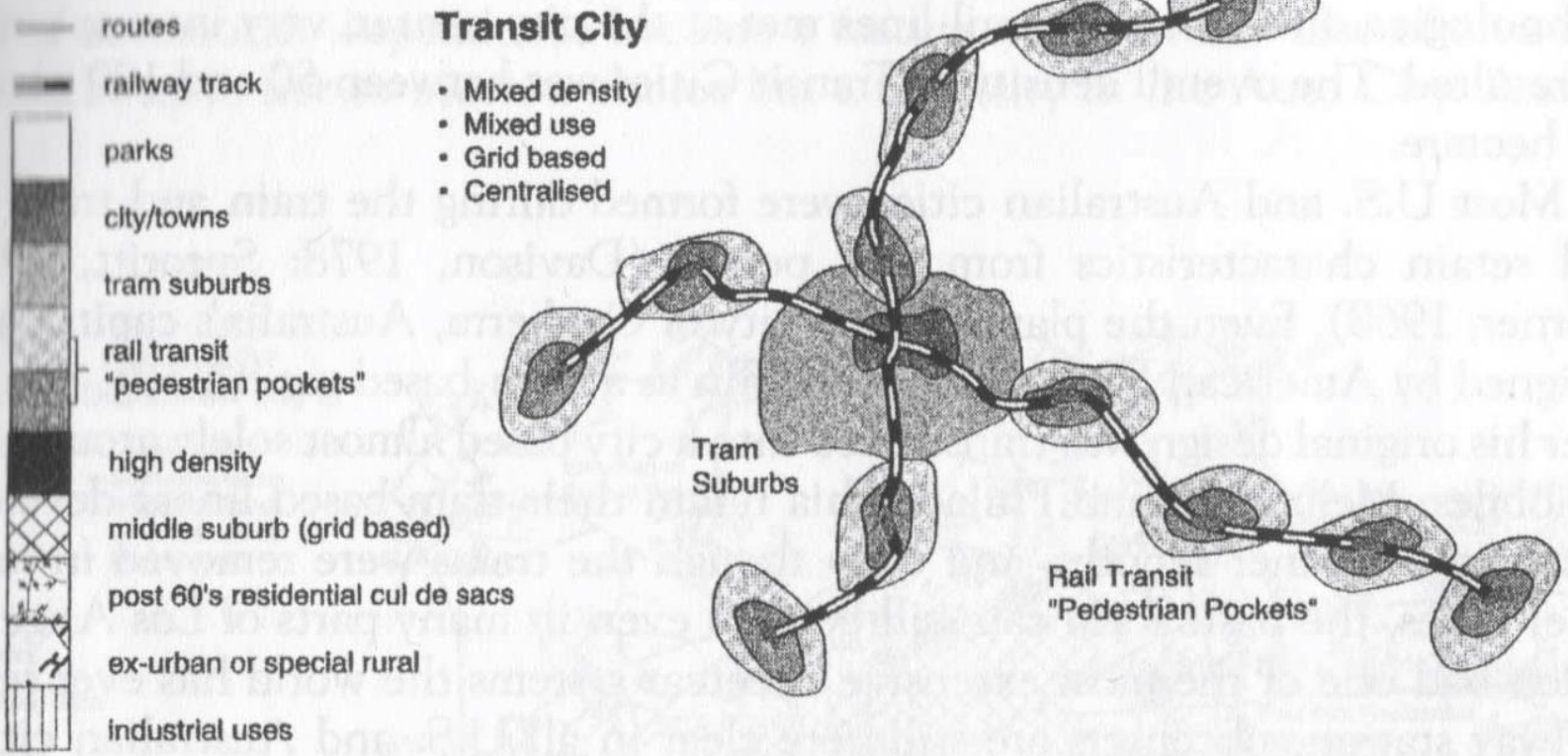


*Figure 2.2.* Transit City

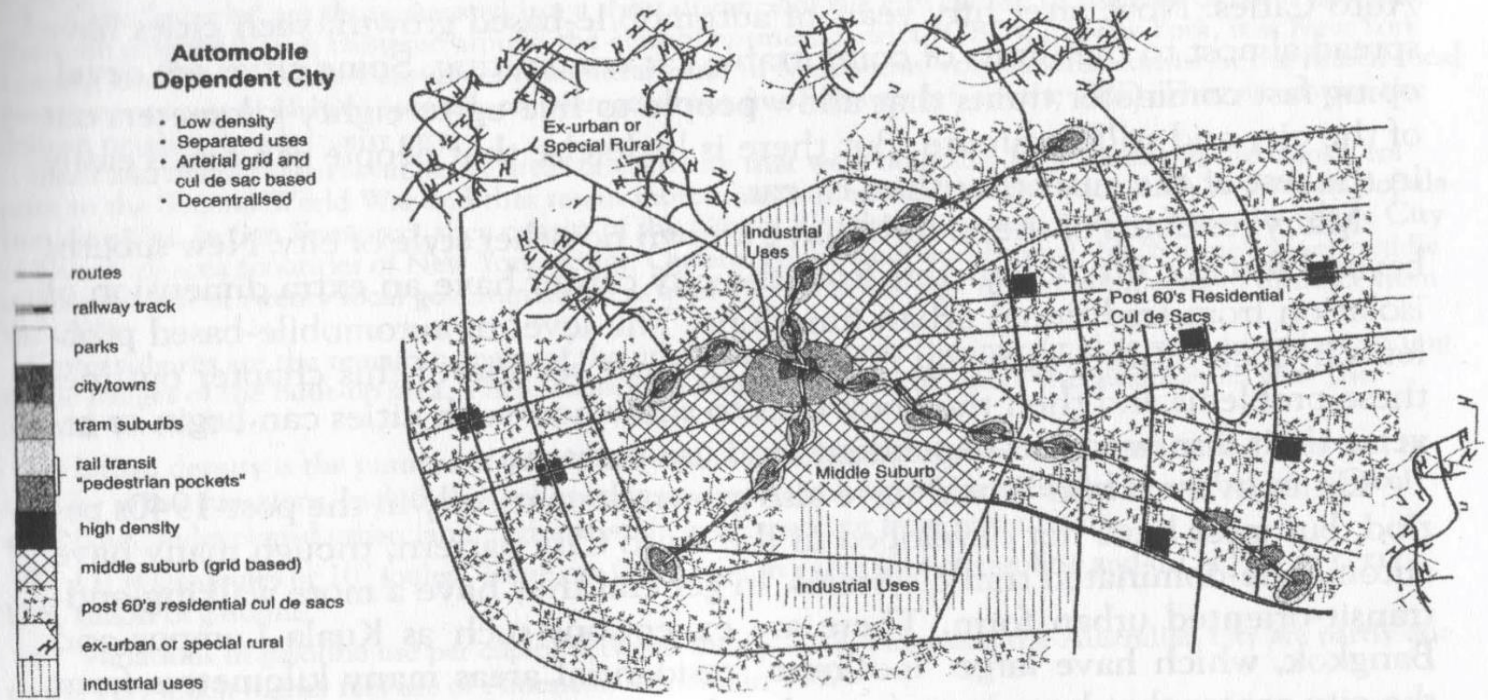


*Figure 2.3.* Automobile-dependent City

# Urban design
# (the useful and interesting environment)

## People on Foot and Universal Access

Streets must be designed to accommodate safe, accessible, and comfortable use by everyone. Streets with active storefronts, foot traffic, and human scale contribute to an active and economically vibrant community. Public safety, adequate sidewalk width, visual variety, protection from rain, and shade from the sun make a successful street.

## People on Cycles

Cyclists include users of bicycles, cycle-rickshaws, and cargo bikes. Facilities should be direct, safe, intuitive, clearly delineated, and part of a cohesive network to encourage use by people of all ages and confidence levels. Cycle tracks that create an effective division from traffic and are well coordinated with signal timing and intersection design form the basis of an accessible cycle network.

## People Using Collective Transport

Dedicated space on the street for people using collective transit supports safe, convenient, reliable, and frequent service. Whether using rail, bus, or small collective vehicles, transit service dramatically increases the overall capacity of the street and should have safe and easily accessible boarding areas. The overall level of access and scope of a transit network should be aligned with demand, meeting service needs without sacrificing streetscape quality.

## People in Personal Motorized Vehicles

Personal motorized vehicles provide on-demand, point-to-point transportation and include automobiles, for-hire vehicles and motorized two- and three-wheelers. Streets and intersections should be designed to facilitate safe movement and manage interactions between motorized vehicles and people walking and cycling.

## People Moving Goods and City Services

Freight operators benefit from dedicated curb access or docks for easy loading and unloading and rigorous management of space and movement throughout the traffic system. Emergency responders and cleaning vehicles need adequate space to operate, which can be accommodated while ensuring the safety of all other street users.

## People Doing Business

Vendors, street stalls, and commercial activity connected to storefronts provide important services that support vibrant, active and engaging street environments. Adequate space in appropriate places on the street should be allocated to these uses. Providing regular cleaning, maintenance schedules, power, and water can support commercial activity and improve local quality of life.


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# 3

# What are some techniques used in transportation planning?

# System assessment: what do we have?

The Unique Demand Profile (UDP)

Every transport environment consists of three elements:

1. Topography (constraints)
2. Development (demand)
3. Infrastructure (supply)

A discrete plot of land sharing the same elements is referred to as a UDP.

# Caribbean cities

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# Caribbean cities

- small size
- primate capital cities
- low elevation coastal locations
- informal settlements
- weak enforcement of development standards
- decapitalised urbanisation
- weak resilience

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# Caribbean urban transportation

- rapid motorisation
- lightly regulated/unregulated public transport
- traffic congestion
- high levels of emissions
- unsustainable fuel consumption
- inequity of access
- compromised road safety


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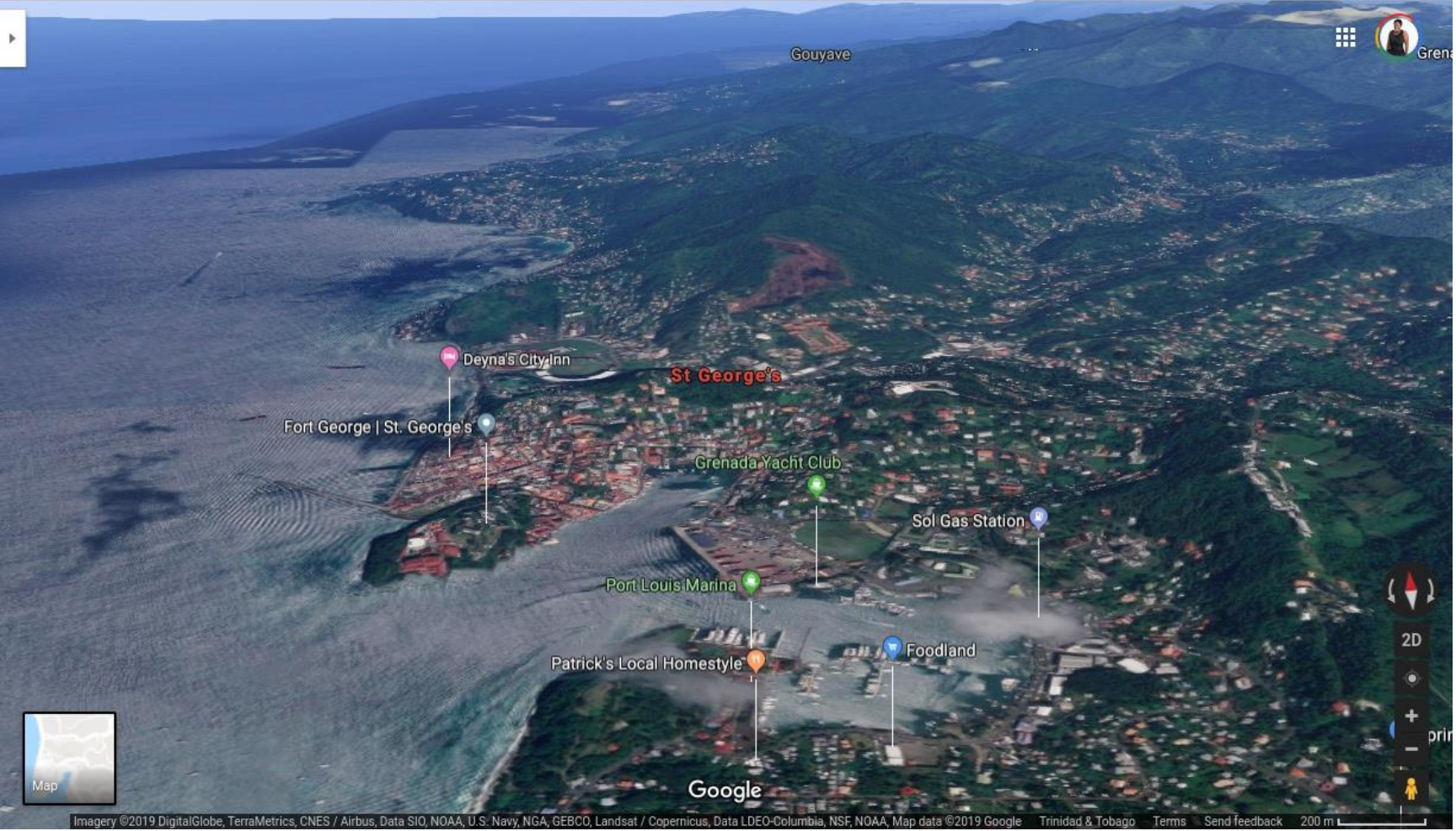
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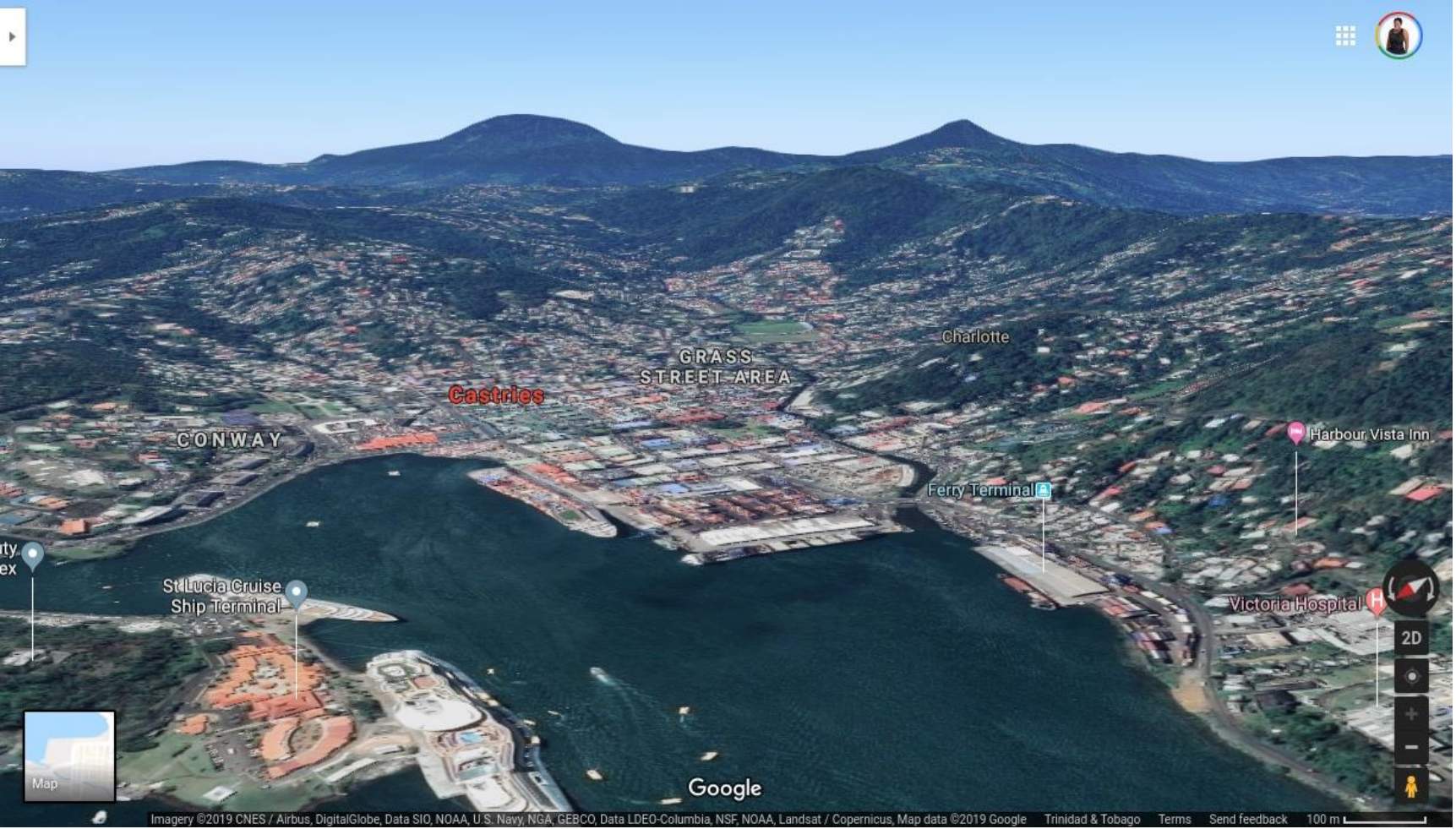
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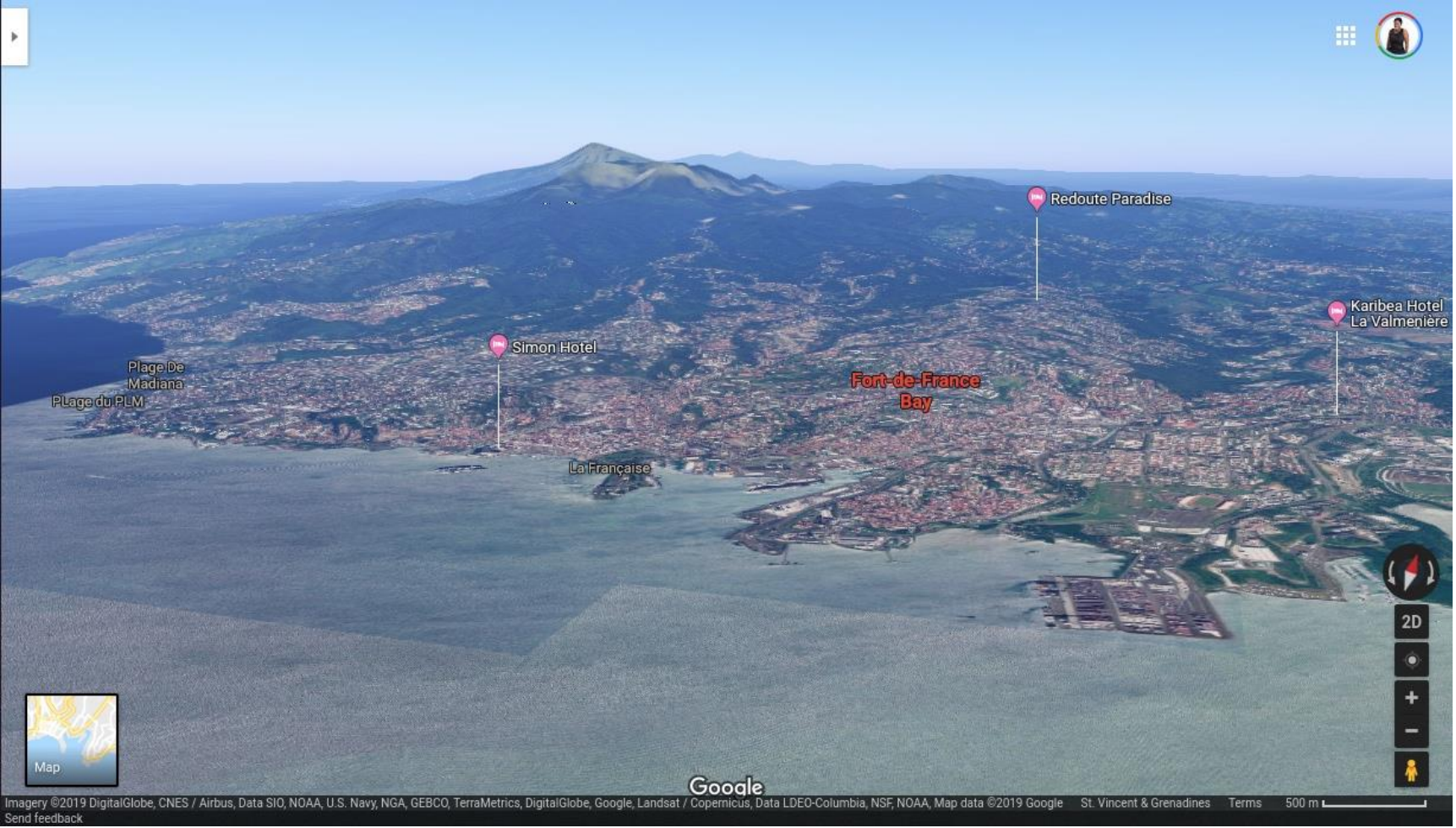
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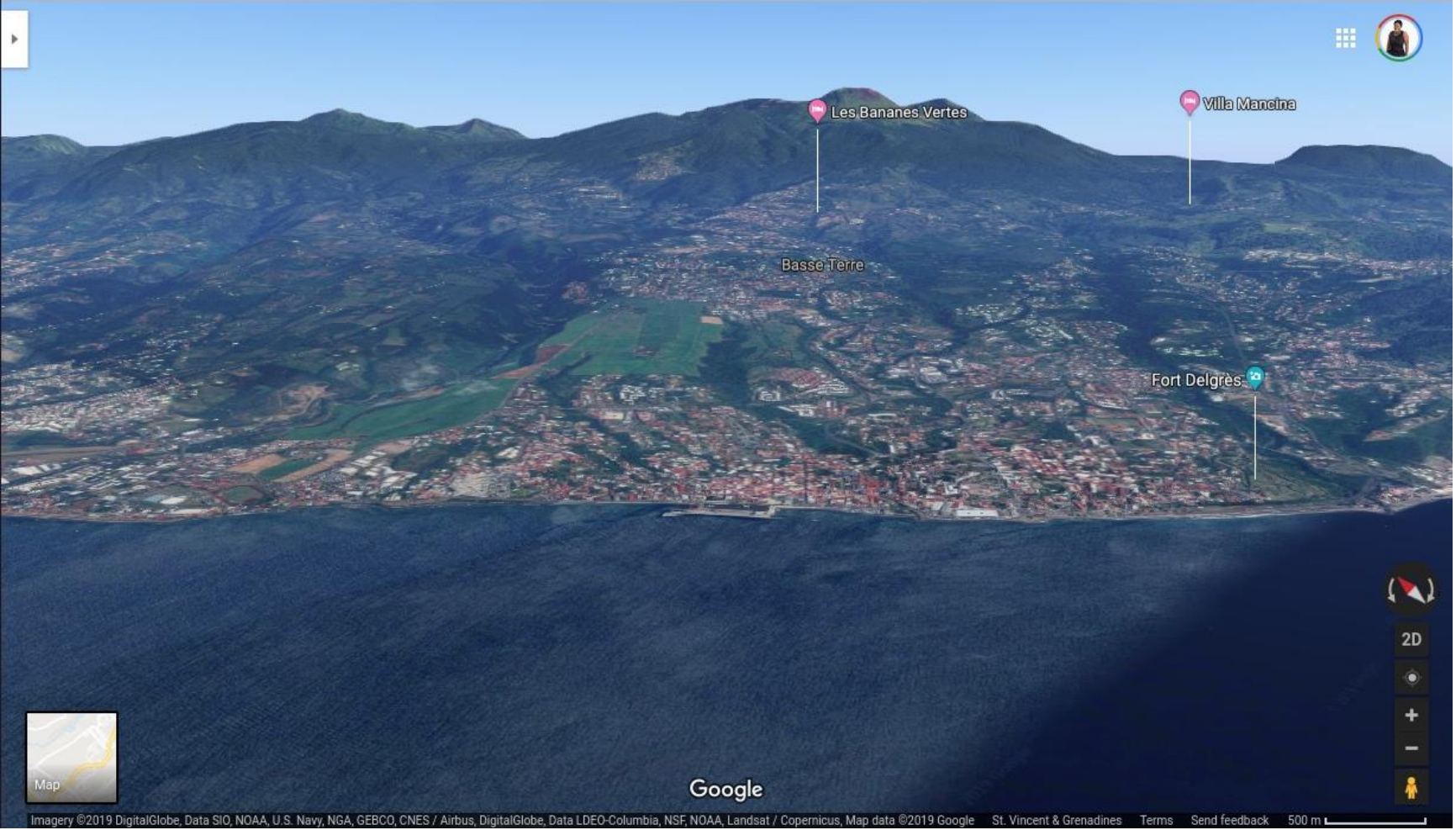
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# Demand factors: what do we need?

Transport user demands:

- Take me where I want to go
- Take me when I want to go
- Don’t waste my time
- Don’t waste my money
- Respect me
- Don’t break my trust
- Give me freedom

Demand management techniques

**L**ocalise
**I**ncentivise/Disincentivise
**V**irtualise
**E**ducate

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# Supply factors: what can we do?

Transport supplier provides:

- Understanding of the system
- Access from the origin to the system
- Facilities for waiting
- Ways to pay for use of the system
- Vehicles (directly/indirectly) and rules for the system
- Connection throughout the system
- Access from the system to the destination

Supply management techniques

- **B**uild
- **B**uy
- **O**rganise
- **P**rioritise

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# 4

# What are the opportunities for Arnos Vale?

# What is a New Town?

“New Towns are cities or towns that are designed from scratch and built in a short period of time. They are designed by professionals according to a Master Plan on a site where there was no city before. This distinguishes a New Town from a ‘normal’ city that gradually grows and evolves over time. Also, New Towns are mostly the result of a political (top-down) decision.

The building of a new city ‘from scratch’ is a heroic enterprise that challenges the architect or planner to find the ideal shape for the urban program according to the state of the art planning ideas. A New Town is always a reflection of one moment in time and the ambitions of that moment.”

- International New Town Institute

# 20th century

- Designed to provide housing for an exploding middle class
- Design prioritised automobile use
- Commercial activity designed to support suburban lifestyles
- Focus on private space
- Commuter towns

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# 21st century

- Designed to provide economic drivers for the region/area
- Design prioritises walkability and transit use
- Housing designed to support the economic activity
- Focus on public space
- Mixed use/reverse commute towns

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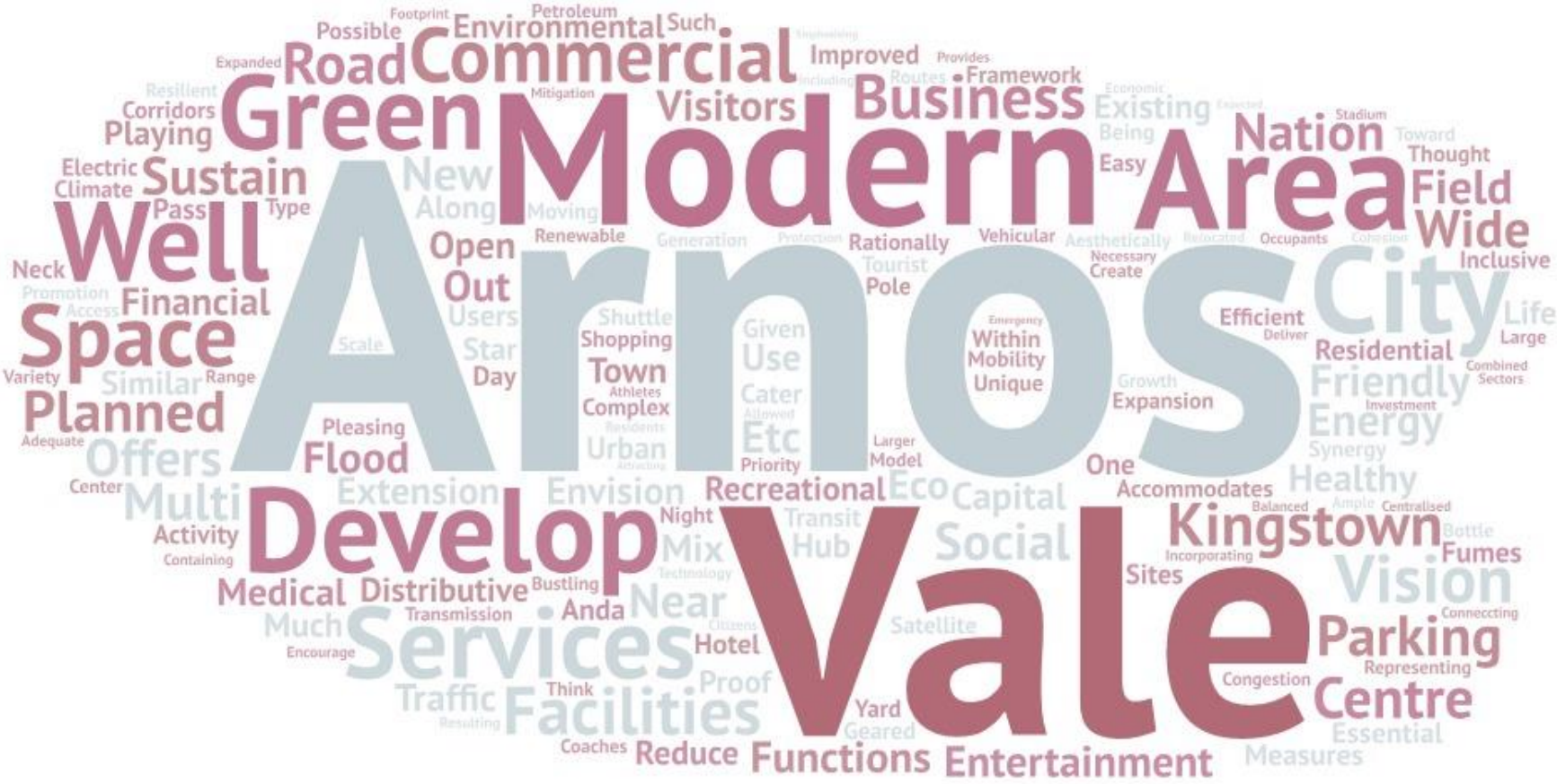


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# Discussion

1. **Current transport issues at and around the Arnos Vale site.**

2. **Developing transport priorities in the development of the ‘Modern City’ based on proposed urban form and urban design.**

3. **Avoiding isolation of the development to ensure connectivity to existing surroundings, including Kingstown Port and Argyle Airport.**


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# Thank you!


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