URBAN PLANNING AS A RESPONSE TO COVID-19

**A Policy Direction Paper
by the Planning & Development Department**

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ACKNOWLEDGMENTS

"Urban Planning as a Response to Covid–19" is a report produced on a work from home basis by the Urban Design & Planning Section of HDC with consideration of the views and opinions of those acknowledged.

Published on June 2020

1. INTRODUCTION

1.1 AIM OF THE PAPER

The COVID–19 outbreak discovered in Wuhan, Hubei, China, in December 2019 has subjected the world to extraordinary challenges.

Therefore, this paper aims to understand the impacts on our local development context and identify possible responses regarding COVID–19 pandemic.

Moreover, this pandemic is an opportunity to reflect on how future cities are planned and managed for them to be safer places to live and better respond to crises.

Figure 1. Healthcare workers (Ilyas, 2020)

1.2 BACKGROUND

World Health Organization (2020) gives an overview of the current pandemic as follows.

COVID–19 is an infectious respiratory disease caused by a newly discovered coronavirus. Most people who are infected will experience mild to moderate respiratory illness and recover without any special treatment. Although the elderly and people with pre-existing medical conditions may develop a serious illness due to this virus.

The best way to prevent this virus is to be well informed about the virus, protecting yourself and others from infection by following proper health guidelines.

The COVID–19 virus primarily spreads through droplets of saliva or discharge from the nose when an infected person coughs or sneezes, so it is important to always practice respiratory etiquette.

Our World in Data (2020) states that there is no single figure of case fatality rate for any particular disease. The Case Fatality Rate (CFR) is the ratio between confirmed deaths and confirmed cases. The CFR varies by location and is typically changing over time.

The current CFR values for COVID–19 ranges from 0.25% to 10%. In comparison, the estimated CFR of SARS–CoV and MERS–CoV were 10% and 34%, respectively. Whereas, Ebola stands at about 50%.

1.3 DATA TRENDS

The Singapore University of Technology and Design (SUTD), Data-Driven Innovation Lab website provides continuous predictive monitoring of COVID-19 as a complement to traditional monitoring or traditional prediction practices.

The graph below from SUTD (2020) is obtained from continuously updated predictions with the latest data, and are expected to change as the result of the changes in real-world scenarios over time.
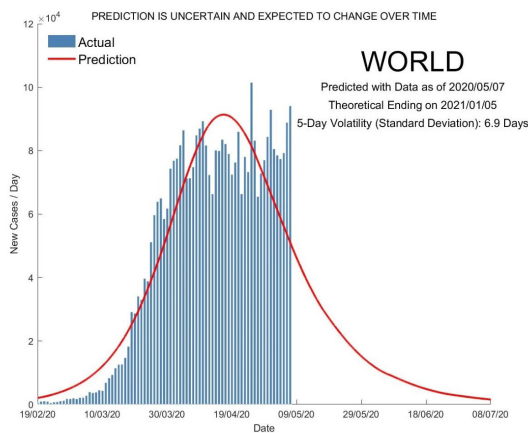

Figure 2. *Model-Based Data-Driven Estimation of COVID-19 Life Cycle (Singapore University of Technology and Design, 2020)*

The graph shows the last publicly available prediction before the project was internalized on 11 May 2020. It gives the theoretical ending of the pandemic as 5 January 2021.

1.4 NON-PHARMACEUTICAL INTERVENTIONS

According to information obtained by Harvard University Graduate School of Design (2020), the general population does not have immunity against COVID-19 since it is a new disease. Therefore, it is expected that infection rates will be high until when a vaccine is available, which is expected to be 6 to 18 months away, or a large number of people have been infected and develop immunity.

Hence, in the meantime, to contain the virus, we have to resort to non-pharmaceutical interventions such as mitigation and suppression. Mitigation aims to slow the disease using measures such as isolating those who are sick, quarantining household members, and implementing social distancing. This would spread out infections and has been used effectively in the past.

Suppression includes closing schools and universities and social distancing of the entire population for months. However, a key problem of using suppression as an intervention is that people do not build up immunity.

Therefore, suppression needs to be in place until a vaccine is released, immunity built up, or until systems can be put in place to test, track, and trace at a massive scale. Additionally, the economic fallout from suppression may endanger the health of the vulnerable, and people may lose their livelihood and housing.

1.5 PAST PANDEMICS & URBAN CHANGE

There are valid reasons to look at historic crises as moments for dramatic urban change. Although pandemics have been a threat to the human population, they also have helped architecture and city planning to evolve (Los Angeles Times, 2020).

- **14th-century** brought out the bubonic plague, which helped to inspire radical urban improvements. Cities cleared their cramped living quarters, expanded their borders, developed early quarantine facilities, opened larger and less cluttered public spaces, and deployed professionals with specialized expertise, from surveyors to architects.

- **18th-century** yellow fever and **19th-century** cholera and smallpox outbreaks helped to catalyze innovations like broad boulevards, citywide sewer systems, indoor plumbing, disease mapping, and the early suburbs.

- **20th-century** pandemic breakouts like tuberculosis, typhoid, polio, and Spanish flu prompted urban planning, slum clearance, waste management, and Modernism with airy spaces, single-use zoning, cleaner surfaces, and emphasis on sterility.

2. URBAN ISSUES IN THIS PANDEMIC

2.1 COUNTRYWIDE CHALLENGES

The country's geography having the population spread out across small islands poses many challenges. These include difficulty in service delivery and restricting the prospects for the creation of jobs and diversification of the economy (The World Bank, 2020).

The COVID-19 epidemic has had a crippling effect on the economy due to over-reliance on tourism and fishing. Therefore, we need to diversify our income sources regardless of limitations to minimize the negative impact of crises on the economy.

The following are some of the urban problems included during an outbreak (HeriLand, 2020).

2.2 INADEQUATE MEDICAL FACILITIES

This issue is evident in insufficient number, uneven distribution, low capacity, and lack of resources.

Figure 3. Congested street in Male', Maldives (Two Thousand Isles, 2018)

2.3 EXCESSIVE URBAN POPULATION DENSITY

The COVID-19 virus has a strong infectious capacity, an incubation period, and human-to-human transmission. It is more likely to spread in cities with high population density, as it is more difficult to control population movements, cut off the virus transmission route, and other urban systems will face greater pressure after the necessary quarantine is implemented.

2.4 MANAGING PUBLIC SERVICES

Like medical facilities, other public service facilities have a small total volume, small scale, and uneven distribution.

2.5 CONGESTION

This problem is caused by disorganized city road hierarchy and low level of road facilities. The urban transportation system is important to ensure the timely transportation of medical personnel, patients, and various emergency materials when an epidemic occurs. It is the lifeline of the city during the outbreak period and its accessibility should be guaranteed first.

2.6 INSUFFICIENT OPEN SPACE

This matter is mainly reflected in the uneven distribution of large open spaces, the small number of small open spaces, and the small scale. During the epidemic, the open spaces serve as temporary storage and patient receiving spots. Insufficient open space also means that the overall scale of the city's treatment is reduced, and the potential for coping with risks is relatively reduced.

3.
BEST PRACTICES & EMERGING TRENDS

3.1 DISEASES & URBANIZATION

Research and understand the relationship between the spread of infectious diseases and urbanization. Aspects of focus are identifying where disease outbreaks occur and how they relate to the physical, spatial, economic, social, and ecological changes brought on by urbanization (Charles Correa Foundation, 2020).

3.2 DECENTRALIZED PLANNING

Decentralized planning with a focus on resource recovery and equitable distribution of resources is key for the efficient delivery of services (Down To Earth, 2020).

3.3 LIVABLE DENSITY

Achieve livable density – a balance where the benefits of agglomeration are significantly higher than the cost of congestion. In addition, density must be well-integrated and well planned to ensure the quality of life (TheCityFix, 2020).

3.4 PUBLIC TRANSPORTATION

Accommodate more buses that are less full and more frequent. Frequency is the key to transit being the alternative to private vehicles and for safety during a pandemic (Vox Media, 2020).

3.5 HIGHER-DENSITY HOUSING

Design higher-density housing better. This includes more space in hallways; better and wider staircases; natural ventilation for better airflow; more usable amenities like personal balconies and shared courtyards (Vox Media, 2020).

3.6 MICRO-ZONING

Provide residents with their essential needs, such as work, education, shopping, health, or leisure within a short walk or bike ride from their doorstep (CityLab, 2020).

- Paris en Commun (Paris in Common), which is Paris Mayor Anne Hidalgo's campaign group, has created a diagram to illustrate the concept of what should be available within 15 minutes of "Chez Moi" (home).

Figure 4. Paris en Commun's "15-minute city" concept sketch. Clockwise from the top the headings read: Education, WOrk, Knowledge Exchange, Shopping, Recreation, Community Engagement, Health, Public Transport, Excercise, and Nutrition (Paris en Commun, 2020)

3.7 GREEN SPACES

Quality green spaces require active planning and design, and they need to be spread throughout the city to be accessible to many residents and have enough space to avoid overcrowding (TheCityFix, 2020).

Los Angeles Times (2020) details some methods being adopted to cope with the current crisis.

3.8 HEALTHY BUILDING MOVEMENT

The Healthy Building Movement is an approach to improving health through strategies like greater natural light, improved ventilation, fewer toxic substances, and the incorporation of plants and other natural materials.

3.9 ADAPTIVE REUSE

Adaptive reuse deals with the use of existing buildings to serve newly relevant purposes. Moreover, it is proving to be the most efficient way to create emergency facilities.

Figure 5. Field hospital inside the Pacaembú Stadium in São Paulo, Brazil (Oliveira, 2020)

3.10 MODULAR CONSTRUCTION

Modular construction consists of pre-fabricating standardized components in a factory, then assembling them quickly on site. It has long been touted as a fast, flexible, less wasteful alternative to traditional building.

3.11 DIGITAL INFRASTRUCTURE

Telecommuting is an alternative method moving mainstream in the midst of this crisis, which has temporarily come to dominate our work and social lives.

Distance communication could bring major change to cities and suburbs. The time savings of not commuting from home, the increased familiarity with telemedicine and distance learning, the convenience of online shopping, and the cultural connection of online entertainment all could change our long-term habits, dramatically cutting traffic, sprawl, and pollution.

3.12 DIGITAL SYSTEMS

The digital systems now being used to track and contain the virus play among many other things, to assess potential threats where we congregate, act as early warning systems, help us maintain social distance, quickly alert authorities to close spaces or ensure that those infected are not out socializing.

A webinar held by Strong Towns (2020) highlighted some important points on dealing with the present situation.

- A healthy community culture is most important right now because it is needed to exchange ideas in order to collaborate effectively, solve the big problems, execute on important things, or take advantage of opportunity.

- Everyone realizes we are not going back to "normal". We have to find new and better ways to do things by using the current situation as a reset. Those who experiment with different ideas will likely hit on the best solution.

Regarding a talk about density, urbanization and pandemic preparedness, Michele Acuto, a professor of global urban politics in the School of Design at the University of Melbourne stated the following to CityLab (2020):

"Modern planning and civil engineering were born out of the mid-19th century development of sanitation in response to the spread of malaria and cholera in cities. Digital infrastructure might be the sanitation of our time."

4.
IMPACT OF COVID-19 IN MALDIVES

Figure 6. Malé City (Ishan, 2017)

A survey was carried out by the Planning & Development Department to understand the impact of the epidemic on the general public of the Maldives, and identify their opinion on possible responses to adapt to its effects from an urban planning perspective.

The survey was conducted from 20 – 27 May 2020, and the information gathered from the survey will be used to improve the services provided by the Housing Development Corporation, and in future planning decision-making in response to crises.

A summary of the survey feedback & analysis is given below.
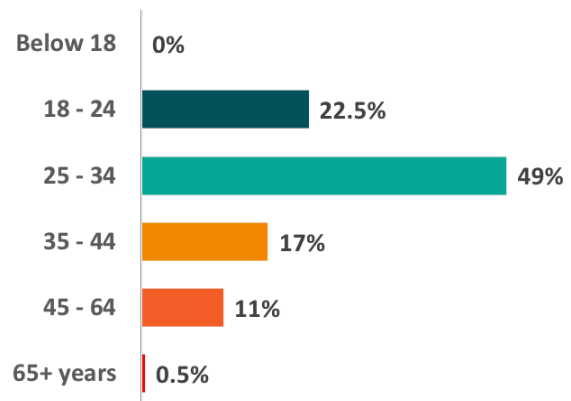
4.1 DEMOGRAPHIC INFORMATION

GENDER

**More than 160 respondents** completed the online questionnaire consisting of **38% females** and **62% males.**

Females 38%
Males 62%
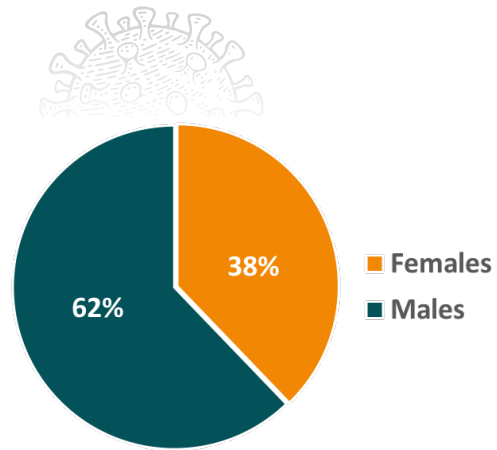
AGE CATEGORY

Regarding the **age category**, most of the respondents were from the age group of **25 to 34 years** with **49%**, and **no one below the age of 18** responded.

Below 18   0%
18 - 24   22.5%
25 - 34   49%
35 - 44   17%
45 - 64   11%
65+ years   0.5%

GEOGRAPHICAL SPREAD

In terms of **geographical spread**, most of the respondents are located in **Kaafu Atoll (92%)** and are mainly from either **Malé** or **Hulhumalé.**

Malé 66%
Hulhumalé 31%
Vilimalé 2%
Gulhi 1%
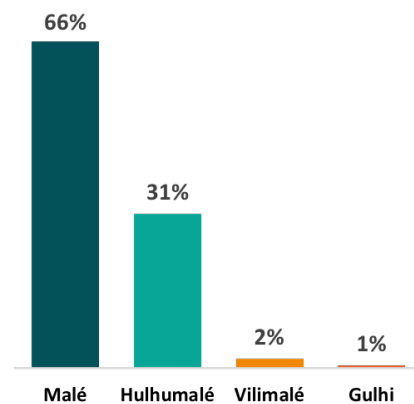
TYPE OF ACCOMMODATION

As for the **type of accommodation**, **39%** reside in their **own home, 54%** in **rented homes**, and the remainder live in **social housing.**

Rented 54%
Own Home 39%
Social Housing 7%
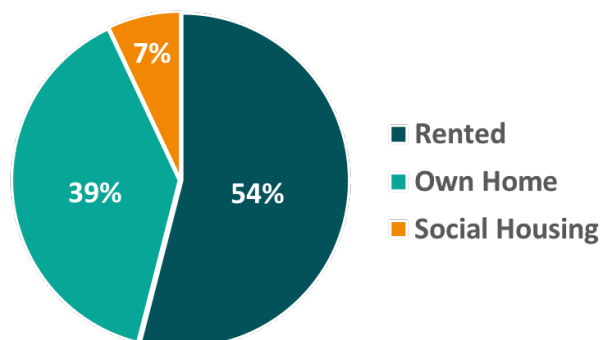
HOUSEHOLD SIZE

In addition, **51%** specify that **3-5 people** live in their homes, and **40.5%** having **more than 6 people**, which indicates a high density in the capital region.

51%

26%

14.5%

8.5%

0-2 People 3-5 People 6-8 People 8+ People
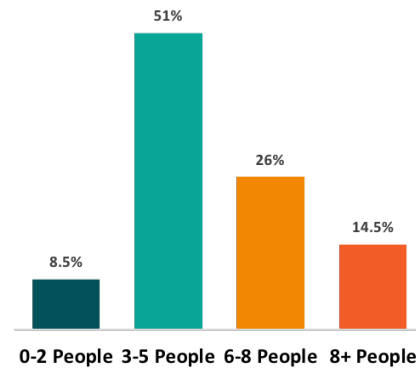
EMPLOYMENT STATUS

With regard to **employment** status, **77.5%** are **employed, 14.5%** are **un-employed, 7%** are on **temporary unpaid leave** and the rest are re-tired.

|	
Employed	**77.5%**
Furloughed	**7%**
Unemployed	**14.5%**
Retired	**1%**
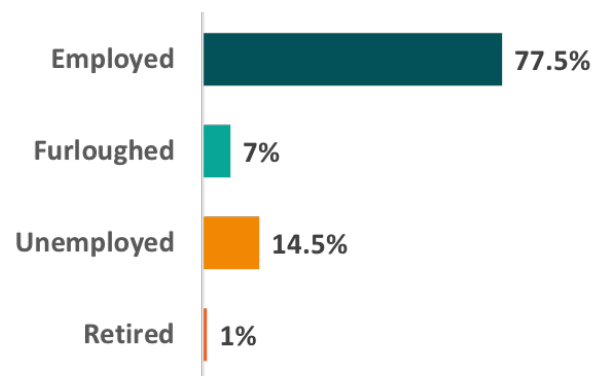
4.2 IMPACT OF PANDEMIC

Effect on work, health, and finance are the most common impact of the pandemic. Although **10%** respond that they **did not affect** at the time of the survey, **5.5%** express they were **affected in all types**.

10%

12%

52%

26%

- Affect to Work
- Impact on Health
- Financial Affect
- No Impact
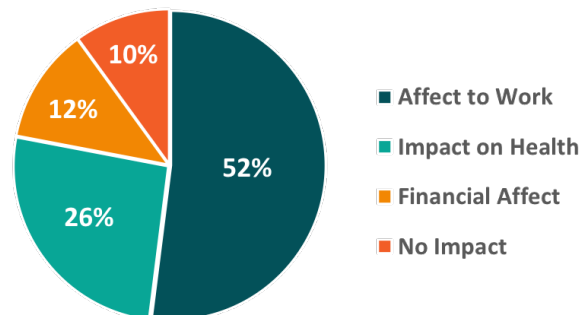
4.3 PANDEMIC & URBAN PLANNING

MEDICAL SERVICES

36% state that the **medical services** provided in their island of residence is **good**, and another **36%** agree that it is **acceptable**. However, **28%** con-sider it **inadequate**.

Acceptable	**36%**
Good	**36%**
Inadequate	**28%**
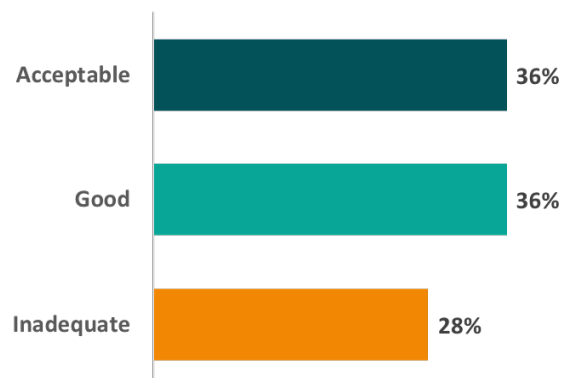
CONGESTION

63% believe their place of residence to be **very congested**, and **17%** think it is **moderate**. On the other hand, **20%** see it as **slightly congested**.


Legend:
- Slightly Congested
- Moderately Congested
- Very Congested

Pie chart values: 20%, 17%, 63%
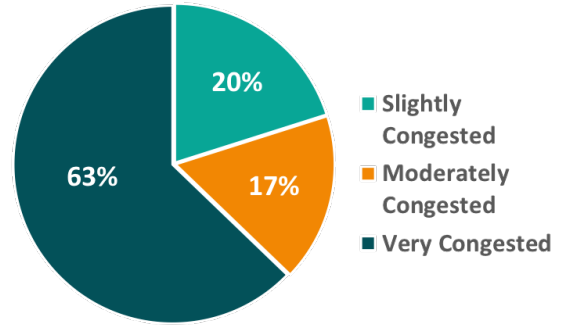
OPEN SPACES

32% replied that they have **suitable amount of open space** in their place of residence. **22%** feel it is **adequate**, and **46%** observe that they have **few open spaces** available.


Legend:
- Suitable
- Adequate
- Few

Pie chart values: 32%, 22%, 46%
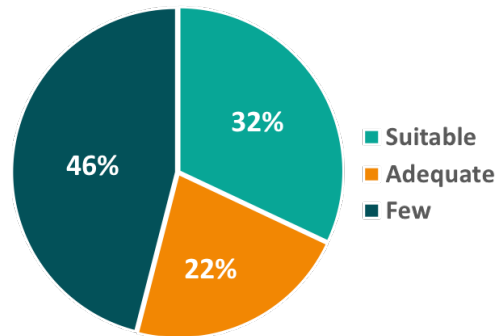
TRANSPORTATION

Considering **transportation**, re–spondents mainly use **motorcycles (72%)**, whereas only **9%** use **public transport**.

|	
Motorcycle	72%
Walking	15%
Public Transport	9%
Automobile	3%
Taxi	1%
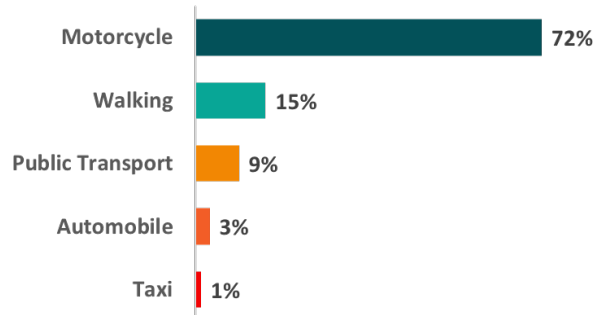
PUBLIC TRANSPORT ISSUES

The **lack of preference** for **public transport** is mostly due to **longer commuting time** and **inconvenient stop locations**.


Longer Commuting Time	101
Inconvenient Stop Locations	92
Frequency of Transport	81
Health & Safety Concerns	62
Expensive	35
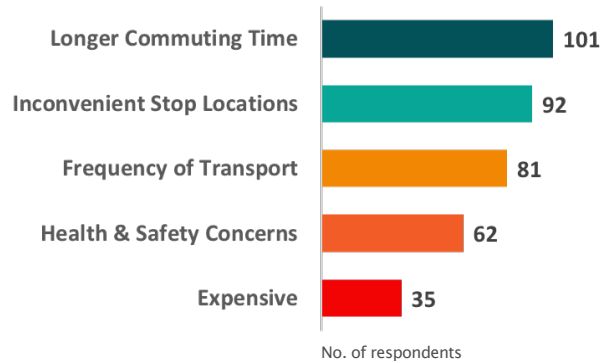
No. of respondents

WILLINGNESS TO LEAVE PRIVATE VEHICLE

52% of respondents who own **private vehicles** are **willing** to leave them in favour of an **efficient public transport system**.
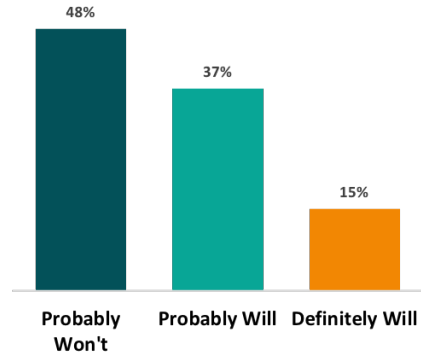
EFFECTIVE TOOLS FOR PLANNING

Urban planning plays an important role in easing the impact of a pandemic. According to the respondents, the **most effective tool** to counter this pandemic is implementing **proper development guidelines**.
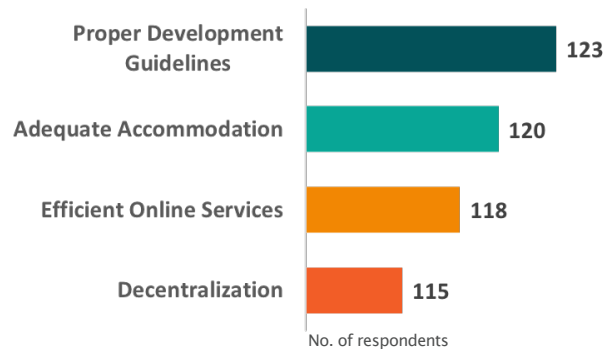
5. RECOMMENDATIONS

The list of recommendations given below summarizes the proposed recommendations for this document, after taking into consideration of the previous chapters. The recommendations will be adapted to the local context in response to the COVID-19 pandemic.

EXECUTION OF ACTIVITIES
■ **Short-Term:** Tasks which could be carried out within 1 – 2 years.
■ **Medium-Term:** Tasks that can be implemented in 2 – 5 years.
■ **Long-Term:** Tasks that will take 5 years or more to complete.

LIST OF RECOMMENDATIONS	TIME-SPAN
5.1 FAST TRACKING E-GOVERNANCE SYSTEMS	
• Implement technologies to provide services online.	■
• Data gathering and data mapping to be done regularly.	■
• Execute submission of drawings through the online platform.	■
• Enable work from home for relevant staff as a norm.	■
• Create an online platform to encourage the citizens to take an active part in the decision-making process.	■
5.2 REVIEWING PLANNING AND DEVELOPMENT GUIDELINES	
• Provide social housing with dedicated open spaces.	■
• Inclusion of a green component in building guidelines.	■
• Practice larger balconies spaces with better views in private housing.	■
5.3 INTRODUCING URBAN FARMING AND COMMUNITY GARDENING	
• Introduction of urban farming and community gardening as a source of income and sustenance.	■
• Promoting local products and make arrangements for the community to sell their products.	■

5.4 PROMOTING ADEQUATE EXPATRIATE ACCOMMO-DATION AND WELFARE

- Create necessary guidelines for expatriate accommodation.

- Allocate expatriate accommodation zoning.

- Establish routine monitoring of hygiene and health in accommodations.

5.5 ESTABLISH SUSTAINABLE/GREEN TRANSPORT

- Reducing motorized vehicle allowance on the roads.

- Promoting sustainable methods of transport such as cycling and walking.

- Enforce a more efficient and sustainable public transport system.

- Stagger school and office timings to reduce congestion.

5.6 MICRO-ZONING

- Providing essential services within walkable distance of a neighborhood.

- Providing open spaces and leisure activities within walkable distance of a neighborhood.

5.7   ADAPTIVE REUSE AND FLEXIBLE BUILDINGS

- Revise the development guidelines for commercial, industrial and community buildings to be adaptive to crisis management and reuse in an emergency.

- Adapt emerging techniques and technologies in the built environment.

5.8 DECENTRALIZATION AND REGIONAL PLANNING

- Support relevant government agencies in developing regional urban centers by providing technical expertise.

- Develop effective strategies to ensure economic and social inclusivity across the entire country.

- Provide necessary infrastructure within islands to be resilient to disasters.

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