

CHAPTER II

GENERAL OVERVIEW OF GRAND BATANG CITY AND COASTAL CONDITION IN BATANG REGENCY

2.1.General Overview of Grand Batang City

Indonesian government under Joko Widodo second period of administration had established some of strategic project to encourage economy growth in the country. Most of its focus are located on the strategic partnership through foreign investment. One of the famous project that inaugurated by President Joko Widodo is Grand Batang City.

As one of National Strategic Project (PSN), Grand Batang City become the area of investment that managed by PT. Kawasan Industri Terpadu Batang (PT KITB). This project is one of the industrial zone that given status as PSN out of 8 others which already operating. Highlighting the concept of smart and sustainable, Grand Batang City or KIT Batang will focusing on various types of industries such as petrochemical, energy, infrastructure, logistic, and automotive, electronic, and many more.

This area offers 4,300 hectares of prime land for industrial, retail, and commercial development. Although, this project was divided into 2 phase, on phase 1 which already started since 11 December 2020 already inaugurated by President Joko Widodo and already operating. The area of 450 hectares in phase 1 has brought in 18 investors from both foreign and local. Up to this point, Grand Batang City received exceeding 14 trillion rupiah of investment and expected to absorb around 19,000 workforce. As a PSN, Indonesian government has been contributing fully on this project to build several vital infrastructure using State Budget (APBN) and State Capital Participation (PMN) by 3.6 trillion rupiah. Bahlil Lahadalia, who was previously as the Minister of Investment explaining on the

inauguration ceremony, that Grand Batang City will accommodating around 250,000 workers on the next ten years.

Located near the coastline of Batang Regency, it has ± 9,22 km of coastal area which will be integrated to the nearest accommodation like train station and trading port. Since this project targeting international market, Grand Batang City also create their own trading port near the area. The trading port will expected to be done in March 2025. The developer of Grand Batang City collaborating with PT Pelabuhan Indonesia (Pelindo) to establish integrated trading port that could accommodate international cargo ships with expected weight until 6.000 to 7.000 DWT. Moreover, Head of the One Stop Investment and Integrated Services Service from Central Java Province Sakina Rosellasari said Central Java Province Government have been approved the permits and issued through Online Single Submission Risk Based Approach (OSS RBA) system.

2.1.1. Types of Companies in Grand Batang City

Since become an integrated industrial zone, Grand Batang City attracting several investors from abroad. Based on the data that released by Grand Batang City, there are 14 companies that already registered in the area. The companies are:

No	Company Name	Country	Industries/Sectors	Wide of Area (m2)
1	PT KCC Glass Indonesia	South Korea	Glass	460.000 m2
2	PT Yih Quan Footwear Indonesia	Taiwan	Footwear	162.298 m2
3	PT CosmosIndo Ink	South Korea	Ink	14.710 m2
4	PT Jayamas Medica Industri	Indonesia	Medical Devices	41.325 m2
5	PT Wavin Manufacturing Indonesia	Netherland	Pipe	200.283 m2
6	PT Unipack Plasindo	Indonesia	PVS	29.587 m2
7	PT Tawada	Indonesia	Medical Devices	19.340 m2

Healthcare				
8	PT Interskala Medika Indonesia	Indonesia	Medical Devices	13.940 m2
9	PT Interskala Medika Solusindo	Indonesia	Medical Devices	3.404 m2
10	PT Samator Indo Gas Tbk	Indonesia	Industrial Gas Plant	28.005 m2
11	PT Acindo Medika Sejahtera	Indonesia	Medical Devices	31.367 m2
12	PT Window Shutters Indonesia	Indonesia -England	Furniture	21.404 m2
13	PT Sumber Graha Sejahtera	Indonesia - Singapore	Wood Pellets	52.000 m2
14	PT Rumah Keramik Indonesia	Indonesia - India	Ceramic	138.316 m2

Table 2.1. List of Companies in Grand Batang City

There are 14 companies that are officially registered in Grand Batang City. Those companies become an early investors that establish their own factory in the first phase. Based on the data released by Grand Batang City, the industrial area claimed to be filled with 45% of companies. Investors that established their land in the first phase come in various types of country, such as South Korea, Netherland, India, China, and even United Kingdom.

Nonetheless, there are still some of Indonesian private companies that also investing on some factories and logistics warehouse in Grand Batang City. Grand Batang City also targeting the whole area would covered up to +100.000 potential labour for both locals and foreign. It is followed by the expected competitive wage up to 151 USD/month.

2.1.2. Masterplan of Grand Batang City

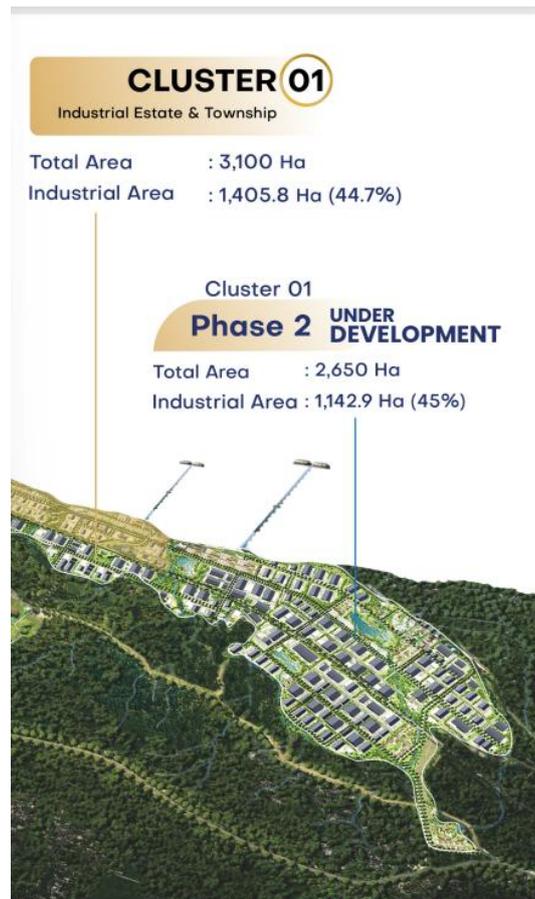
Grand Batang City has 4300 Ha of land area which will be filled with many things such as industries to real estates. The planning of Grand Batang City consists of two phases, which the first phase already inaugurated and sold out. Located in Central Java,

Grand Batang City will provide different types of products, such as industrial lot, office and retail area, standard factory building, and commercial area.



Picture 2.1. Phase 1 Masterplan of Grand Batang City, KIT Batang (2024)

First phase of Grand Batang City contains several developments of industrial zone which already sold out to 14 companies. The investors that came from different countries provided with integrated system of several utilities. Wastewater Treatment Plan (WWTP) and Water Treatment Plan (WTP) was developed to cover the need of water on the area. In the Phase 1, the capacity could hold until 285 L/s and took 450 Ha land of area. Besides that, the ICT was provided up to 100 Mbps with Fibre Optics type. National Electric Company (PLN) also providing power station that believed to be clean energy and capacitate until 34 Mega Watt. Moreover, the Gas company would supply up to 15 Million Standard Cubic Feet per Day (MMSCFD). In this term, the area is totally cover by huge gas system that integrated on each facility and factories.



Picture 2.2. Phase 2 Masterplan of Grand Batang City, KIT Batang (2024)

Phase 2 provides 5,750 Ha of land area for expanding the investment land. Industrial estate and township are two main goals that they want to build in the second phase. Different from phase 1, in the second phase they only have one cluster that consist of different types of purposes. However, the area of phase 2 will be integrated directly to the international harbour that created near the cluster. The harbour will provide an integrated transportation that serving companies globally.

2.1.3. Regulation Applied in Grand Batang City

Regulations become one of the basis form to create some limitation on certain implementation or development. The development of Grand Batang City are involving many actors of national government. Thus, the regulations that applied for this project also

came from the national level which concerning in the development of Strategic National Project by Indonesian government.

No	Regulations that Applied	Concern	Impacts
1.	Presidential Regulation Number 109 of 2020 concerning the Third Amendment to Presidential Regulation Number 3 of 2016 concerning the Acceleration of Implementation of National Strategic Projects	Optimization of Strategic National Project by Indonesian government to enforce the acceleration development, job creation, and national economic recovery.	Strengthening the urgency of 201 Strategic National Projects development in several areas.
2.	Presidential Regulation Number 106 of 2022	Acceleration of investment through the development of Grand Batang City in Central Java Province.	Encouraging the development of Grand Batang City as the investment zone and its bureaucracy system that integrated with 7 sectors of ministry.
3.	Government Regulation Number 78 of 2019	concerning Income Tax Facilities for Investment in Certain Business Fields and/or in Certain Regions	Facilitating the clear regulation of direct investment activities, both in terms of economic growth, development of the business sector, legal certainty to improve the business climate to be more conducive.
4.	Minister of Finance Regulation No. 11/PMK.010/2020	Acknowledging the implementation of Government Regulation Number 78 of 2019 on income tax facilities for capital investment.	Clarifying the realization of capital investment within foreign investment and national tax facility.
5.	Minister of Finance Regulation Number 130/pmk.010/2020 of 2020	Providing corporate income tax reduction facilities for certain industry.	Specify the flow of tax reduction criteria for pioneer industry who have made investments.
6.	Investment Coordinating Board Regulation Number 7 of 2020	Concerning detail of Business Fields	Specify the detail of business fields or

		and Types of Pioneer Industrial Production and Procedures for Providing Corporate Income Tax Reduction Facilities	investors registration and requirements to become pioneer industrial and meet the tax reduction criteria.
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Table 2.2. List of Regulations that Applied in Grand Batang City, KIT Batang (2024)

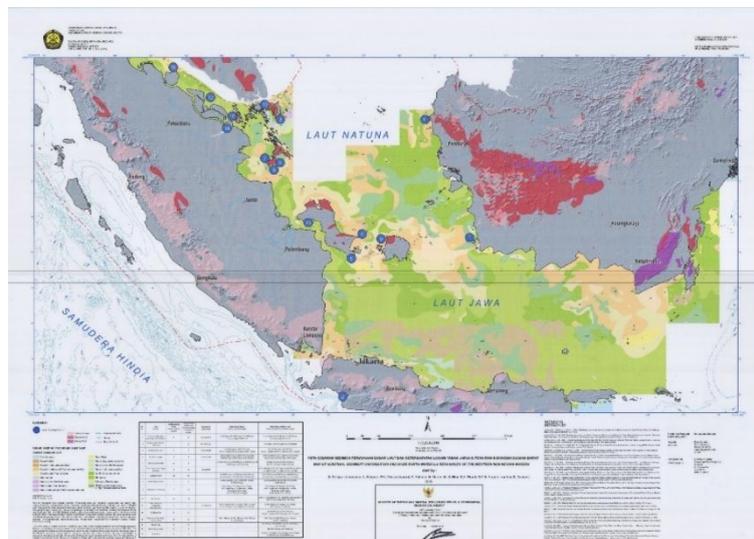
There are 6 regulations that recognized and applied in the development of Grand Batang City based on the data by KIT Batang (2024). Presidential Regulation Number 109/2020 and Presidential Regulation Number 106/2022 were addressed in order to accelerate the project of Grand Batang City as Strategic National Project by Indonesian government. Those regulations become a strong basis to encourage certain development aspects and bureaucracy system. Meanwhile the rest of regulations undergo the investment system for companies.

Since Grand Batang City has been designated as a national investment project aimed at capturing opportunities in the global market, the regulatory framework encompasses a broad array of ministries. Key players include the Coordinating Ministry of Maritime Affairs and Investment, the Ministry of Finance, the Coordinating Ministry of Economy, the Ministry of Industry, the Minister of State-Owned Enterprises, the Minister of Public Works and Housing, and the Minister of Investment, who also serves as the Head of the Investment Coordinating Agency. The collaboration among these ministries is essential, as each is tasked with conducting thorough assessments and evaluations to create a cohesive and efficient bureaucratic system for the project. This integrated approach not only streamlines processes but also ensures that the project aligns with national economic goals and international standards, ultimately fostering an environment conducive to investment and growth.

2.2. Geological Mapping of the coastal characteristic on Batang Regency

Since the development of Grand Batang City officially established on 2024, Batang Regency expected to be integrated area for international trading activities. Moreover, this region which located on the northern coast of Java Island holding the vital point of around 30 Kilometers coastline for mangrove and conservative area. Some development that existed around coastal area of Batang Regency become the highlight point of this research. Decreasing of land slope in Batang Region also one of the impact that came from massive development alongside coastal area.

Based on data map of the distribution of seabed sediments in western Indonesia and rare earth metal by Ministry of Energy and Mineral Resources (2022) Indonesia consist of several sediments material that spread throughout every island.



Picture 2.3. Map of the distribution of seabed sediments in western Indonesia and rare earth metal by Ministry of Energy and Mineral Resources (2022).

The distribution of sediment materials mostly covers by sea sand and sand silt. This data become one of indicator that acknowledged by the government. If looking on the narrow point in Central Java Province, the spread of sediment material consists of sea sand, silty sand, gravelly sand, muddy sand, and muddy gravel.



Picture 2.4. Map of the distribution of seabed sediments Batang Regency.

Acknowledging the area of Batang Regency and Grand Batang City covers with sandy silt, sea sand, silty sand, silt, and gravelly mud. The length of Batang Regency coastline reach $\pm 38,75$ km, based on survey in 2016. Each morphology components could become an indicator for healthiness rate of coastal area in Batang Regency. Thus, Batang Regency become vulnerable to any changes, especially on the context of sediment transport in the coastline.

1. Data of coastline changes in Batang Region on 2017-2021

The changes in the coastline are influenced by various factors, including unpredictable weather and infrastructure development near the coast. These changes are a part of ongoing coastal dynamics, resulting in both land loss (abrasion) and land gain (accretion). Nevertheless, the coastal area of Batang Regency is particularly vulnerable to the North Java Sea, leading to significant wave-induced shoreline changes. Since the development of Grand Batang City, coastline of Batang Regency also exposed to the ongoing development that could disrupt the balance.

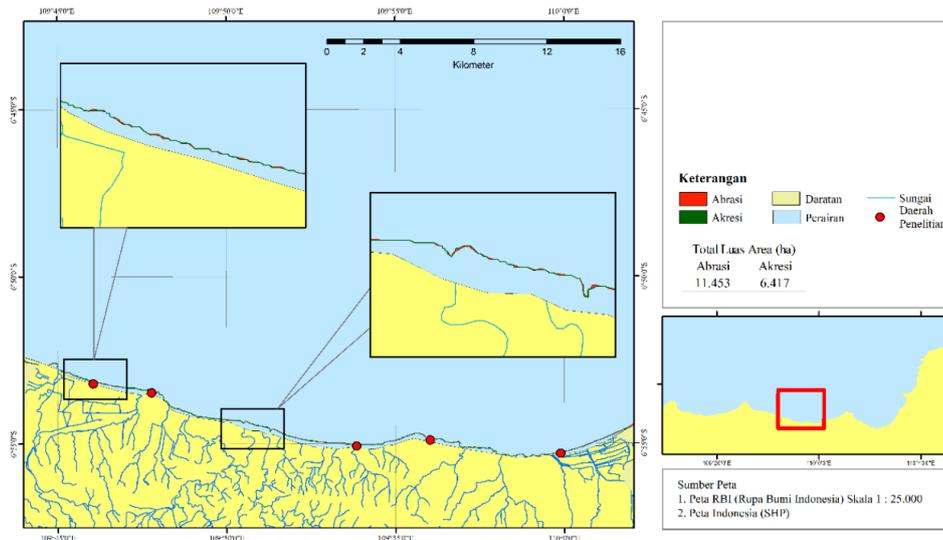
However, the changes of land slope in Batang Regency already occurred since 2017 and will continuously happens alongside the development of Grand Batang City. Based on

Study of Shoreline Changes in 2017 – 2021 on the Coast of Batang Regency, Central Java by Islam, Suryoputro, and Handoyo (2022) reflecting the realtime data that collected using Digital Shoreline Analysis System (DSAS), by analysing the changes with Net Shoreline Movement (NSM) and End Point Rate (EPR).

Point	Coordinate	Measuring Value of Coastal Slope				Description
		($^{\circ}$)			Average	
		1	2	3		
A	6°52' 7.2" SLa 109° 45' 14.8" ELo	0.5	0.6	0.5	0.53	Flat - Almost Flat
B	6°52' 51.6" SLa 109° 47' 51.8" Elo	0.7	0.7	0.6	0.67	Flat - Almost Flat
C	6°54' 26.6" SLa 109° 53' 22.7" ELo	0.2	0.3	0.2	0.23	Flat - Almost Flat
D	6°54' 44.8" SLa 109° 55' 43.8" Elo	0.6	0.6	0.5	0.57	Flat - Almost Flat
E	6°54'44.7" SLa 109° 59' 46.3" ELo	0.4	0.5	0.4	0.43	Flat - Almost Flat

Table 2.3. Coastal Slope Value in 5 Different Area of Batang Regency, Islam, Suryoputro, and Handoyo (2022)

The research was carried out in 5 different locations, which are Sigandu Beach, Ujung Negro Beach, Kuripan Beach, Celong beach, and Jodo Beach. The sandy beaches of Batang Regency are punctuated by headlands that extend into the sea, making these areas prone to abrasion. Based on the current condition, coastal sloping that occurs can causing loss of land area and threaten the surrounding environment. In essence with the condition, Marfai et al., (2011) declared that the beach geomorphology in Batang Regency is relatively gentle with quite strong current.



Picture 2.5. Map of Coastline Changes 2019 -2021 in Batang Regency, IJOCE (2022)

The coastline changes in Batang Regency can be attributed to a combination of natural and human-made factors. Naturally, the land slope in this region has been shaped significantly by winds blowing perpendicular to the coast, contributing to the dynamics of erosion and deposition. This wind action not only influences sediment transport but also plays a crucial role in shaping the coastal landscape. Observations indicate that nearly the entire coastline is undergoing changes, with abrasion—a process where material is worn away—being more prevalent than accretion, where sediments are deposited. This imbalance suggests that the coastline is under pressure, leading to the loss of land in certain areas while highlighting the need for effective management strategies to mitigate further erosion and preserve the coastal environment.

2.3. Ecosystem in Coastline of Batang Regency

Batang Regency has various biodiversity that compose the ecosystem that exist in the coastal area. Regency that stretches across five sub-district administrative areas such as Batang, Tulis, Subah, Limpung, and Gringsing District). More than 101.814 people living under 20 villages or sub-districts, which reaching $\pm 10,961$ people as fisherman (KKLD Batang, 2006). However, coastal livelihood in Batang Regency has coexist with the coastal

ecosystem that compose natural form of habitat. The components of ecosystem could be various, such as:

1) Coral Reef Ecosystem

The coral reef ecosystem in the coastal area of Batang Regency, located on the northern coast of Central Java, Indonesia, is a vibrant and diverse habitat teeming with marine life. This ecosystem is characterized by its complex structure formed by corals, which provide shelter and food for a variety of species, including fish, crustaceans, and molluscs. The warm waters of the Java Sea and the presence of various reef-building corals contribute to the high biodiversity found in this region. These reefs play a crucial role in maintaining ecological balance, protecting shorelines from erosion, and supporting local fisheries, which are vital for the livelihoods of coastal communities.

Celong Beach is one of the types of a rocky beach that serves as a habitat for coral reef ecosystems. The rocks on this beach function as barriers against currents and waves, reducing abrasion, and providing shelter for marine organisms that prefer sandy (*Psammophil*) and rocky (*Lithophil*) environments. Rocky beaches can also be found between Ujungnegoro Beach and Sigandu Beach, known as Maeso Reef. In the waters around Maeso Reef, there are many jellyfish, indicating good water quality and minimal pollution. This area, extending from Maeso Reef to Ujungnegoro, is very suitable for developing marine aquaculture, such as grouper, snapper, and seaweed. Additionally, there is also Kretek Reef in the vicinity.

2) Mangroves Ecosystem

As a primary barrier and natural coastal protection, mangroves ecosystem become one of the important marine biotas who can maintain the healthiness rate of coastal area. Mangroves are specialized trees that flourish in saline conditions and are well-

adapted to changing tidal environments. They offer critical habitats for numerous species, such as fish, crustaceans, and birds, while also serving as nurseries for various marine organisms. The intricate root systems of mangrove trees play a crucial role in stabilizing shorelines, mitigating erosion, and acting as natural defences against storm surges and tidal waves, thereby providing essential protection for coastal areas.

The mangrove ecosystem in Batang Regency consists of three components: major, minor, and associative species. Major component species identified in the field such as *Rhizophora Mucronata*, *Rhizophora Apiculata*, *Avicennia Marina*, and *Bruguiera Cylindrica*, which together make up a significant portion of the mangrove vegetation in the region. The only minor component species found in the mangrove ecosystem of Batang Regency is *Excoecaria agallocha*. Associative species present in the area include hibiscus, ketapang (*Terminalia catappa*), and sea pine (*Casuarina equisetifolia*).

However, the mangrove ecosystem in Batang Regency faces significant threats due to human activities and environmental changes. Coastal development, deforestation for agricultural expansion, and aquaculture practices have led to the degradation and loss of mangrove habitats. Pollution from industrial and urban runoff further exacerbates the situation, impacting water quality and the health of the ecosystem. Conservation efforts are being implemented to restore and protect mangrove areas, including reforestation initiatives and community engagement in sustainable practices. These efforts aim to ensure the resilience of the mangrove ecosystem, which is crucial for the livelihoods of local communities and the overall health of the coastal environment.

3) Estuary Ecosystem

The estuary ecosystem could be described as an area where rivers meet the sea, serves as a dynamic and productive environment that is crucial for both ecological and economic stability. Estuaries are characterized by their brackish waters, which result from the mixing of freshwater from rivers and saltwater from the ocean. This unique environment supports a rich diversity of flora and fauna, including various fish species, crustaceans, molluscs, and migratory birds, making it an important habitat for wildlife. The nutrient-rich waters and sediment in estuaries promote high primary productivity, supporting both aquatic and terrestrial food webs. Additionally, the mangroves and marshes often found in estuarine areas provide critical nursery grounds for juvenile fish and other marine organisms, contributing to the overall health of nearby marine ecosystems.

The benefits of the estuary ecosystem for the coastal area of Batang Regency are manifold. Economically, estuaries are vital for local fisheries and aquaculture, providing livelihoods for many coastal communities. They also support recreational activities such as fishing, birdwatching, and tourism, which can contribute to the local economy. Ecologically, estuaries act as natural buffers, protecting coastal areas from erosion and mitigating the impacts of storms and flooding. They help filter pollutants from runoff, improving water quality in both freshwater and marine environments. Furthermore, estuaries play a critical role in carbon sequestration, helping to combat climate change. Overall, the estuarine ecosystem in Batang Regency is essential for sustaining biodiversity, supporting local economies, and maintaining the resilience of coastal areas.

2.4. Main Purpose of PP No.26/2023

Government Regulation (PP) No.26/2023 explained its finest purpose to support the rehabilitation process of sedimentation on coastal ecosystem. Indonesia has a long coastal area that stressed from West to Eastern part of the island, especially in Java island. Based on the explanation by Ministry of Fisheries and Marine Affairs (2023) on their seminar in August 2023, the urgency of this policy consist of several factors, such as:

1. Restoration of fish spawning areas quality
2. Supporting the quality of conservation area
3. Reconstructing ecological impact
4. Reducing buildup of sand material due to volcanic eruption or similar natural processes
5. Top risk mitigation surrounding environment buildings and marine infrastructure

The Ministry of Fisheries and Marine Affairs' objectives closely align with the overall goals of PP No. 26/2023, which focuses on institutionalizing and implementing sustainable sediment management practices to safeguard and restore Indonesia's coastal ecosystems. With the increasing influences of both natural and anthropogenic factors, this regulation has been very important in mitigating the increased challenges of marine and coastal resource management in Indonesia.

Among the objectives of PP No. 26/2023 is the establishment of fish spawning areas and assistance to the quality of conservation areas tied together to apply vibrant ecosystems for marine biodiversity. As a direct consequence of improving the sediment conditions, the regulation includes restoring important habitats for fish species, thereby supporting the industry's continuity of marine life as it relates to

fishing, which is an important segment of the local economies. This vision indeed goes in line with the policy's tenets to address environmental issues and also in bolstering coastal communities against hazards.

The other concern of the policy is reconstructing ecological impacts, an aspect important for reversing the impacts of poor sediment management, over-exploitation, and climate change. PP No. 26/2023 encouraging coastal restoration and marine ecosystems which they can rehabilitate their ecological functions, thereby providing benefits for conservation and sustainable management of coastal resources.

Aside from these, it shows how the regulation would sustain the benefits of sedimentation management to mitigate the effects of buildups of sand materials deposited by volcanic eruptions or similar natural processes and damage or risks to nearby buildings and marine infrastructure.