



Ministry of Municipalities Affairs
and Urban Development



Kingdom of Bahrain



Arad Bay Project

Development of the Protectorate Area in Muharraq-Bahrain 2013









His Royal Highness Prince
Khalifa bin Salman Al Khalifa
The Prime Minister



His Majesty the King
Hamad bin Isa Al Khalifa
The King of Bahrain



His Royal Highness Prince
Salman bin Hamad Al Khalifa
The Crown Prince and First Deputy Prime
Minister and Deputy Supreme Commander

Kingdom of Bahrain

Arad Bay Project

Development of the Protectorate Area
In Muharraq - Bahrain 2013

Preface

The International Award for Liveable Communities (LivCom Awards) carried out jointly with United Nations Environmental Program UNEP. The LivCom Awards were launched in 1997 and is the World's only Awards Competition focusing on International Best Practice regarding the management of the local environment. The objective of LivCom is to develop and share International Best Practice, with the further objective of improving the quality of life of individual citizens through the creation of 'liveable communities'. Since 2007 UNEP has collaborated with the LivCom Awards, when a Memorandum of Understanding was signed between the two Organizations. LivCom is non-political, embracing all nations and cultures, and over 50 countries have been represented within the Awards.

Each year communities that have met at the Finals of The LivCom Awards have exchanged Best Practice and practical experience and have joined forces to address mutual challenges. These partnerships have inevitably led to mutual technical advances and more effective use of resources, including finance, and the improvement of the quality of life within a community. The LivCom Awards are the only forum in which International Best Practice may be observed and developed, and participation in the Awards is an investment in the future of a community. The Awards are in three types: Whole City Awards, Project Awards, and Bursary Awards. Set of regulations and criteria have been introduced as well as judging criteria. Communities of different sizes and in different cultures have different structures and responsibilities.

Muharraq town is gifted with a large diversity of economic activities by virtue of its geographical location and historical value of the city. This historical fortunate position has been very influential on the country's community activities. In the last two decades, the city has witnessed a very active process to revive and safeguard heritage, as well as enhance the quality of life for the inhabitant, by building parks and gardens within its neighborhoods as much as possible. Generally, the life style of Muharraq community can be described as tolerant and supportive to each other, as well as friendly; expatriates consume 12% of Muharraq's inhabitant from over 90 nationalities.

The Arad Bay Project developed the protectorate area in Muharraq town, Bahrain. The site, which measures 30 acres of land surrounding 100 acres of bay seawater, is now suitable for public recreational activities, and for supporting the marine ecosystem conservation project. One of the project's objectives was to turn the bay into a natural park for marine plants and life, especially those of fish, prawns and migratory birds.

This booklet is a synopsis from the report of Arad Bay Project Development of the Protectorate Area in Muharraq – Bahrain, which highlights the best practices onto ensuring a sustainable environmental community in Bahrain, with Arad Bay chosen as the project to showcase such efforts and how it became a truly livable community. Arad Bay Project has reached the final on the Natural Projects categories, which will take place at Xiamen, China (28th November – 2nd December, 2013).

Falah Al Kubaisy, Ph.D.

Development Advisor,
Ministry of Municipalities Affairs and Urban Planning
Kingdom of Bahrain

Arad Bay Project

Development of the Protectorate Area in Muharraq - Bahrain

Summary:

The Arad Bay Project developed the protectorate area in Muharraq city, Bahrain. The site, which measures 30 acres of land surrounding 100 acres of bay seawater, is now suitable for public recreational activities, and for supporting the marine ecosystem conservation project. One of the project's objectives was to turn the bay into a natural park for marine plants and life, especially those of fish, prawns and migratory birds. Muharraq is made up of residents from over 90 nationalities and is a home to both the international airport and the sea port.

Enhancement of the Natural and Built Landscapes: Due to low rainfall and land scarcity, there is no large abundance of greenery in Bahrain. Muharraq currently has 0.5m² per capita ratios, higher than that of the Kingdom as a whole, which is at 0.3m² per capita. This was achieved through planting the streets with trees and palm trees, as well as increasing the number of gardens and parks.



Figure 1: Location of the project which is close to the traditional town and large catchment area of Muharraq.



Figure 2: Transformed the neglected bay into a clean natural park for marine plants, fish and migratory birds.

Environmental Best Practices: Several best practice and environmental initiatives have been carried out recently in Muharraq City. The first of these is an initiative related to the project Signature Bahrain. It has started a movement to support the environmental organisations and individuals who are making a difference to Bahrain's environment; where place and memory of sea and fishing life are precious to the community.

Arts, Culture and Heritage: Muharraq is rich in heritage and full of cultural activities, especially art, craftsmanship, and folk dance. The project can provide a place for those who are eager to explore their artistic or cultural interests. Events can also be held for the public to enjoy, small free-of-charge ones for the neighborhoods and larger events for people from across Bahrain to attend. For a

large part of recent history, Bahrain was celebrated for its pearls. Pearl diving was first mentioned in Assyrian texts dating back to 2000 to BC. The Roman author Pliny commented that Bahrain was 'famous for the vast amount of its pearls.' Between 1850s and 1930s, pearls were more precious than diamonds. Jewelers as famous as Cartier used Bahraini pearls.

Noteworthy, Bahrain was number one in pearl production. Last year, Bahrain's pearling path was inscribed as a UNESCO World Heritage Site. It was used by pearl divers for much of Bahrain's history, and the path consists of a variety of buildings, oyster beds, the Bu Mahir fortress and a segment of the coast.

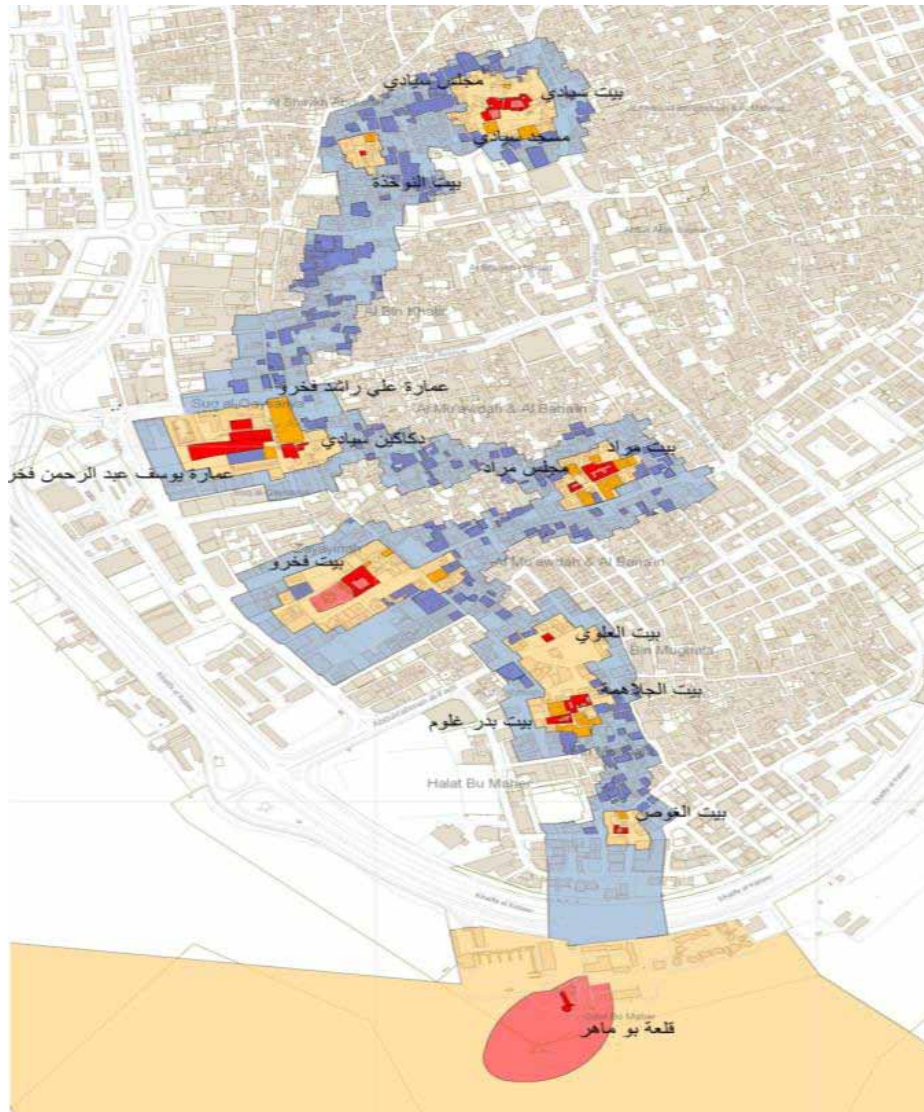


Figure 3: one of the largest conservation projects in Muharraq is under development by the Ministry of Culture. Aligning with the NPDS and Muharraq guiding concepts and principles, this project is one of the most important priority areas that facilitate area connectivity and mobility in regards to heritage. The plan creates pedestrian zones and links within the old area that preserves and enhances the distinctive character of the urban heritage. This project was submitted to UN -UNESCO to be recognized as a 'World Heritage Site'. Ref.: Ministry of Culture, Bahrain.

Health and Lifestyle: Bahrain has free health care and education services for all residents, through the state's social welfare services. The Ministry of Health also issued various policy directives to encourage a more comprehensive, integrated, responsive and collaborative partnership approach to the population's health - delivered through a National Health Plan. Such plan would shift the emphasis from acute care interventions to community-based programmes promoting health.



Figure 4: The 3 km long walkway is well - managed and open to the public 24 hours, seven days a week.

The Arad Bay project falls in line with this directive, as it encourages local community members to work - out and integrates daily exercise, such as walking, into day-to-day life activities. These exercises undoubtedly prevent illnesses down the line, especially cardiovascular diseases and diabetes, which are a result of two-thirds of the population being overweight.

Community Participation and Empowerment: Various agencies had to deeply and consistently cooperate in order to work successfully, and the support of the community was sought early on. Private companies on the island donated the cost of two bridges that now connect adjacent neighbourhoods across a highway.

Strategy Planning: Bahrain's National Development Planning Strategy (NDPS) has designated several islands close to Muharraq city as protectorate areas in order to maintain their biodiversity, indigenous planting, and unique psyches. Furthermore, large areas of the sea will be designated to revive the natural pearl industry.



Figure 5: Two bridges connect adjacent neighborhoods across a highway was donated by private companies in Muharraq.



Arad Bay Project

Development of the Protectorate Area in Muharraq - Bahrain

Introduction:

Muharraq literally translated as ‘place of ashes’, served as the country’s capital until 1923. The city is located on Muharraq Island and has long been a center of religiosity. It is gifted with large diversity of economic activities by virtue of its geographical location and the historical value of the city, which have been incredibly influential on the country’s community activities.

The island also holds enormous cultural significance in Bahrain, as it houses two important historic sites - Abu Maher and Arad fortresses. Arad Fort was built in the 15th century, before the Portuguese invasion. While it currently overlooks sea passages of Muharraq’s shallow seashores, in the past, there was an inaccessible marine channel, which was controlled by the local people to prevent ships from breaking through to the island.

The island of Muharraq is the third largest in the archipelago of Bahrain, after eponymous Bahrain Island and Hawar Island. It is a governorate defined by unique island clusters and distinct historic communities with high quality neighborhoods. Being home to both the Bahrain International Airport and the Khalifa bin Salman sea Port, it is also an international gateway to the world and a major emerging industrial employment center.

In general, the lifestyle of the Muharraq community can be described as tolerant, supportive and friendly. The people of Muharraq are culturally quite conservative, in line with Arab and

Muslim customs and habits. Moreover, expatriates from over 90 nationalities live in Muharraq, constituting 12% of its inhabitants.

The impact of the land-use on the environment has been taken into account in the enforcement of urban planning settings within all the regions of Bahrain. Urban requisites in planning have been set to reduce environmental damage related to land-use. The livable community of Muharraq has a prominent impact on the urban and economic development of the province and on the role it has been playing in past and present on the Kingdom’s economic life, which comprises many modern economic plants, handicrafts and traditional industries. Developing the existing ‘Dohat Arad’ area yielded several important outcomes. A 3km. public walkway was created, along with additional and recreational facilities. These include a playground, medical facility shops, pedestrian bridges, parking spaces, amenities, lighting and other related services.



Figure 6: View of Muharraq with the skyline of Manama in the background from Arad Bay

1. Enhancement of the Natural and Built Landscapes:

Green zoning has recently become a priority in recent city plans. Due to the scarcity of land and space in Bahrain as well as unsuitable soil and low rainfall, green areas, parks and public gardens were not heavily featured in previous plans.

Location, Topography and Inhabitant: Muharraq has simple topography and undulating mean heights ranging from 1.5 to 2.5m, with sea levels rarely rising above 5m. Having low rainfall and no running watercourse or flowing valleys, the coasts are impacted by seawater during high tidal movement, leaving behind salt content spots and tidal wetlands. The inhabitants of Muharraq province are distributed over villages and neighborhoods close to the traditional city Muharraq. Due to the urbanization expansion, the surrounding villages have gradually become dwelling suburbs of the city.

Muharraq has a population of 189,114 inhabitants who represented 14.3% of the Kingdom's total population in Bahrain in 2010; with an area of over 59 sq.km. Population is projected to reach 384,000 by 2030.



Figure 7: Location of the Project which is close to the traditional town and large catchment area of Muharraq Town- Bahrain

1.2 Green Area: The per capita share of gardens and parks has drastically shrunk. However, as a result of recycled and treated water being provided for usage a few years ago, Muharraq's municipality was able to expand green areas and roadside planting. Main streets have been planted on either side and in the middle, resulting in a small number of gardens and parks in urban areas. Furthermore, the city also currently has a 0.5m² per capita ratio, higher than that of the Kingdom as a whole, which is at 0.3m² per capita in gardens and parks.

New projects in Muharraq have been undertaken as part of the municipality urban development strategic plan supported by the two strategic initiatives which are set by the municipality. These will increase the number of green spaces and general coastal beaches. Thus, the per capita share of inhabitants for gardens and parks will reach 1.25 m² in 2015, an acceptable rate for a country that lacks freshwater and has very limited rainfall. Despite land and water scarcity, intensive efforts have been made by municipal authorities to provide green areas through increasing the number of parks and gardens.

1.3 Sustainability Context: A fundamental criterion of sustainability and visibility in Muharraq's community policies is the preservation, creation and management of a sustainable society. Sustainability within this context is demonstrated by the past, present and future conditions of landscapes and heritage that are developed to encourage highly liveable communities.

Despite Muharraq being a city with a compact nature of urban structure, especially in the traditional towns, the community has implemented a flourishing green policy and strategy for every land available to the public. These policies have contributed to the community's sustainability, and are the tools that managed

to produce a sustainable countryside for community policies, especially those close to the waterfront. Furthermore, in order to treasure the area's history, roots and traditional practice, the municipal council has adhered to the public's wishes and renovated the fishery ports in Muharraq. Traditional places that live in memories are precious to the community, and thus have been protected.



Figure 8: Such landscape in harsh climate is available thanks to recycled treated water.

2. Arts, Culture and Heritage: Muharraq is rich in heritage and full of cultural activities, especially art, craftsmanship, and folk dance. The Sumerian water god Enki was associated with Bahrain when it was still known as Dilmun, and said “*Let the city of Dilmun become the port for the whole world.*”

In the 8th. Century B.C., Dilmun was a vassal of Assyria and by 600 B.C., Dilmun was part of the Neo-Babylonian Empire. It is believed to have been the location of the ‘Garden of Eden’ and was described as paradise in the Epic of Gilgamesh. Bahrain’s first recorded poet was Tarafah ibn al ‘Abd (549AD).

‘Ancient Indus Valley and Mesopotamian traders arrived in Dilmun to trade copper and returned home with Dilmun seals featuring stylised animals and feasting gods. Various invaders, including Kassites [Babylonia], Assyrian, Greek, Parthian and Portuguese built settlements and contributed to the island’s ever-expanding collection of pottery and artifacts.’

Bahrain’s culture is predominantly Arabic and Islamic, and similar to that of its Gulf neighbours. It has also grown largely cosmopolitan in the past two centuries, with a large expatriate community including those from India, Pakistan, Iran, Egypt and Malaysia.

A high-density population and large catchment area surround the project; thus, there is easy access for all Muharraq residents to enjoy having a place for leisure where they can demonstrate cultural activities including arts, music and dance. Furthermore, the 3km walkway has become an important destination for people who have health problems and for those who walk for the purpose of exercise.



Figure 9: Different ethnic groups celebrating the Heritage Festival in Muharraq.



Figure 10: Creating open space for gathering and celebration events close to the beach.

3. Environmental Best Practices: The Public Commission for the Protection of Marine Resources, Environment and Wildlife (PMEW) is a governmental body responsible for every issue related to the environment in Bahrain. PMEW assists the government of Bahrain with the conservation, as well as management, of natural environments and resources, wildlife and bio-diversity in the Kingdom. This is initiated through conducting scientific studies, developing plans for the future, sustaining development, promoting environmental awareness and developing clear strategies. Various economic, political and social aspects will be enhanced when there is a balance with the presentation of the environment.

Best practices are used to maintain quality as an alternative to mandatory legislated standards and can be based on self-assessment or benchmarking.

Best practices are a feature of accredited management standards such as ISO9000 and ISO14001. Up to April 2013, over 300 companies and enterprises have been certified as ISO 9000 and ISO14001 in Bahrain. All consultants and contractors involved in implementing this project were chosen with regard to accredited management standards.

This is achieved by providing sustainable development policies, such as waste management, water conservation and reduction, air quality, energy conservation and conversion programs for efficient lighting and reduction of light pollution.



Before



After

Figure 11: Arad Bay Protectorate Area Project: consists of a 3Km. walkway, parks, and 2 crossing bridges (Sustainable Scenery for Community).

The project led Bahrain to having unique landscape architecture and a conservation design public park project. The site measures 30 acres of land surrounding 100 acres of picturesque bay seawater, for public recreation and marine ecosystem conservation project, and was completed in 2011. The aim of the project was to turn the bay into a natural park for marine plants, fish, prawns and migratory birds.

Several best practices and environmental initiatives have been carried out recently in Muharraq City. The first of these is an initiative related to the Arad Bay project -called Signature Bahrain. It has started a movement to support the environmental organisations and individuals who are making a difference to Bahrain's environment. Other initiatives like Bahrain Green Awards have been created as a platform to enable green initiatives to be showcased to inspire and stimulate others for the benefit of the environment locally, regionally and globally. Bahrain Green Awards is a contribution to the cause; however, it requires collective efforts and active participation of Bahrain's business community to sustain and make it a national success.

4. Community Participation and Empowerment: The ongoing effort to empower people to create positive social change is clearly articulated in the work of Muharraq community. Whether effectively organising the voices of private citizens and expatriates or by making people realise that contributing to society also benefits the self, social entrepreneurs are empowering a culture of participation. A series of meetings have been set for public participation to review the National Development Strategy Plan (NDSP) for Muharraq with its impact on the Arad Bay development project. In cooperation with Muharraq's Municipality Council and several NGOs, the work plan of implementation, with its technical reports regarding the sustainable environment has been examined, reviewed and approved.

Municipal councillors from each neighbourhood surrounding the project's area met members of the community to ensure that the gardens and facilities provided would be adequately maintained. These are linked through the pedestrian link system with the whole protectorate project. The community is encouraged to take care of the gardens and walkways to ensure positive feedback on cleanliness and order by the public at large. There is also a strong vibrant citizen sector in Muharraq—individuals, families and communities who devote their time and energy to public causes.



Figure 12: Community participation approving traditional area in Muharraq.



Figure 13: Landscape design and seasonal planting are a routinely managed in the site.

These citizens attend town meetings, monitor elections, volunteer at schools, and contribute to bettering society. The rise and spread of new democracy in Bahrain has made the people not only possible, but absolutely necessary. Through their civic engagement, people help society grow; they hold their government to standards of accountability, transparency, and responsiveness. This emerging sector has been growing at an unprecedented rate over the last three decades and is reorganising the way the work of society gets done.

Since the last decade, NGOs have been active in promoting awareness in the field of sustainable environment and labor sector in a non-discriminatory, non-political and non-profit making manner. NGOs are widely recognized in Muharraq's community as a leading impartial corporate sector group. The project generated high cooperation between various agencies and also appealed active support of the community. The cost of the two bridges which connect adjacent neighborhoods across the highway (as seen in Figure 5 in summary), was donated by private companies in Muharraq.

5. Health and Lifestyle:

In recent years, public agencies and NGOs have been exploring and adopting best practices when delivering environment, health and human services. In these settings, and in this context, the use of the term “best practices” is often used interchangeably. It is time to consider setting serious contributions towards safeguarding the environment for the present and future generations.

Quality of life in Bahrain means achieving high-level of human development. Assessing the quality of life in Muharraq will be based on the review of what has been accomplished in meeting the UN Millennium Development Goals. More importantly, economic and social data as well as survey findings have been extensively set, showing that there are currently no meager income problems that exist or what is referred to as extreme poverty. This is achieved by government efforts and the poverty eradication programs which were initiated in the previous decade to provide in every field and for every segment in the society. The free for all health care and education services through the state’s social welfare services, include productive families or ‘Youth Employment’ programmers - identified as Tamkeen (an empowerment agency).

The health authority has issued a series of policy directives that reflect a more comprehensive, integrated, responsive and collaborative partnership approach to the population’s health delivered through a National Health Plan that incorporates a shift in program emphasis from acute care interventions to community based programs of health promotions and preventions. The Ministry of Education has embraced such policy direction and its applicability to challenges in education along with the urgent need for a National School Health Program.

Furthermore, almost two-thirds of adults in Bahrain are either overweight or obese, which can lead to cardiovascular diseases, cancers and diabetes. The combined burden of these diseases is challenging to the country. The Arad Bay project provides an opportunity and a place for children from many schools across Muharraq to exercise and enjoy playing outdoors in the fresh air, while simultaneously being a suitable place for adults to exercise. The Ministry of Health and the Ministry of Education created a joint committee in order to monitor health promotion at schools. Other programmes include:



Figure 14: The project provides daily walking habits and activities.

1- Healthy Living Program: This program is directed to women to supply them with best practices and tools that will help them maintain a healthy life – emotionally, mentally and physically. Working in an alignment with Michelle Obama’s anti-obesity campaign ‘Let’s Move’ participants will learn the nutrition and benefits of an active lifestyle.

2- ‘Lose Weight, Begin a Fresh Start’ A campaign established by the community to offer advice via Smartphones on daily and weekly basis in order to slim down healthily, and in turn benefit from better concentration, more energy and a faster metabolism.

6. Strategy Planning:

It is quite apparent that the National Development Planning Strategy NDPS in Bahrain include large pre-determined areas which are reserved lands intended for environment, heritage and archeological purposes. There are also large areas of natural reserve lands such as Hawar Isles that are up to 63.7 sq.km rating 8.4% of Bahrain's area; another large area is in the open sea designated to cultivate natural pearls in the Arabian Gulf. The NDPS has designated the bay area as a protectorate in order to maintain its biodiversity, indigenous marine life, plants and migratory birds.

The integration of Land Use and Transport Strategy with the concept of live, work and play provides benefit to the residence for shorter travel time and better mobility. The reduction of trip generation reduces the proportion of journeys made by car and increases the proportion of walking, cycling or using public transportation. It is a very important strategy adopted in Muharraq, and the Kingdom as a whole, so as to ensure that the plan is structured and planned in such a way that the need for private vehicular travel is minimized. Wherever possible, new developments are located in areas that ensure integration of service requirement in proximity to the catchment area.

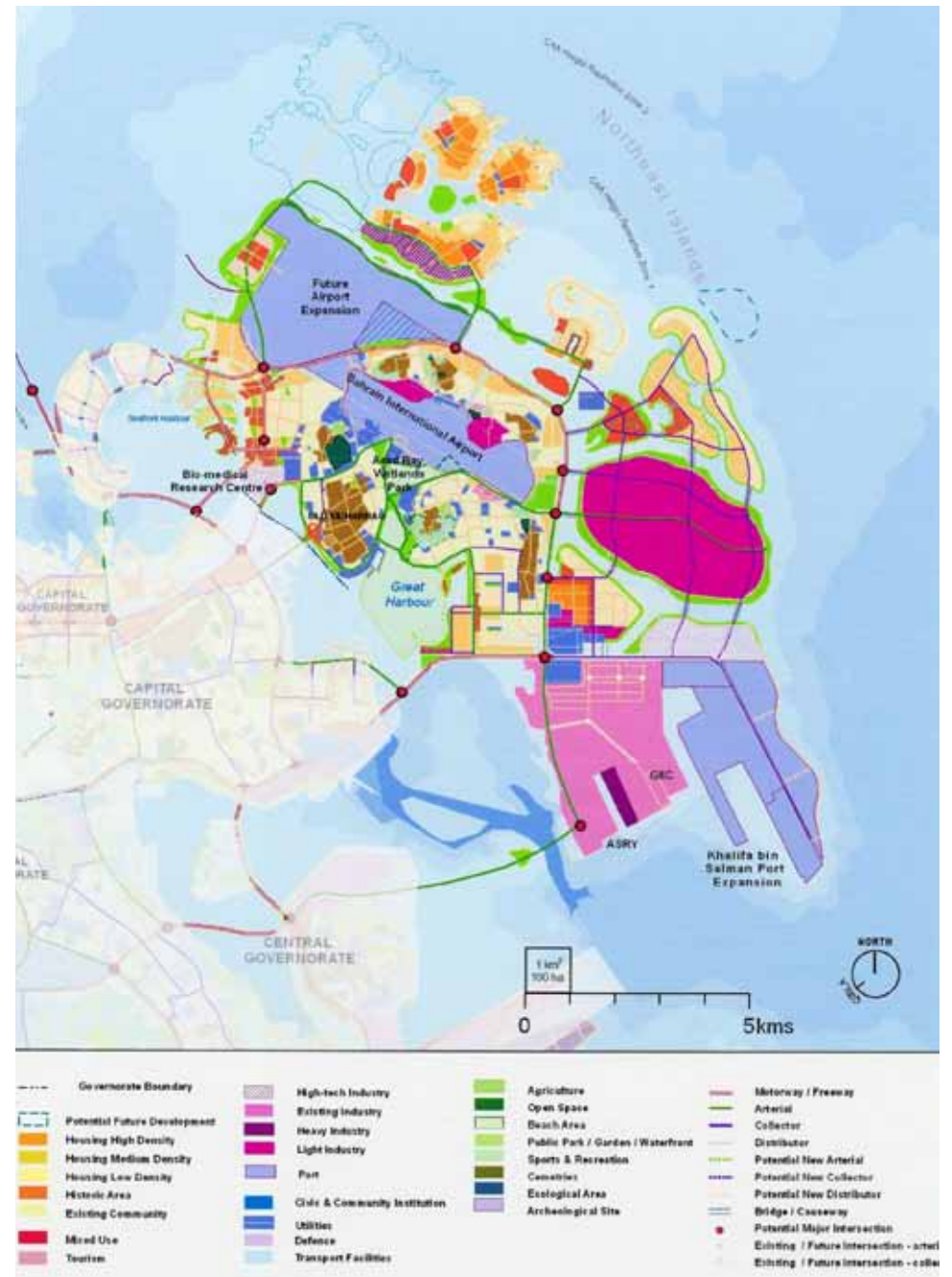


Figure 15: Muharraq Governorate land use strategy 2030.









© Published by Ministry of Municipalities Affairs and Urban Development 2013