

SITUATIONAL ANALYSIS OF NELSON MANDELA BAY BUILT ENVIRONMENT – 2018

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1. CURRENT PERFORMANCE OF BUILT ENVIRONMENT

1.1 Situational Analysis of Nelson Mandela Bay

STATS SA describes Nelson Mandela Bay as follows:

“Nelson Mandela Bay Municipality is located on the south- eastern coast of Africa in the Eastern Cape. It is one of eight category A municipalities in South Africa. In 2001, the Nelson Mandela Bay Metropolitan Municipality was formed as an administrative area covering Port Elizabeth, the neighbouring towns of Uitenhage and Despatch, and the surrounding agricultural areas. Nelson Mandela Bay is a major seaport and automotive manufacturing centre.

The Coega Industrial Development Zone (IDZ) is situated within the Nelson Mandela Metropolitan Municipality. The initiative is a multibillion-dollar industrial development complex customized for heavy, medium and light industries. It is adjacent to a deepwater port, the Port of Ngqura, and covers 110 km² of land. The city’s unique advantage of possessing two ports, namely Port Elizabeth Harbour and Ngqura, creates an opportunity for the city to establish a strong and vibrant maritime sector”.

A situational analysis of Nelson Mandela Bay, covering various socio-economic trends, is presented below.

Demographic Background

(a) Current situation

The following statistics are relevant:

- Population - 1,271,776 (STATS SA 2017)
- Households (formal) - 344 305 (STATS SA 2017)
- Households (total) - 365 973 (STATS SA 2017)
- Area covered - 1 959 km²
- Unemployment rate - 34,3% (STATS SA 2017)

The population trend in Nelson Mandela Bay is reflected in the table below:

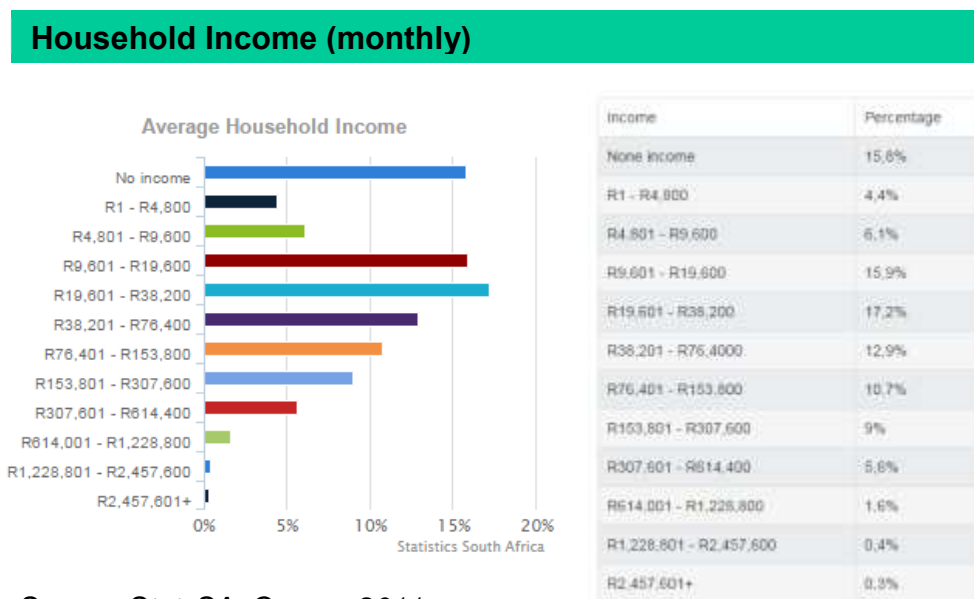
TABLE 1: Population Trends in NMBM (2001 to 2011)

Year	Total	Asians / Indians (%)	Black Africans (%)	Coloureds (%)	Whites (%)
2001	1 005 804	1.12	58.93	23.43	16.51
2007 (CS)	1 050 933	0.92	60.40	22.56	16.12
2011	1 152 112	1.11	60.13	23.56	14.36
2015	1 224 630	1.1	56.0	24.1	18.8

Sources: StatsSA (Census, 2001), StatsSA (Community Survey, StatsSA Mid-year Estimates and StatsSA (Census, 2011)

The above trends show that there is very low population growth and this trend will continue into the near future.

FIGURE 1: Household Income Distribution (2011)



Source: StatsSA; Census 2011

The above figure shows that 26.3% of NMBM households earn less than R9 600 per month and are therefore potentially dependent on subsidised public sector housing.

Nelson Mandela Bay has the lowest proportion of informal households among South African Metropolitan Municipalities, having significantly reduced the numbers since 2001 (SACN, 2016). In addition, the average number of people per household declined from 4,25 in 1996 to 3,55 in 2011.

The life expectancy among Nelson Mandela Bay residents is 59,3 years and 53,7 years for females and males respectively. This is the same as for Buffalo City. By comparison, Cape Town has a life expectancy of 70,1 and 64,2 years, while Mangaung has a life expectancy of 52,7 and 49,6 years for females and males respectively (SACN, 2016).

Regarding education, in 2011, 19,7% of Nelson Mandela Bay's population had attained matric, whilst 6,8% had a higher education (SACN, 2016).

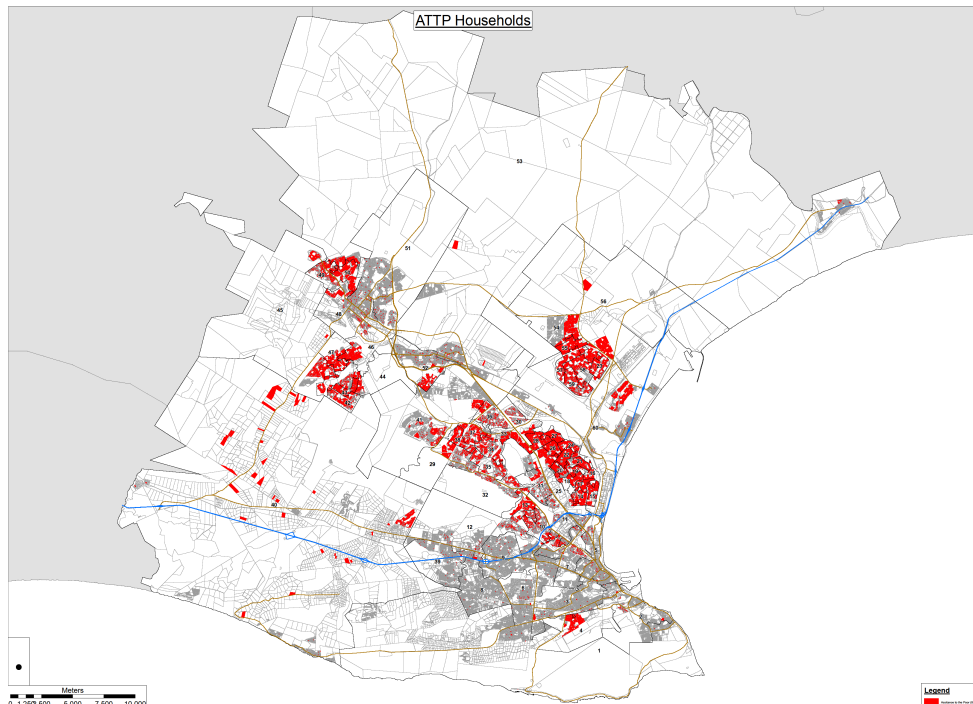
In analysing non-school going residents, 3% had no schooling, 13% had Grade 7 or less (Primary School level), while 75% had a school education of Grade 12 or less (Secondary School level) (STATS SA, 2011).

The following aspects support the information provided above and serve to illustrate the socio-economic trends in Nelson Mandela Bay.

(b) *Indigent Assistance / Assistance to the Poor (ATTP)*

Poverty alleviation in line with national government policy is a priority of Nelson Mandela Bay. For this reason, the annually gazetted Equitable Share Grant is used to provide assistance to poor households who cannot afford to pay for basic municipal services, rates and taxes. Nelson Mandela Bay Municipality has an indigent programme known as Assistance to the Poor (ATTP). This is essentially a subsidy programme for qualifying indigent formal households to obtain a subsidy in line with a Council approved policy. The number of indigent households, as reflected in the ATTP programme of the municipality, provides a valuable yardstick to measure the wealth or financial state of residents in the NMBM. It also reflects the economic situation in the municipality.

FIGURE 2: Spatial Distribution of ATTP Programme Beneficiaries



Source: NMBM CorpGIS, 2018

The figure above is a spatial representation of the location of households that benefit from the indigent subsidies under the ATTP programme. This correlates with the results of demographic studies and confirms the poverty levels that still exist in most of the previously disadvantaged communities of the city.

The figure further indicates the areas of the city where interventions regarding spatial targeting are required. This BEPP reveals the programmes for targeting these areas.

The Nelson Mandela Bay Municipality had 373,393 formal households by 30 June 2017 of which 112,419 were registered as indigent households. This means that 30% of formal households are not in a position to pay for municipal services.

This number excludes informal households for which basic services are also rendered at no cost.

Households that qualify for the indigent subsidy in terms of the municipal ATTP policy, receive financial assistance from the Municipality. This financial assistance comes from the Municipality's Equitable Share Allocation.

In recent years, the number of ATTP beneficiaries has grown. Each new successful ATTP applicant's outstanding debt is written off as part of the ATTP process. This results in a concomitant outflow from the Equitable Share allocation and thus less of this grant can be used for repairs and maintenance. This results in an increase in municipal repairs and maintenance backlogs.

The Indigent register grew by 27 158 households in the first half of the 2017/18, which is a growth of 30.6% in comparison with the 2015/16 Indigent Register. This increase is directly linked to the change in the indigent policy that Council passed prior to the August 2016 local government elections. The change in policy allowed households with a property value below R100,000 (irrespective of the household income) to automatically qualify as "indigent" and therefore qualify for the ATTP subsidy and, in addition, for any municipal debt to be written off. The policy amendment has had significant negative fiscal impacts for the City in addition to customers in debt that are employed and not necessarily indigent having an automatic write off of debt.

The current Council has reviewed and amended the ATTP policy to ensure the verification of all new beneficiaries that qualified as a result of the change in the indigent policy, to ensure that the household income does not exceed the value of two state pensions. The policy change amounted to a budget impact of -R194,209,632 in 2017/18.

Currently approximately 30% of formal households in the city cannot afford basic services in terms of the indigent program. This is an unsustainable situation that requires urgent intervention.

The following table and figure illustrate the number and value of Equitable Share subsidies allocated to ATTP households.

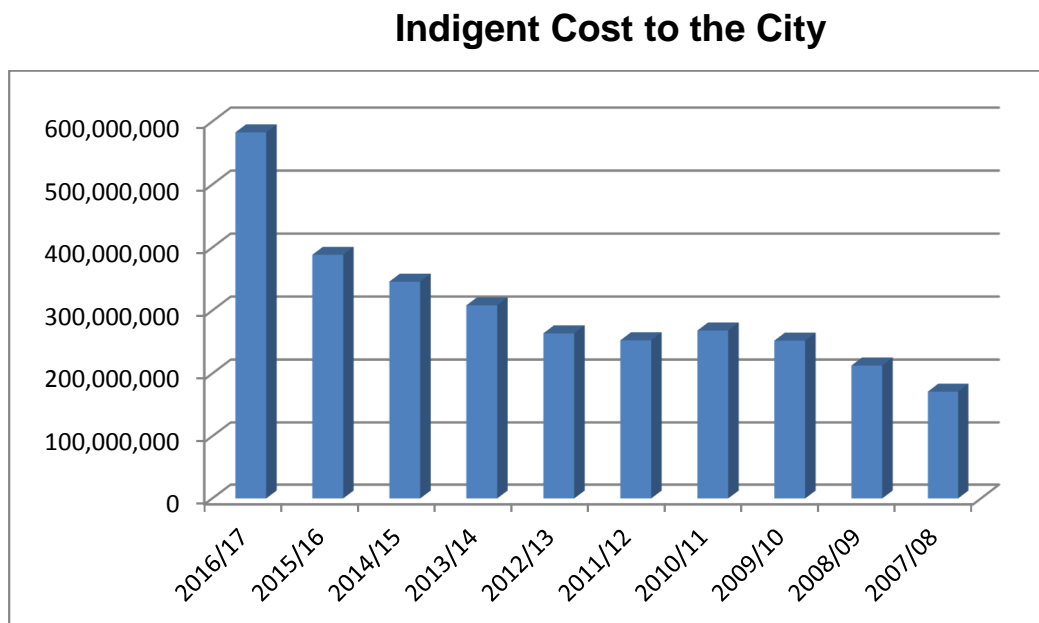
TABLE 2: ATTP - Number and Value of Financial Assistance to ATTP Households

Description	2016/17	2015/16	2014/15	2013/14	2012/13
Number of Indigents (closing numbers)	115,934	88,776	86,428	85,022	71,551
Year-on-Year growth (decline) in indigents	27,158	2,348	1,406	13,471	-849
Actual Indigent Allocation	582,764,477	388,554,845	345,946,687	308,292,772	263,880,851
Gazetted Equitable Share	798,043,000	774,616,000	761,606,000	743,325,000	729,226,000
% of Equitable Share	73%	50%	45%	41%	36%

Description	2011/12	2010/11	2009/10	2008/09	2007/08
Number of Indigents (closing numbers)	72,400	95,498	108,665	109,534	1,880
Year-on-Year growth (decline) in indigents	-23,098	-13,167	-869	107,654	109,534
Actual Indigent Allocation	252,770,170	268,321,432	252,311,837	212,753,832	171,284,538
Gazetted Equitable Share	656,653,000	602,883,000	466,834,716	382,444,191	291,588,000
% of Equitable Share	38%	45%	54%	56%	59%

Source: NMBM Budget & Treasury, 2017

FIGURE 3: Financial Contributions made to Indigent Households in NMBM



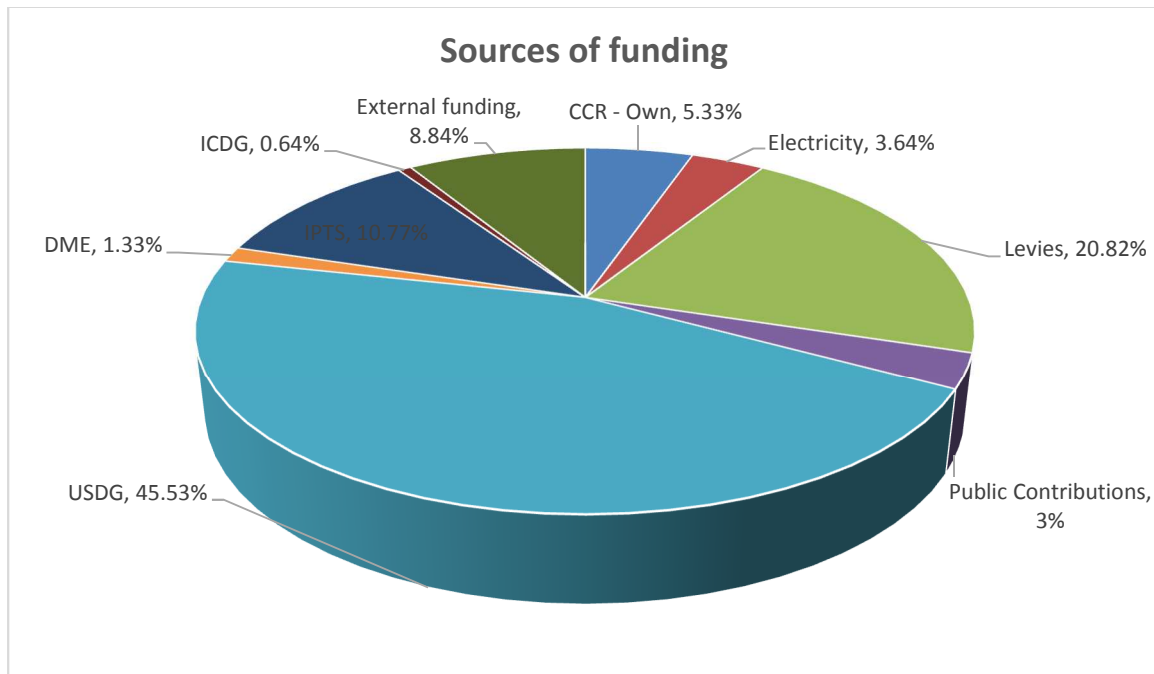
Source: NMBM Budget & Treasury, 2018

(c) Financial Overview of Nelson Mandela Bay Municipality

The total NMBM Draft Capital Budget for the 2018/19 financial year is currently R1.5 billion. However this will increase as the municipality is in the process of sourcing loan funding to supplement the 2018/19 Capital Budget to fund revenue generating projects.

The following figure and table represent the funding sources for NMBM’s Capital Budget – excluding potential loan funding.

FIGURE 4: 2018/19 Draft Capital Budget - Sources of Funding



Source: NMBM Budget & Treasury, 2018

TABLE 3: 2018/19 Draft Capital Budget - Sources of Funding (VAT Incl.)

	Draft 2018/19 Capital Budget	Draft 2019/20 Capital Budget	Draft 2020/21 Capital Budget
Total CRR - 901	89,492,500	93,169,553	67,050,000
Total Electricity CRR - 904	61,000,000	86,000,000	86,000,000
Total Levies Replacement Grant Funding - 959	349,304,348	379,889,896	390,249,887
Total Public Contributions Funding - 923	52,000,000	62,000,000	62,000,000
Urban Settlements Development Grant - 951	763,907,896	802,734,887	846,901,939
Total DME Grant Funding - 953	22,302,609	27,826,087	27,826,087
IPTS Grant - 918	180,621,122	169,569,904	178,340,452
Neighbourhood Development Grant - 919	-	17,391,304	4,347,826
Integrated City Development Grant - 916	10,743,478	16,050,435	16,096,522
External Finance Fund - 962	148,289,700	286,369,700	235,942,700
Total Capital Budget Funding	1,677,661,653	1,941,001,766	1,914,755,413

The table below indicates NMBM to be 78% Grant dependent which is a situation that requires a turnaround strategy which includes building up cash reserves and generating revenue for the City.

TABLE 4: Grant Dependency in NMBM 2018

Grant Dependency		
National Grants	Value	Percentage
Conditional Grants	977,575,105	58%
Unconditional Grants	349,304,348	20%
NMBM Grant Dependency	1,326,879,453	78%

Source: NMBM, 2018

(d) Access to services

(i) Water

- All households located in formalised human settlements have access to water via a connection per erf.
- 100% of households located in informal settlements within the urban edge have access to water within a 200 m radius.
- Informal areas receive water through standpipes (within a 200 m radius) and water tanks, except for communities occupying private land illegally.

(ii) Sanitation

- 100% households are provided with access to basic sanitation (excluding areas serviced by bucket system).
- 8 562 buckets were still in circulation to informal settlements as a means of sanitation as at 31 December 2017.

(iii) Waste management (refuse removal)

- 100% of formal and informal households are provided with a basic level of refuse collection. This excludes informal areas on privately owned erven and erven not earmarked for human settlements development.

(iv) Electricity

- 100% of households in formally demarcated residential areas have access to electricity.

(v) Integrated Human Settlements Challenges

- Housing challenges:

A report titled “Sustainable Provision of Housing (As a component of a Human Settlement Framework) in Nelson Mandela Bay” was completed by Shisaka Development Management Services in January 2017. This report states the following in relation to the circumstances of households in NMBM:

- There are high levels of households living in formal housing (85%)
- There are high levels of households living in owned formal housing (57%)
- 12% of households are living in informal housing conditions (in informal settlements and back yards)
- There is very low estimated new family formation to 2020 (7% between 2011 and 2020 (0.6% pa.)
- Given that the remaining period to 2020 is only four years the new family formation for the period 2021 to 2030 has been estimated and included in the current estimate of housing circumstances.

This is evident from the Table below.

TABLE 5: Housing Circumstances in NMBM

Monthly Income	R0 to R3200	R3200 to R6300	R6300 to R12800	R12800 to R25600	R25600+	Total
A: Formal – owned	68,373	29,912	24,173	21,544	39,424	183,426
	21%	9%	7%	7%	12%	57%
B: Formal – rented	37,215	16,130	13,136	11,339	13,345	91,165
	12%	5%	4%	4%	4%	28%
C: Informal settlement	20,876	5,890	2,349	537	335	29,987
	6%	2%	1%	0%	0%	9%
D: Backyard dwelling	5,473	1,949	957	318	161	8,858
	2%	1%	0%	0%	0%	3%
E: Traditional dwelling	482	203	133	113	175	1,106
	0%	0%	0%	0%	0%	0%
G: Other	4,433	1,758	1,201	755	656	8,803
	1%	1%	0%	0%	0%	3%
Total (2011)	136,852	55,842	41,949	34,606	54,096	323,345
	42%	17%	13%	11%	17%	100%
Estimated new households (2011 – 2030)	18,673	7,585	5,754	4,814	7,477	44,303
Total (2030)	155,525	63,427	47,703	39,420	61,573	367,648

Source for table: Census 2011.

Estimated new households to 2020: BEPP 2015/16 - projects additional population between 2011 and 2020 to be 91,818 people. It also indicates four people per households. Accordingly, this amounts to an additional 22,955 households.

Estimated new households 2020 to 2030: Between 2011 and 2020 population growth is 7% this is about 0.6% pa. Accordingly, growth between 2021 and 2030 has been assumed at 0.6% pa and is projected as 44,303. This is proportioned by income category in terms of the total income percentage per category.

The report further identifies that “these housing circumstances are a-typical of most Metros in South Africa generally, where there is lower home ownership, higher levels of informal housing conditions and higher new family formation.

On the basis of the above and assuming that housing need is defined as upgrading the conditions of households currently living in substandard conditions and accommodating new family formation, there is an indicated requirement to resolve the housing need for an estimated 70,378 lower income households (earning below R 12 800) by 2030. This comprises (see figure below):

- 38,366 households currently living in informal settlements and backyard dwellings
- 32,012 estimated new households earning below R12,800.

TABLE 6: Housing Circumstance and Need to 2030

Income Band	R 0- R 3,200	R 3,200 – R 6,300	R 6,300 – R 12,800	R 12,800– R 25,600	R 25,600 plus	TOTAL HH's
Hh's in formal housing	110,503	48,003	38,643	33,751	53,600	284,500
Hh's in informal housing	26,349	7,839	3,306	855	496	38,845
New Hh formation to 2030	18,673	7,585	5,754	4,814	7,477	44,303
TOTAL HH's in need to 2030 (living informally or new families < R12,800 pm)	45,022	15,424	9,060	855	496	70,857

Source: Shishaka, 2017

In addition, there is a need to secure delivery for an estimated 12,291 new households earning above R12,800. Of these a portion of the 4,814 households earning between R12,800 and R25,600 are eligible for the FLISP subsidy and have been included in the modeling of the strategic scenarios.”

- Households living in stressed areas (servitudes, floodplains and overcrowded areas) remain a challenge and these are identified as priority areas to be relocated in terms of the Housing Plan.
 - Land and spatial planning challenges include the following:
 - A shortage of government-owned land in inner-city and serviced areas.
 - A lack of visible spatial restructuring.
 - The lack of fully integrated and sustainable human settlements for new township areas as well as existing poor areas.

The Human Settlements Strategic Framework adopted by Council in December 2012 recommends spatial restructuring through the following interventions:

- Urban Renewal Precincts including Inner City areas, Motherwell, Happy Valley, Lower Baakens Valley, Walmer Gqebera, Korsten, Helenvale and the Greater Ibhayi-Northern Areas Hub.
- Spatial Transformation Precincts such as Parsonsvele, Coega IDZ/ Motherwell, Bay West and N2 Developments.
- Implementation of an Integrated Zoning Scheme and Land Use Management System.
- Assembly of well-located public and private land for development of Integrated Human Settlements.

During 2014 a Strategic Development Review (SDR) of the Nelson Mandela Bay Metropolitan Municipality (NMBM) recognised the need for a shift in the development trajectory of the metro summarised as “walking together for growth” this is detailed in the BEPP and is attached as Annexure B to the BEPP.

As part of giving effect to this shift, the National Treasury’s City Support Programme supported the NMBM to undertake a high level strategic review and to formulate recommendations for the housing component (of the human settlement framework) in NMBM. This work was performed by Shisaka.

The report has been completed and details a recommendation for the housing component and outlines a proposed Strategic Shift for the investment in housing as well as a way forward for demonstration programmes.

The report, which has not yet been approved by Council is in the process of being dealt with administratively and politically in order to take the proposals further. A reviewed housing strategy for Nelson Mandela Bay proposes strategic shifts around the provision of subsidised BNG housing; the provision of serviced sites for not only for qualifying BNG households, but also for households qualifying to access the FLISP

(Finance Linked Individual Subsidy Programmes) programmes; rental housing provision, etc.

It is envisaged that the strategy review will be concluded during the 2018 calendar year.

(vi) Infrastructure challenges

The following challenges are experienced in relation to infrastructure:

- The backlog of tarring of gravel roads is approximately 600 km. The cost to eliminate this backlog is approximately R4 billion. This backlog has occurred largely due to the fact that the housing development programme funded by the government only includes sufficient funding for gravel roads and the recent increase in the number of developments constructed.
- Stormwater drainage inadequacies are experienced in disadvantaged areas, especially in newly developed areas because of limited funding for roads and stormwater construction. The scour of gravel from unsurfaced roads results in stormwater blockages.
- Ageing infrastructure, especially electricity, water and sanitation infrastructure results in leakages, pipe bursts, blockages and electricity disruptions which in turn cause service delivery disruptions.
- The completion of the Nooitgedacht Low Level Scheme remains the most significant project to ensure long-term water sustainability in the NMBM. This project supports both the provision of basic water, but also water for economic development. Phase 2 is operational and Phase 3 planned for completion by Amatola Water as the implementing agent funded by the Department of Water and Sanitation (DWS) is scheduled for completion in December 2019.
- Fishwater Flats Wastewater Treatment Works (FWF WWTW) commenced with the completion of the Phase 1 (inlet works). Subsequent contracts have commenced with as part of Phase 2. This and other Wastewater Treatment Works are critical (socially & economically) for further growth and development in the Metro, not to mention the support for the Bucket Eradication Programme. The total funding needed exceeds R1 billion.

- Economic infrastructure for development such as the Coega Wastewater Treatment Works and the Coega Return Effluent Scheme is needed to support the Coega IDZ. Further development of the IDZ will be hampered without funding for these projects. An investment of approximately R600M is required to complete the project, but the viability of the project is also dependent on the FWF WWTW upgrades.
- Planning has commenced on a new wastewater treatment facility to support the housing developments north of Motherwell and the Coega IDZ. This plant is planned for an ultimate capacity of 120 MI/d costing in the region of R1 500M. A start up capacity of approximately 40-50MI/d will be required and is estimated at R750M (including a sea outfall).
- The Municipality is working on a long-term capital investment plan to support economic growth and socio-economic development.

The following table summarises the critical infrastructure needs of the NMBM:

TABLE 7: Critical Growth and Investment Priorities in NMBM

No	Description	Cost Est.	Budget	Timing	Project Status
1	Nooitgedaght Phase 3	R350M	DWS	Dec-19	Construction stage
2	Borehole Water Exploration	R200M	'18/19 – R12M; 19/20 - R23M; 20/21 - R25M	Dec-19	Production boreholes under construction. Tender for treatment facilities to be advertise during 1 st quarter of 2018/19.
3	Western Desalination	R1,500M	'18/19 – R4M; 19/20 – R4M; 20/21 – R4.5M	5 yrs.	60MI/d: Cost estimate excludes link pipe and pump station network to distribution network. Subject to EIA processes
4	Sundays River	R1,000M	R100M pa	5 yrs.	55MI/d: Cost estimate includes link pipe & pump station network to distribution network. Subject to EIA processes
5	Fishwater Flats	R1,300M	R100M pa	5-10 yrs.	Phase 1: 95% complete
6	Coega Wastewater Treatment Works	R1,500M	'18/19 – R7M; 19/20 – R5M; 20/21 – R7M	5 yrs.	Preliminary planning phase.
7	Coega Return Effluent	R600M	'18/19 – R1M; 19/20 – R1M; 20/21 – R1M	3 yrs.	Project ready for implementation
8	Non-Revenue Water	R1,400M	R650M for First 5 yrs.	10 yr. Plan	Project Commenced. R1010M required for infrastructure upgrades. These are cost estimates, 10 Year Plan being drafted.

Source: NMBM 2017

Infrastructure Challenges - Electricity and Energy.

The following challenges are experienced in relation to electricity infrastructure:

- Large increases in the purchase price of electricity have led to a continuous decline in electricity revenue. This makes it difficult to fund capital loans, repairs and maintenance from the operational value of the business, i.e. it is no longer easy to increase the electricity tariff to recapitalize infrastructure and/or to generate a surplus to fund other initiatives.
- Tampering, theft and vandalism are a challenge as prices soar and pressure is put on the disposable income of the NMBM residents.
- Government's grant funding is decreasing year to year.
- National challenges from Eskom and the uncertainty of load shedding causes residents to move to alternative energy sources placing a concomitant burden on overall municipal revenue.
- Ageing infrastructure is problematic both from an operational as well as a quality of supply point of view. This places further negativity around investment security in the NMBM.

(vii) Building investment trends

Nelson Mandela Bay recorded steady and rapid growth from 2001 to 2004, followed by a decline in the 2004/2005. 2005 to 2007 reflected a recovery but, 2008 saw a dramatic decline in growth, indicating the impact of the global economic crisis.

There was a recovery in the 2009/10, almost to the 2007 pre-economic meltdown figures, both in terms of the number and value of plans passed. This dipped slightly in the 2011/12 and continued to dip in the 2012/13 financial year.

The increase in the number and value of plans for the 2013/14 period was directly attributable to an increase of RDP house plans approved in that period which was 2 910. The figures therefore do not reflect private sector investment and growth.

The number of building plans increased by 2 867 in the 2013/14 financial year. However, the number of RDP house plans increased by 3 122 over the prior year. In the 2012/13 financial year, only 815 RDP house plans were approved.

Therefore for the 2013/14 period commercial and private sector plans decreased by 255 plans.

The percentage of RDP house plans in relation to other building plans changed from 51,46% to 59,96% (3937/7651 to 5603/9345) in the 2014/15 financial period. The value of RDP building plans has however shown an increase, which is largely attributable to the increased subsidy quantum value for RDP housing. The number of building plans for RDP housing decreased to 537 in the 2015/16 period, reducing to a mere 12,77% of all residential building plans submitted during this reporting period. A slight increase to 32,77% (1861/5679 residential building plans) is observed during the 2016/17 reporting period.

A corresponding decrease in the number and value of private and commercial building plans is noted in 2014/15, as an indication of an economy that remained weak. The building statistics for the 2015/16 period show a marked decrease in numbers as reflected in the tables and graphs that follow. Some recovery is however observed in the 2016/17 period.

TABLE 8: Number of building plans submitted

BUILDING TYPE	2013-2014		2014-2015		2015-2016		2016-2017	
	No of Plans	% Total	No of Plans	% Total	No of Plans	% Total	No of Plans	% Total
COMMERCIAL	254	3.19%	185	1.93%	152	3.43%	216	3.61%
GOVERNMENT	22	0.28%	11	0.12%	37	0.84%	16	0.27%
OTHER	26	0.33%	24	0.25%	36	0.81%	79	1.32%
RESIDENTIAL	7651	96.20%	9345	97.70%	4204	94.92%	5679	94.81%
TOTALS	7953	100.00%	9565	100.00%	4429	100.00%	5990	100.00%

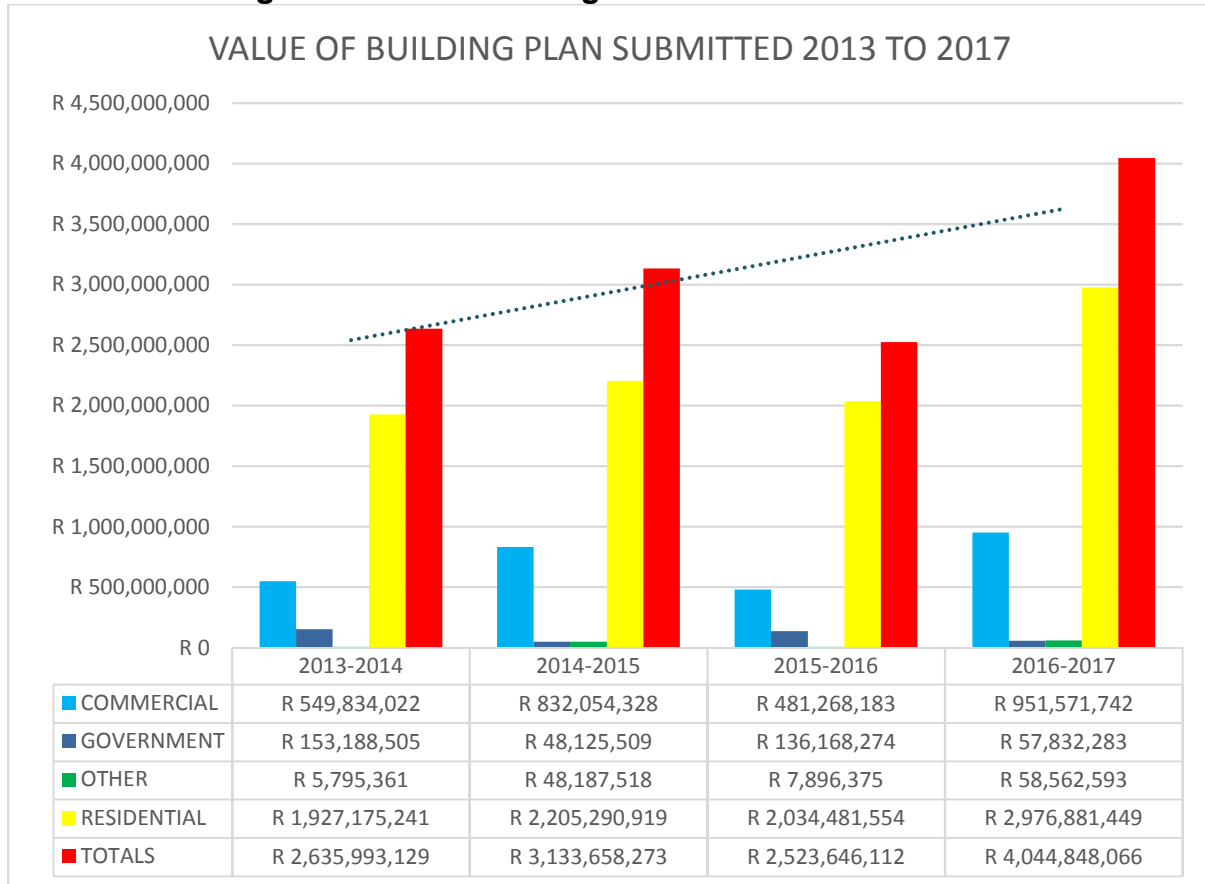
Source: NMBM, 2017/18

TABLE 9: Value of building plans submitted

	2013-2014		2014-2015		2015-2016		2016-2017	
	Value of Plans Submitted	% Value	Value of Plans Submitted	% Value	Value of Plans Submitted	% Value	Value of Plans Submitted	% Value
COMMERCIAL	R 549,834,022	20.86%	R 832,054,328	26.55%	R 481,268,183	19.07%	R 951,571,742	23.53%
GOVERNMENT	R 153,188,505	5.81%	R 48,125,509	1.54%	R 136,168,274	5.40%	R 57,832,283	1.43%
OTHER	R 5,795,361	0.22%	R 48,187,518	1.54%	R 7,896,375	0.31%	R 58,562,593	1.45%
RESIDENTIAL	R 1,927,175,241	73.11%	R 2,205,290,919	70.37%	R 2,034,481,554	80.62%	R 2,976,881,449	73.60%
TOTALS	R 2,635,993,129	100.00%	R 3,133,658,273	100.00%	R 2,523,646,112	105.40%	R 4,044,848,066	100.00%

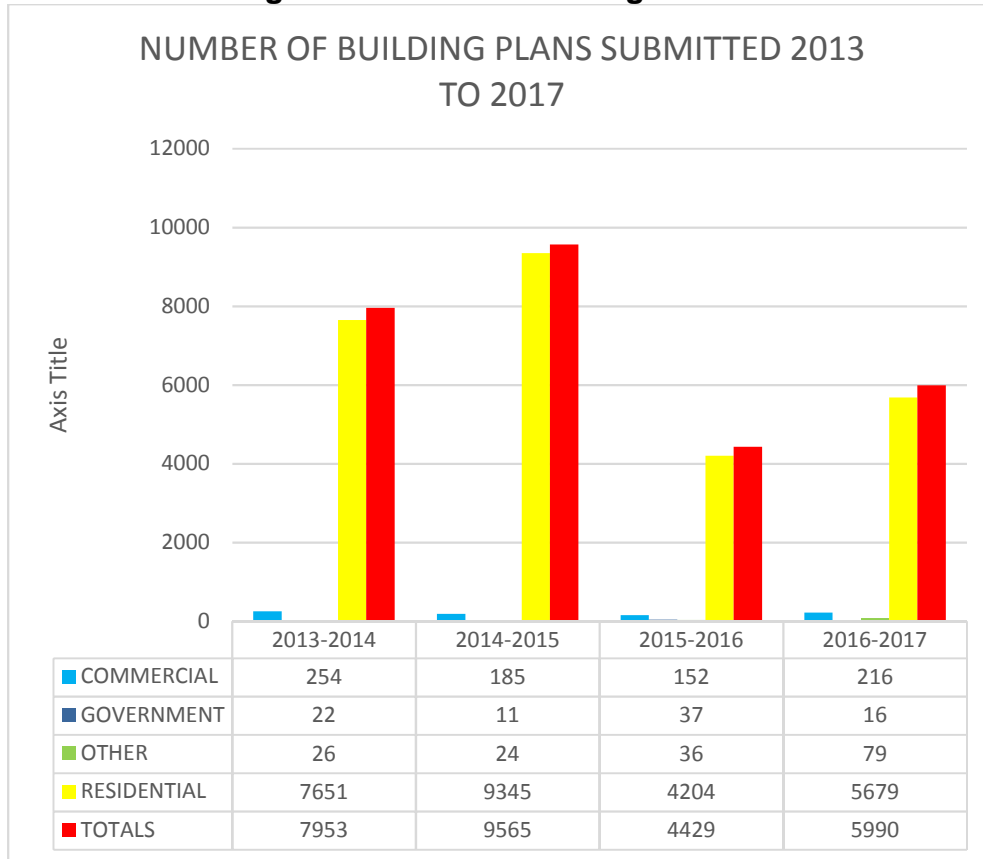
Source: NMBM, Building Stats, 2017/18

FIGURE 5: Change in Value of Building Plans Submitted : 2013-2017



Source: NMBM 2018

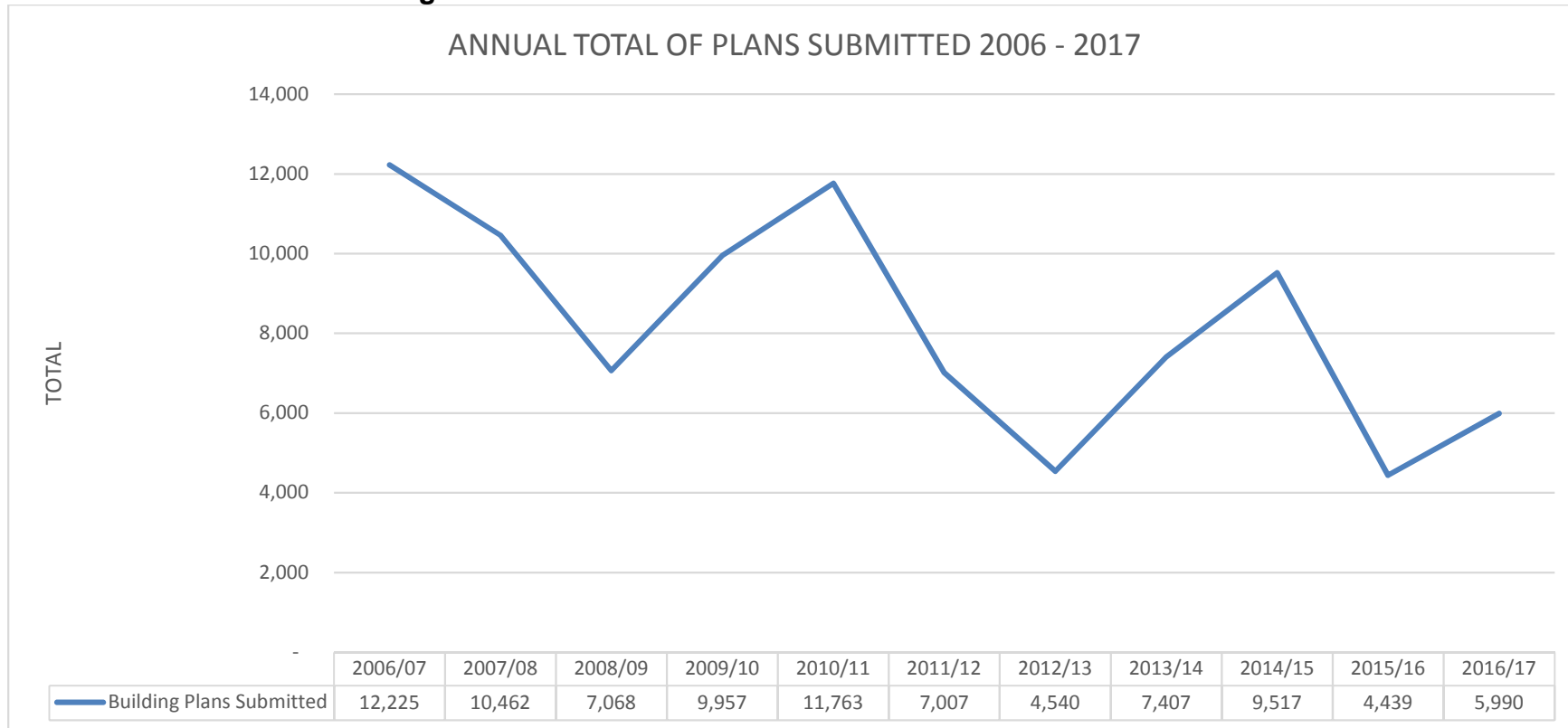
FIGURE 6: Change in Number of Building Plans Submitted: 2013 – 2017



Source: NMBM, 2018 (Building Statistics)

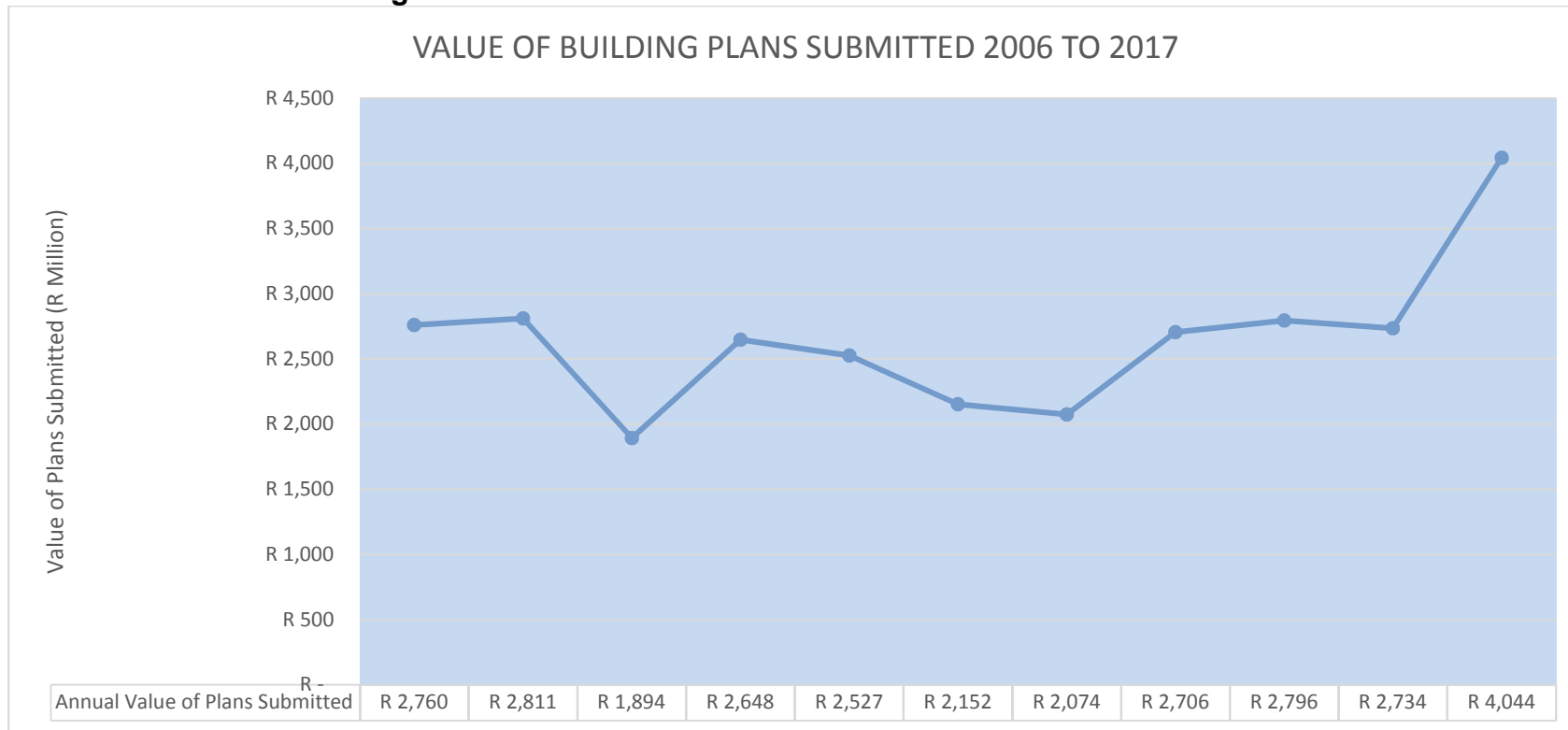
The two graphs below show the number and value of building plans submitted over recent years, as economic indicators.

FIGURE 7: Number of Building Plans Submitted: 2006 – 2017



Source: NMBM, 2018

FIGURE 8: Value of Building Plans Submitted: 2006 – 2017



Source: NMBM, 2018

TABLE 10: Building Plans (per type) Approved over the period 2013 to 2017

BUILDING TYPE	2013-2014		2014-2015		2015-2016		2016-2017	
	Plans Passed	Value of Plans Passed	Plans Passed	Value of Plans Passed	Plans Passed	Value of Plans Passed	Plans Passed	Value of Plans Passed
COMMERCIAL	190	R 471,913,967	188	R 780,011,152	118	R 485,342,486	182	R 890,505,458
ADDITIONS (GOV)	3	R 89,848,170	1	R 226,720	0	R 0	3	R 3,305,328
INTERNAL ALTERATION (GOV)	2	R 34,000	0	R 0	0	R 0	0	R 0
POOL/CARPORT/B-WALL (GOV)	0	R 0	0	R 0	1	R 66,192	0	R 0
HALL/CLUB/CHURCH (GOV)	0	R 0	1	R 15,000,000	0	R 0	1	R 12,638
HOSPITAL/CLINIC (GOV)	7	R 52,779,088	1	R 17,983,527	0	R 0	0	R 0
OTHER - NON RESIDENTIAL (GOV)	5	R 4,379,977	4	R 32,626	2	R 1,271,140	5	R 1,489,053
SCHOOL/UNIVERSITY/LIBRARY(GOV)	2	R 6,147,270	9	R 14,882,591	29	R 8,935,990	3	R 50,400,000
GOVERNMENT	19	R 153,188,505	16	R 48,125,464	32	R 10,273,322	12	R 55,207,019
NEW OTHER - NON RESIDENTIAL	17	R 2,264,583	14	R 40,966,978	34	R 10,393,502	29	R 19,011,520
NEW STABLE	3	R 3,042,000	1	R 583,803	2	R 1,241,778	6	R 4,072,380
ABBATOIR ON FARM	0	R 0	0	R 0	1	R 0	0	R 0
SIGNAGE APPLICATION	1	R 379,600	0	R 0	3	R 20,000	17	R 1,084,400
UNKNOWN	0	R 0	0	R 0	1	R 10,435	2	R 44,000
OTHER	21	R 5,686,183	15	R 41,550,781	41	R 11,665,715	54	R 24,212,300
ADDS TO DWELLING	2174	R 723,256,468	2249	R 827,770,689	2264	R 776,769,211	2029	R 966,001,594

BUILDING TYPE	2013-2014		2014-2015		2015-2016		2016-2017	
	Plans Passed	Value of Plans Passed	Plans Passed	Value of Plans Passed	Plans Passed	Value of Plans Passed	Plans Passed	Value of Plans Passed
ADDS: INTERNAL ALTERATIONS	211	R 171,105,793	236	R 87,077,314	333	R 82,156,329	248	R 37,157,452
ADDS TO DWELLING - WITH NO SQ	249	R 34,239,221	213	R 38,994,163	219	R 26,088,370	140	R 28,682,326
NEW DWELLING	468	R 448,335,537	542	R 443,909,713	630	R 626,139,370	707	R 733,406,614
NEW FLAT	10	R 36,365,374	10	R 28,641,427	4	R 34,859,878	4	R 29,485,048
NEW OTHER - RESIDENTIAL	8	R 7,993,109	4	R 30,429,927	2	R 1,812,200	25	R 5,766,071
NEW TOWNHOUSE	146	R 99,867,871	93	R 76,919,768	158	R 273,740,726	184	R 169,344,728
NEW DWELLING (HOUSING PROJECT)	2825	R 208,738,620	3829	R 427,774,554	549	R 260,960,902	1640	R 764,272,586
RESIDENTIAL	6091	R 1,729,901,993	7176	R 1,961,517,555	4159	R 2,082,526,986	4977	R 2,734,116,419
TOTALS	6321	R 2,360,690,647	7395	R 2,831,204,951	4350	R 2,589,808,509	5225	R 3,704,041,196

Source: NMBM 2018

The above table shows building plans approved over the past three reporting periods, i.e. 2013/14 to 2016/17 in terms of building plan types. This table is meaningful in understanding the economic impact of the building plans approved over this period.

It is to be noted that the data reflected in the above table relates to approved building plans, whereas the earlier tables reflect building plans submitted for assessment.

The earlier tables noted a decline in the number of building plans submitted for assessment over the past two periods, i.e. from 9517 (2014/15) to 4438 (2015/16). This tendency is similarly reflected in the number of building plans approved, i.e. 7395 (2013/14) to 4353 (2015/16). Of interest is the observation that the difference between number of building plans submitted and approved has reduced significantly.

The table highlights a considerable increase in the number of building plans for new townhouses, new dwellings as well as the category that includes schools, libraries and university. The increase in the number of residential building plans can largely be attributed to social housing and affordable residential developments in Parsonslei and Fairview, whilst the increase in the educational sector can be assigned to new and additional facilities and amenities at the NMU.

It is concluded that the statistics in relation to the approval of building plans are still indicative of a weak economy.

2. TRENDS AND DEMAND FOR ECONOMIC INFRASTRUCTURE

2.1 Economic Background

STATS SA and ECSECC (Eastern Cape Socio Economic Consultative Council), are the main sources of economic information for the Nelson Mandela Bay Municipality. ECSECC update their economic reviews every second year. There is no economic update on the data from the two sources since the 2017/18 BEPP. The largest economic sectors in the Nelson Mandela Metro are manufacturing, finance, community services and transport. Community services, trade and manufacturing sectors are the sectors that create the most employment in the Metro”.

Economic performance per Sector

The following priority sectors are the key drivers of both the NMBM and Eastern Cape economies:

- Agro-processing
- Business Processing and Outsourcing (BPO)
- Capital Goods
- Ocean Economy
- Information Technology and Electronics (ICT)
- Manufacturing
- Mining
- Petrochemicals
- Renewable Energy
- Textiles
- Tourism

Agro-processing

The agro-processing industry transforms products originating from the agriculture, forestry and fisheries sector and plays a critical role in development, especially in developing countries. The industry has been identified in the National Development Plan as a key vehicle for creating jobs and growth.

In 2015, the total real value of the GDP for the agro-processing industry in the Nelson Mandela Bay was R4.6 billion. This is a 6.0% increase from 2010 when the value was R4.3 billion. In 2015, the agro-processing industry accounted for 26.7% of the total manufacturing sector's value, and 5.7% of the total GDP value of the Nelson Mandela Bay.

Between 2010 and 2015, the Nelson Mandela Bay's agro-processing industry grew by 1.2% per annum, compared to the 1.0% for the Metro's total manufacturing sector but lower than the 1.5% for the entire NMBM economy. The Eastern Cape's agro-processing industry outperformed the NMBM's, growing at a rate of 1.4% per annum between 2010 and 2015. This suggests that there are factors that are affecting the overall competitiveness of the local agro-processing industry.

Although the Nelson Mandela Bay's agro-processing employment is 1.0% higher than it was in 2010 (229 jobs), it is still below the historic peak attained in 2005 when approximately 13 091 people were employed in the Nelson Mandela Bay agro-processing industry. The industry however, still remains a critical employer, accounting for 23.8% of manufacturing employment.

Sarah Baartman District Municipality, adjacent to NMBM, has a relatively strong agricultural sector. The biggest employers in the Coega IDZ are agro-processing plants. Agro-processing has linkages through into the Sarah Baartman District Municipality economy. Strengths of this sector in NMB include existing industries, natural resources and the IDZ to support industry. This sector is constrained by trade policies, lack of skills, loss of productive land and zoning limitations as well as a lack of coordination between stakeholders.

Business Processing and Outsourcing (BPO)

Business process outsourcing (BPO) refers to the outsourcing of business processing services to outside firms, replacing in-house services.

In 2015, the majority of BPO operations in the Eastern Cape were confined to the Nelson Mandela Bay Metro, more specifically the Coega IDZ. The most significant BPO investment in the province has been the construction of the R125 million, 1 500 seat call-centre within the IDZ in 2007. This BPO park covers five hectares in Coega's business service precinct and includes training facilities and recreational space.

Since the establishment of this park, the Coega IDZ has attracted R90.8 million in investment from a number of BPO investors. R10 million from Bizworks now no longer operating

Collectively, these firms employed 1 400 people in 2015, or 0.6%, of the total national employment in the BPO sector. Despite this small contribution, the Nelson Mandela Bay BPO sector accounts for 28.0% of the total BPO employment outside of Gauteng, the Western Cape and KwaZulu-Natal.

Capital Goods

Capital good include durable equipment that lasts at least three years. This equipment is usually used in manufacturing, mining or the development of infrastructure (motor vehicles and vehicle components).

The Nelson Mandela Bay's capital goods sector is a critically important component of the metro's economy, generating approximately R7.8 billion in real GDP value in 2015. This is over R500 million more than recorded in 2010. Nelson Mandela Bay is also a major contributor at a provincial level accounting for 75.4% of the Eastern Cape's capital goods sector. The capital goods sector is accordingly a large component of the broader manufacturing sector in the NMBM, contributing 44.9% to total manufacturing

GDP value in 2015. This sector's share of total manufacturing GDP value has remained constant at 44% for the 2010 to 2015 period.

The Nelson Mandela Bay's capital goods sector is dominated by the manufacturing of transport equipment primarily motor vehicles and vehicle components.

Between 2010 and 2012, the Nelson Mandela Bay's capital goods sector grew at 3.5% above both the national (2.7%) and provincial averages (3.3%). This growth was driven by a several major investments in the NMBM over this period including:

- The R600 million investment by China's First Auto Works (FAW) in the construction of a light truck assembly plant in the Coega IDZ. This plant is anticipated to produce 5 000 trucks a year and employ up to 750 people.
- A R400 million investment by Agni Steel into the establishment of a high-tech smelting plant in the Coega IDZ that will produce 100 000 tons of mild steel billet fabricated from scrap metal a year, and employ approximately 270 people.

The 2013 to 2015 period saw a very marginal increase (0.1%) in the GDP value growth rate of the Nelson Mandel Bay's capital goods sector. The Nelson Mandela Bay's capital goods sector nevertheless appeared to be more resilient than both the South African and Eastern Cape capital goods sectors, which between 2013 and 2015, contracted by 0.7% and 0.4%, respectively. The Nelson Mandela Bay's capital goods sector is likely to continue to outperform the sector at a national level due to a number of future investments that are likely to come on line in the near future such as the:

- R4.5 billion investments by Volkswagen Group (VWSA) in new models and infrastructure at its Uitenhage vehicles factory.
- R670 million investment by Goodyear South Africa to increase production of high-value-added consumer tyres at its Uitenhage plant.
- R11 billion investment by the Beijing Automotive International Corporation (BAIC) in the construction of a completely knocked down (CKD) vehicle manufacturing plant in the Coega IDZ. This is anticipated to created approximately 2 500 direct and 7 500 indirect jobs.

The above figures highlight the strong GDP value growth prospects of the Nelson Mandela Bay's capital goods sector, as well as the importance of the automotive industry to the economy of the NMBM.

The strong growth in the capital goods sector GDP value between 2010 and 2015 has not seen a corresponding rise in employment in the Nelson Mandela Bay's capital goods sector, which declined by 5.8%, from 26 837 in 2010 to 25 287 in 2015. Almost all of these jobs (70.1%) were lost in the transport equipment sub-sector. This has resulted in the Nelson Mandela Bay's capital goods sector shedding an average 310 jobs per year since 2010, resulting in an average annual employment growth rate of -1.2% between 2010 and 2015.

Despite the capital goods sector's poor employment growth between 2010 and 2015, it still accounts for 50.0% of total manufacturing employment and 7.1% of total metro employment.

Ocean Economy

Marine Transport and Manufacturing (MTM) includes activities in the marine transport sector including cargo handling, national registry and flagging and the manufacturing sector which includes marine vessel building, rig and ship repair and offshore oil and gas services.

Approximately 8.6 million tons of cargo were handled in 2015 by both the Port of Ngqura (72 785 tons, 0.8%) in the Coega SEZ and the Port of Port Elizabeth (8.6 million tons, 98.2%). This represents a 1.0% decrease from the 8.7 million tons of cargo handled by these two ports in 2014.

Significant growth is expected in transshipment containers from and to the Port of Ngqura. At present current demand stands at 765 000 TEUs (Twenty Foot Equivalent Unit - is the unit of the capacity of a container ship, a container terminal and the statistics of the container transit in a port), which is expected to grow to 3 million TEUs by 2043.

Volumes of manganese moving through the Port of Ngqura are expected to increase to 12 million tons per annum in 2020 following the relocation of the terminal from the Port Elizabeth harbour.

The liquid bulk terminal is expected to increase its handling of liquid bulk products from 1.1 million kilolitres in 2014, to 22.2 million kilolitres in 2043. This is made up of a growth in liquid exports and importing crude oil from 2018 onwards as well as the proposed refinery.

The Port Elizabeth Port currently handles around 9 million tons of cargo per annum, which is expected to decrease to 4 million tons per annum with the removal of manganese and crude oil to the Port of Ngqura. Bunkering operations associated with the transshipment traffic of the Port of Ngqura have been established in Algoa Bay and significant growth in this industry is expected with increasing container traffic which will be enhanced with improved near port rail logistics at the Coega SEZ.

Automotive export and import volumes are expected to grow from 115 000 to 280 000 units per year by 2043.

Break bulk volumes are expected to increase from the current 0.3 million tons per annum to 0.6 million tons per annum by 2043.

In 2013 the Port of Ngqura was named as one of four South African ports earmarked for the repair and upgrading of drilling rigs in the 2013/2014 IPAP. It was noted in the plan that an estimated 120 drilling rigs passed Cape Point every year, with an additional 80 to 100 rigs along the West Coast. The policy suggested that approximately 28 rigs could be serviced across South Africa, of which four would be at the Port of Ngqura. Based on the DTI's estimations, the repair of these 28 oil rigs could support 7 000 direct and 21 000 indirect jobs, and lead to R10 billion in foreign revenue being injected into South Africa's economy (DTI, 2014). Based on statistics from Transnet (2016), the Port of Ngqura provided repair services to two oil rigs in 2015 up from zero in 2014 (Transnet, 2016).

Despite the limited number of a marine or freshwater aquaculture projects in the Nelson Mandela Bay, the Metro does have a sizable wildcatch fisheries industry. Collectively these two industries generated R107.2 million in GDP value for the Nelson Mandela Bay in 2015, 45.3% higher than the R73.8 million generated in 2010. This GDP value was almost exclusively derived from the chokka (squid) and line fish industries based from the Port Elizabeth harbour. In a normal season, the Nelson Mandela Bay chokka industry fishes between 7 000 and 8 000 tons of squid a year; however, due to diminishing squid supplies as a result of climate change and over fishing, the local industry has been unable to harvest more than 5 000 tons per year.

This has had a direct impact on the GDP value growth rate of the Nelson Mandela Bay fisheries sub-sector, which only grew by 0.4% in 2014. Despite this low growth rate in 2014, which was below the national (4.7%) and provincial (0.9%) averages, the strong GDP value growth in the preceding years made it possible for the industry to attain an average year-on-year growth rate of 7.8% between 2010 and 2015.

The strong GDP value growth rate of the fisheries industry between 2010 and 2015 had a corresponding positive impact on employment. Over the 2010 to 2015 period employment rose by 7.9% year-on-year with the industry adding 780 new jobs. Port Elizabeth accounted for the majority of this employment, accounting for 92.3% (720 jobs) of this growth.

Information Technology and Electronics (ICT)

The Information and Communication Technology (ICT) industry includes the integration of telecommunications (telephone lines and wireless signals), computers as well as necessary enterprise software, storage, and audio-visual systems, which enable users to access, store, transmit and manipulate information. The ICT industry cuts across both the manufacturing sector (the production of both hardware and software) as well as the services sectors (data storage, maintenance and repairing systems, etc.).

In 2015, the Nelson Mandela Bay's ICT industry contributed R2.8 billion to the total GDP-R of the Metro, and accounted for 59.1% of the total GDP value of the Eastern Cape's ICT industry. The Metro's ICT industry has shown significant positive growth between 2010 and 2015, registering an average annual GDP value growth rate of 1.5% per year over the period.

Following the slowdown in broadband and fibre roll-out post-2010, the GDP value growth rate of the Nelson Mandela Bay's ICT industry decreased sharply, with the 2011 to 2012 period only registering a growth rate of 0.7%. Although this decline was greater than that exhibited at either a national or provincial level, the Nelson Mandela Bay's ICT industry's average annual GDP value growth rate of 1.5% between 2010 and 2015, still outperformed the provincial average of 1.3%, but was well behind the national ICT growth rate of 3.7%. This increase in the Nelson Mandela Bay's ICT industry growth rate has had little impact on the industry's contribution to overall metro GDP value which remained fairly constant over the 2010 to 2015 period. Despite this, the Nelson Mandela Bay's ICT contribution to total metro GDP value peaked in 2015 at 3.5%.

Unlike the positive growth in GDP value, the Nelson Mandela Bay's ICT industry has exhibited a downward trend in respect of ICT employment, decreasing by 6.9% in absolute terms between 2010 and 2015. This has resulted in the loss of almost 300 jobs in the industry over the period, taking employment within the industry to 3 832 in 2015.

Manufacturing

Manufacturing is a process by which machinery, tools and labour are used to produce goods for use or sale as intermediaries, or as final products, either domestically or internationally.

The total real GDP value of the greater Nelson Mandela Bay's manufacturing in 2015 was R17.4 billion; R830.3 million greater than in 2010, equating to a real increase of 5.0% over the five-year period. This increase was however, lower than the increase in

real manufacturing GDP value at both a national and provincial level which, over the same period was 5.8% and 5.3%, respectively. These numbers mean that the Nelson Mandela Bay's manufacturing sector grew by an average annual rate of 1.0% year-on-year between 2010 and 2015 – in line with the provincial average, and only 0.1% lower than the national figure.

The performance of both the metro and national manufacturing sector has been hindered by weak demand in local and external markets, as well as by increased competition from imported products. The sector has also experienced rising operational costs and its production activity has been negatively affected by infrastructure constraints (particularly electricity supply, transportation and logistics) and industrial actions. This has resulted in the manufacturing sector at a metro, provincial and national level, registering negative year-on-year growth of 0.4%, 0.3% and 0.1%, respectively, over the 2013 to 2015 period.

Mining

The definition of mining includes the extraction of valuable minerals or other geological materials from the earth including metals, coal, oil shale, gemstones, limestone, gravel and clay.

There is little to no mining activity occurring in the Nelson Mandela Bay, as evidenced by the sectors 0.1% contribution to the total metro economy in 2010 and the fact that mining only generated R77.2 million in real GDP value in 2015. This figure is slightly higher than the R64.8 million in GDP value that the Nelson Mandela Bay's mining sector contributed to the overall metro economy in 2010. This rise is equivalent to a 19.2% increase in the sector's real GDP value over the period. This increase meant that the NMBM's mining sector had an average annual GDP value growth rate of 3.6% between 2010 and 2015. This growth rate was higher than both the national (0.4%) and provincial (3.0%) averages. It is however, important to note that this growth is occurring off a very low base, with most mining in the metro being confined to open pit quarries. These materials are used in the construction industry for road aggregates or in the manufacturing of bricks.

Statistics indicate that just over 140 people are employed by the mining sector in the Nelson Mandela Bay – less than 0.1% of total metro employment. Furthermore, employment within this sector has steadily declined since 2010, when 176 people were employed by the local mining sector. Employment growth in the Nelson Mandela bay mining sector was thus -4.3% year-on-year between 2010 and 2015.

Petrochemicals

The petrochemical industry consists of three main sub-sectors: liquid fuels, commodity organic chemicals and fine chemicals.

The Nelson Mandela Bay's petrochemical industry has shown muted growth relative to both the South African and Eastern Cape industries, growing at an average rate of 0.7% per annum between 2010 and 2015. This resulted in GDP value increasing from just R3.4 billion in 2010 to R3.6 billion by 2015 – a 3.5% increase, in absolute terms. Barring a slight slowdown in growth between 2013 and 2014 when the petrochemical industry's GDP value contracted by R 73.0 million, there has been strong, constant increases in the GDP value generated by the industry.

Even though the GDP value of the Nelson Mandela Bay's petrochemical industry increased slowly between 2010 and 2015, it plays an important role in the Nelson Mandela Bay's economy, accounting for 4.4% of the total GDP value of the metro in 2015. This represented only a marginal deterioration from 2010, when the sector contributed 4.6% to total metro GDP value. Although the industry's contribution to the total metro's GDP value has largely remained unchanged, the petrochemical industry's share of total manufacturing GDP value has fallen slightly from 21.0% in 2010, to 20.6% in 2015. This was the lowest share since the 2011 peak when the industry contributed 21.3% to total manufacturing GDP value.

Approximately 6 088 people were employed in the Nelson Mandela Bay's petrochemical industry in 2015 – just 1.7% of the total metro employment. This was however, almost 200 people less than was employed by the industry in 2010, meaning that year-on-year employment within the industry was -0.6% between 2010 and 2015.

This was in line with employment growth at a national (-0.5%) level but lower than at a provincial (-1.0%) level.

Positively, although chemical imports have increased at an average annual rate of 17.9% since 2010, chemical exports have outpaced this growth by a factor of 2.1, growing at a rate of 38.7% year-on-year between 2010 and 2015. This is likely to improve further as new petrochemical investments targeting the export market begin coming on line in the Coega IDZ.

Renewable Energy

Renewable energy is generally defined as energy generated from resources that are continually replenished such as sunlight, wind, waves, biomass and geothermal heat. The renewable energy industry therefore, comprises those enterprises that seek to commercialise these natural processes to generate electricity for consumers.

The electricity sub-sector is a very marginal sub-sector in the Nelson Mandela Bay, generating only R469.1 million in real GDP value in 2015, equivalent to 0.6% of the total GDP value of the metro. This contribution to total GDP value has also remained fairly static between 2010 and 2015, remaining at +/- 0.7% since 2010.

The marginal nature of the electricity sub-sector in Nelson Mandela Bay is further highlighted by the fact that the industry only employed 644 people or 0.2% of the total labour force in 2015. Despite this, employment in the renewable energy's sector has increased steadily since 2010 adding over 50 people and growing at an average annualised rate of 1.7% between 2010 and 2015.

Textiles

The textile and apparel industry is concerned with the manufacturing and distribution of clothing as well as the production of yarn and cloth. The textile and apparel industry has backward linkages to the agricultural sector (for natural products) and to other parts of the manufacturing sector, such as the chemicals sub-sector, for synthetic products.

The Nelson Mandela Bay's textile and apparel industry generated approximately R497.6 million in real GDP value in 2015, accounting for just under 3% of the total metro's manufacturing GDP value. More importantly, the GDP-R from the metro's textile and apparel industry shrunk by R63.1 million between 2010 and 2015, equivalent to a 11.3% decrease over 6 years. This was significantly higher than the 7.8% reduction at a national level, and the 10.2% reduction at a provincial level.

Between 2014 and 2015 the Nelson Mandela Bay's textile and apparel industry declined by 15.2% compared to only 8.9% at a national level and a 12.1% at a provincial level. The Nelson Mandela Bay's textile and apparel industry however, remains a minor component of the metro's broader manufacturing sector, with its share of total manufacturing GDP value decreasing from 3.4% in 2010 to 2.8% in 2015.

Similarly, to both the national and provincial textile industries, employment in the Nelson Mandela Bay's textile and apparel industry contracted by 2.7% year-on-year between 2010 and 2015. As a result, the metro's textile and apparel industry lost 678 jobs over the review period. More positively, in 2013 and 2015, the industry added 70 and 158 jobs respectively. These positive gains were however offset by the 772 jobs lost between 2010 and 2012 and the additional 160 jobs lost in 2014. Job prospects in the textile and apparel industry have begun to improve, with a 3.5% increase between 2014 and 2015.

Tourism

The tourism industry relates to all the goods and services linked to a person staying and travelling outside of their area of residence.

The tourism industry is a primary industry of Nelson Mandela Bay, and has the most potential for future development. The majority of tourist attractions within the metro are linked to the natural environment and culture (e.g. heritage sites, museums, etc.). This, coupled with the metro's proximity to the Addo Elephant National Park as well as several other popular public and private nature reserves, is likely to have a positive impact on tourist numbers over the medium to long term.

NMBT (Nelson Mandela Bay Tourism) estimates that the tourism industry contributed R4.7 billion to the Metro's total GDP value in 2013, up 7.1 % from the R4.4 billion in 2010. Of this R4.7 billion, the majority was generated by domestic tourism market (R4.4 billion, 88.3%) as opposed to foreign tourist arrivals (R556.4 million, 11.7%).

Economic Challenges

Whilst the NMBM is an important node of activity within the economy of the Eastern Cape, it is characterised by several challenges in terms of economic development. These include:

- A high unemployment rate (34%), low education levels of the labour force, including large numbers of illiterate adults with limited employment prospects.
- Ageing and inadequate investment in the maintenance and upgrading of infrastructure.
- The dependence on the automotive sector and insufficient diversification within the manufacturing and others sectors.
- A lack of up-to-date local economic statistics and monitoring and evaluation systems.

Growth in the automotive sector of the economy has historically provided employment and boosted exports, while masking long-term weaknesses and continuing social inequality. For NMBM, the automotive industry's infrastructure strengths include the Coega IDZ and NMB Logistical Park which are both growing in potential. There is substantial government and institutional support - the Automotive Production & Development Programme (APDP) supports incentives to replace Motor Industry Development Programme (MIDP). The Nelson Mandela Bay economy is heavily reliant on this industry and this industry, in turn, is heavily reliant on SA incentive support – MIDP/APDP. The fragile and ever fluctuating global economy poses a serious risk to the automotive sector.

Logistically, the distance from product and supply markets is disadvantageous. This is coupled with high logistics costs and inefficient transport. The automotive industry

faces numerous threats to its competitiveness. These include that poor fuel quality restricts entry into the fuel efficient space and markets. Poor management of South Africa's energy supplies contributes negatively to industrial progression. In terms of the crisis of auto-mobility, there is a limit to the alternatives in South Africa. The rise of Asia (China, India, South Korea) as forces in both production and consumption proposes much competition for market share.

NMBM, once the leader in the automotive industry in South Africa, now lags behind eThekweni and Tshwane which now take up the major share of the South African automotive industry.

Countering these weaknesses and inequalities will require the following:

- Serious diversification of the local economy. in order to reduce its dependency on the traditional sectors.
- Down-stream and cross-stream diversification within the manufacturing sector.
- Development of new growth industries.
- Diversification of markets for manufactured products and services.
- Investment in the intellectual capital, creativity and technical capabilities of the labour force through skills development.
- Innovation support through research and development.
- Public and private sector investment to accelerate the production of all economic sectors.
- An aggressive market development programme for regional production within the region itself, as well as within the country, in order to ensure the localised sustainability of productive activities (NMBM EDRS, 2009).
- A clear and shared economic development strategy for the NMBM.

There is a portfolio of sectors discussed in the Nelson Mandela Bay Industrial Development Strategy (2012) that focuses on industrial (or secondary) sectors as opposed to primary and tertiary sectors.

2.2 Strategic Initiatives

The Municipality has identified a number of initiatives to enhance economic development of the city. Many of these are captured in the main BEPP document. The City has adopted a “Nelson Mandela Bay Long-Term City Growth and Development Plan 2017-2032” during the first quarter of 2018 and projects highlighted in this document include amongst others those mentioned below which are of significance:

ESTABLISHMENT OF TANK FARM AND MANGANESE EXPORTS FACILITY IN THE COEGA INDUSTRIAL DEVELOPMENT ZONE (IDZ)

Transnet’s latest undertaking is to have the tank farm and manganese export facilities removed from the present sites in the Port of Port Elizabeth by 2021 and 2023 respectively. The NMBM has called upon Transnet to fast-track the relocation process. The city recognizes the economic importance of both these bulk storage facilities, but the land can be freed and used to realise a waterfront development comprising real estate, commercial and tourism products. The challenges that are being addressed in the interim are to manage the dust and air pollution and to ensure Transnet does not further delay the deadlines for the removal of the facilities from the Port Elizabeth Port area.

BAAKENS VALLEY

The Baakens Valley Programme is a package of projects, identified in the Baakens Precinct Plan, which has been approved by Council. The precinct is divided into four focus areas, each with a unique identity and spatial character that could support new and integrated uses. The Focus Areas are:

- Focus Area 1 -The Heart of the Bay
- Focus Area 2 - Baakens River Valley
- Focus Area 3 - St Georges Park
- Focus Area 4 - The Port (This planning is being undertaken by Transnet)

Approximately 50 projects are identified within the precinct plan. Priority projects have been identified in each Focus Area for implementation which will mainly be done by the MBDA in order to transform the area into a safe, clean and affordable precinct that is characterised by multi income, multi-generational and multi-sectoral uses. The strategy includes area management, multi- sectoral programmes, and partnerships with research institutions and the private sector. New technological solutions and innovative approaches will be sought. Ultimately this will contribute to economic growth and reduce inequality and poverty.

Three projects were completed. These include the Campanile, (a popular Tourism attraction which has been transformed both in appearance and in relevance as the start of the Iconic Route 67), the Tramways building refurbishment and the provision of parking in Union Street.

The upgrade of Fleming Street and North Union Street is nearing completion. This first phase of the Vuyisile Mini upgrade will rationalize parking in the precinct and create part of the pedestrian walkway to the river. It will also enable an events space within which markets and performances can be programmed. The planning and the preparation of approval submissions for the construction of a pedestrian bridge has commenced in order to ensure that construction can proceed in the 2018/19 financial year. The bridge will link the heart of the city with the Baakens River.

The upgrade of St Peters Land will commence in 2018 and the process of rezoning all the available land on the south bank to enable a mixed use precinct, predominantly for affordable housing has commenced. The upgrading of the Ellis Street Houses, which are rental stock earmarked for giving ownership to tenants will also commence in 2018.

Stakeholder engagements have been held regarding cultural stories and environmental opportunities in the Valley. The private sector has invested in the precinct with event such as Food Truck Friday, Markets, cycle events and walks being programmed on a regular basis.

Traffic calming measures and the rationalization of parking has commenced. A number of interest groups have been working on initiatives towards activating the Valley and collectively achieving results.

EXTENSION TO THE PORT ELIZABETH INTERNATIONAL AIRPORT

The NMBM is of the view that if the airport can accommodate larger aircraft, through the extension of runways, it will permit increased tourism opportunities through domestic and international connectivity. ACSA is committed to ensuring that Port Elizabeth International Airport grows in line with the demand of the region. Discussions are being held to enable the extension of the runways and to deal with the associated land issues.

AQUARIUM - BAY WORLD

In terms of the Co-operative Governance Agreement, signed between NMBM and the Provincial Department of Sports Recreation Arts and Culture, the intention is to redevelop Bayworld into a world class tourist attraction and flagship heritage institution for both Nelson Mandela Bay and the Eastern Cape Province. It is the specific intent to foster partnerships with other government institutions, with a view to collaborate and coordinate efforts in line with strategic objectives. Built into the agreement is a requirement to establish a sustainable model for operating. One of the key partnerships that have been entered into is with the Nelson Mandela University (NMU).

The NMBM has confirmed that Bayworld is an important project for the Nelson Mandela Bay Metropolitan Municipality. At the MBDA Representative Members Meeting held on 14 August 2017, the Members indicated that the approach of conceptualizing the facility as a premier conservation, research/science and edutainment facility, rather than a fully commercial venture is recommended. A facility without dolphins in captivity is envisioned. It is also envisaged that the facility can have close links with the Science Centre in Uitenhage to maximise the offerings of both collectively.

Bayworld complex, although in an advanced state of disrepair, has a registered school, a rehabilitation programme for injured penguins, seals, etc. a recently renovated conference centre and a museum with some very skilled and dedicated staff that are still attracting schools and learners. The site is in the heart of the tourism beachfront strip.

Nelson Mandela Bay has a number environmental and ecological attributes:

- It has critical biodiversity (sea/marine, land river estuaries/valleys).
- The area has is designated as a global biodiversity hotspot as one of the richest and most threatened reservoirs of plant and animal wildlife.
- It is also identified as the dolphin capital of the world and one of the few places where endangered species such as the African penguin can be seen in their natural habitat.
- The area has 5 of the 7 biomes and is home to the big 7, all in a malaria free environment.
- A two port, coastal city with more than 80 km of coastline, with vast opportunity to harness the potential within the blue economy, for sustainable growth and job creation linked to the marine environment, its conservation and sustainable management of its resources.

Within this context Bayworld could become the home of wildlife conservation, showcasing regional biodiversity and enabling research, education, economic development focused on the ocean's economy and social cohesion through nature in Nelson Mandela Bay.

Through collaboration between NMBM, MBDA, the Provincial Department of Sports Recreation Arts and Culture who have signed a Co-operative Governance Agreement the aim is to have a facility that is operational by 2022.

APPLE EXPRESS

NMBM in partnership with Transnet embarked on a process to re-establish and operate the Nelson Mandela Bay Steam Train formerly known as the Apple Express. The implementation of the project has focussed on phase one which initially was from the harbour to Kings Beach.

Due to the cost associated with upgrading the steel bridge on this route, (R3m) an alternative route was sought for the short term. Therefore, phase one runs from Kings Beach to the Airport (9,9km return trip). The objective of phase one is to gauge public interest in the steam train since it last operated in 2010.

The first trip took place was on the 26th of December 2017 and an official media launch was held on the 27th December 2017. The public response was overwhelming and the train was fully booked in all trips that were done daily up to 7 January 2018. For the remainder of January, the train operated on Saturdays and Sundays.

During the peak operating time five trips per day were undertaken and many were oversubscribed from a carrying capacity of 110 passengers. Over 7000 people travelled on the train in this short period.

Following on from the success of Phase one Transnet and NMBM will agree on the way forward.

UITENHAGE NMB LOGISTICS PARK

The purpose-built Nelson Mandela Bay Logistics Park (NMBLP) in Uitenhage managed by the Coega Development Corporation (CDC) is geared to locating more first and second tier suppliers in automotive manufacturing. The vision of the NMBLP is to obtain economies of scale for the automotive manufacturing industry through centralisation of different functions and suppliers to reduce costs by shortening and improving the supply chain to the automotive industry.

Precinct A of the Park is 57 hectares and features purpose-built infrastructure and shared services including security, ICT and logistics to minimise costs for new investors and existing tenants. More than 1000 people are employed within Precinct A of the Park. Developments in Precinct A have reached a stage where expansion will have to be undertaken into Precinct B. Investments need to be made in economic enabling infrastructure for essential services and utilities such as electricity, water, a fire-ring main for emergencies and internal roads.

HAPPY VALLEY PRECINCT / TELKOM PARK

A Local Spatial Development Framework (LSDF) was developed and approved by Council for the redevelopment of this precinct. Future development will be retail, residential, office and tourism/leisure/entertainment development.

Funding of approximately R20 million is required for bulk infrastructure to the area prior to any development taking place. The site is un-serviced. The MBDA has undertaken to do a feasibility study to demonstrate that the plans reflect a strong Internal Rate of Return (IRR) to ensure the attraction of private investors.

Options for the short, medium and longer term are being considered.

ZANEMVULA PRECINCT DEVELOPMENT

The Zanemvula precinct development intends to ensure that socio-economic facilities and amenities and alternative residential types are provided within these RDP housing areas.

Amenities in this area will also serve the Bloemendal and KwaNobuhle areas.

Mixed use areas have been planned alongside the transport spine in this area in the heart of Zanemvula project (45 000 residential opportunities).

Opportunities do not exist for connectivity of this area to the rest of the city and the role of this area as a transport hub needs to be recognised.

MOTHERWELL PRECINCT DEVELOPMENT

Development in the Motherwell area comprises municipal and private sector developments. Critical to the development of this area is the implementation of a commuter rail link with four stations between the Swartkops line and Motherwell NU29 as a first phase. This is discussed in more detail under the catalytic project of Motherwell Rail Corridor.

The Motherwell Growth Area / Economic Node is discussed in more detail above.

RED LOCATION PRECINCT

Located in the historic Red Location area of Ibhayi, the precinct consists of the Apartheid Museum, Art Gallery, Electronic Library and Back-packers Lodge. The Apartheid Museum was completed in 2004. The Art Gallery and Electronic Library buildings were completed in 2011. The performing arts complex and school of music form the last two phases of the precinct. The Business Plan for the performing arts complex is complete.

The continued closure of Red Location Museum due to community demands is hampering the maximisation of the full potential of the precinct. The precinct will play a significant role as a cultural/tourism node and can be directly linked with the Port Elizabeth CBD by means of the New Brighton Railway Station, which is within walking distance. It will furthermore complement and strengthen not only the Njoli Hub, but also the Khulani Corridor.

NJOLI URBAN HUB PRECINCT

The multi-million rand redevelopment initiative around the historic Njoli Square will contribute to creating a dignified space within a previously marginalised community. It is aimed specifically at economic upliftment.

The project is comprised of the following:

- Reconfiguration of the junction of Njoli and Daku Roads to accommodate traffic flow through a compact four-legged intersection;
- Accommodation of development components on the four quadrants surrounding the intersection, such as commercial development, medical suites, space for a future library and civil building, and stalls for informal traders and a Modal Transport interchange;
- Promoting pedestrian accommodation through safe and controlled crossing points;
- Accommodating future IPTS stations on the approaches to the intersection and
- Accommodating all minibus-taxi operations in one facility at or close to the existing off-street facility.

CLEARY PARK MODAL DEVELOPMENT

A modal interchanges has been planned at Cleary Park in close proximity to the existing shopping centre. The intention is to develop:

- Catalytic activities around the modal interchange
- Opportunities for public transport activities and densification along Cleary park route

The Cleary Park route is very constrained and needs planning intervention as a section runs alongside the commuter railway.

FAIRVIEW PRECINCT DEVELOPMENT

This precinct is not only a catalytic project but is also recognised as a Growth Area/ Economic Node of the City. It is an Integrated Mixed Use and Residential Development in the Fairview / Willowdene as discussed in detail in the section covering Growth Areas and Economic Nodes above.

UITENHAGE RAILWAY SHED RECREATIONAL PRECINCT

This project involves the development of an integrated mixed use and recreational precinct that links the Uitenhage Railway Shed development with a planned open space and regional recreational facility. This project is considered as an important project for the Uitenhage area as it will bring regional recreational opportunities to the area and will support the Railway Shed and Science Park Centre which have been developed by the Municipality.

The precinct consists of four sub-projects:

- Project 1: Unblocking of the development (Sale of land and Lease Agreement) with the private sector. A legal opinion is being obtained as this sale and lease processes have not been concluded in eight years.
- Project 2: The upgrade of Railways Sheds on the lease portion that form part of the Science Centre Precinct. The MBDA is in the process of procuring the services of a service provider to assist with the assessment of the buildings as they are of historic value.
- Project 3: Unblock the potential of the under-utilized sports facilities (Central Sport fields and Swifts Sports Ground). A structural assessment of the existing buildings must be done. A way forward must be determined on how to deal with the illegal occupants in the buildings.
- Project 4: Development of a precinct plan incorporating all 3 projects referred to above and identifying potential new projects.

N2 NODAL DEVELOPMENT

The N2 Growth Area/ Economic Node is discussed in detail above. The project therefore is both a BEPP Catalytic Project and Growth Area. This area is the fastest growing development area in the NMBM.

The project area is anchored by the Baywest Shopping Mall of 90 000 m² GLA. The greater area includes 450 000 m² of mixed retail and office space, a hospital, hotel and ICC.

The area is critical for socio-economic integration and will, once fully developed, provide a range of housing opportunities. In order to further the objectives of integration and access, this area will need to be physically linked to the Zanemvula Chatty area via the Western Arterial.

BLOEMENDAL ARTERIAL

The Bloemendal Arterial is a critical link that connects the Njoli and Chatty Jachtlakte Hubs. The construction of this critical linkage forms part of the longer-term proposal of the Comprehensive Integrated Transport Plan.

The road is 9 km in length and is comprised of two portions made up of 6.5 km and 2.5 km. Once constructed, it will strengthen access and integration by spatially linking the two areas. By improving connectivity between areas, economic activity will also increase.

A spin off of the development of this road will be that it is an essential transport collector to fast track development in the area. The impact will directly assist the predominantly poor area.

CHATTY LINK ROAD

The Chatty Link Road is a Catalytic Project as it is critical for the further development of the mixed use planned area which abuts it. This area will allow development of much needed alternative higher density housing opportunities, community and economic amenities as well as open spaces and meeting places.

The road is a 1.98 km link road between Standford Road and Bloemendal Arterial Routes and is presently under construction partially using ICDG funding.

WESTERN ARTERIAL

The Western Arterial is a critical link road linking the N2 nodal area to the Chatty Jachtlakte area and greater Uitenhage. It is approximately 10 km in length and preliminary designs are completed. Detailed designs have been finalised for the interchange with the N2 as well as the link between the interchange and Cape Road.

Route alignment between Cape Road and Stanford Road is currently being finalised through the EIA process.

This route will connect areas of poverty and unemployment to the growing N2 economic node. Presently people from Uitenhage and surrounds need to travel into Korsten in order to get to the N2 node which offers many employment opportunities.

MOTHERWELL RAIL CORRIDOR

PRASA is due to invest R1,4 billion for the completion of the first phase of this corridor which will ultimately run from PE CBD to Motherwell NU29 in its first phase.

Detailed designs of the rail link and stations are complete and are undergoing environmental authorisation.

An MOU between NMBM and PRASA has been developed and will be concluded shortly. The MOU makes provision for the institutional and technical support to give effect to the development such as land exchanges, infrastructure provision etc.

The route is hampered by the existence of certain informal settlements in the way of the route alignment. These challenges will have to be overcome in due course.

NORTH END COASTAL DEVELOPMENT

This is not a catalytic project but long term has the potential of being one. The North End Coastal Development project is intended to reinstate the existing degraded coastal environment north of the Port Elizabeth Harbour over a 30-year period,

creating an attractive urban gateway entrance to Nelson Mandela Bay. The project is intended to stimulate tourism and the economic development of the region.

The project seeks to restore beach sand to the severely eroded northern coast area through the redirection of dredged sand from the harbour mouth.

The first phase of the project aims to create a 500m long beachfront, with a direct link to the adjacent Nelson Mandela Bay Stadium, New Brighton and neighbouring communities. The project can be implemented only in partnership with Transnet and the National Ports Authority and is still at concept stage.

STATUE OF LIBERATION

This project is seen to help grow the tourism products in Nelson Mandela Bay and serve as an iconic attraction that will compel visitors to come to Nelson Mandela Bay. This will also provide an identity for the Nelson Mandela Bay region. Critical to the way forward and the implementation of the project is the identification of a suitable site and the funding of the project.

RESORTS

Over the years, most of the former tourist resorts in the NMBM have been neglected and left in a state of ruin by companies they had been outsourced to. This is due to a number of reasons some of which have legal implications. Currently, the Nelson Mandela Bay Municipality is deriving limited revenue from the operation of Willows, Van Stadens and Springs. Beachview and Maitland have been closed. A new policy is set to revitalise the ailing holiday resorts across Nelson Mandela Bay as the City is working on new management models to maximise the potential of these neglected facilities.

Solar 250MW investment project.

In order to maintain its initiatives towards a balanced energy mix, a low carbon economy and a sustainable income from energy, the NMBM has advertised an investment opportunity for small scale embedded generation from the installation of

solar panels on the roofs of domestic, commercial and industrial buildings. The simple intention is for the investor to sell or rent the solar system to the user at a fixed electricity tariff with a known increase over a period of 20 years. The NMBM, as the network owner and operator will collect the revenue as per normal and pay over to the investor the amount of generation in kWh less a "wires charge". This is the value of money needed by the NMBM to maintain and recapitalize the electrification network. If successful, the program could lead to large scale investments and concomitant job creation.

It will also ensure that the NMBM maintains its source of revenue and attempts to prolong if not prevent "Grid defection " where the entire revenue stream is lost. The program is advertised and explained on the NMBM web site.

INNOVATIVE ELECTRIFICATION

The current growth in illegal connections has seen an increase in the number of faults and failures on the NMBM grid. It has also led to dangerous and unsafe conditions where a dangerous "spiderweb" of thin wires cuts across the informal settlements. The NMBM is developing a system and has installed a number of the new safer and regulated connections which provide the residents with a specific limited usage which is safe reliable and cost effective.

DEVELOPMENT OF THE TOWNSHIP ECONOMY

The NMBM has placed a strong focus on the economic development of Townships and other previously neglected areas. The focus will be on the development of businesses in these areas, improvement of infrastructure and links between business hubs. The city is developing a plan to deliver economic infrastructure to township communities and improve services and facilities for residents, businesses and visitors.

2.2.1 Solid Waste Diversion and Beneficiation Project – Waste Park

This project is placed on hold due to certain procedural investigations underway. It may be resuscitated after the investigations and has an aim of diversion and beneficiation of municipal solid waste (MSW) as a potential revenue resource within NMBM.

The primary objectives of the project include:

- The maximising of waste-resource recovery
- Optimise waste recycling
- Creation of jobs
- Waste beneficiation and value add
- Minimization of waste to landfill – along the lines of a zero-waste to landfill approach.

The Project was started through catalytic funding from Eskom in 2012(after a MoA was signed between parties), as the principal electricity generation entity in SA primarily concerned with the generation of energy from renewable resources due to electricity generation crisis at the time. Where energy recovery is possible, a crucial objective was the development of renewable energy by employing waste-to-energy technologies, meeting targets on diversification of the energy mix and reducing carbon emissions.

Soon after the MoA was signed in 2012, a multi-disciplinary Project Steering Committee (PSC) was established to guide the Project Development Phase.

The Eskom funded feasibility study report was completed in October 2014. The Project Steering Committee resolved that Eskom's involvement in the Project was primarily skewed towards generation of energy from renewable resources (waste to energy) and **not** solemnly committed to the Waste Hierarchy. It is out of this backdrop that the PSC decided to commence with a Public-Private Partnership (PPP) Solid Waste Diversion and Beneficiation Project. The Project was divided into 2 (two) sub-projects:

- The Landfill Gas Extraction Project
- Waste Park Project

NMBM requested a project preparation funding facility of approximately R33 million from the Infrastructure Investment Program of South Africa (IIPSA) under the custodianship of the Development Bank of Southern Africa (DBSA) which is less than 2% of the total estimated project costs for the finalisation of the Bankable Feasibility

Study and development and facilitation of the Procurement Plan for the Solid Waste Diversion and Beneficiation PPP Project. The IIPSA Facility Agreement between the NMBM and DBSA was signed in November 2016. The Municipality is in the process of procuring a Transactional Advisor for the Project in fulfilment of the condition of the Agreement.

The NMBM has identified four potential sites for the development of waste management infrastructure (also called 'Enabling Infrastructure') – comprising Materials Recovery Facilities (MRF) and Refuse Transfer Station (RTS) infrastructure. These sites are PPC West, Greenbushes, Markman and Koedoeskloof.

In addition, a site within the Coega IDZ (Industrial Development Zone) was considered as a potential waste beneficiation site – in particular for a waste-to-energy plant (WtE). These sites, where possible, have been strategically selected in locations believed to be the centre of waste origination of the city's 'waste catchments'.

3. TRENDS AND DEMAND FOR BASIC INFRASTRUCTURE

The provision of infrastructure to deal with basic services is not dealt with separately, but forms part of the integrated planning for water and sanitation services that serve the Metro as a whole. As the development of infrastructure for human settlements has been the biggest driver for infrastructure expansion, the financial impact is related to the projects captured in the annual budgets.

The capacity of water and sanitation infrastructure to serve the NMBM is guided by the Metropolitan Spatial Development Framework (MSDF). The planning for the current and future capacity is dealt with in the approved Water and Sanitation Master Plans that takes cognisance of the MSDF.

The abovementioned Water Master Plan was approved by Council in 2006 (NMBM Infrastructure & Engineering Directorate, 2006) and is currently being reviewed. However, the recommended expansions to the infrastructure remain relevant, as set out below. The Sanitation Master Plan (NMBM: Infrastructure & Engineering Directorate, 2012) was approved by Council in 2012 and as in the case of water also supports both basic and economic infrastructure.

3.1 Water Master Plan (WMP)

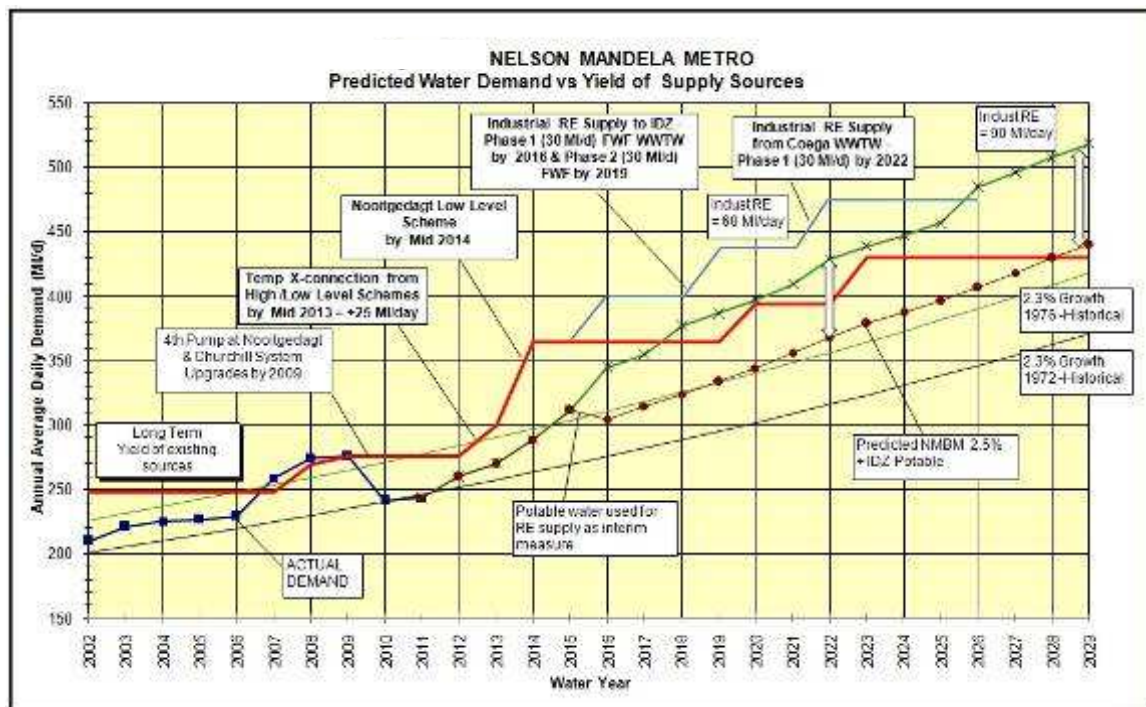
Sufficient internal bulk infrastructure exists to convey water to all developments within the metropolitan boundaries. Link water mains are installed as part of developments, when required. A constraint that existed in the previous BEPP has now been partially addressed with the completion of the Nooitgedacht Low Level Scheme Phase 2 making an additional 50 Ml/d of water available, which provides water for all new developments, as well as the Coega Industrial Development Zone. Phase 3 is planned for completion in December 2019.

The figure below is an extract of the anticipated water requirements up to 2030 and approved in the Algoa Water Reconciliation Study (Department of Water Affairs, 2012).

The anticipated historic growth for Nelson Mandela Bay has been 2.3%; however, developments such as the Housing Programme and the Coega Industrial Development Zone would increase the medium-term growth pattern. As these developments are linked to the availability of funding and investor interest, it is difficult to predict this growth. The Nootgedacht Low Level Scheme is therefore critical for investor confidence in the ability of the Municipality to support large investments.

From a spatial perspective, the land set aside for housing development in terms of the Housing Programme, and for large developments, such as the Coega Industrial Development Zone, shows that the biggest need for water is in the north/northwest of the metropolitan area, which confirms the need for the augmentation of the water supply from Nootgedacht.

FIGURE 9: Predicted Water Demand of NMBM



Sources: Department of Water Affairs, 2012; NMBM Infrastructure & Engineering Directorate (Water & Sanitation) 2011

The capital investment required to support the anticipated water required is partially contained in Table 8 above, but will need to be dealt with in detail in the Long Term Financial Plan of the NMBM.

Drought in the Algoa Water Supply System

Since December 2015 the Algoa Water Supply System has received below the 20-year average rainfall in the catchment area. The NMBM has introduced various water restrictions since September 2016. As a result of the reduction in the dam levels the NMBM was declared a local Drought Disaster area on 22 May 2017 in terms of the Disaster Management Act. Over the last 12 months the average dam levels have reduced from 54% to the current 26%. This has culminated in the National Disaster Management Centre declaring a National Drought Disaster that was gazetted on 13 February 2018. (Gazette 41439 No 107).

The NMBM submitted a Drought Mitigation Plan to the Provincial / National Drought Disaster amounting to R2.2 billion. An amount of R97 million was awarded to the City for drought mitigation in March 2018.

3.2 Sanitation Master Plan (SMP)

Sufficient internal bulk infrastructure exists to connect all developments within the Municipality to sewers. Link sewers are installed, as and when required. Sufficient hydraulic capacity exists to meet the requirements of the current developments. All wastewater treatment works are being upgraded to meet future development and capacity demands, including effluent compliance. In this area the upgrade of the Fishwater Flats WWTW is the most significant one that will be carried out at an estimated cost of R1 billion, followed by Kelvin Jones and Driftsands WWTW. The latter works deal with developments in KwaNobuhle and Uitenhage with Driftsands support the developments of Walmer Gqebera up to the N2 Node.

Economic infrastructure for development such as the Coega Wastewater Treatment Works and the Coega Return Effluent Scheme, is needed to support the Coega IDZ. Further development of the IDZ will be hampered without funding for these

projects. An investment of approximately R600M is required to complete the project. Planning has commenced on a new wastewater treatment facility to support the housing developments north of Motherwell and the Coega IDZ. This plant is planned for an ultimate capacity of 120 MI/d costing in the region of R1 500M. A start up capacity of $\pm 40-50$ MI/d will be required.

Coupled to this is the need to eradicate the remaining 8562 buckets that are still being used in the NMBM. The permanent solution is covered by the Master Plan, however, the interim measures are covered in the implementation strategy as set out below was approved by the Council on 1 December 2016:

Informal Settlements:

- Communal Container Ablutions (Toilets fitted within 1 male & 1 female container setup, waterborne connectivity) – Contracts in place.
- Communal Toilets (Individual toilets clustered together, waterborne connectivity) – additional contract required.
- Plumbed free-standing toilets (Individual scattered toilets, waterborne connectivity) – additional contract required.
- Waterless, maintenance-free individual toilets (Possible technology suppliers: Enviro Loo, Eco San, Cemforce, Four Stage Sanitation System, etc.) Space constrains, ground condition, permanent servicing clashes, & EIA challenges, more conducive for rural areas – additional contract required
- Waterless, municipality-maintained individual toilets, portable flushing toilet (Possible technology suppliers: Sanitech, Porta Potty) & chemical toilet. Potential additional municipal division required – additional contract required

Formal Settlements:

- Metro House construction.
- Slab & toilets option where serviced sites (± 4000) are in excess of the available housing subsidies.

- Individual toilet option where serviced sites (± 4000) are in excess of the available housing subsidies.

The reduction in bucket from 16 317 to 8 652 was predominantly as a result of the relocation of communities from informal settlements to formal settlements where either a subsidised house is being constructed or a toilet is constructed on a serviced site. The programme is progressing reasonably well. However, some wards do not accept some of the options for eliminating buckets. Interventions are under way with communities to eliminate this impasse.

3.3 Asset condition

This data is an extract from a study (Infrastructure Maintenance Backlog Assessment) that was conducted in 2011.

TABLE 11: Water Backlog Maintenance

<i>Water Backlog</i>	Total Sum of Repair Cost	Total Sum of Estimated Replacement Value	Repairs as % of Replacement Value
Dams	R2,408,320	R768,141,482	0.31%
Reservoirs	R21,519,671	R1,206,530,799	1.78%
Water Treatment Works	R57,295,705	R656,586,425	8.73%
Bulk Water Supply Lines	R12,949,500	R5,066,790,845	0.26%
Pump Stations	R23,372,730	R127,379,002	18.35%
Internal Reticulation	R530,370,326	R1,391,328,057	38.12%
Grand Total	R647,916,252	R9,216,756,610	

Source: NMBM Infrastructure & Engineering Directorate, 2018

TABLE 121: Medium-term Replacement / Refurbishment Plan

Water Backlog	< 2 yrs	< 5 yrs	ASAP	Monitor only	Record only	Routine	Total Sum of Repair Cost
Dams	R853,500	R264,800	R1,229,520	Nil	Nil	R60,500	R2,408,320
Reservoirs	R16,793,467	R295,000	R4,431,204	Nil	Nil	Nil	R21,519,671
Water Treatment Works	R22,119,655	R7,301,250	R18,516,800	R359,500	R567,500	R8,431,000	R57,295,705
Bulk Water Supply Lines	R1,035,000	R1,982,500	R9,722,000	R210,000	Nil	Nil	R12,949,500
Pump Stations	R2,646,900	R477,000	R19,784,330	R120,000	Nil	R344,500	R23,372,730
Internal Reticulation	R4,524,276	R4,040,984	R521,805,065	Nil	Nil	Nil	R530,370,326

Grand Total	R47,972,798	R14,361,534	R575,488,919	R689,500	R567,500	R8,836,000	R647,916,252
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Source: NMBM Infrastructure & Engineering Directorate, 2018

From the above table, it can be seen that the total maintenance backlog for water infrastructure for the next five years amounts to R647,916,252.

TABLE 2: Sewer Replacement Cost and Maintenance/ Rehabilitation Plan

Sewer Backlog	< 2 yrs	< 5 yrs	ASAP	Monitor only	Record only	Routine	Total Sum of Repair Cost	Total Sum of Estimated Replacement Value
Pump Stations	R15,527,520	R1,111,000	R12,179,100	R81,000	R0	R826,700	R29,725,320	R120,724,600
Sewer Reticulation	R160,180,756	R167,349,637	R60,938,492	R211,084	R0	R422,168	R389,102,138	R2,110,840,274
Waste Water Treatment	R34,021,564	R5,046,233	R102,497,695	R687,320	R12,000	R487,290	R142,752,104	R1,979,608,789
Grand Total	R209,729,84	R173,506,87	R175,615,287	R979,404	R12,000	R1,736,158	R561,579,562	R4,211,173,663

Source: NMBM: Infrastructure & Engineering Directorate, 2018

The above information forms the basis of, the Engineering Design and Management Systems software data management system. This same management system is used to provide the GRAP 17 compliance data on asset management.

The figures indicate the serious financial implications of the lack of maintenance of water and sanitation infrastructure. The situation is deteriorating progressively each year, due to the inability of the Municipality to adequately fund repairs and maintenance especially preventative maintenance. To relieve the situation, the largest capital requirement is required in less than two years, for which there is insufficient budget.

3.4 Roads/Stormwater/Transport

The NMBM's Comprehensive Integrated Transportation Plan (CITP) is currently in its review stage as required by the National Land Transport Act (5 of 2009). The review includes an overhaul of the CITP which will include new projects which have to be implemented within the next 5years of the CITP's validity.

The Comprehensive Integrated Transport Plan (CITP) as approved by the NMBM Council and Province sets out the roads network requirements based on the inter alia MSDF. The CITP includes all transportation requirements i.e. Non-Motorized Transport, Public Transportation etc.

Road infrastructure, (including Stormwater), is critical to support economic activities in Nelson Mandela Bay and has the capacity to support the current major public transport network routes. However, the Housing Subsidy (HSDG) does not allow for the tarring of internal and access roads. This results in increasing backlogs. The latter is of particular importance, as this also impacts on public transport.

Projects that have been identified for implementation are summarised in the table below. The table excludes backlog costs that were not budgeted for, due to affordability levels, and therefore does not indicate the actual funding requirements to eliminate infrastructure and maintenance backlogs over the five-year period.

TABLE 3: CITP Projects

NO.	PROJECT DESCRIPTION	TOTAL PROJECT COST – five years (Rand)
1	Metropolitan Transport Planning	75,000,000
2	Roads required for additional capacity (short-term projects)	618,750,000
3	Roads required for access and connectivity (short-term projects)	681,250,000
4	Roads requiring rehabilitation (short-term projects)	1,156,250,000
5	Road maintenance projects	2,875,000,000
6	Bridge maintenance projects	606,250,000
7	Public transport projects	4,950,000,000
8	Non-motorised transport projects	400,000,000
9	Freight transport projects	125,000,000
10	Traffic and signage improvements (short-term projects)	131,250,000
11	Stormwater maintenance projects	943,750,000
GRAND TOTAL		12,562,500,000

Source: NMBM 2017

The following table is an illustration of the roads, transport and stormwater backlogs and the maintenance budget required to address these backlogs:

TABLE 15: Maintenance Backlog

		Total Operational Maintenance Backlogs	Annual Requirement to Eliminate Backlog	Operating Budget 2017/18	Operating Budget 2018/19	Operating Budget 2019/2020	OPERATING BUDGET 2020/2021
	Roads & Stormwater						
1	Subsidised Roads	625,000,000	115,000,000	16 883 535	17 896 547	18 970 340	20 108 560
2	Non-subsidised Roads	1,800,000,000	368,000,000	13 383 535	14 186 547	15 037 740	15 940 004
3	Rehabilitation of Stormwater Facilities	795,000,000	175,000,000	6 674 770	10 785 260	11 785 260	12 118 330
4	Road Signs & Markings	110,000,000	25,500,000	3 500 000	3 710 000	3 932 600	4 168 556
5	Bridges	510,000,000	110,000,000	896 000	1 000 000	1 060 000	1 123 600
6	Resurfacing of Roads	1,890,000,000	205,000,000	0	12 980 586	13 406 840	14 585 590
				41 337 840	60 558 940	64 192 780	68 044 640

Source: NMBM 2018

The implementation of the projects depends on the availability of funds and is supported by the asset information from the Road Management System, the Stormwater Asset System and the Bridge Management System.

3.5 Electricity

The NMBM has been reliant on electricity revenue to off-set the rates account and fund a portion of the institution's administration. Declining sales, increasing purchases, losses and theft are creating a much reduced gross profit margin.

The following table shows the decline in profit made from the sale of electricity since 2006:

TABLE 4: Declining Electricity Sales Profit

Financial Year	Sales	Bulk Purchases	Gross Profit	% Gross Profit	Electricity Losses %
2006/2007	(R1,119,758,699)	R611,923,001	(R507,835,697)	45%	-
2007/2008	(R1,196,274,998)	R663,170,083	(R533,104,914)	45%	-
2008/2009	(R1,502,322,088)	R901,060,864	(R601,261,224)	40%	6,0
2009/2010	(R1,807,750,905)	R1,184,203,683	(R623,547,222)	34%	7,5
2010/2011	(R2,185,993,075)	R1,511,442,011	(R674,551,064)	31%	7,5
2011/2012	(R2,711,116,309)	R1,915,652,397	(R795,463,912)	29%	9.0
2012/2013	(R2,819,881,230)	R2,109,854,326	(R710,026,904)	25%	10,7
2013/2014	(R2,963,172,710)	R216,850,320	(R794,669,190)	27%	11,3
2014/2015	(R3,182,151,220)	R2,294,034,910	(R888,116,310)	28%	12,3
2015/2016	(3,463,791,052)	R2,720,304,070	(R743,486,982)	21%	12,7
2016/2017	(R3,693,703,315)	(R2,892,128,296)	(R801,575,019)	22 %	13.4

Source: NMBM 2018

A replacement of electricity in cross subsidisation could be the Council's fibre optics and wireless networks. This is still in the stage of development, however, a pilot project for a commercial model for wireless broadband communication is under way in the Walmer Gqebera area. Initial results indicate that in excess of R75 million revenue per annum may be achievable.

The NMBM is a frontrunner in creating an enabling environment and attracting investment in the green economy sector. Currently two wind farms with the capacity to produce approx. 89 megawatts exist in the Metro. The Municipality played a large role in the success of these ventures and continues to support other public and private initiatives. The Municipality is committed to exploring alternative energy solutions to offset the impact of load shedding and the electricity crisis in South Africa.

There has been a decrease in Capital Budget provision for electricity services recently as a result of the financial difficulties the NMBM has been experiencing.

The current condition of the electrical infrastructure requires a major injection of funds and man power in order to bring it to acceptable conditions in line with national standards and the expectation of electricity users.

NERSA has indicated that electricity tariffs cannot be used as the sole source of income to fund capital and maintenance projects. It is thus vitally important that the NMBM finds additional sources of funding for its capital and maintenance projects.

The current electricity outages and challenges being experienced on the electricity distribution network is evidence supporting the above. A previous ring fenced allowance on the local tariff never realized the expected results of an income.

Funding is required to bring the electrical infrastructure back to an acceptable condition, so that it complies with the required national standards. A five year period is detailed below however funding should not stop after five years but should continue into further years to prevent the network from deteriorating again.

In relation to distribution, the existing Nelson Mandela Bay Municipalities Electricity network is a mixture aged and relatively new infrastructure. The larger majority being older with some equipment being 40 years plus old, it is therefore urgent that major upgrade, refurbishment and replacement takes place. The following is a reflection of the first 5 years of this work in order to start making inroads into this problem.

The total cost for the various categories is as follows:

Major Substations	R 65 730 000
Major Transformers	R128 000 000
Minor Substations	R122 750 000
Overhead Lines	R 52 500 000
Total over 5 years	R368 980 000

With regard to Projects and Planning, the main responsibility is to ensure that the network is capable of catering for present and future loads. It also undertakes project management of new projects from low voltage up to medium voltage. Below is a breakdown of the funding required for the short to medium term projects.

The Transmission section is responsible for designing and project managing the high voltage infrastructure in the NMBM. Below is a breakdown of costs for the implementation of all the high voltage projects approved by the Municipality.

TABLE 17: Electricity Projects

Immediate Projects	2018/19	2019/20	2020/21
Walmer Conversion	R5,000,000	R 5,000,000	R 5,000,000
Charlo Conversion	R3,000,000	Nil	Nil
Uitenhage Reinforcement	R2,500,000	R2,500,000	R2.500,000
Walmer Town Hall Area	R1,200,000	R1,200,000	Nil
Humewood Conversion	R3,000,000	R3,000,000	R2,000,000
Brickmakers Kloof	R3,000,000	Nil	Nil
Struandale Conversion	R5,000,000	Nil	Nil
Swartkops Village	R2,000,000	R2,000,000	R2,000,000
Algoa Park Conversion	R2,000,000	R2,000,000	R2,000,000
Deal Party	R5,000,000	R5,000,000	R5,000,000
Wells Estate	R1,500 000	R 1,500,000	R1,500,000
Rural Areas	R3,000,000	R3,000,000	R3,000,000
Redhouse	R1,000,000	R1,000,000	R 500,000
Despatch (San Souci Reinforcement)	R1,500,000	R1,500, 000	R1,500,000
Korsten	R2,000,000	R2,000,000	R1,000,000
Miscellaneous Mains	R5,000,000	R5,000,000	R5,000,000
Township Development	R3,000,000	R3,000,000	R3,000,000
Total Cost	R48,700,000	R37,700,0000	R 34,000,000

Source: NMBM 2018

TABLE 18: High Voltage Projects

Immediate Projects	2017/18	2018/19	2019/20	2020/21
Swartkops 132	R15,000,000			
Swartkops/Deal Party Line		R450,000	R3,000,000	R10,000,000
Deal Party 132kV Substation		R2,000,000	R4,000,000	R10,000,000
Nivens Drift Substation		R1,000,000		
San Souci-Nivens Drift Line	R15,000,000	R 1000,000		
17 th Avenue Substation	R1,000,000	R40,000,000	R10,000,000	
Lorraine-17 th Avenue Line	R1,000,000	R20,000,000		
Chelsea 132/22 2nd transformer		R14,000,000		
Aloes 3 rd Transformer			R14,000,000	
Fitches Corner		R5,000,000		
Kragga Kamma Refurbishment	R10,000,000	R10,000,000	R20,000,000	R5,000,000
132kV CT Replacement	R3,000,000	R3,000,000	R3,000,000	R3,000,000

Source: NMBM 2018

4. TRENDS AND DEMAND FOR RESIDENTIAL INFRASTRUCTURE

The NMBM has, over the past decade, successfully provided a steady stream of RDP housing. The current provision of RDP housing is unsustainable and there is a need to diversify housing development initiatives.

The NMBM Council on 6 December 2012 adopted the Human Settlements Framework 2030 that sets out the strategic vision for the implementation of the new approach towards achieving Integrated Human Settlements aimed at the following objectives:

- Upgrade Informal Settlements and formalise backyard dwellings.
- Ensure all households have access to basic services.
- Plan for transformation, inclusion and resilience (to overcome spatial inequality).
- Increase residential densities and develop rental housing at scale.
- Renew priority urban zones (i.e. townships and inner-city).
- Improve organisational alignment and fitness.
- Support residential property functionality and transformation.

4.1 Land and housing analysis and project demand for housing by income group, location and cost

In order to create a better understanding of residential demand and supply, a joint exercise between the NMBM, the Housing Development Agency (HDA) and the MBDA was undertaken in 2012, conducted by Shisaka Development Management Services in collaboration with Bagale Consulting (Pty) Ltd.

This work was updated by Shisaka in 2017 and is reflected in section 1.1 above.

Of note is that 70% of the existing and projected population will depend on some form of subsidised housing in the future.

The map attached as Annexure “E” shows private sector, municipal and public private partnership proposals for the development of different types of housing in Nelson Mandela Bay. This includes the affordable housing sector.

In terms of the Capacity Support Implementation Plan, a land and housing market trend analysis has been done by Shisaka which includes proposals to revise the NMBM housing policy in a manner that is more sustainable and meets spatial restructuring objectives. The report has been confirmed administratively and currently serves as the baseline for the development of a new Housing Strategy for Nelson Mandela Bay. It is envisaged that the new strategy will be completed and adopted politically during the 2018 calendar year.

5. TRENDS AND DEMAND FOR COMMUNITY AND SOCIAL INFRASTRUCTURE

5.1 Quantifying backlogs and future demand in relation to commitments secured by relevant provincial/national departments or entities

The table below relates to the delivery of social amenities. It shows actual delivery costs, it includes the reality of housing costs (at minimum), internal reticulation, bulk servicing, social amenities and retail opportunities based on the estimated housing needs as contained in the Shishaka Report. The costs have been escalated to allow for inflation.

It is concluded that the delivery cost per erf is approximately double the subsidy amount allowed, if community infrastructure is considered.

TABLE 19: Cost of Community Infrastructure

Estimated housing need for lower income households by 2030		
Current households in need (backyards / informal settlements)		38366
Estimated new low income households by 2030		32012
Total lower income household need (estimated)		70378
Estimated additional households earning above threshold		4814
Total estimated need for social infrastructure		75192
Estimated cost for development	Cost per erf	Total cost
Housing Expenditure	R 110,654	R 7,787,607,212
Indicative First Order Summary - Social Facilities		
<i>Schools</i>	R 22,600	R 1,699,339,200
<i>Clinics</i>	R 12,656	R 951,629,952
<i>Police Stations</i>	R 5,424	R 407,841,408
<i>Sports Facilities</i>	R 1,808	R 135,947,136
<i>Community Centres</i>	R 7,232	R 543,788,544
<i>Libraries</i>	R 1,808	R 135,947,136
<i>Parks and Recreation/Greening</i>	R 1,808	R 135,947,136
<i>Private Investment – Retail</i>	R 22,600	R 1,699,339,200
Total - Social Facilities	R 75,936	R 5,709,779,712

Estimated cost for development	Cost per erf	Total cost
NMBM Internal Reticulation (Basic Scraped Roads, Water & Sanitation)	R 26,228	R 1,972,168,109
NMBM Electricity Reticulation	R 11,201	R 842,192,508
Total Housing, Social Facilities & Internal Reticulation	R 224,019	R 16,311,747,540
NMBM Bulk Reticulation (Bulk water, sewer and roads and stormwater upgrade)		R 12,387,506,040
Total Housing, Social Facilities and Bulk Infrastructure	R 356,770	R 28,699,253,580

Source: NMBM 2018

Note: About R25 000 per erf must be added to tar the roads and provide stormwater control.

Buildings, the natural environment, vegetation and open spaces are important for creating liveable environments. In addition, education and safety and security, well-functioning services and adequate facilities are required by communities for proper living. To deliver the full spectrum of services and amenities with housing opportunities, good intergovernmental relations are required, as all spheres of government are involved in delivering these products.

6. TRENDS AND DEMANDS FOR SPORT, RECREATION, ARTS AND CULTURE FACILITIES

6.1 Sports, Arts and Culture

In support of the National Development Plan, the sport sector has developed a vision for 2030. In working towards the achievement of the 2030 ideal sport system the National Sport and Recreation Plan (NSRP) was developed. The NSRP details the programmes, projects and activities that will be undertaken by all role players in the sport sector to achieve the objectives of an active nation, a winning nation and the creation of an enabling environment to achieve the active and winning sporting nation.

Strategic Objective 9 of the NSRP seeks “to ensure that SA sport and recreation is supported by adequate and well-maintained facilities.” The country has a serious challenge regarding the building, shared utilization, equitable access and maintenance of sport and recreation facilities that have far reaching consequences for the transformation and development of the sport sector. This is no different in the Nelson Mandela Bay Municipality. The provision and maintenance of facilities forms the foundation for the entire sport and recreation system.

The following table represents the number of sport and recreation infrastructure assets under the management of Sports Recreation Arts and Culture Directorate within particular identified zones:

<u>FACILITIES</u>	<u>ZONE 1</u>	<u>ZONE 2</u>	<u>ZONE 3</u>	<u>ZONE 4</u>	<u>ZONE 5</u>	<u>ZONE 6</u>
SPORTS	17	32	44	24	25	14
MPC'S and INDOOR CENTRES	0	2	2	2	2	2
BASKETBALL /NETBALL	9	33	48	31	3	0
POOLS	6	6	2	2	1	3

Many of the sports, recreation, arts and culture infrastructure is in a state of disrepair and neglect or vandalized, which severely compromises their ability not only to attract regional, national and international sport and cultural events, but also to adequately serve communities.

In terms of the priorities identified during the IDP Public participation process; the need for sport and recreation facilities has been identified as the second highest priority by communities of the Nelson Mandela Bay Municipality. This is a clear indication of insufficient provision in relation to the demand for social infrastructure and the existing backlog for social infrastructure that continue to grow as new Human Settlements are developed without the required social facilities.

The demand for sport, recreation, arts and culture infrastructure must be considered in the context of the following key aspects:

- Its role in the development of sustainable human settlements; ensuring social cohesion; nation building; reduction of crime and substance abuse in communities; and the general health and wellbeing of communities.
- Profiling the city as a preferred tourist destination.
- The economic impact of hosting major sport, recreation and cultural events
- Its contribution towards profiling the city as a preferred destination to host national and international sport and recreation events

Investment in revenue generating sports infrastructure can assist to deliver economic impact into the local economy and social benefits to communities. In addition, heritage assets must be preserved, conserved and activated through the establishment of resources within the city that must be well managed, maintained, used and celebrated.

Furthermore, the liberation heritage resources within the city that are have been and must still be developed, should form part of the National Heritage Liberation Route where over a longer term period, the objective would be to create an opportunity for the resources to be recognized as world heritage resources.

Nelson Mandela Bay has two Museums and an Art Gallery, namely the Red Location Museum of Struggle and Resistance History and the Nelson Mandela Metropolitan Art Museum and Red Location Art Gallery as internationally acclaimed facilities whose major contributions are to collect, preserve and exhibit and foster an understanding and enjoyment of works of art.

The identification, development, sustainability of Cultural Precincts is a responsibility that NMBM must implement as part of establishing infrastructure as well as other significant spaces where both creative and cultural industries find expression that in turn encourage the tourism industry. Identification and marketing of these precincts in the metro is work in progress wherein a precinct may have within any of either, memorial / heritage site, cultural / art centre, theatre, museum, heritage / art route, library etc.

Current trends internationally and nationally demand public libraries to provide:

- Digitisation of local resource such as community history, maps photographs, local artist work and resources found in local documents, research and creation.
- Collections migrated moved from traditional to electronic resources accentuating a need to redesign the library spaces to meet the 21st century demands and trends.
- Increased electronic resources which requires additional employee support for users to train in the use of new technology i.e. the red location digital library.

The continuing high employment creates continued need for libraries, to help people get access to free internet and email; newspapers, books and Materials to provide community support.

According to CSIR research as quoted in the library policy; a trip to the library must be a 5 minute walk accentuating that more libraries need to be developed to meet the requirement. The use of physical libraries as social hubs and community centres has

become more central to their continued existence. The primary goal of the NMBM LS is to develop its libraries to become true Centres of excellence reflecting the needs of the community they serve.

Below are the newly developed areas that must be considered for Satellite libraries in order to respond to the “Inclusive City” pillar of the IDP.

The Coastal areas

The White Paper on Sustainable Development and the Integrated Coastal Management Plan aim to achieve sustainable coastal development through integrated coastal management. The Integrated Coastal Management Plan further places responsibilities on local authorities to promote conservation of the coastal environment and to ensure that the use of natural resources within the coastal zone is socially and economically justifiable and sustainable.

Nelson Mandela Bay Municipality, has 120 km coastline characterized by pristine beaches providing a wide range of recreational opportunities, including safe swimming, sunbathing, walking, snorkelling and scuba diving. The NMBM coastline is of great value due to its diverse array of natural and heritage resources, which are key tourist and socio-economic assets.

The provision of amenities of a high standard at all the beaches in Nelson Mandela Bay, from parking and boardwalks to ablutions and restaurants, ensures a superb visitor experience. The strategic plan of the Municipality includes the development, upgrading and maintenance of recreational facilities mainly focusing on Beaches and Resorts into clean and safe world class facilities that will promote a sense of pride from the Nelson Mandela Bay residents

Sport and Recreation Industry Size

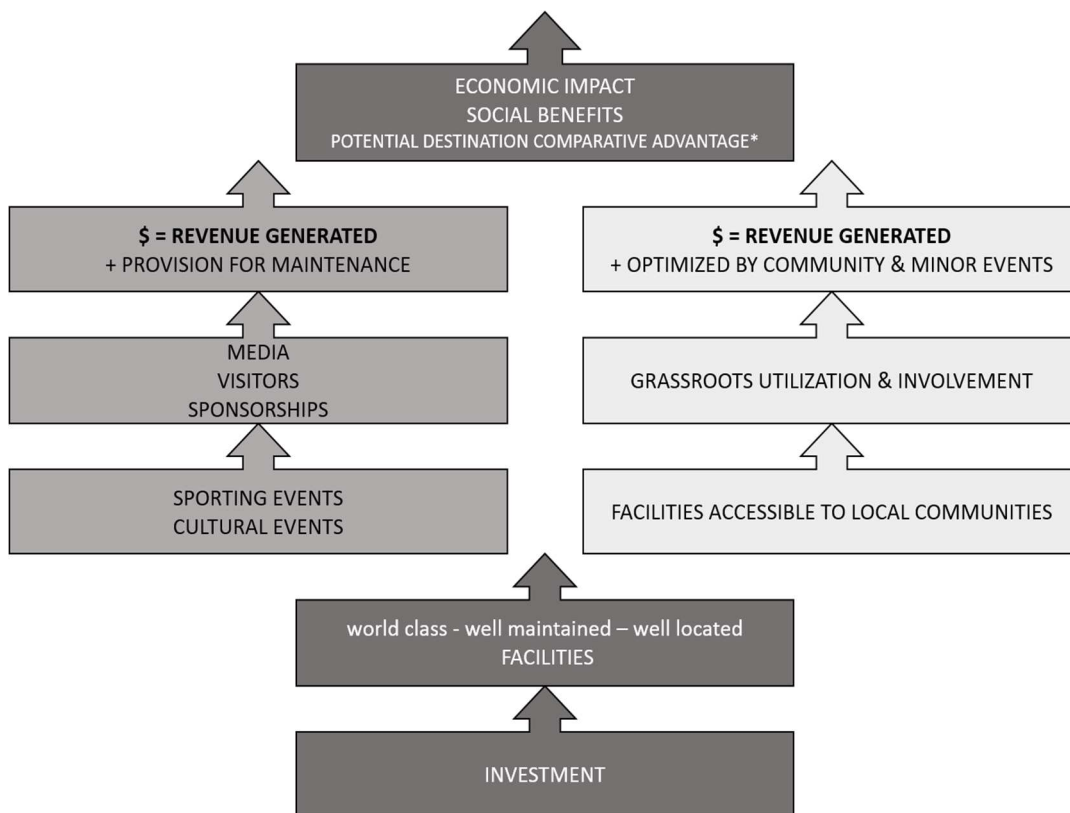
Worldwide the sport industry is estimated at 480-620 billion dollars. In South Africa, sports industry figures are difficult to establish, but the industry equates to around 2,1 % of GDP.

Creative economy industry size

In SA the Film industry alone generates R7,4 billion p.a., Music R2 billion, and publishing R6 billion. This equates to around 2,0% of GDP. The industry employs over 100 000 people.

If our facilities are not up to world class standards, and are in a state of serious disrepair as they are, this highly effective mechanism for the redistribution of revenue will not work!

The following diagram shows how capital investment in sport, recreation; arts and culture infrastructure can contribute towards economic impact and social benefits in the Nelson Mandela Bay Municipality.



**Note: Comparative Destination Advantage is dependent on additional factors as well such as category of investment, labour, cost, interest rates, inflation rate, facility occupancy levels; etc.*

The Sport, Recreation, Arts and Culture Directorate Infrastructure Development Strategy towards the next 5 years will focus on the following:

- Development, Maintenance and Management of our infrastructure that will provide a needed service to the community; and would generate social and economic benefit to the city.
- Adherence to the SRSA Norms and Standards for Sport and Recreation Infrastructure Development (Volume 2) as adopted by Council
- Planning and development of Sport and Cultural Precincts
- Development of **master plans** for each precinct and the costing thereof
- The upgrade and rehabilitation of existing sport, recreation, beach & cultural facilities
- Development of 5-10 Maintenance Plan to deal with ageing infrastructure under capital maintenance and operational repairs and maintenance
- The development of new infrastructure in newly developed human settlements and the peri-urban areas.
- To militate against climate change; explore more environmentally sustainable options for irrigation and lighting of sport, recreation and cultural infrastructure; eg: borehole and grey water systems; LED flood lights/ Solar systems
- The development of synthetic/ artificial pitches for hockey and football.
- Sport and Recreation Programs that will promote citizen health and wellness

6.2 Status Quo of Parks in the Metro

NMBM Parks Division is committed to create, maintain and landscape areas and cemeteries in a sustainable, aesthetic eco-friendly safe environment to enhance the marketability of NMBM and improve the quality of life for all. The draft Horticultural Development and Maintenance Policy aims to define the official position of the Nelson Mandela Bay Municipality towards the conservation, maintenance and development of its urban open spaces. It will ensure that long term goals and vision of the NMBM Integrated Development Plan (IDP) are realised through the appropriate allocation of resources. The Policy will assist with classification of Parks and determination of the minimum standards of development as well as a commitment towards ensuring appropriate allocation of resources to implement the set standards.

Provisioning and developing Public Open Spaces for active and passive recreation is vital in the fulfilment of every citizen's constitutional right to a safe and clean environment and promoting sustainability of new and established settlements. It has been proven worldwide that the provision of recreational facilities in communities has health benefits such as reduction of stress, boosting immunity, enhancing productivity and healing, psychological wellbeing and promoting social cohesion. The degree of these benefits corresponds with the quality of Parks provision and management and therefore a reasonable investment must be made to create quality parks. This necessitates the protection of land set aside for parks and informs Council to secure resources towards development of these facilities.

Currently a huge backlog exists in NMBM due to a lack of funding for development of Public Open Spaces in new areas as well as older areas due to historic inadequate provision in the already developed areas. The amount of budget made available for each park determines the standard of development and sadly this has always been below desirable levels. Densification of residential dwellings is necessary to meet the demand for more housing however this creates a need for more recreational facilities to cater for the larger population and offset the uncomfortable living environment that has been created by densification. Provision of adequately developed and well maintained Parks will offset some of the negative elements of living in high density settlements.

Frequent maintenance and revamping of facilities is crucial as wear and tear occurs at a higher rate than low density areas. The value of open space in improving the quality of life and uplifting the dignity of the community is extensively recognised. The role that parks fulfill in especially high density living environments is extremely important as they provide the only opportunity for active recreation and relaxation for many residents.

Reduced budget allocation for development and maintenance of Parks poses a threat as it allows antisocial activities such as illegal dumping, crime spots in undeveloped and overgrown open space, land invasion by informal settlements, etc to be established within communities. Crime and illegal dumping in areas where

undeveloped open spaces have been converted to recreational parks has been drastically reduced and this has resulted in high levels of dissatisfaction and pressure for development where it has not taken place due to limited resources.

In Settlements with no provision or inadequate provision of parks, small children are constantly playing on dangerous streets or in illegal dumping in undeveloped land. Due to the small sizes of erven as well as socio economic status of these communities, it is impossible for recreational needs of children and the youth to be provided with individual family budgets within private homes.

The value of Parks within communities needs to be viewed as follows:

- Visual Impact of the environment by softening harsh elements and reducing the negative effects such as pollution, harsh climates, etc.
- Integration of biodiversity and humans to create eco-systems
- Special created landscapes provide places of attraction
- Heritage, commemorative and entertainment
- Health and well-being through play, passive and active recreation
- Economic values through provision of employment opportunities, sponsorships, increased value of property, tourism, etc.
- Engineering values such as storm water outlets to minimize disastrous effects of the weather
- Social and community values; parks are a meeting place for communities, venues for Concerts, weddings, etc.
- Education and research; school outings, resource groups and research projects within reach

The residents of the Metro are already reaping some of these benefits where undeveloped filthy land has been turned into productive recreational facilities for the enjoyment of the community. The aim is for all parks to cater for the needs of the whole family due to the variety of installed infrastructure to meet the needs of adults, the youth and small children. This arrangement has resulted in improved security of park users.

6.3 Status Quo of Cemeteries in Nelson Mandela Bay

Currently there are 36 Cemeteries in the NMBM of which 24 are closed and 12 are operational. It is anticipated that NMBM, like many cities, will run short of burial space. A study was conducted in 2011 to gather information regarding vacant land in operating cemeteries but most of it cannot be used to allocate graves for various reasons. Geotechnical investigations need to be conducted in order to identify a realistic lifespan of the operative cemeteries as old Cemeteries were developed without undergoing a thorough process of studying underground conditions. There is an urgent need for a master plan to provide information regarding available burial land, new Cemetery acquisition and development in order to prevent the crisis situation that might arise should the present operational Cemeteries become full.

It should also be taken to account that acquiring of land for burial has its own challenges as the land has to meet certain criteria to qualify as being suitable for the purpose. E.g. Environmental Impact Assessments and distance from residential area. Another challenge is the cost of buying privately owned land if there is no suitable municipal land.

An exercise to identify suitable parcels of land for burial purposes has commenced and is in a preliminary assessment stage involving the identification of suitably sized land parcels in “well located” localities, regardless of ownership. The next step will be to subject those even identified to further assessment where the viability of the parcels will be assessed in terms of environmental viability; technical viability (availability and access to infrastructure and services); valuation and cost of acquisition as well as other relevant criteria. It is envisaged that a preliminary report herein will be available for consideration and further action during 2018/19 Financial Year.

Sufficient funding and planning is required in existing cemeteries to ensure that the remaining land is cleared, levelled and provided with concrete berms so that grave numbers can be allocated to undertakers who constantly apply for graves. If this is not done, bodies would have to be stored in mortuaries while the Municipality is still sourcing funding to do the necessary preparations.

Cemeteries experience vandalism, theft and stray animals which are a challenge due to lack of fencing. Significant monumental works get stolen and destroyed. In addition, residents encroach on Cemetery land because it is not demarcated properly. Fencing of some of these Cemeteries has resulted in a remarkable improvement and restored dignity in Cemeteries and with consistent budget provision annually, all existing Cemeteries will be secured. 18 Cemeteries still need fencing at an estimated cost of R53 million.

The Metro's standard of development and maintenance is not uniform and as a result of this, the tariffs to bury the dead had to be adjusted to correspond with the varying service levels. The majority of cemeteries in the former PEM areas are in a better condition compared to the ones from historically disadvantaged areas. Notwithstanding this, more development is still required. The majority of these cemeteries had some level of infrastructure such as offices, roads, sewerage system, electricity and public ablutions already installed however these unfortunately have also deteriorated over time.

The Municipality is required to render burial services and keep an accurate record of the deceased in our Cemeteries. An electronic system has been put in place to keep paperless, electronic records in a legally compliant manner and in line with best practices established by the South African Cemetery Association. The electronic system makes it possible to manage cemetery capacities and life spans, identify grave re-use opportunities and search for burial records based on any combination of data fields available online. The database currently comprises over 400 000 burial records plus an additional 400 000 survey records across 33 municipal cemeteries dating back to the early 1900s. All records can be found within 30 seconds. This has also assisted in the detection of fraud and corruption in NMBM where over R10 million of lost revenue was detected through the use of the Cemetery Manager software.

Currently the demand for burials in selected cemeteries far exceeds capacity and will result in rapid reduction of their lifespan. Residents are encouraged to bury their loved ones in Cemeteries that are closer to where they live. Some who can afford to pay for better developed cemeteries select cemeteries far from their homes.

7. TRENDS AND DEMAND FOR TRANSPORTATION

Fundamental to the concept of the Integration zones is the accessibility of precincts and nodes via public transport. This is in accordance with the CITP objectives of:

- Integration
- Safety
- Environmental Impact
- Economy
- Accessibility

Poor integration due to historic spatial planning and land-uses perpetuates inadequacy in accessibility to work opportunities and other amenities by public transport which impacts negatively on the economy, environment and other social factors through long average travel times, high fuel usage and wasted time.

One of the focal points of the MSDF is to develop corridors along major transport routes. The corridors in the proposed integration zones are to be flanked by mixed-use development and will be supported by improved public transport routes that were identified specifically to facilitate mobility and accessibility within the integration zones.

The IPTN starter service as it is current being planned is mainly subscribing to the five objectives of the CITP that which seek to foster integration and provide safe and secure service while increasing accessibility by either contributing or facilitating socio and economic activities within the NMBM and beyond, while doing so within the ambit of the environment.

7.1 Trends in demand for transport services by mode and income group

The Transport Travel Survey undertaken in 2009 indicates an estimated total of 1.33 million person trips per day in the municipal area.

TABLE 20: Person Trips per Day (2009)

Mode	Person Trips	% (All Modes)	% Private / Public	% Public Modes
Private vehicle	739,746	56	57	-
Taxi (all types)	372,866	28	43	67
Bus	188,465	14		33
Walk	23,974	2	-	-
Total	1,325,051	100	100	100

Source: SSI Engineers & Environmental Consultants, March 2011

It should be noted that this information excludes the number of passenger trips by commuter trains; only two scheduled train services a day are in operation between Uitenhage and the Port Elizabeth CBD. The train service is accessible to a relatively small number of residents within walking distance of the stations, because the railway line was originally constructed as a freight line, located away from the residential areas.

A future public transport route between Uitenhage and Port Elizabeth would alleviate this problem. PRASA is well advanced in the planning of the Motherwell to Port Elizabeth Commuter Rail Corridor.

Walking is the predominant mode of travel in low income areas, while private transport is the predominant mode used in the Port Elizabeth Central/Western suburbs and Uitenhage/Despatch areas. In the Northern Areas (Gelvandale/ Bethelsdorp), there is an almost equal modal split between walking and private and public transport.

Contracted bus services and minibus taxis are currently the predominant public transport service providers in the municipal area.

7.2 Implications of ITP and IPTS for land use management

According to the Technical Transport Planning Guidelines for CITPs prepared by the Department of Transport, the MSDF should be influenced by the CITP. Specifically, the alignment of an Integrated Public Transport System (IPTS) should inform land development, thereby providing proposed developments access to existing and operational public transport facilities. Additionally, the CITP can indicate the necessary intensification requirements of commercial, residential and activity land-uses that would make an IPTS viable. Low density, dispersed developments beyond the reach of public transport corridors have numerous negative impacts on the transport system, including long trip-times to public transport nodes, poor non-motorised transport (NMT) opportunities and the promotion of private vehicle use. These developments should consequently not be prioritised for development until they are linked to the public transport system or employment opportunities are provided within or close to the development and urban densities are increased to sustainable levels.

The MSDF, and the individual project proposals specified by the MSDF, should be evaluated according to the transport implications of the project alternatives. Selection of project alternatives should be made with reference to the performance of the proposal and transport system in terms of the following objectives:

- Integration
- Safety
- Environmental Impact
- Economy
- Accessibility

The MSDF should be informed by the CITP in such a way as to meet the five above mentioned objectives. Poor integration of land-uses and inadequate accessibility to work opportunities by public transport negatively impact the economy and environment through long average travel times, high fuel usage and wasted time.

One of the focal points of the MSDF is to develop corridors along major transport routes. These corridors are to be flanked by mixed-use development and will be supported by improved public transport routes, such as the Khulani Corridor that extends from the NMBM 2010 Stadium to Njoli Square and Motherwell. These corridors thereby promote accessibility to a number of amenities, facilities and jobs, as well as improve mobility within the City.

The strategic development projects included in the MSDF implement the core development focus areas. A number of projects, such as the Njoli Square Development, the Motherwell Urban Renewal Programme, and the Zanemvula Project to name a few, include strategies to promote mixed-use development, increase urban density and infill housing on currently vacant land, especially along transport corridors.

A core component of the Urban Network Strategy and identified Integration Zones is to promote functional precincts that are linked by transport.

Improved integration is assured by promoting public transport development, which is made viable by increasing housing densities as more people can make use of fewer public transport stops. The safety of users is enhanced by upgrading the road reserves as well as through densification: by placing more residences and businesses adjacent to the access routes, human presence on the street is increased thereby enhancing pedestrian security. Environmental impact is mitigated by reducing travel distances and time spent travelling by promoting mixed-use developments and public transport. Dense, mixed-use neighbourhoods allow economic opportunities and community facilities to be located closer to a greater number of residents, thereby making the provision of facilities more cost effective. Accessibility to public transport and facilities is also improved by dense, mixed-use development strategies on defined transport corridors.

An area which was lacking in a number of projects is specific reference to the safety and security of pedestrians, cyclists and wheelchair users and community segregation by barriers such as high order roads and rail lines. This needs to be addressed in the MSDF under review for the 2018/19 financial year.

Overall, however, the MSDF performs favourably in terms of its implications on the transport system, as evaluated in terms of the five objectives for good integration of a spatial development framework and the transport system that ultimately supports it.

It is important to note that the NMBM's current IPTN planning is limited to the MTEF period only as apart from the data collected from the surveys conducted in July 2016 on the Starter Service routes and the data that was modelled from the 2004 surveys for the entire city, there is no current data available on public transport operations. Consequently, the NMBM intends to conduct comprehensive Household Travel Surveys before the end of the 2017/18 financial year with the intention of undertaking an overhaul of the Comprehensive Integrated Transport Plan (CITP) and updating the Public Transport Plan towards the development of a 20 year Integrated Public Transport Strategy.

8. TRENDS AND DEMAND FOR SUSTAINABLE DEVELOPMENT

The Nelson Mandela Bay Municipality (NMBM) is mandated to deliver services in a sustainable manner (Local Government: Municipal Systems Act, No 32 of 2000). Sustainable development being defined as development which meets the need of the present without compromising the ability of future generations to meet their own needs.

This includes a responsibility with regard to ensuring ecosystem services or benefits provided by the natural environment. In a local context, sustainable development embraces all resources, ecological and others, which form part of service delivery. This is linked to how municipalities plan and deliver services. The NMBM's IDP has a strong focus on Local Economic Development and job-creation projects for waste minimisation, beautification and education and awareness-raising for residents. on climate change.

How the ecological (natural/green) infrastructure supports and constrains urban growth and development; procedures; standards; and performance

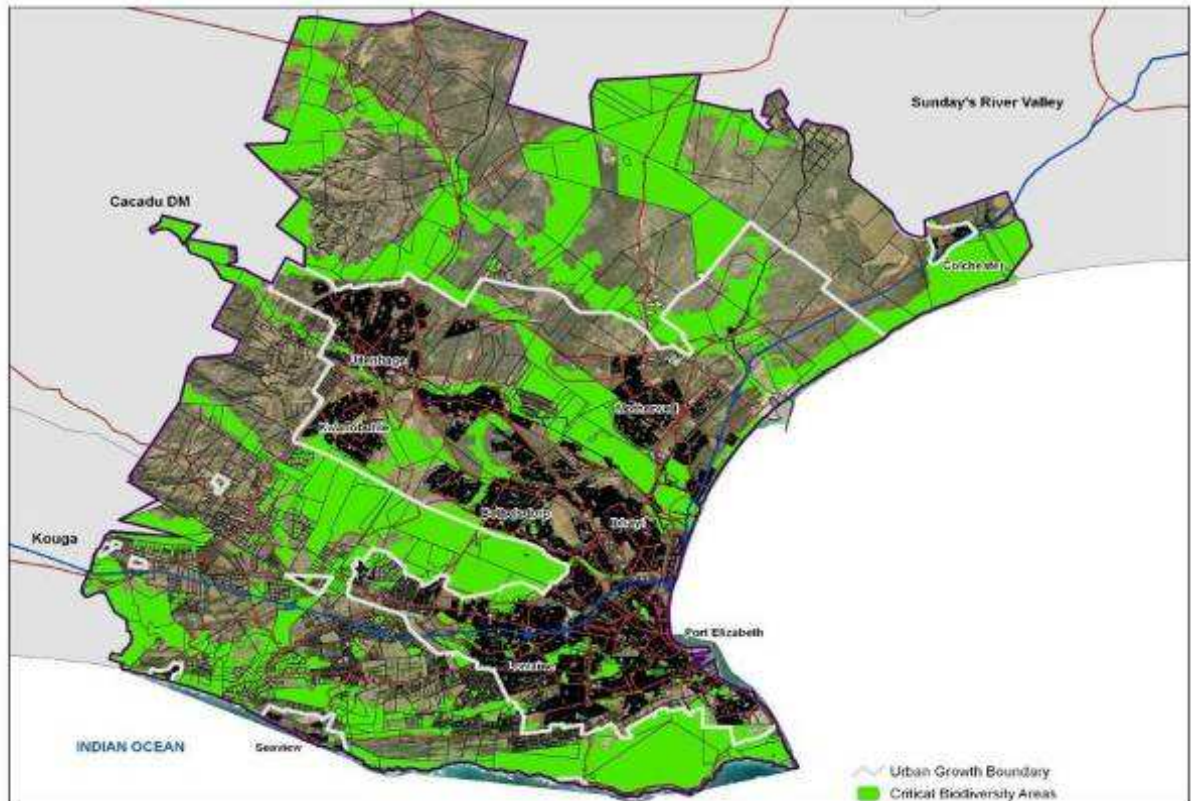
The governing legislation for the natural environment is the National Environmental Management Act (Act No. 107 of 1998), (NEMA). NEMA and other specific environmental management legislation which emanate from it, specifically the Environmental Impact Assessment Regulations inclusive of all Listing Notices (2014), continue to guide development and any activity which has potential negative environmental impacts. The ethos of application of environmental legislation is on a "polluter pays" principle, and establishes responsibility and accountability for mitigation actions for development which compromises natural or socio-economic processes.

Unsustainable development (e.g. urban sprawl; illegal developments), exploitative growth and investment in environmentally draining projects place constraints on urban growth and challenge access to green economy opportunities.

The National Environmental Management Biodiversity Act, Act 10 of 2004 and other environmental legislation still require municipalities to develop strategic environmental planning tools (i.e. Strategic Environmental Assessment, Environmental Management Framework and Bioregional Plan, Greening & Beautification Plan) and management programmes aimed at informing and guiding land use planning and decision-making processes, thereby promoting sustainable biodiversity management.

The Municipal Systems Act, Act 32 of 2000 also requires that the environmental impacts of the Municipal Spatial Development Framework (MSDF) be evaluated. In 2007, the NMBM completed a systematic biodiversity planning assessment process that spatially represented a network of its biodiversity resources and processes. This process of developing the municipality's systematic biodiversity assessment led to the Bioregional Plan (gazetted in March 2015). The Biodiversity layer of the Bioregional Plan informed the MSDF.

The biodiversity network represented within the MSDF was later used to inform the Environmental Management Framework (EMF) at a Metro-wide scale in 2009. It is used to guide development to appropriate areas and limits development in environmentally sensitive areas. Geographical areas were identified and mapped to facilitate a reduction in the legal requirements and streamline the Environmental Authorisation process at a strategic level. This process ensures that biodiversity priorities are taken into the sector planning of the NMBM. The review and refinement of the metro's EMF was completed in the 2015/2016 financial year.

FIGURE 10: NMBM Metropolitan Open Space System

Source: *NMBM Metropolitan Spatial Development Framework, 2009*

The NMBM Bioregional Plan which aims at conserving biodiversity at a regional level is primarily concerned with guiding land use planning and decision making through improving the legal standing and consideration of Biodiversity/Conservation areas. This plan was the first that a municipality has developed and gazetted in South Africa, and is legally binding for developments within the NMBM. The Bioregional Plan has been listed as a Strategic Plan of the Municipality, and is a legally-enforceable tool with which development applications must be managed.

The Plan is being revised to determine the current status of vegetation types on the “ground” and may release previously restricted parcels of land for development in future. Public Spaces are opportunities to create integrated communities, promote non-motorized transport modes, and create liveable, breathable cities. The natural resources planning, inventory and operational management of the NMBM's nature reserve network and green infrastructure network ensures that ecosystem values, functions are regulated as these values underpin, amongst others, watershed health and hydrological integrity in a City that is water stressed.

The National Environmental Management Act 107 of 1998, and the updated Environmental Impact Assessment (EIA) regulations and Listing Notices of 2014 also make specific mention of threatened ecosystems, Critical Biodiversity Areas (CBA), Bioregional Plans and systematic biodiversity plans to act as EIA triggers, mining permits, Air Emissions Licenses (AEL), forestry permits, and Water Use License (WUL) triggers. Development is therefore controlled legislatively, through the requirements for these licenses.

To ensure the alignment of service delivery objectives, governance structures are critical to achieving a common-ground approach to the mandate of local government. The incorporation of municipal and provincial spatial planning instruments is encouraged as a means of integrating and aligning strategic sustainability priorities. The overlaying of municipal spatial development frameworks, the conservation status layers, and collaboration with Environmental Management, Human Settlements, Infrastructure and Engineering, and other relevant Directorates are all efforts which speak to this integration and alignment.

A Corporate Environmental Impact Assessment Task Team (CETT) and Bilateral meetings between the Nelson Mandela Bay Municipality and the Provincial Department of Economic Development and Environmental Affairs (DEDEAT), the Department of Agriculture, Forestry and Fisheries (DAFF) and the Department of Water and Sanitation (DWS) are further instruments employed towards ensuring integration at social, economic and environmental levels.

Sustainable coastal management in a city with coastal assets such as Nelson Mandela Bay is imperative for risk reduction from the impacts of climate change induced storm surges and related coastal erosion. To this end the National Environmental Management: Integrated Coastal Management Act, Act 24 of 2008, allows for the development of a Municipal Coastal Management Programme (coastal management plan). This programme calls for an integrated, coordinated and uniform approach to coastal management within the Metro by all stakeholders in ensuring the sustainable use of coastal resources. The NMBM management plan has recently been revised with the Coastal Development Line (hazard lines) study having been completed and Provincially promulgated. The delineated coastal development lines as well as the management plan inform appropriate development along the coastline of the Metro.

Nelson Mandela Bay manages (under the Department of Environmental Affairs: Oceans & Coast) the protection of a declared Marine Protected Area at Sardinia Bay. The natural resources planning, inventory and operational management of the NMBM's nature reserve network and green infrastructure network is concerned with conserving ecosystem values, functions and the restoration of natural systems that underpin watershed health and hydrological integrity supporting natural resources necessary for agriculture and aquaculture.

Municipal policies, such as the Integrated Environmental Policy and the Integrated Energy Plan, are specifically geared to address the response and resilience of all communities to climate change impacts. The NMBM has a Climate Change and Green Economy Action Plan (2015). This uses a scientifically-sound climate projection, a collaborative vulnerability assessment and specific sector interventions to respond the challenges of climate change, it also aims to create sustainable economic opportunities (green economy) from these responses. This climate response action plan directly links to the green economy opportunities which can be gained from climate change impacts, in accordance with the outcomes of the Strategic Infrastructure Projects (SIPs).

The Integrated Environmental Policy of 2012 (currently under review) specifically, provides guidelines for the Land Use and Planning sector of the Municipality, which (amongst others) are to:

- Undertake spatial planning that reduces urban sprawl, promotes densification, mixed use development, and corridor developments; and
- Encourage green buildings and sustainable design and development practices.

The municipal guidelines in the NMBM Integrated Environmental Policy predate the legislation in the Spatial Planning and Land Use Management Act (Act No 16 of 2013). Thus, together with the NMBM Sustainable Communities Planning Guidelines of 2009, sustainable spatial planning has long been part of the municipality's spatial vision.

On the 28th September 2015, the first green building for the NMBM was opened to the public in the Grootkloof area of the Van der Kemps Kloof natural reserve area. Named the Grootkloof Education Centre, it houses a rainwater harvesting tank, solar powered heating & lighting systems, gas powered cooking systems, recycling and has multi-

functional spaces. Since then a number of other green buildings have been erected in the City.

The NMBM has set out to achieve the following sustainable goals:

- Providing an affordable and secure energy supply that increases the development and use of renewable, less toxic and less carbon intensive sources.
- Providing affordable and secure energy for all, while minimising demand and consumption.
- Increasing the percentage of energy derived from renewable sources.
- Policies promoting the use of clean and efficient energy.
- Achieving greenhouse gas emissions and air pollution reduction in both municipal operations and the community at large, with attention given to the reduction and prevention of inequalities.
- Improving the response and resiliency of all communities to climate change impacts on the built, natural and social environments, with the emphasis on public health and historically underserved populations.
- Ensuring that outdoor air quality is healthy for all segments of the human population and the natural environment.

The NMBM has actively engaged on climate change issues since 2009. Various campaigns, workshops, initiatives and intergovernmental relations activities have taken place and Nelson Mandela Bay is the leading metropolitan city in terms of climate change actions for the Eastern Cape Province.

The NMBM's Climate Change and Green Economy Action Plan is the official climate change response guide for all Directorates.

The current areas of focus for climate change in the city include:

- Greenhouse gas emissions tracking and reduction.
- Promoting Go Green initiatives, whilst exploring municipal and public awareness actions.
- Addressing the roles and responsibilities of every directorate in climate change related issues.
- Responding to vulnerability and aligning it with urban adaptation.

- Education and awareness.
- Ensuring alignment with provincial and national strategies and actions, and managing in-house policies and strategies.

In 2013, a municipal Community Awareness Campaign, called the Go Green Advocacy Programme, was launched. This Programme was aimed at providing residents with the resources they need to think critically about and address environmental problems and solutions, and include the environment as an important consideration in their work and daily living. This awareness programme built on the Go Green Campaign, which was initiated in 2008 to showcase municipal-led projects and initiatives which demonstrated sustainability. Approximately 108 000 households were targeted in face-to-face information sessions.

Despite these actions, climate change responses remain largely isolated. There is no dedicated department or official for climate change response work. Different municipal departments have played their part in sustainable climate change actions. However, this decentralized approach requires coordination.

The Integrated Energy Plan aims to provide a high level perspective of the energy trends and needs of Nelson Mandela Bay over the next 10 years. This plan is superseded by the State of Energy Report, which was finalized in the 2015/2016 financial year.

Another tool which was approved by the NMBM Council in 2009, is the Green Procurement Implementation Strategy, which is aimed at moving the NMBM toward the inclusion of environmental criteria in its Supply Chain Management Policy in order to encourage the development and diffusion of goods and services which have the least impact on the environment. Green or sustainable procurement addresses sustainable, domestic-focused and inclusive economic development. However, in implementing this procurement approach, the following learnings have occurred:

- There is reluctance by supply chain management officials to defend environmentally sustainable specifications (despite a long history of consultation and awareness-raising).
- National procurement legislation for municipalities does not cater for sustainable procurement. The NMBM Supply Chain Management Policy does not include environmental specifications.

- Litigation cases against the NMBM for requesting only local suppliers has been cited as one of the reasons for the reluctance to request only municipal-based suppliers (Localization is used to create unfair competition).

An Environmental Management System (EMS) is in operation at the Nelson Mandela Bay Multi-Purpose Stadium. An EMS is a management tool aimed at reducing and managing the environmental impacts of activities, and is a condition of the Stadium's environmental authorisation. This Stadium was built on Green Goal principles, sourced from the 2006 FIFA World Cup held in Germany.

The NMBM has adopted the national standard for energy efficiency or SANS 204 in municipal buildings, which greatly raised awareness of the consumption of energy resources and the type of energy resource that is being used.

The Disaster Management Sub-Directorate (Safety & Security Directorate) has identified in its' Risk Assessment (2010) that the highest rated risks to the NMBM are Hydro-metereological (Floods & Storms) and Hydro-metereological (Droughts), and then Environmental Degradation (in order of importance). This has implications for city planning. Preventative and disaster-proof city planning and design must become the norm in future where the effects of climate change are not linear or always predictable. Additionally, the potential positive impacts of climate change likelihoods (such as increased rainfall) must not go ignored. Resilient infrastructure and resilient services can be created if rainwater harvesting and even stormwater harvesting is investigated as part of the approach to urban development.

The Integrated Waste Management Plan (IWMP) of the Municipality also galvanizes the legislative understanding of the waste hierarchy (Reduce, Reuse, Recycle). The IWMP objectives revolve around the inclusion of the waste hierarchy during the collection, cleansing, transportation and disposal of waste products. The second generation of the IWMP (in 2015) has led to the inception of the Waste Diversion and Beneficiation Project for the Municipality, which intends to divert waste-to-landfill and create secondary waste economies.

The impacts of climate change experienced in Nelson Mandela Bay are noticeable changes to typical weather patterns within seasons; increased flooding and prolonged drought periods and coastal storm surges.

Climate change is a cross-cutting issue, which influences governance, integrated city planning, mobility, energy, waste as well procurement, and transport planning. In this regard National legislation is clear that government is responsible for combating the impacts of climate change and creating adaptive capacity in all areas of its mandate.

Whilst there is a National mandate for local government to take on various climate change-related issues, this mandate is not clearly defined. Local government nevertheless has the power to assign specific powers for mitigation and adaptation in-house. These actions could, can and have taken the form of coastal management plans, developmental set back lines, infrastructural guidelines, energy plans, and the management of natural resources. Fiscal mechanisms to support local government capital and operating expenditures currently do not offer incentives to municipalities in order to mainstream effective climate change responses in local government activities.

There are nevertheless two fundamentals to Climate Change:

- (i) measurement ie being able to determine “what harmful emissions are entering to atmosphere” and
- (ii) undertaking mitigating actions that reduce emissions and or physical (on the ground) measures that reduce environmental impacts resultant of climate abnormalities.

The NMBM Air Quality Section is the local permitting authority with regard to private sector industrial emission permissions. Nevertheless data in this regard and licencing information is not evaluated locally but submitted to National Government Agencies for collation. The NMBM is not in a position to quantify or compile a greenhouse gas emission register with reliable data due to fact that that monitoring of greenhouse gasses requires complex data analysis programs which are currently not functional. NMBM cannot effectively report on its emission status and whether or not it has effective emission mitigation measures in place. Devolution of authority from a National level to local level with regard to data analysis has yet to take place.

This is not to say that the City doesn't involve itself in climate change mitigation measures. Interrogation of the IDP and KPI's of the various directorates reveal that there are concerted efforts being undertaken to mitigate against climate change. Certain but not specified actions undertaken by the Public Health Directorate relate to (i)maintenance and establishment of parks, (ii)tree planting and protection of natural areas, (iii)bush clearing to increase water flow in wetland areas (iv)management of landfill sites (v)implementation of “set back lines” with regard to coastal developments

and implementation of various environmental legislative norms and protocols that critically evaluate development taking into consideration mitigation against climate change.

Other Directorates are also directly or indirectly working on climate change mitigation. These include (i) Electricity supply with the phasing in of energy efficient LED lighting (ii) Disaster Management with plans that mitigate against climatic abnormalities such as flooding (iii) Water and Sanitation with plans to augment water supply.

Climate change is a truly cross cutting discipline and it affects civil society and the entire economy as well as many specific sectors including energy, transport, agriculture, forestry, water resource management and provision of water services and health. The National Climate Response Strategy of the DEA continues to promote integration between the programmes of the various government departments to maximise benefits to the country while minimising negative impacts. It is a strategic document that clearly indicates the steps or actions to be taken by government and other players to respond at a national level to the challenges posed by climate change.

Hydro-meteorological (Floods & Storms) and Hydro-meteorological (Droughts), and then Environmental Degradation (in order of importance) have and will continue to impact on city planning. Preventative and disaster-proof city planning and design must become the norm in future where the effects of climate change are not linear or always predictable.

9. IMPACT OF SECTOR TRENDS AND DEMAND ON SPATIAL FORM

The spatial challenges identified, are not experienced in Nelson Mandela Bay only, but are common problems throughout South Africa and include:

- Fragmented socio-economic spatial development (an apartheid legacy).
- Urban sprawl.
- Low densities.
- Lack of integrated transport planning, e.g. car-dominated planning.
- Misalignment of transport and land-use planning.
- Poor civic infrastructure, especially in disadvantaged areas.
- Lack of housing typologies for lower income groups.
- Lack of mixed use and tenure options in lower income areas.

In order to address the above fragmented spatial form, a number of initiatives have been introduced and implemented to a varying degree in Nelson Mandela Bay. These include the following:

- Comprehensive Integrated Transport Plan, to ensure accessibility.
- Defining an urban edge and densification policies.
- Focus on the civic infrastructure in the public realm.
- Metropolitan Spatial Development Framework, including Local Spatial Development Frameworks and Sustainable Community Planning.
- NMBM Housing Programme.
- Social housing implementation.
- Land Use Management System revision.
- Retention of erven in new low income areas for private sector, residential and mixed use.
- Integrated Development Matrix.
- Urban simulation modelling, with a view to refine certain shortcomings identified during the first round and to incorporate financial modelling for the long-term financial sustainability strategy.

- Formulation of a long-term desired shared vision and mission.
- Development of the Urban Network Strategy and Integration Zones

Some of these interventions have been successful; however, the following aspects have been identified as barriers to the effectiveness of the interventions:

- The lack of funding to tar gravel roads and provide access to new areas and internal roads is a major inhibiting factor, as banks will not finance commercial developments unless they are located on a tarred road. Although land is made available for mixed-use development, this deters private sector development in newly developed residential areas.
- Private sector developers constantly pressurise the NMBM to relax the urban edge. Arguments such as the need for job creation and economic diversity are used to motivate developments. These developments cause leap-frog developments and unsustainable bulk infrastructure.
- The acquisition of well-located private land at market related prices is a prolonged process, for which there is insufficient funding.
- Growth in the local population and economy is very slow. The implementation of development and the steering of development initiatives to priority areas can therefore take place over the long term only.
- For fully integrated and sustainable settlements, quality civic infrastructure in low income areas is needed. This includes the quality of roads, pavements, cycling infrastructure and civic amenities. There is no funding for this provision from the current grant framework, and the NMBM is unable to fund this infrastructure itself. The result is that new lower-income township areas are developed, with noticeably deficient civic infrastructure and amenities.
- The Spatial Planning and Land Use Management Act (SPLUMA) was promulgated in 2013 and enacted in July 2015. A Municipal Planning Tribunal (MPT) as required in terms of the Act, has been in place since August 2016 and is streamlining applications processes.
- Intergovernmental coordination is a major challenge with regard to integrated and sustainable human settlements. This is because facilities and services that are to be provided by the provincial sphere of government are not being

properly coordinated in the development and redevelopment of human settlements areas.

- In certain projects in the Municipality, such as Zanenvula and Motherwell Extensions 29, 30 and 31, extra-ordinary arrangements have been made to secure the necessary intergovernmental coordination. This, however, does not happen as a matter of course in all projects. The Integrated Development Matrix was specifically developed to identify, at an early stage, the roles and funding requirements of all actors in the development of human settlements and to secure commitment.
- The Provincial Department of Transport does not contribute adequately to the maintenance of provincial roads in the Metro.
- The perpetuation of RDP housing with low densities remains a challenge. There is a need to change the mindset of communities and other roleplayers to adopt alternative sustainable solutions.
- Densification along corridors is slow due to the very slow growth being experienced in the Metro coupled to the majority of development being in the subsidized housing sector.