

SITUATIONAL ANALYSIS OF NELSON MANDELA BAY BUILT ENVIRONMENT – 2019

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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:

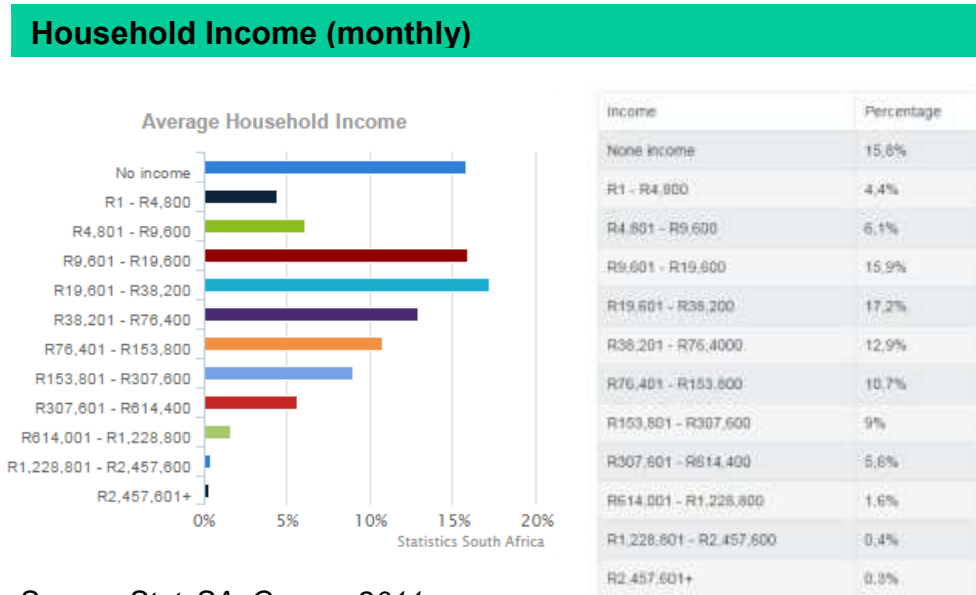
TABLE 1: Population Trends in NMBM (2001 to 2011)

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. 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 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).

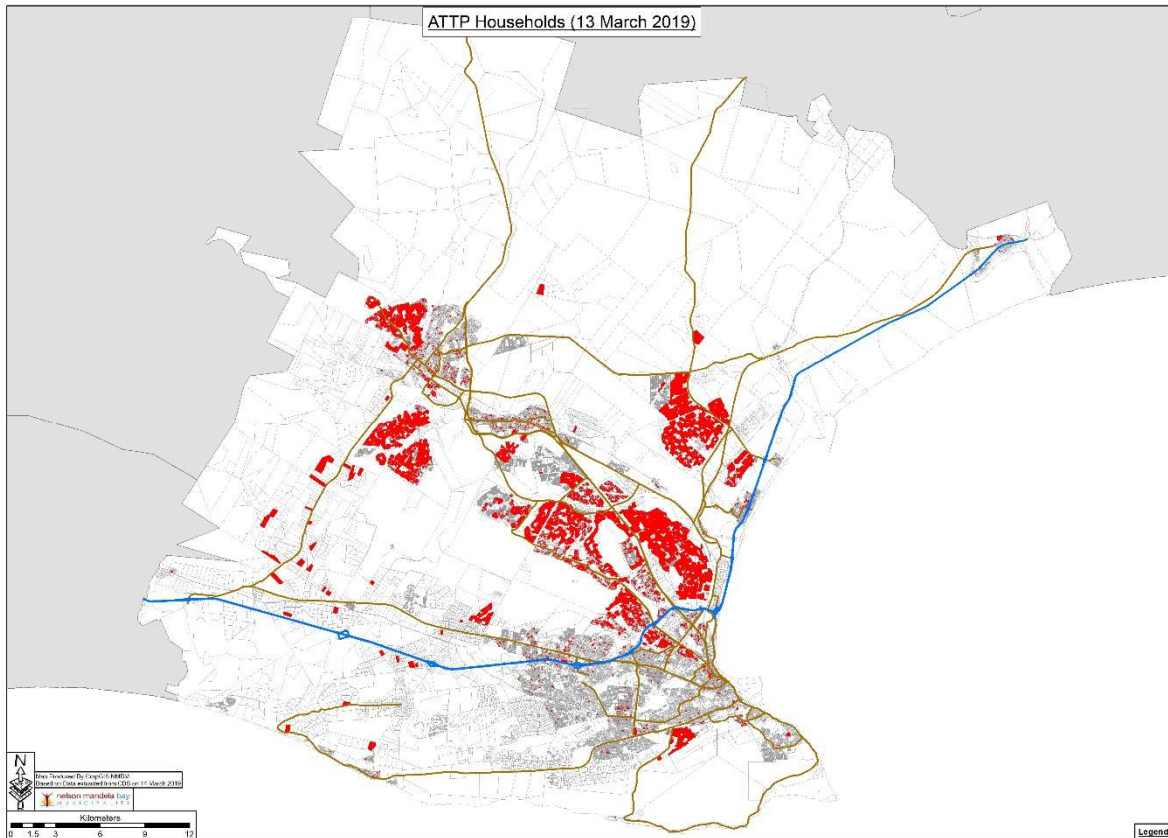
In analysing non-school going residents, 3% had no schooling, 13% had Grade 7 or less (Primary School level), and 75% had a school education of Grade 12 or less (Secondary School level) (STATS SA, 2011).

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 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 is also an indication of the economic situation in the municipality.

FIGURE 2: Spatial Distribution of ATTP Programme Beneficiaries



Source: NMBM CorpGIS, 2019

The figure above shows the location of the current 101 258 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.

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.

In the 2017/18 financial year R281 million of the arrear debt of those classified as indigent was also written-off against the Equitable Share allocation of R939 million. This has brought the total indigent actual allocation to R614 million which constitutes 65% of the total Equitable Share. Despite the 14,656 reduction in the number of

indigent households, the indigent cost continues to increase due to annual tariff increases and the arrear debts that accumulate before a household qualifies as indigent. This impacts directly on the available funds for repairs and maintenance backlogs.

Currently approximately 27% of formal households in the city cannot afford basic services and are funded 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.

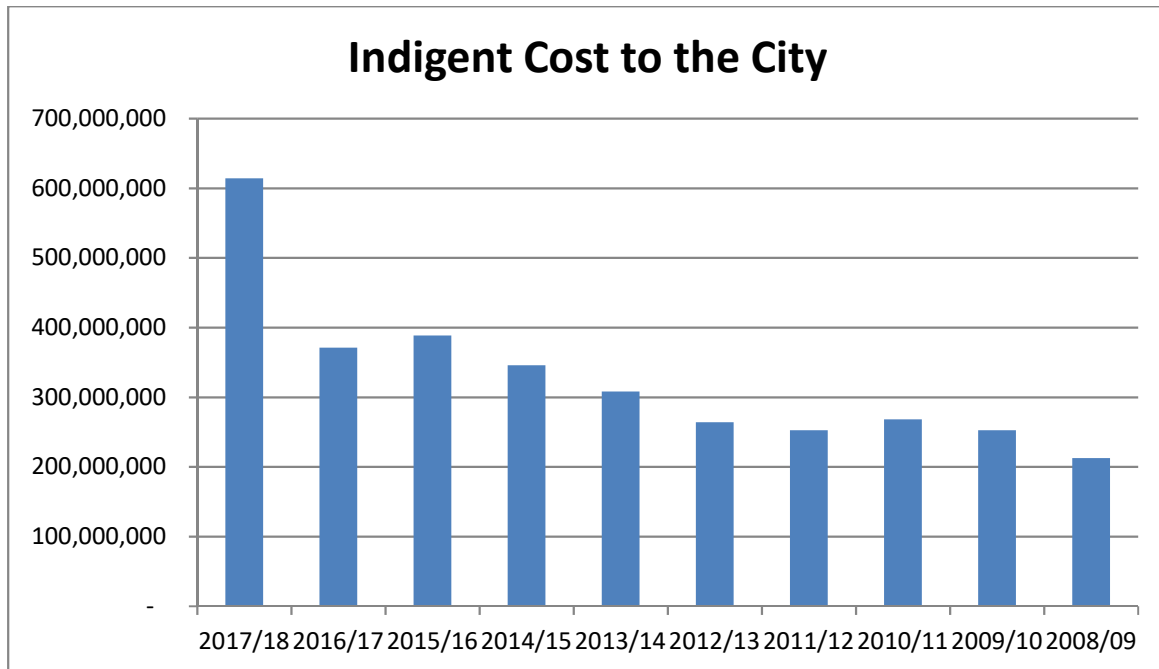
TABLE 2: ATTP - Number and Value of Financial Assistance to ATTP Households

Description	2017/18	2016/17	2015/16	2014/15	2013/14
Number of Indigents (closing numbers)	101,258	115,934	88,776	86,428	85,022
Year-on-Year growth (decline) in indigents	-14,676	27,158	2,348	1,406	13,471
Actual Indigent Allocation	614,218,196	371,170,533	388,554,845	345,946,687	308,292,772
Gazetted Equitable Share	939,530,000	798,043,000	774,616,000	761,606,000	743,325,000
% of Equitable Share	65%	47%	50%	45%	41%

Description	2012/13	2011/12	2010/11	2009/10	2008/09
Number of Indigents (closing numbers)	71,551	72,400	95,498	108,665	109,534
Year-on-Year growth (decline) in indigents	-849	-23,098	-13,167	-869	107,654
Actual Indigent Allocation	263,880,851	252,770,170	268,321,432	252,311,837	212,753,832
Gazetted Equitable Share	729,226,000	656,653,000	602,883,000	466,834,716	382,444,191
% of Equitable Share	36%	38%	45%	54%	56%

Source: NMBM Budget & Treasury, 2019

FIGURE 3: Financial Contributions made to Indigent Households in NMBM



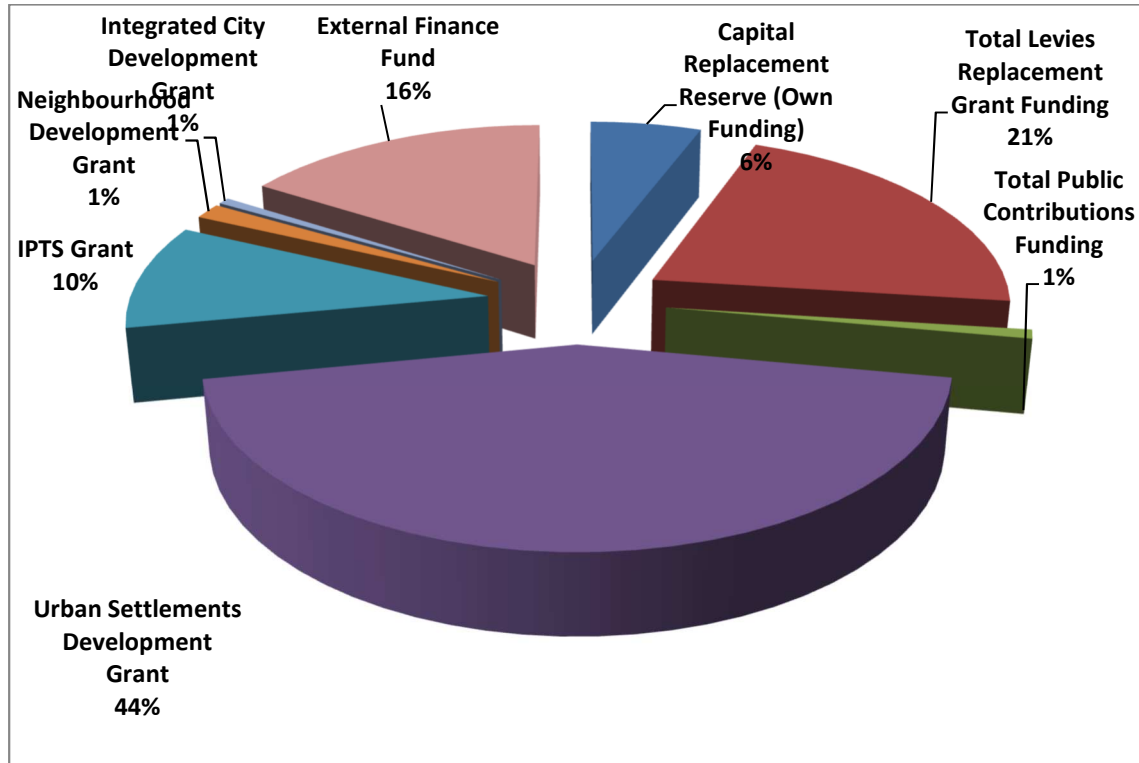
Source: NMBM Budget & Treasury, 2019

(c) Financial Overview of Nelson Mandela Bay Municipality

The total NMBM Draft Capital Budget for the 2018/19 financial year is currently R1.8 billion. However, this will increase as the municipality is in the process of sourcing loan funding to supplement the 2018/19 Capital Budget. These funds will be used for revenue generating projects.

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

FIGURE 4: 2019/20 Draft Capital Budget - Sources of Funding



Source: NMBM Budget & Treasury, 2019

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

Sources of Finance	Value	%
Capital Replacement Reserve (Own Funding)	103,388,501	5.8%
Total Levies Replacement Grant Funding	380,000,000	21.2%
Total Public Contributions Funding	15,000,000	0.8%
Urban Settlements Development Grant	789,125,151	44.1%
IPTS Grant	177,227,407	9.9%
Neighbourhood Development Grant	26,086,957	1.5%
Integrated City Development Grant	11,040,870	0.6%
External Finance Fund	286,369,700	16.0%
Total Capital Budget Funding	1,788,238,586	100%

Source: NMBM Budget & Treasury, 2019

The table below indicates NMBM to be 56% Grant dependent which is a situation that is improving but requires a turnaround strategy including building up cash reserves and generating revenue for the City.

TABLE 4: Grant Dependency of the Capital Budget		
Unconditional Grant Dependency		
Total Levies Replacement Grant Funding	380,000,000	21%
Conditional Grant Dependency		
Urban Settlements Development Grant	789,125,151	
IPTS Grant	177,227,407	
Neighbourhood Development Grant	26,086,957	
Integrated City Development Grant	11,040,870	
	1,003,480,385	56%
TOTAL GRANT DEPENDENCY – 56%		

Source: NMBM, 2019

(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% of formal households have access to basic sanitation.
- 68,3% of informal households have access to basic sanitation
- 6 010 buckets were still in circulation to informal settlements as a means of sanitation as at 1 March 2019.

Bucket eradication is a priority in order to fulfil the Outcome 8 Policy objectives. The number of buckets has reduced from approximately 16 000 in 2016.

(iii) Waste management (refuse removal)

- 100% of known informal settlements receive integrated waste handling services.
- 100% of known formal settlements receive integrated waste handling services.

(iv) Electricity

- 82.5% of households (both formal and informal) 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)

The following table extracted from the Shisaka report shows the housing situation in NMBM.

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 @ 1.36% annual growth rate (2011 – 2032)	44,888	18,316	13,759	11,351	17,744	106,058
Total (2032)	181,740	74,158	55,708	45,957	71,840	429,403

Source for table: Census 2011.

The NMBM has delivered 21,891 serviced sites and 11,112 houses (both fully subsidised) between 2011/12 and 2016/17. Due to the fact that the sites delivered are used to develop the housing units it can be assumed that the number of households assisted over this period is 21,891 households.

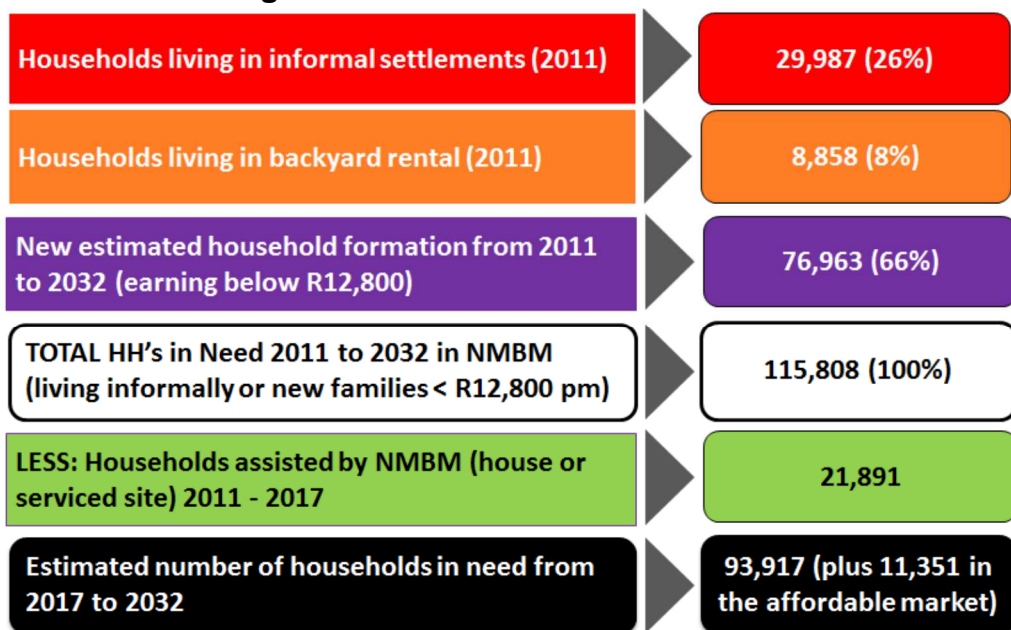
These figures also indicate a sustained capacity within the NMBM to directly deliver in the order of 2 000 houses and 4 000 serviced stands per annum.

The assessment of the housing circumstances at 2016/17 financial year end indicates a housing need (should the NMBM not have delivered any new housing since 2011) of 115,808 houses for lower income families. These are comprised of the following:

- 29,987 (26%) who were living in informal settlements (regardless of income) as at 2011;
- 8,858 (8%) who were living in backyard rental as at 2011;
- 76,963 (66%) who are estimated new household growth from 2012 to 2032 and are projected to be earning below R12,800 (excluding salary escalation). Of these at least 4,888 (42%) are estimated to have monthly incomes of R3 500 and less.

Between 2011/12 and 2016/17 NMBM assisted a further 21,891 households to access state subsidised housing. This reduces the estimated number of households in need from 2017/18 to 2032 to 93,917 (see figure below). There is also a need to facilitate the delivery of approximately 11,351 affordable houses. Of these a portion is eligible for the Finance Linked Individual Subsidy Programme (FLISP) subsidy.

TABLE 6: Housing Circumstance and Need to 2032



Source: Shishaka, 2018

Households 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.

These 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 Parsonsvelei, Coega SEZ/ 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. The scenario recommended is summarised as “walking together for growth” and 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 and the provision of serviced sites for

qualifying BNG households, as well as households qualifying to access the FLISP (Finance Linked Individual Subsidy Programmes) programmes and rental housing provision.

The strategy was presented at an NMBM Housing Indaba in 2018 and it was identified that further refinement will be required. It is intended to conclude this during the 2019/20 financial 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 SEZ. Further development of the SEZ 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 SEZ. 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-21	Construction stage
2	Borehole Water Exploration	R300M	'18/19 – R8.94M; 19/20 - R214.96M; 20/21 - R60.01M	Dec-21	Production boreholes under construction. Tender for treatment facilities to be awarded in the 3 rd quarter of 2018/19.
3	Western Desalination	R1,500M		5 yrs.	60MI/d: Cost estimate excludes link pipe and pump station network to distribution network. Subject to EIA processes. Collaboration with CDC to be explored.
4	Sundays River Return Flows	R1,000M	R100M pa	5 yrs.	55MI/d: Cost estimate includes link pipe & pump station network to distribution network. Subject to EIA processes Subject to Feasibility by DWS based on the Algoa Reconciliation Study outcomes
5	Fishwater Flats	R1,300M	R100M pa	5-10 yrs.	Phase 1: 100% complete
6	Coega Wastewater Treatment Works	R3000M		5 yrs.	Preliminary planning phase.
7	Coega Return Effluent	R650M		3 yrs.	Project ready for implementation
8	Non-Revenue Water	R1,631M	R650M for First 5 yrs.	10 yr. Plan	Project Commenced. 10 Yr Business Plan Approved by Council to reduce losses in the amount of R1631M. Of this a loan of R415M was approved for NRW for 4 years.

Source: NMBM 2019

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 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 residents.
- Technical and non- technical losses.
- 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 from an operational and 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 in 2011/12 and continued to dip in the 2012/13 financial year.

The increase in the number and value of plans for 2013/14 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 2013/14. However, the number of RDP house plans increased by 3 122. In the 2012/13 financial year, only 815 RDP house plans were approved.

Therefore in 2013/14, commercial and private sector plans decreased by 255.

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 2014/15. The value of RDP building plans has however shown an increase, which is directly attributable to the increased subsidy value for RDP housing. The number of building plans for RDP housing decreased to 537 in 2015/16, 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) occurred in 2016/17.

A corresponding decrease in the number and value of private and commercial building plans occurred in 2014/15, and is an indication of an economy that remained weak. The building statistics for 2015/16 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 with little change in 2017/18.

TABLE 8: Number of building plans submitted 2013- 2018

BUILDING TYPE	2013-2014		2014-2015		2015-2016		2016-2017		2017-2018	
	No of Plans	% Total	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%	222	4.17%
GOVERNMENT	22	0.28%	11	0.12%	37	0.84%	16	0.27%	13	0.24%
OTHER	26	0.33%	24	0.25%	36	0.81%	79	1.32%	91	1.71%
RESIDENTIAL	7651	96.20%	9345	97.70%	4204	94.92%	5679	94.81%	4999	93.88%
TOTALS	7953	100.00%	9565	100.00%	4429	100.00%	5990	100.00%	5325	100.00%

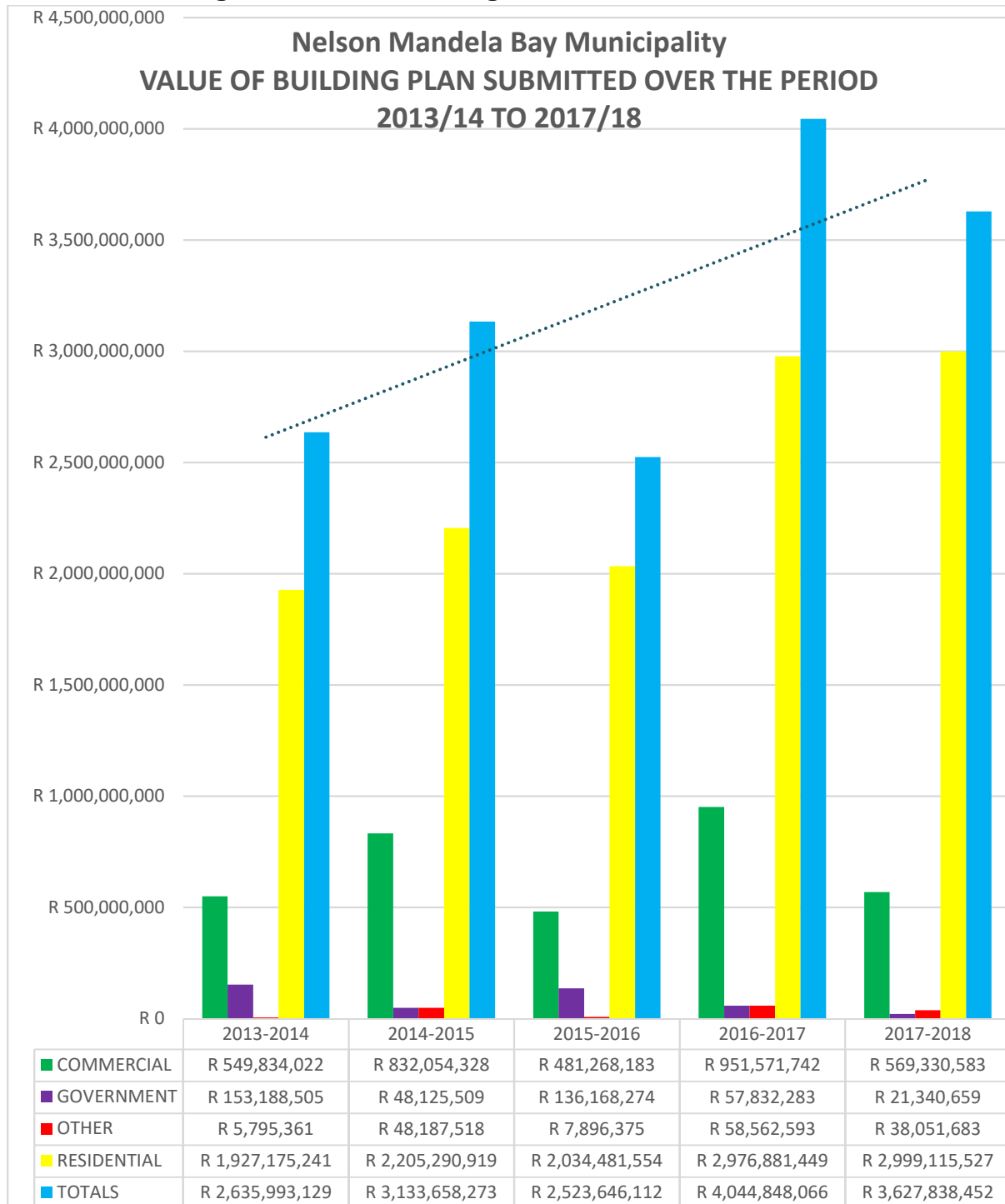
Source: NMBM, 2019

TABLE 9: Value of building plans submitted 2013- 2018

BUILDING PLAN TYPE	2013-2014		2014-2015		2015-2016		2016-2017		2017-2018	
	Value of Plans Submitted	% Value	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%	R 569,330,583	15.69%
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%	R 21,340,659	0.59%
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%	R 38,051,683	1.05%
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%	R 2,999,115,527	82.67%
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%	R 3,627,838,452	100.00%

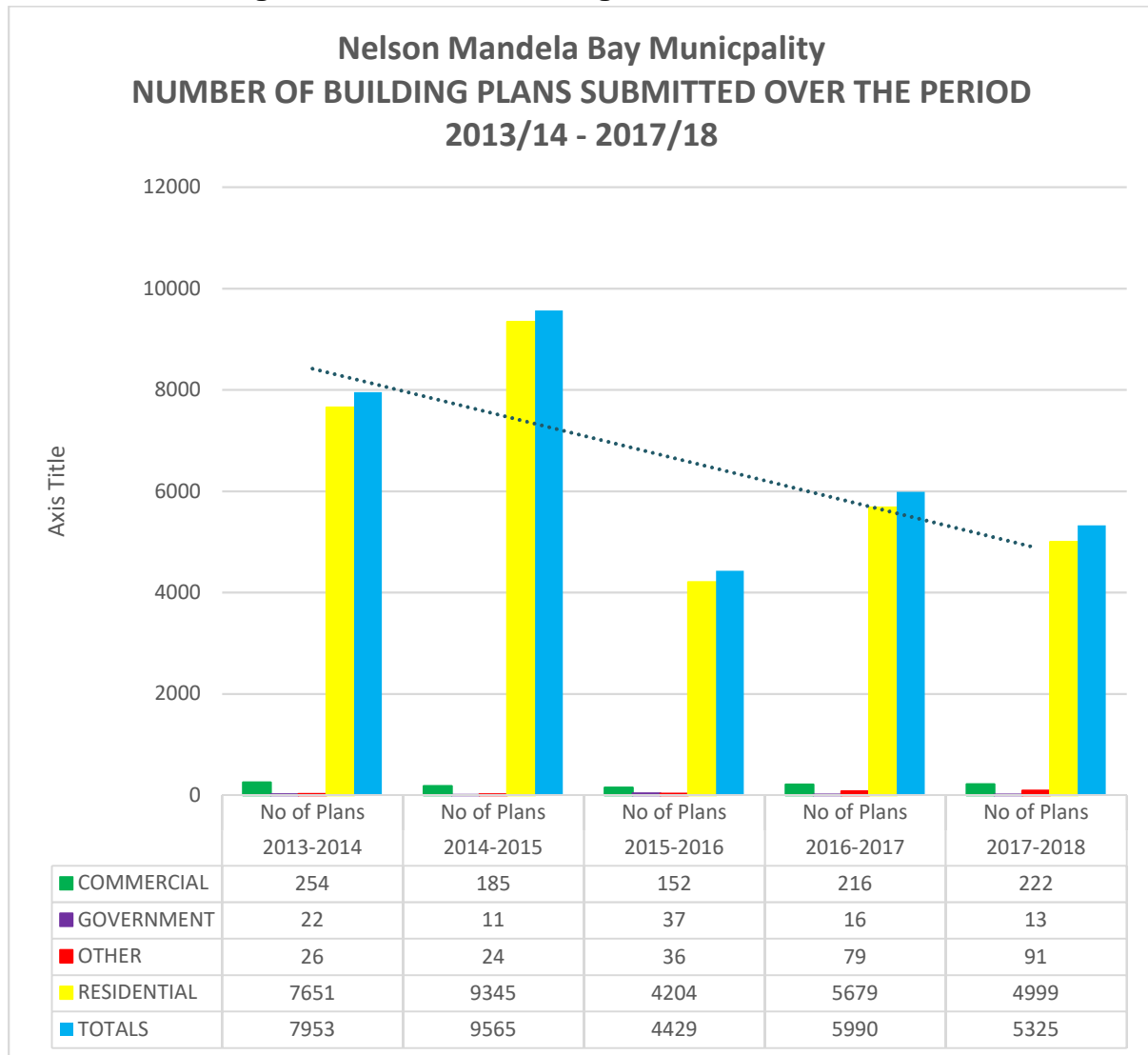
Source: NMBM, Building Stats 2019

FIGURE 5: Change in Value of Building Plans Submitted: 2013/14-2017/18



Source: NMBM 2019

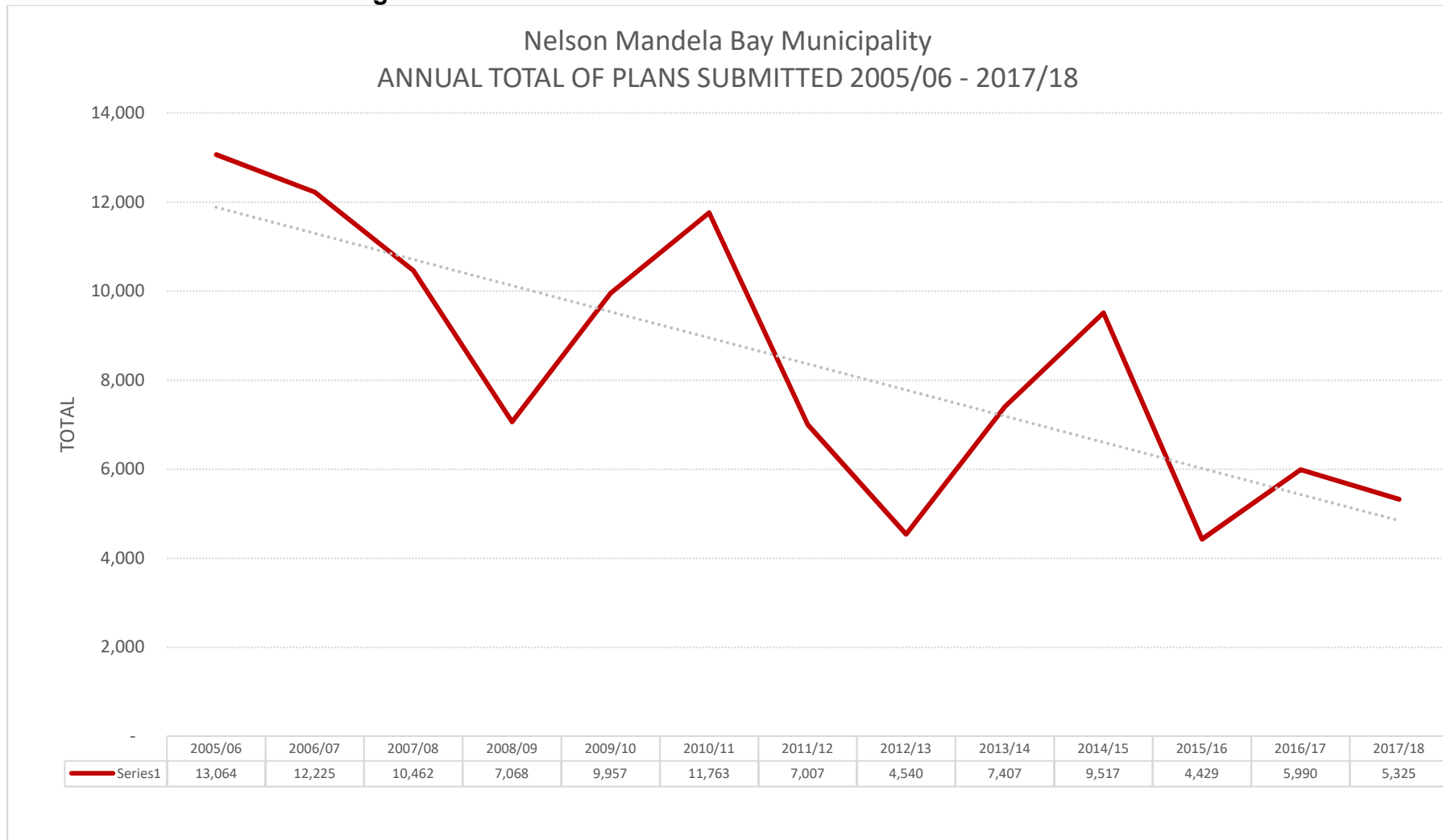
FIGURE 6: Change in Number of Building Plans Submitted: 2013/14 – 2017/18



Source: NMBM, 2019 (Building Statistics)

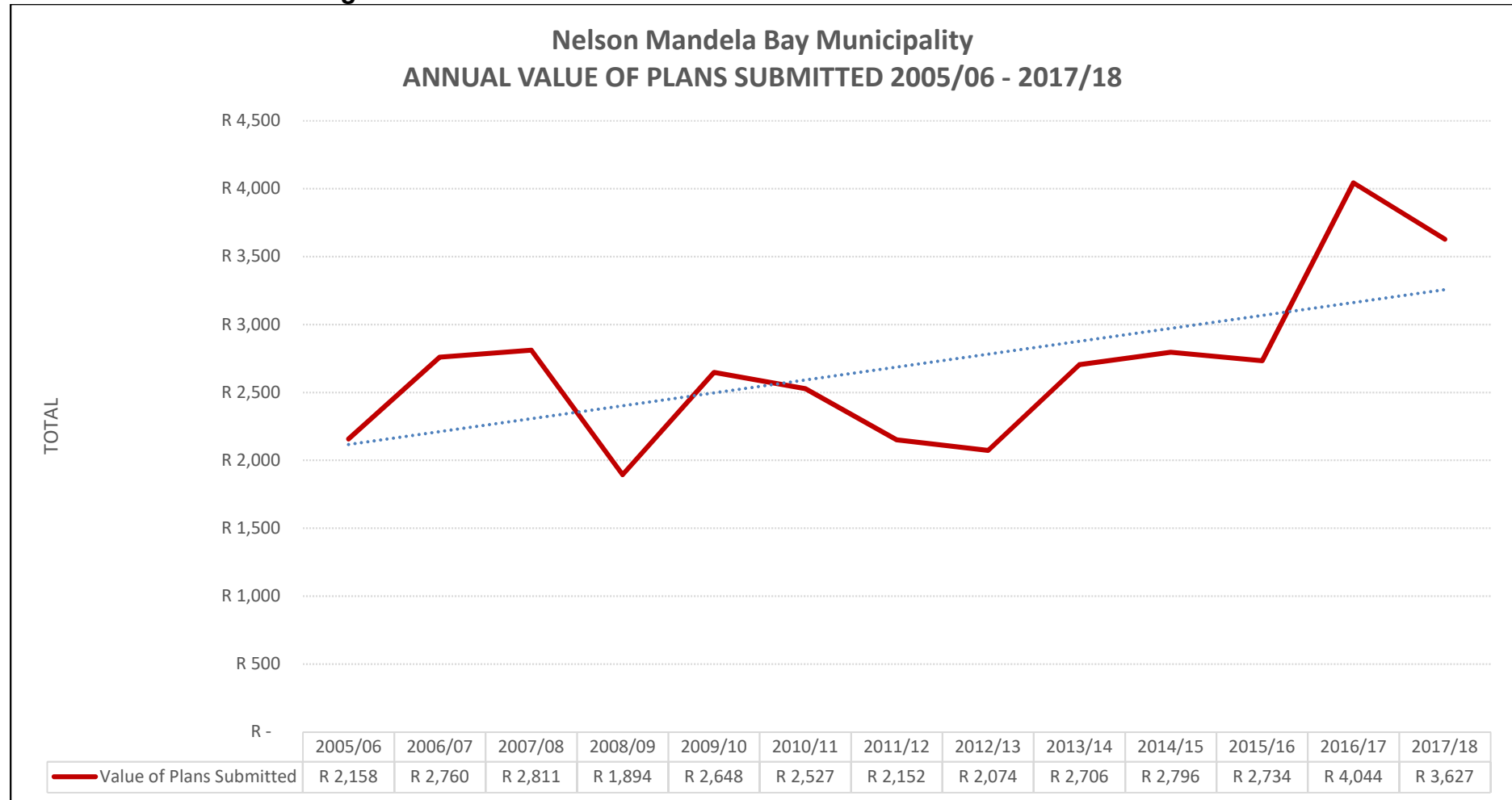
The two graphs below show the number and value of building plans submitted over recent years, as economic indicators. A decline in the number of building plans submitted is reflected with a general increase in the value of building plans. The building plan value increase can be attributed to the increased construction cost rather than economic growth.

FIGURE 7: Number of Building Plans Submitted: 2006 – 2018



Source: NMBM, 2019

FIGURE 8: Value of Building Plans Submitted: 2006 – 2018



Source: NMBM, 2019

TABLE 10: Building Plans (per type) Approved from 2013/14 to 2017/18

BUILDING TYPE / CATEGORY	2013-2014		2014-2015		2015-2016		2016-2017		2017-2018	
	Plans Passed	Value of Plans Passed	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	233	R 727,945,377
GOVERNMENT	19	R 153,188,505	16	R 48,125,464	32	R 10,273,322	12	R 55,207,019	12	R 21,121,659
OTHER	21	R 5,686,183	15	R 41,550,781	41	R 11,665,715	54	R 24,212,300	75	R 24,217,177
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	4943	R 3,106,483,202
ADDS TO DWELLING	2174	R 723,256,468	2249	R 827,770,689	2264	R 776,769,211	2029	R 966,001,594	2007	R 968,078,399
ADDS: INTERNAL ALTERATIONS	211	R 171,105,793	236	R 87,077,314	333	R 82,156,329	248	R 37,157,452	302	R 104,743,379
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	175	R 35,742,942.
NEW DWELLING	468	R 448,335,537	542	R 443,909,713	630	R 626,139,370	707	R 733,406,614	685	R 1,094,038,276
NEW FLAT	10	R 36,365,374	10	R 28,641,427	4	R 34,859,878	4	R 29,485,048	2	R 8,562,230
NEW OTHER - RESIDENTIAL	8	R 7,993,109	4	R 30,429,927	2	R 1,812,200	25	R 5,766,071	5	R 6,482,472
NEW TOWNHOUSE	146	R 99,867,871	93	R 76,919,768	158	R 273,740,726	184	R 169,344,728	230	R 293,972,891
NEW DWELLING (HOUSING PROJECT)	2825	R 208,738,620	3829	R 427,774,554	549	R 260,960,902	1640	R 764,272,586	1537	R 594,862,611
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	5263	R 3,879,767,414

Source: NMBM 2019

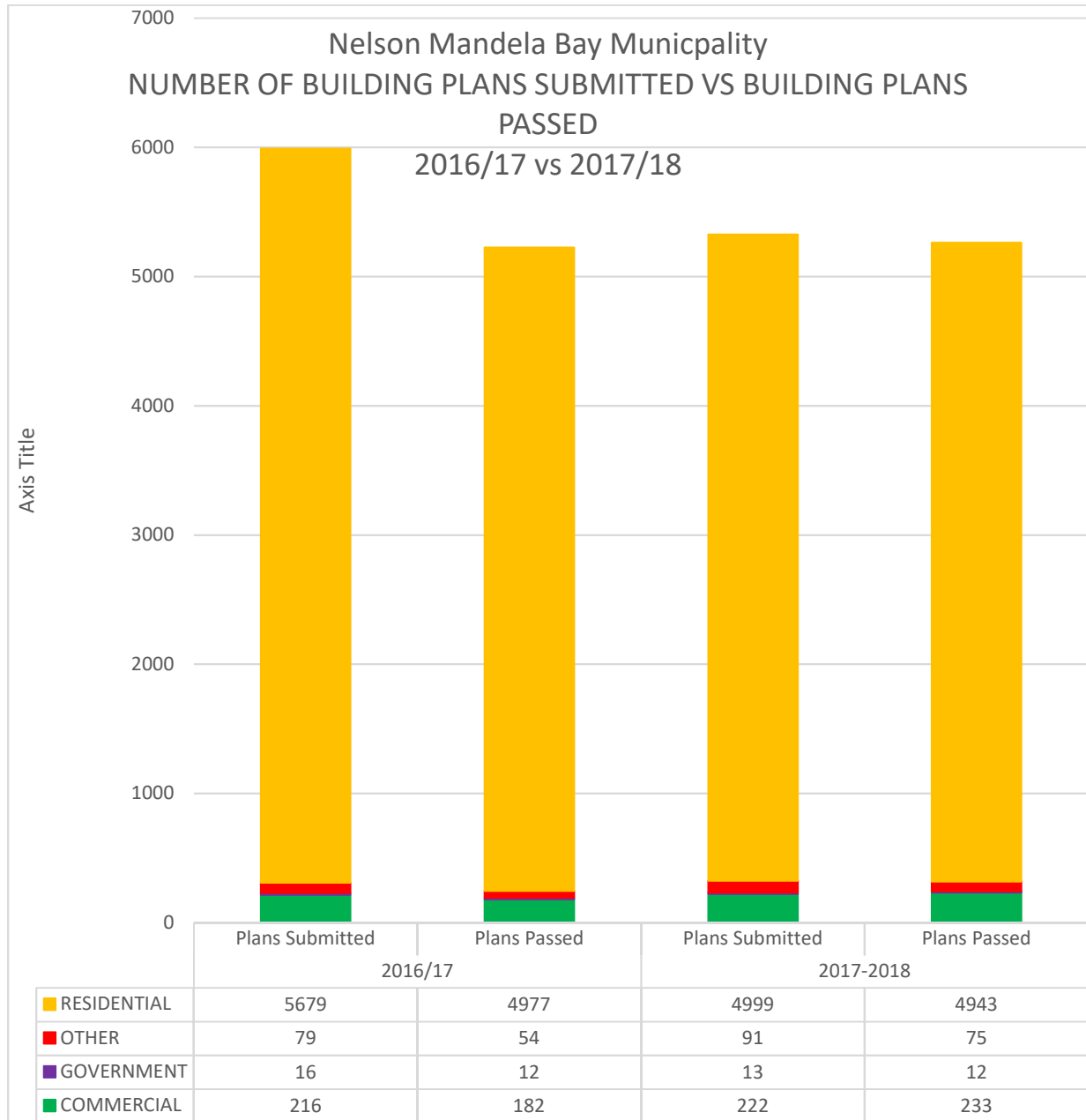
The above table shows building plans approved from 2013/14 to 2017/18 in terms of building plan type. This table is meaningful to understand the economic impact of the building plans approved over this period.

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 general decline in the number of building plans submitted for assessment. i.e. from 9517 in 2014/15 to 5325 in 2017/18. This tendency is similarly reflected in the number of building plans approved, i.e. 7395 in 2014/15 to 4263 in 2017/18. Of interest is that the difference between number of building plans submitted and number 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.

FIGURE 9: Building Plans Submitted vs plans approved: 2016/17- 2017/18



Source: NMBM 2019

It is concluded that the statistics in relation to the approval of building plans remain 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.

The figures quoted below are therefore the latest information available.

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 GDP for the agro-processing industry in NMBM 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. 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 SEZ are agro- processing plants. Agro-processing has linkages through NMBM into the Sarah Baartman District Municipality economy. Strengths of this sector in NMBM include existing industries, natural resources and the SEZ 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 SEZ. The most significant BPO investment in the province has been the construction of the R125 million, 1 500 seat call-centre within the SEZ in 2007. This BPO park covers five hectares in Coega's business service precinct and includes training and recreational space.

Since the establishment of this park, the Coega SEZ 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 goods 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 SEZ. 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 SEZ that will produce 100 000 tons of mild steel billet fabricated from scrap metal a year, and employ approximately 270 people.

2013 to 2015 saw a very marginal increase (0.1%) in the GDP value growth rate of the Nelson Mandel Bay's capital goods sector. This 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 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 SEZ. 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 NMBM 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 NMBM 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 accounted for 50.0% of total manufacturing employment and 7.1% of total metro employment in 2015.

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 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 NMBM 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 NMBM 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 local 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.

Permits for sand mining are active within the Coega SEZ.

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 SEZ.

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.
- An unstable electricity grid due to the dominance of coal-powered energy sources.

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 SEZ and NMB Logistics 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.
- A more mixed energy base, utilizing opportunities from renewable energy and storage and distribution technology for renewable or alternative (energy from waste) energy.

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 those mentioned below which are of significance:

ESTABLISHMENT OF TANK FARM AND MANGANESE EXPORTS FACILITY IN THE COEGA SPECIAL ECONOMIC ZONE (SEZ)

Transnet’s latest undertaking (February 2019) 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 recognises the economic importance of both these bulk storage facilities, but the land use can be optimized through the establishment of metropolitan aligned maritime commercial activities, including a waterfront development with real estate, commercial and tourism opportunities. 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 suite of projects, identified in the Council approved Baakens Precinct Plan. 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 have been 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 commenced in the latter half of 2018 and will continue in 2019/2020. The process of rezoning all the available land on the south bank to enable a mixed use precinct, predominantly for affordable housing has commenced. Environmental Authorisation is also being sought in respect of the land parcels on the south bank of the valley.

The upgrading of the main library has also commenced with Phase 1 nearing completion.

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 rationalisation 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 remains 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. Air service connectivity is an integral part of the working economy, thus the establishment of new intercontinental routes linking the region through the Port Elizabeth International Airport as a gateway plays a key catalytic role.

It is therefore key that integration of the Airport Master Plan, City plans and plans of the state-owned entities occurs. The city and the catchment area play a critical economic role in the country's various industries. The project aims to improve the city and the province's global economic competitiveness by stimulating air travel and opening air links to under-served markets across the region and the globe. It is hoped this will lead to improved global brand equity for the city and province as well as socio-economic transformation and a seamless flow of trade and tourism.

It requires strategic planning and research of the current operations, facilities, revenue streams both aeronautical and non-aeronautical; and land acquisition for the expansion from a domestic-regional hub to an international gateway for passengers and cargo.

BAYWORLD

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 has been entered into is with the Nelson Mandela University (NMU).

The NMBM has confirmed that Bayworld is an important project for the Municipality. Members of the MBDA Representative Forum, in August 2017, 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 envisaged. 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 animals such as penguins and seals, a recently renovated conference centre and a museum with skilled and dedicated staff that attracts schools and learners. The site is well located 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 is designated as a global biodiversity hotspot and one of the richest and most threatened reservoirs of plant and animal wildlife.

- It is 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 and economic development focused on the ocean’s economy and social cohesion through nature.

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.

The MBDA is currently undertaking a series of public participation engagements to obtain inputs from various stakeholders as to the future of the facility. A final concept plan is then to be submitted to Council for approval and implementation.

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 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 for all daily trips up to 7 January 2018. For the remainder of January, the train operated on Saturdays and Sundays.

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

Following the success of Phase one, Transnet and NMBM are to agree on the way forward. NMBM has made R3,5m available in the current financial year for the upgrading of the bridge that will take the steam train into the harbour. An MOA has been drafted and Transnet and NMBM's Legal Services Directorate are resolving minor issues before finalisation.

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 grown to the extent that expansion will have to be undertaken into Precinct B. Investments need to be made in enabling infrastructure for essential services and utilities such as electricity, water, a fire-ring main for emergencies and internal roads for Precinct B. Specialists in logistics park planning and operations need to be appointed to assist with the planning, preparation of detailed cost estimates and a business case for Precinct B. Funding has been requested from the City's budget for the 2019/20 financial year that commences on 1 July 2019 for the appointment of the specialists.

HAPPY VALLEY PRECINCT / TELKOM PARK

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

Funding of approximately R80 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 attract private investors.

Short, medium and longer term options are being considered.

ZANEMVULA PRECINCT

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

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

Mixed use areas have been planned alongside the Chatty Link Road 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.

Consultants have been appointed to prepare a Precinct Plan for the Zanemvula Area which will identify and programme spatial interventions to exploit the inherent potential of the area and to enhance the quality of life of the residents.

The Precinct Plan is in the final stage and is anticipated to be completed by July 2019.

MOTHERWELL PRECINCT

Development in the Motherwell area comprises municipal and private sector developments. Critical for the development of area is the implementation of a commuter rail link between the CBD and Motherwell with four stations between the Swartkops line and Motherwell NU29 as a first phase. The Motherwell Rail Corridor will open numerous opportunities especially around the stations.

The Motherwell Precinct- including the rail corridor and stations- is one of the BEPP Catalytic Land Development Programmes.

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 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 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.

A Precinct Plan for the Njoli Hub and surrounds (including major road corridors leading to Njoli Square) should be approved by Council by end of April 2019. The projects have been prioritised and divided into public funding required and private sector involvement. Below is the list:

TABLE 11: PROJECTS TO BE IMPLEMENTED IN NJOLI SQUARE

Public Sector funding required		
Priority 1	Roofed Market	R 10,800,000,00
Priority 1	Informal Street Trading Facilities	R 576,000,00
Priority 1	Upgrade 31 Vehicle Holding Area	R 3,000,000,00
Priority 2	Waiting Rooms, Ticket Offices, Ablution Facilities & Shelters: Long Distance Terminal	R 4,200,000,00
Priority 2	Commuter Taxi Terminal Shelters	R 4,500,000,00
Priority 2	Paving of Commuter Taxi Terminal	R 1,000,000,00
Priority 2	Ablution Facilities for Commuter Terminal	R 3,000,000,00
Priority 3	Livestock Market Pan	R 166,000,00
Priority 3	Events Space Paving to Livestock Market	R 75,000,00
Priority 4	Public Parking for Retail Anchors	R 1,740,000,00
	Sub-Total: Public	R 29,057,000,00

Private Sector investment required		
Priority 5	Motor City/Commercial/SMME Premises	R 8,480,000,00
Priority 5	Motor City/Commercial/SMME Premises	R 1,680,000,00
Priority 5	Public Parking: Precinct D	R 360,000,00
Priority 5	New Retail Anchor	R 57,060,000,00
Priority 5	Private/Public Offices	R 42,920,000,00
Priority 6	Medical Centre	R 9,990,000,00
Priority 6	Public Parking: Medical centre	R 120,000,00
	Sub-Total: Public	R 120,610,000,00
TOTAL funding required for the project		R 149,667,000,00

Source NMBM 2019

CLEARY PARK MODAL PRECINCT

A modal interchange 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 the Cleary Park route

The Cleary Park route is very constrained and needs planning intervention as a section runs alongside the commuter railway. Detailed planning for the implementation of the modal interchange is currently under way and will inter alia influence the finalisation of the Cleary Park Precinct Plan.

A preliminary Precinct Plan has been prepared and needs to be finalised.

FAIRVIEW PRECINCT

This precinct is 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 BEPP main document.

UITENHAGE CENTRAL 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 important 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: The development of the land abutting the Science and Technology Centre. After 10 years of not concluding the Sale of Land and Lease Agreement with the private sector, Council will be requested to consider the cancellation of the lease and sale and approve the development of the land for high density, mixed use development with a focus on housing.
- Project 2: The upgrade of Railways Sheds on the lease portion that forms part of the Science Centre Precinct. The MBDA has undertaken a conditional assessment of the historic buildings on the site. The refurbishment of the buildings is estimated at R18 million. The appointment of consultants for the design and project management is in the final stages of procurement. The project is expected to commence in 2019/2020 financial year.
- Project 3: Unblock the potential of the under-utilised 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, the housing project in John Street and identifying potential new projects.
- Project 5: The John Street Social Rental Housing Project comprising of approximately 385 residential opportunities to be delivered in two phases from 2019 to 2021.

N2 NODAL PRECINCT

The N2 Growth Area/ Economic Node is discussed in detail in the main BEPP document. The project 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.

The programme is comprised of the following projects:

- Project 1 (Private Sector): Baywest Precinct Phase 1 consisting of the Mall, Mixed Use, Office, Lifestyle and Residential Development. The mall and one office complex is complete
- Project 2 (Public/ Private Sector): Redhouse Chelsea Arterial which involved the construction of the Easter Interchange and Link Road between the Mall and Cape Road now known as Baywest Boulevard. Construction is complete
- Project 3 (Private/ Public Sector): Utopia Precinct planned for Mixed Use Retail and Residential development
- Project 4 (Public Sector): The N2 North Integrated Residential Development planned for Mixed Residential and Mixed Use development
- Project 5 (Public Sector): The Greenbushes Bulk Water Main to enhance the capacity of the N2 Nodal Development Area
- Project 6 (Public Private Sector): The Western Arterial linking the N2 Nodal Development Area with the Northern Suburbs of Bethelsdorp, Bloemendal, Zanemvula and Jachtlakke
- Project 7 (Public Sector): The Baywest/ Driftsands Collector Sewer
- Project 8 (Public/ Private Sector): “Gro-gro” informal settlement development
- Project 9 (Private Sector): Baywest Precinct Phase 2 – mixed Use, Office, Residential and High Tech Light Industrial Development.

BLOEMENDAL ARTERIAL

The Bloemendal Arterial is a critical link that connects the Njoli and Chatty Jachtlakke 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 comprises two portions 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 critical linkage as it is important 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 Stanford Road and Bloemendal Arterial Routes and is constructed. Tree planting and a small fitness park complement the road. These have been funded 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 complete. 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 to 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 environmental authorisation is obtained.

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

The route is hampered by the existence of 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 has the longer term 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 will 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 a compelling attraction for visitors to come to Nelson Mandela Bay. This will also provide an identity for the Nelson Mandela Bay region.

During 2018 NMBM through its entity, MBDA, went out on a national competition for a concept for a Nelson Mandela Statue, dubbed an “Iconic Land Mark Precinct”. The competition involved conceptualizing and designing an Iconic Land Mark Precinct featuring the statue of Nelson Mandela. The award winning concepts and designs were submitted by M&C Saatchi Consortium, a Cape Town based company. A replica of the landmark was unveiled by the Executive Mayor on 10 October 2018.

A process of developing a business plan for the development of this landmark has begun and it is anticipated that by end of July 2019 a business plan will be completed. This will also include the identification and analysis of a site for the project. It is planned that by the beginning July 2019 a process to call for investors will commence based on the outcome of the business plan.

RESORTS

Over the years, most of the former tourist resorts in the NMBM have been neglected and left in a state of ruin. This is due to a number of reasons some of which have legal implications. Currently, NMBM derives 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 a 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 website.

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.

SOLID WASTE DIVERSION AND BENEFICIATION – WASTE PARK

This project was placed on hold in 2017 to certain procedural investigations underway. It may be resuscitated after the investigations and aims for the diversion and beneficiation of municipal solid waste (MSW) as a potential revenue resource.

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 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 SEZ (Special Economic 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 Water Master Plan was approved by Council in 2006 and is currently being reviewed. However, the recommended expansions to the infrastructure remain relevant, as set out below. The Sanitation Master Plan 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)

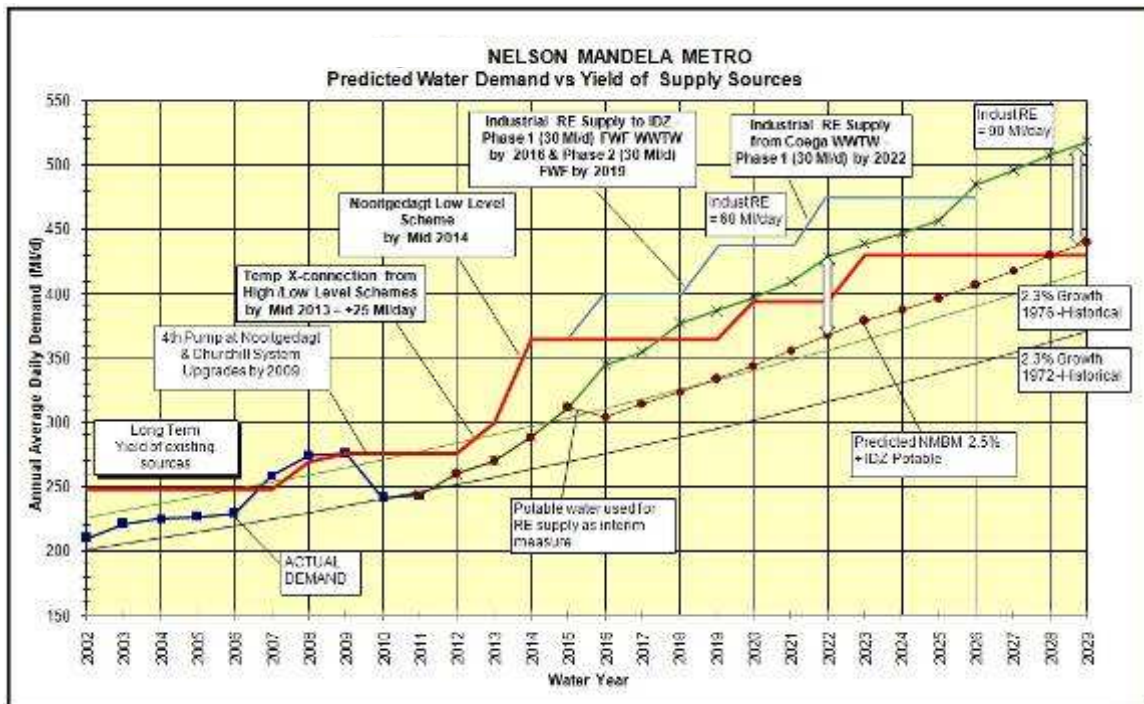
Sufficient internal bulk infrastructure exists to convey water to all developments within the metropolitan boundaries. Link water mains are installed as part of developments, when required. A constraint that existed in the previous BEPP has now been partially addressed with the completion of the Nooitgedacht 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 Special Economic Zone Phase 3 was planned for completion in December 2019. Due to funding delays from DWS, the anticipated completion date has now moved to 2021.

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 finalised Algoa Water Reconciliation Study report will also be used as strategic input in the preparation of the Water Master Plan which is under preparation.

The anticipated historic growth for Nelson Mandela Bay has been 2.3%; however, developments such as the Housing Programme and the Coega SEZ would increase the medium-term growth pattern. In addition, as a result of the housing backlog and the establishment of new informal settlements, the growth in water supply is expected to be higher than the above growth. As these developments are linked to the availability of funding and investor interest, it is difficult to predict this growth. The Nooitgedacht 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 SEZ, show that the biggest need for water is in the north/northeast of the metropolitan area. This confirms the need for the augmentation of the water supply from Nootitgedacht. It also highlights the need to evaluate the need to upgrade internal bulk / link services to support infill development and increased densification of developments.

FIGURE 10: 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. This includes possible construction of a desalination sea water plant in collaboration with CDC that will be explored.

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 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. 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 average dam levels reduced to 17% in August 2018. Rain in September 2018 increased average levels to 53%.

The NMBM submitted a Drought Mitigation Plan to the Provincial / National Drought Disaster authority amounting to R2.2 billion. An amount of R97 million was awarded to the City for drought mitigation in March 2018. The funds are being used for the drilling of boreholes as per the grant conditions. In addition, R233M was received in March 2019 for the construction of a Water Treatment facility to treat the high levels of iron and manganese in the Coega Kop Boreholes.

There remains a water supply shortfall as the Impofu Dam, which is the major dam supplying water to the NMBM, is only at 28,9% (March 15 2019).

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. Two major sewer links are under planning and construction and these are the Lorraine Driftsands sewer to serve the N2 Node and surrounding areas and the Swartkops Sewer to serve the Jagtvlakte / Zanemvula development areas. 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 more than a R1 billion, followed by Kelvin Jones and Driftsands WWTW. The latter works deal with developments in KwaNobuhle and Uitenhage and Driftsands supports 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 SEZ. Further development of the SEZ will be hampered without funding for these projects. An investment of approximately R750M 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 SEZ. This plant is planned for an ultimate capacity of 120 MI/d costing in the region of R3000M. A start up capacity of 40-50MI/d will be required.

Coupled to this is the need to eradicate the remaining 6010 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 and bathroom” 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 buckets from 16 317 to the present 6 010 was predominantly as a result of the relocation of communities from informal settlements to formal settlements where either a subsidised house is constructed or a toilet/bathroom 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. Of significance is that one area alone that is refusing the interim solutions has approximately 2000 buckets-one third of those in existence. A further contributing factor to this backlog is the recently established informal settlements where additional interim services are now required that make an additional burden on the budget.

3.3 Asset condition

This data is based upon a study (Infrastructure Maintenance Backlog Assessment) that was conducted in 2011 and escalated.

TABLE 12: Water Backlog Maintenance

Water Backlog	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, 2019

TABLE 13: 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

Source: NMBM Infrastructure & Engineering Directorate, 2019

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 14: 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, 2019

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 5 years 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 15: 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 16: Maintenance Backlog

		Total Operational Maintenance and Rehabilitation Backlogs	Annual Requirement to Eliminate Backlog	Budget 2017/18	Budget 2018/19	Budget 2019/2020	Budget 2020/2021
	Roads & Stormwater						
1	Maintenance / Rehabilitation of Subsidised Roads	660 000 000	122 200 000	26 184 135	27 896 547	30 970 340	34 108 560
2	Maintenance / Rehabilitation of -Non subsidised Roads	1 890 000 000	385 700 000	43 015 216	43 410 957	44 037 740	44 940 004
3	Maintenance / Rehabilitation of Stormwater Facilities	830 000 000	180 400 000	21 678 920	25 789 410	29 530 260	30 573 130
4	Road Signs & Markings	116 000 000	26 300 000	3 500 000	3 710 000	3 932 600	4 168 556
5	Maintenance / Rehabilitation of Bridges	540 000 000	117 000 000	896 000	4 000 000	2 060 000	1 123 600
6	Resurfacing of Roads	2 000 000 000	2 170 000 000	0	12 980 586	13 406 840	15 625 590
				95 274 271	117 787 500	123 937 780	130 539 440

Source: NMBM 2019

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 17: 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
2017/2018	(R3,687,191,074)	(R2,870,435,742)	(R816,755,332)	22%	13.95

Source: NMBM 2019

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 approximately 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.

The current condition of the electrical infrastructure requires a major injection of funds and manpower 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. 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 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 of aged and relatively new infrastructure. The majority being older with some equipment older than 40 years. 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 to medium voltage. Below is a breakdown of the funding required for the short to medium term projects.

TABLE 18: Electricity Projects

Immediate Projects	2019/20	2020/21	2021/22
Walmer Lorraine	R3 000 000	R4 500 000	R4 500 000
Mount Road Reinforcement	R500 000	R1 000 000	R4 500 000
Uitenhage Reinforcement	R3 000 000	R3 000 000	R3 000 000
Hunters Reinforcement	R1 500 000	R550 000	R3 000 000
Humewood Conversion	R1 500 000	R2 000 000	R2 500 000
Western Reinforcement	R2 000 000	R2 000 000	R2 000 000
Struandale Conversion	R1 600 000	R1 600 000	R1 600 000
Newton Park Reinforcement	R1 000 000	R1 000 000	R1 000 000
Bethelsdorp Reinforcement	R1 100 000	R1 100 000	R1 100 000
Malabar Reinforcement	R1 000 000	R1 000 000	R1 000 000
Wells Estate	R1 500 000	R1 500 000	R2 000 000
Rural Areas (Peri Urban)	R3 000 000	R3 000 000	R3 000 000
Redhouse	R500 000	R500 000	R500 000
Despatch (San Souci Reinforcement)	R500 000	R500 000	R500 000
Korsten	R500 000	R500 000	R500 000
Miscellaneous Mains	R15 000 000	R15 000 000	R15 000 000
Township Development	R10 000 000	R10 000 000	R10 000 000
Total Cost	R47 200 000	R48 750 000	R55 700 000

Source: NMBM 2019

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 19: High Voltage Projects

Immediate Projects	2018/19	2019/20	2020/21
Swartkops/Deal Party Line	R300 000	R300 000	R300 000
Deal Party 132kV Substation	R300 000	R300 000	R300 000
Nivens Drift Substation	R1,000,000		
San Souci-Nivens Drift Line	R1 000		
17 th Avenue Substation	R8 350 000	R9 000 000	R16 000 000
Lorraine-17 th Avenue Line	R2 000 000	R10 000 000	R8 000 000
Chelsea 132/22 2nd transformer	R1 300 000	R13 000 000	R500 000
Perl Road 3rd Transformer		R400 000	R100 000
San Souci 132kV Yard Extension	R300 000	R5 000 000	R15 000 000
Chatty Chelsea Servitude	R300 000	R300 000	R300 000
Chatty/Chelsea & Redhouse/Swartkops Line upgrade	R500 000	R25 000 000	R25 000 000
17 th Avenue Powercable	R0	R6 000 000	R0

Source: NMBM 2019

The following table shows the budget approved vs budget requested for High Voltage Network Projects.

TABLE 20: Budget requested and approved for High Voltage Projects

HV Network Reinforcement - New Substations	
Requested Budget 2018/19	R10 250 000
Draft Approved Budget - 18/19	R8 500 000
Requested Budget 2019/20	R27 700 000
Draft Approved Budget - 19/20	R8 500 000
Requested Budget 2020/21	R31 900 000
Draft Approved Budget - 20/21	R6 540 000
HV Network Reinforcement - O/H Lines	
Requested Budget 2018/19	R3 100 000
Draft Approved Budget - 18/19	R2 000 000
Requested Budget 2019/20	R35 600 000
Draft Approved Budget - 19/20	R8 000 000
Requested Budget 2020/21	R33 600 000
Draft Approved Budget - 20/21	R8 000 000
HV Network Reinforcement - U/G Cables	
Requested Budget 2018/19	R0
Draft Approved Budget - 18/19	R0
Requested Budget 2019/20	R6 000 000
Draft Approved Budget - 19/20	R6 000 000
Requested Budget 2020/21	R0
Draft Approved Budget - 20/21	R0

Source NMBM 2019

Electricity Losses

Losses are an on-going concern, as it results in a loss of revenue and overall reduced efficiency of the utilisation of the electrical resources. Creative programmes such as the Innovative Undeclared Informal Electrification Programmes have been implemented to assist in the reduction of non-technical electrical losses caused by tampering socio-economic factors. The total losses as a percentage is 13.95% of total electricity, Non-Technical losses as a percentage is 7.95% and Technical losses as a percentage is 6%.

A strategy to deal with non-technical losses has identified the following programmes:

- Audits to identify and deal with illegal connections, direct connections and bypasses.
- Installation of smart meters that are integrated to the vendor system.
- Installation of distribution bulk meters.
- Procurement of services in order to supplement the Audits two programmes have been proposed back to basics and EDF assistance.
- Replacement of credit meters with prepayment meters for residential customers.
- Greater collaboration and co-ordination between the monthly meetings between the Electricity & Energy and Budget & Treasury Directorates to identify, investigate and correct incorrect billing.
- The replacement of old CT's and VT's metering measuring equipment, in High Voltage customers.

The tables below show the percentage losses per financial year from 2016 to 2018 with Rand Values and some of the projects to reduce non-technical losses.

TABLE 20: Losses of financial years 2016, 2017 and 2018 and Rand value

DESCRIPTION	2016/17	2017/18	2018/19
Electricity Losses	12.5%	13.35%	13.95%
Total Rand value of Electricity losses	R244,374,869,97	R345,983,126.68	R339,512,105.74

Source: NMBM 2019

TABLE 21: Revenue collection and budget protection for 2018/2019

PROJECT TITLE	PROJECT ID	WARD NO.	AMOUNT R
REVENUE COLLECTION AND PROTECTION			
Upgrade of Commercial Meters – remote metering	20182549	-	5 427 000.00
Smart Prepayment meters	20182550	-	10 942 700.00
Low Voltage Substation Metering	20182546	-	1 920 000.00
Meters and Current Transformers	19940149	990	1 500 000.00
TOTAL BUDGET TO BE IMPLEMENTED			19 789 700.00

Source: NMBM 2019

A strategy to deal with technical losses has identified the following programmes:

- Redesign and reconfigure the electrical network taking into account the impact of electrical equipment used and infrastructural configurations and optimal power flow in order to increase efficiency.
- Reduction of various voltage levels in the electrical network, which will also result in greater efficiency.

The table below indicates some of the projects that assist in the reduction of technical losses.

Table 22: Capital Projects to reduce technical losses 2019/20

PROJECT TITLE	PROECT ID	WARD NO.	MOUNT R
INFRASTRUCTURE REINFORCEMENT / REFURBISHMENT / PROJECTS			
Reinforcement of Electricity Network – Walmer / Lorraine	20030471	3 & 4	3 000 000,00
Reinforcement of Electricity Network – Walmer/Lorraine	20030471	3 & 4	2 000 000,00
Reinforcement of Electricity Network – Western	20042992	40	100 000,00
Reinforcement of Electricity Network – Redhouse	19960190	30	540 000,00
Reinforcement of Electricity Network – Wells Estate	19960193	60	1 000 000,00
Reinforcement of Electricity Network – Summerstrand	19960195	2	1 000 000,00
Reinforcement of Electricity Network – Malabar / Helenvale	19980402	10	1 000 000,00
Reinforcement of Electricity Network – Swartkops	20000175	16	1 200 000,00
Reinforcement of Electricity Network – Uitenhage	20010119	48	1 000 000,00
Reinforcement of Electricity Network – Despatch	20030470	36	1 000 000,00
Refurbishment of Electricity Network – HV Lines	20050187	990	9 000 000,00

PROJECT TITLE	PROECT ID	WARD NO.	MOUNT R
Refurbishment of Electricity Network – Power Transformers	20150028	990	2 500 000,00
Reinforcement of Electricity Network – Overhead Lines	20042993	-	2 000 000,00
Cable replacement 6.6Kv	19970064	990	1 000 000,00
Reinforcement of Electricity Network – New Substations	20100122	3, 6, 60, 1, 40, 7, 10, 11, 36, 37, 38, 41, 44 & 52	7 500 000,00
Reinforcement of Electricity Network – Bethelsdorp 11Kv	19970063	31 & 25	600 000,00
Reinforcement of Electricity Network – Korsten	2000172	11	50 000,00
HV Transmission line	20182551	-	5 000 000,00
TOTAL BUDGET TO BE IMPLEMENTED			39 490 000,00

Source: NMBM 2019

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 financially 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. This 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.
- 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.

3.6 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 is due to be tabled for adoption in 2019/20.

4. TRENDS AND DEMAND FOR COMMUNITY AND SOCIAL INFRASTRUCTURE

4.1 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 and 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 Shisaka 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 2032		
Current households in need (backyards / informal settlements)	38845	
Estimated new low income households by 2032	76,963	
Total lower income household need (estimated)	115,808	
Less: Households assisted with house or serviced site (2011 – 2017)	21,891	
Total estimated need for social infrastructure	93,917	
Estimated cost for development	Cost per erf	Total cost
Housing Expenditure	R 116,867	R 10,975,798,039
Indicative First Order Summary - Social Facilities		
<i>Schools</i>	R 24,860	R 2,334,776,620
<i>Clinics</i>	R 13,922	R 1,307,474,907
<i>Police Stations</i>	R 5,966	R 560,346,389
<i>Sports Facilities</i>	R 1,989	R 186,782,130
<i>Community Centres</i>	R 7,955	R 747,128,518
<i>Libraries</i>	R 1,989	R 186,782,130
<i>Parks and Recreation/Greening</i>	R 1,989	R 186,782,130
<i>Private Investment – Retail</i>	R 24,860	R 2,334,776,620
Total - Social Facilities	R 83,530	R 7,844,849,443
Estimated cost for development	Cost per erf	Total cost
NMBM Internal Reticulation (Basic Scraped Roads, Water & Sanitation)	R 28,851	R 2,709,580,583.60
NMBM Electricity Reticulation	R 12,321	R 1,157,160,748.70
Total Housing, Social Facilities & Internal Reticulation	R 241,569	R 16,311,747,540
NMBM Bulk Reticulation (Bulk water, sewer and roads and stormwater upgrade)	R 145,088	R 13,626,256,644
Total Housing, Social Facilities and Bulk Infrastructure	R 386,657	R 29,938,004,184

Source: NMBM 2019

Note: About R30 000 per erf must be added to tar the roads and provide stormwater control.

The estimates in the above table are based on:

- a) Revised Shishaka Demand Analysis
- b) Escalation of 10% on Cost of Installation
- c) Escalation of 10% on NMBM Bulk Reticulation

Buildings, the natural environment, vegetation and open spaces are important for creating liveable environments. In addition, education, 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.

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

5.1 Sport, Recreation, Arts and Culture

“South Africa, as a developing country with rapidly growing socio-economic demands and as a respectable player in global affairs including sport and recreation, is facing numerous challenges, which include amongst other things the creation of sustainable sport and recreation infrastructure.” (Quote taken from the then Minister of Sport and Recreation Fikile Mbalula’s foreword on the Norms and Standards for Sport and Recreation Infrastructure Provision and Management 2008).

The National Sport Ministry has conducted research and used several case studies, from an international and national perspective, to extract best practises and guiding principles with regard to norms and standards for sport and recreation infrastructure.

The findings reveal that planning, provision and management of facilities occurs in a fragmented manner in most municipalities. The purpose of the research was primarily to develop norms and standards that addressed the following four elements:

- Provision and Management of facilities
- Technical Specifications
- Operations and Maintenance and
- Safety and Security

These norms provide the legislative framework that regulates the planning, provision, management, maintenance and protection of the future use of facilities. It encourages a clustered approach to the planning of new developments, rather than the traditional stand-alone development of sport facilities that have no adjacent socio-economic activities to make them more sustainable. It warns against a narrow approach of relying solely on normative standards for planning purposes. Rather, it advocates for the joint working of several stakeholder departments in local government to arrive at solutions that are in the best interests of sport and recreation. The result should always be an improved quality of life of local residents and neighbourhoods.

NMBM therefore adopted the SRSA Norms and Standards for Sport and Recreation Infrastructure Development Provision (Volume I & 2) as its guiding document for the provisioning, maintenance and management of sport and recreation infrastructure. (3 October 2014).

In working towards the achievement of the 2030 ideal sport system the National Sport and Recreation Plan (NSRP) was developed to support the National Development Plan. 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, and create an enabling environment for, an active and winning 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. This has 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.

There are a total of 355 Sports Recreation Arts and Culture infrastructure assets spread across the Municipal area; consisting of various sport fields, stadia, pools, indoor sport centres, libraries, museums and heritage assets as well as beach front facilities.

In 2018/19 the need for sport, recreation, arts and culture facilities was identified as the second highest IDP priority by communities of the Nelson Mandela Bay Municipality.

The 2017/18 Customer Satisfaction Survey also indicates a below acceptable satisfaction rate within communities with regard to sports and recreation facilities. This is a clear indication of insufficient provision in relation to the demand for social infrastructure and the existing backlog for social infrastructure that continues 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; 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
- The 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 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. These are internationally acclaimed facilities whose major contributions are to collect, preserve and exhibit and foster an understanding and enjoyment of works of art. Museums add to the knowledge economy of the city by being the creators of new knowledge by stimulating discussions around how and why culture, heritage and art is valued. Through exhibitions, events, research and publications on culture, heritage and art, Museums ensure that important discussions around nation building occur. By interrogating the past and exploring what is new in the present, Museums help communities find value in their lives and their culture and heritage using art and therefore manage change in their lives and create a vision for the future.

Arts, culture, heritage, and museums are key factors that increase the desirability of a city as both a tourist attraction and as a place to live and work. Developing Cultural Precincts will ensure the attraction of people to the city and leverage shared resources to stimulate the creative economy and attract diverse communities from around the city to stimulate social cohesion through shared participation.

The identification, development and 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 moved from traditional to electronic resources accentuating a need to redesign 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, email; newspapers, books and Materials to provide community support.

CSIR research as quoted in the library policy; suggests that a trip to the library must be a 5-minute walk. More libraries would 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 Library Service is to develop its libraries to become centres of excellence that reflect the needs of the community they serve.

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 coastline is of great value due to its diverse array of natural and heritage resources, which are key tourism 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 rich 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 promote a sense of pride from residents.

Sport and Recreation Industry Size

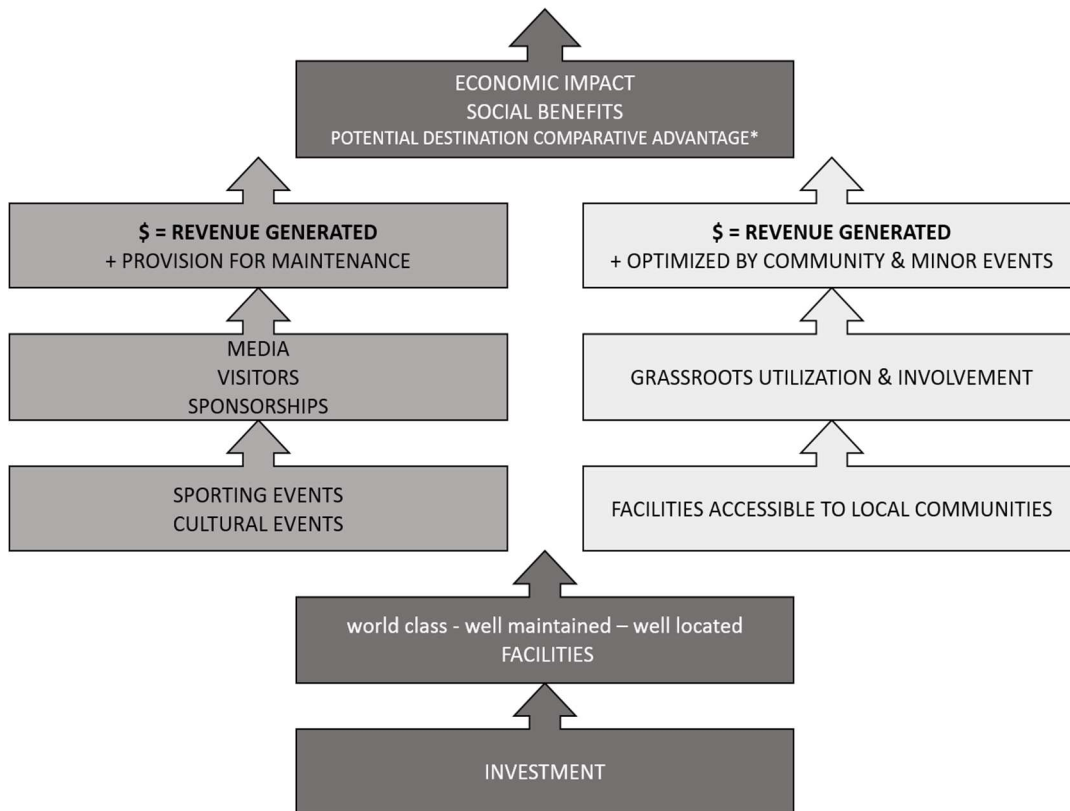
Worldwide the sport industry is estimated at 480-620 billion dollars. In South Africa, sports industry figures are difficult to establish, but the industry equates to around 2,1 % of GDP.

Creative and Cultural 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.*

Impact of Climate Change on Sport Recreation, Arts and Culture

The environmental impact of building sport, recreation, arts and cultural infrastructure is a given; large stadiums, museums, libraries and beachfront developments have a very large environmental footprint. Within the South African context the impact of climate change is evident in the following ways:

- Hotter temperatures, particularly in the inland areas
- More intense droughts, heatwaves and fires
- More intense storms, flooding and rainfall events in certain areas
- Rising sea levels

Direct Impacts:

- Reduced irrigation of dedicated sport grounds and public open recreational spaces
- Increased evaporation requiring more water for existing turf, pools
- Reduced playing surface quality
- Damage to facilities, eg: cricket pitches, tennis courts, swimming pools
- Forced, permanent or temporary closure of facilities
- Reduced flushing of water ways

Indirect Impacts:

- Alternative water supplies become more expensive
- More frequent monitoring and reporting of facilities, water-use efficiencies
- Compromised fitness-related health programs
- Reduced opportunity for freshwater-based recreational activities
- Increased coral bleaching and reef death affecting recreational diving

Impact of Higher Temperatures

- Limitations on outdoor activities or more indoor programs
- Increased exposure to UV Radiation
- Increased exposure to disease-causing agents in recreational waters
- Funding demands for sport field lighting and air conditioned indoor facilities if summer daytime events are rescheduled to evening fixtures

Impact of more frequent and extreme natural events

Direct Impacts:

- Greater risk of storm or fire damage to facilities and infrastructure
- Increased flood risk for facilities located within multiple-use corridors
- Increased risk of damage to coastal facilities; beaches and resorts

- 100-year flood models may underestimate the likelihood of extreme events
- Potential structural engineering issues from extreme natural disasters
- Potential geotechnical problems from extracting too much ground water

Indirect Impacts:

- Difficulty in obtaining extreme event/ natural disaster insurance
- Greater need for recreation centres to provide emergency facilities during extreme weather events
- Disruption to electricity during extreme weather conditions
- Economic stress for facility managers through loss of income and assets

Impact of rising sea levels

- Dislocation of facilities and communities in low-lying areas
- Great risk of storm surge in low-lying areas
- Adverse impact on freshwater ecosystems
- Increased beach erosion from changing wave activity making swimming and surfing dangerous

In conclusion, it must be noted that the influence of climate change may affect low-cost, regular community-based sport and recreation participation. It is vital that urban green spaces are recognized as underpinning the very fabric of our sport, leisure and recreational industries and that water used to maintain them is considered necessary.

The Sport, Recreation, Arts and Culture Directorate Infrastructure Development Strategy towards the next 5 -10 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, Recreation 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 to reduce reliance on water for irrigation
- Sport, Recreation, Arts and Culture Programs that will promote citizen health and wellness

5.2 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 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.

Status quo of Developed Parks within NMBM

Currently developed urban parks and verges measuring 1065 ha in size are being maintained within the boundaries of the Metro. This consists of Major Parks, neighbourhood parks, play parks as well as landscaped verges and centre islands along major routes. The number of developed parks increases annually as the funding for this is provided consistently. Provisioning and development of 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.

Despite the consistent capital budget allocation, a huge backlog still exists due to inadequate funding for development of Public Open Spaces in new human settlements as well as established settlements due to inferior quality of park development. 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 mitigate against 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 in high density settlements than low density ones. 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 residential erven as well as socio economic status of these communities, it is impossible for recreational needs to be provided within individual family budgets of home owners.

The value of Parks within communities' needs is 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

Residents 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 with a 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.

Due to constant change in our climate, consideration has been given to the nature of each park to be developed. Designs adapt to the prevailing environment to ensure sustainability. Climate change threatens to undermine efforts aimed at development and the achievement of IDP goals hence the need to adopt climate responsive models of development.

5.3 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. 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 acquisition 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” areas, regardless of ownership. The outcomes revealed that there is no suitable municipal land available. 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 2019/20 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. With consistent budget provision annually, all existing cemeteries will be secured. Nineteen cemeteries still need fencing at an estimated cost of R59 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 in 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 R10m 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.

6. 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.

6.1 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.

6.2 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, at the beginning of the 2019/20 financial year the NMBM intends to conduct comprehensive Household Travel Surveys 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.

7. 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 as amended), 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. Another guiding principle is "duty of care", which assigns responsibility for the owner of an activity or development to assess potential or actual impacts, address the impacts and be accountable for negative environmental outcomes of the activities.

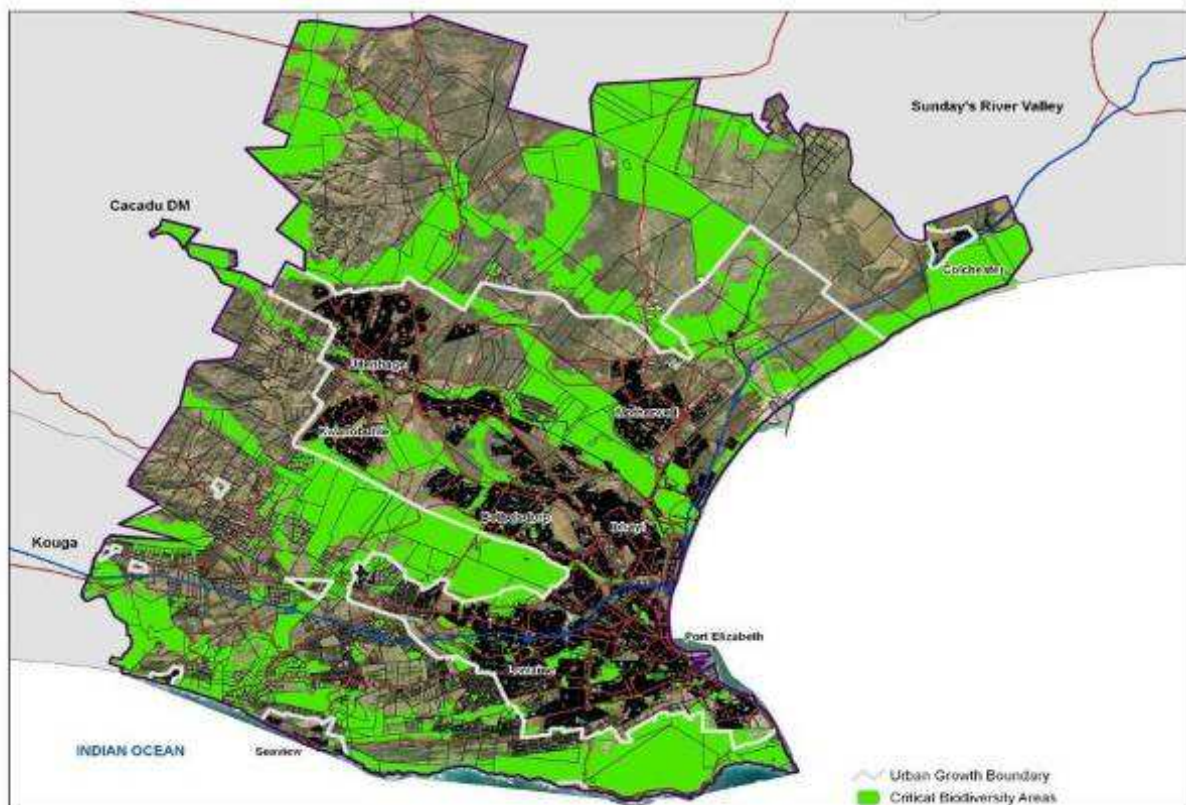
Unsustainable development (e.g. urban sprawl; illegal developments), exploitative growth and investment in environmentally draining projects place constraints on urban growth and challenge access to green economy opportunities.

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 (Gazetted in 2014) which aims to conserve 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 in 2015. The delineated coastal development lines as well as the management plan inform appropriate development along the coastline of the Metro.

The coastal zone of a city such as Nelson Mandela Bay has valuable assets for the ocean economy. The Municipality's Coastal Management Programme (2015) is valid for a five-year period between reviews.

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 (currently under review) and the State of Energy Report (2015), are specifically geared to address the response and resilience of all communities to climate change impacts. The NMBM delivered a Climate Change and Green Economy Action Plan in 2015. This plan uses a scientifically-sound climate projection for the next 100year period, a collaborative vulnerability assessment and specific sector interventions to respond the challenges of climate change. It also aims to identify the sustainable economic opportunities (which contribute to the 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 at the core 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 Kemp's 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. A number of other energy efficient or "green buildings" have been erected by non municipal entities 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. 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.

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 and processes 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, local-sourced 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 (The assumption in this case being that localization is used to create unfair competition).

Continuous work on sustainability and Supply Chain Management (SCM) has resulted in the adoption of a Sustainable Public Procurement (SPP) approach to the operations of the SCM. In 2018, the head of SCM attended an externally-funded workshop for Sub-Saharan local government entities, hosted in Bonn, Germany. A South African municipal network of SPP practitioners has also been established. An Environmental Management System (EMS) is in operation at the Nelson Mandela Bay Multi-Purpose Stadium. This tool is a condition of the Stadium's environmental authorisation.

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-meteorological (Floods & Storms) and Hydro-meteorological (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 i.e. 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.

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.

The value-added benefits of ecological infrastructure are as important as the built environment benefits. Ecosystem services are technically 'free' services which form part of the services which the Municipality delivers. Examples are beautiful open spaces for residents to enjoy and gain cultural or psychological benefits from, flood attenuation of functioning wetlands, good rainfall which supports local or small-scale farming, and good geological formations which support structural foundations for residential expansion. Competing needs between people and the environment will always occur. However, when ecosystem services can no longer function adequately, costly alternative infrastructure must be installed. Increased and unsustainable urban expansion places pressures on existing natural infrastructure and creates more surface area for rainfall runoff and less infiltration to groundwater systems. Unchecked urban sprawl increases the loss of biodiverse ecosystems and their services, and sprawl creates challenges to integrated transport systems. Sustainable, integrated and densified urban development is therefore integral to creating sustained benefits for the Municipality.

8. 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 mind-set of communities and other role-players 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.