



CITY OF CAPE TOWN  
ISIXEKO SASEKAPA  
STAD KAAPSTAD

# ***ROAD MAINTENANCE FORUM***

## **Preventative Maintenance Strategies in the City of Cape Town**

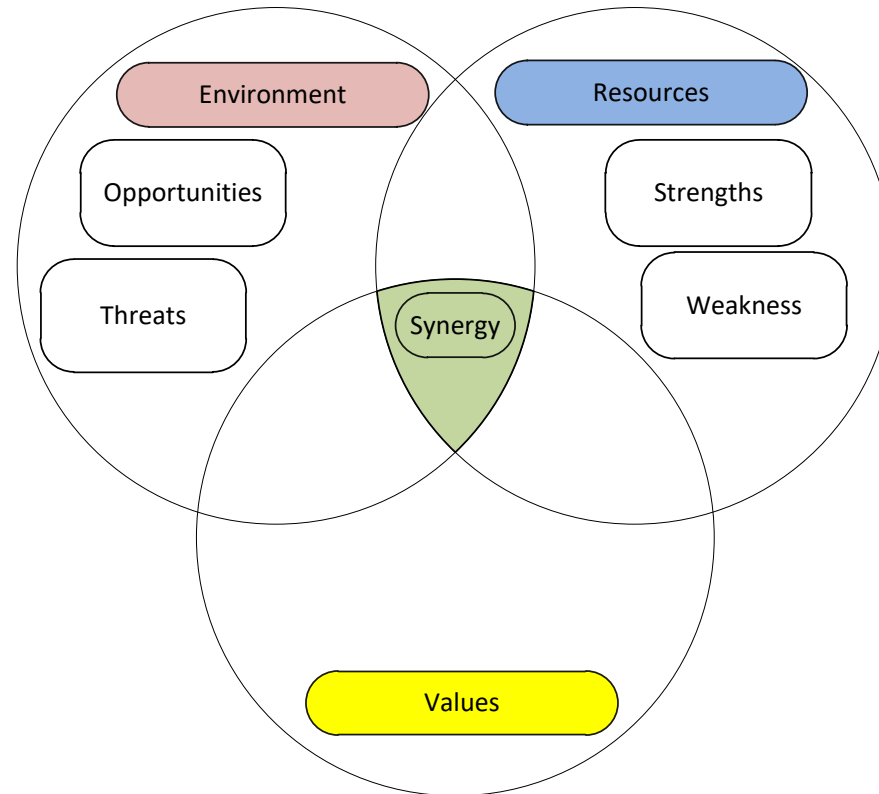
**Directorate: Urban Mobility**

**Road Infrastructure Management**

**5 October 2022**

## “Engineers makes potholes”<sup>1</sup>

“Focusing on potholes are like a doctor who prescribes soft tissues for a patient who has the flu” This is especially true, when the whole road is the pothole. One should not focus on the symptoms, but the cause. By balancing our environment, resources and values, we create synergy in the system. That is where effective maintenance strategies exist.



# City of Cape Town Road Network

- Total length: 10 452 km
- Pavement type:

Flexible Asphalt Pavements (10,002km)	Segmented Block Pavements (126km)	Jointed Concrete Pavements (79km)	Continuously Reinforced Concrete Pavements (50km)	Unpaved Gravel (62km)
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- Road Classes:

Class 1: Primary Arterials 151 km	Class 2: Arterials 749 km	Class 3: Distributors 964 km	Class 4: Collectors 896 km	Class 5: Local Streets 7660 km
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- Visual Condition Index

Condition Index Range (%)	Description
0 – 29	Very Poor
30 – 49	Poor
50 – 69	Fair
70 – 84	Good
85 - 100	Very Good

# Background

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- 1. Roads forms the corridors of economic development and social connections in Cities**
- 2. Past under funding<sup>1</sup> on maintenance has it impact on the infrastructure now,**
- 3. Asset Value of Road Infrastructure amounts to R 146 billion**
- 4. World Bank recommends 2,5 % of Asset Value (CRC) on maintenance amounting to R 3,65 billion**
- 5. Current funding in FY 2023 is R 657 million**
- 6. Backlog on maintenance is estimated at R11,2 billion**

<sup>1</sup> - 2011 LOCAL GOVERNMENT BUDGETS AND EXPENDITURE REVIEW: -

<http://www.treasury.gov.za/publications/igfr/2011/lg/13.%20roads%202011%20lgber%20-%20final%20-%209%20sept%202011.pdf>

# 1. Understanding your road network

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## a. What do I have –

- i. A good foundation for a road network
- ii. A long culture of good maintenance practice
- iii. An administration that want to deliver the best service
- iv. Committed and professional staff, at all levels
- v. A good understanding as to where the construction industry is heading

## b. What is its function of my Road Network?

- i. The corridors of mobility
- ii. Foundation for access to lifeline services, EWWS.
- iii. Corridors of economic development,
- iv. Visible service delivery to communities and the general public,

## 2. Critical elements of a good network management

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- a. Asset register – know what you have
- b. Condition assessment – PMS
- c. Complaints system that is accessible to the user, this informs the reactive side

### 3. Strategic Approach:

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- a. Maintain roads at a network level,
- b. Develop a professional engineering team to will implement your strategy,
  - i. From design to implementation – we are all in this together
  - ii. Develop a culture of quality – inspect what you expect.
- c. Engage and enrol your stakeholders,
- d. Develop a plan and stick to it,
  - i. Develop a RRR approach, reseal, resurface and rehabilitate
    - 1. This is not a sprint, take it over a period, usually Medium term revenue and expenditure periods.
    - 2. Draft your plans (list based on treatments) and have an approval system
    - 3. Adapt to the specific circumstances, as every year we have increased traffic volumes, rain periods, etc.
    - 4. Match your pothole complaints to your planned interventions, especially if the road is the pothole
  - ii. Always innovate, and learn from your mistakes. Metros are amalgamations of earlier small municipalities with poor road building standards
    - 1. Build a professional team that you can trust that is led by knowledge and experience,
    - 2. Always explore your network integrity, you do not know every square metre of road,
  - iii. Rebuild if you have to

### 3. Strategic Approach: (cont..)

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- e. **Utilise the tools to your disposal**
  - i. Completed the PMS assessment for 2019, that informed as to the VCI for flexible pavements,
  - ii. Pragmatic approach to repair “badly” constructed concrete roads,
  - iii. Allow the PMS to inform our strategy (don’t pay money for it and then ignore it)
- f. **Collaborate with other road authorities as they might have discovered the “fountain of youth” or the “magical snake oil”**
- g. **Develop funding models for the future – you might not always get the money.**
- h. **Gradually increase your service provider capacity as your funding grows**
- i. **Have your SCM processes in place**



## 4. Issues that inform our strategy:

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- a. Be cognitive of the legal consequence of “do nothing”
- b. Bad Roads can lead to crime,
- c. We have a social responsibility to fulfil.
- d. Concrete Roads are a good alternative in combatting greywater
- e. Balance the concept of “some for All” and “All for some”

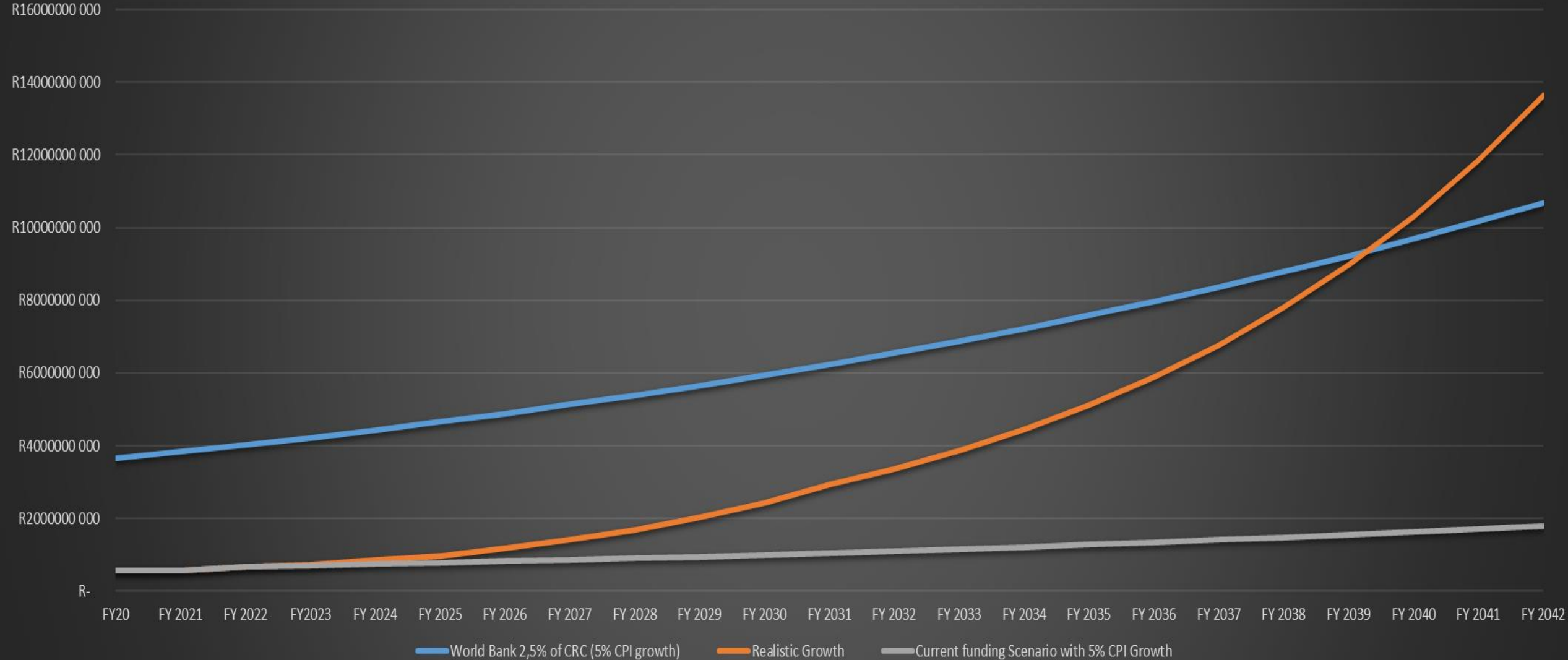
## Investment to eliminate Backlog (DRAFT)

- Current investment in maintenance to be increase by 15 % from the FY2023 base until FY2025
- An increase of investment to be 20% until FY2031.
- This will eliminate the backlog in maintenance based on the 2019 PMS.
- To sustain a good road network, this momentum needs to be upheld until FY2039, where the investment in road maintenance will equal the World Bank's recommended 2,5%.
- An annual Capital investment is to be made of approximately R 200 million for rehabilitation inclusive of the USDG allocation.

Category	2024	2025	2026	2027	2028	2029	2030	2031
<b>Purple</b> Rehabilitation								
<b>Red</b> Light Rehabilitation	R 115 949 668	R 133 342 119	R 160 010 542	R 192 012 651	R 230 415 181	R 276 498 217	R 331 797 861	R 398 157 433
<b>Yellow</b> Resurfacing	R 490 302 641	R 563 848 037	R 676 617 645	R 811 941 174	R 974 329 408	R 1 169 195 290	R 1 403 034 348	R 1 683 641 218
<b>Green</b> Reseal Patching	R 247 155 354	R 284 228 657	R 341 074 388	R 409 289 266	R 491 147 119	R 589 376 542	R 707 251 851	R 848 702 221
<b>Toal Operating</b>	<b>R 853 407 663</b>	<b>R 981 418 813</b>	<b>R 1 177 702 575</b>	<b>R 1 413 243 090</b>	<b>R 1 695 891 708</b>	<b>R 2 035 070 050</b>	<b>R 2 442 084 060</b>	<b>R 2 930 500 872</b>
<b>Cumulative</b>	<b>R 853 407 663</b>	<b>R 1 834 826 476</b>	<b>R 3 012 529 051</b>	<b>R 4 425 772 141</b>	<b>R 6 121 663 849</b>	<b>R 8 156 733 899</b>	<b>R 10 598 817 959</b>	<b>R 13 529 318 831</b>

# Meeting World Bank Standards of maintenance investment (DRAFT)

## RIM Long term budgetary investment in Road Repair and maintenance





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THANK YOU | ENKOSI | DANKIE

Making progress possible. **Together.**