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This report has been prepared for Insite Towers, 7 June 2021, by Peter Brown, Cellular Radio planning and Optimisation Specialist*.

PURPOSE OF Insite Towers INFRASTRUCTURE:

This is a Nominal Cellular Infrastructure Location developed by Insite Towers. Leasing and Permitting undertaken independently.

New Insite Towers Infrastructure:

ISSA491 – Louterwater West

Latitude: -33.7939602°

Longitude: 23.6248031°

Height, 35m Lattice Mast

FINDINGS:

Existing Infrastructure identified, surrounding the proposed Insite Towers Infrastructure:

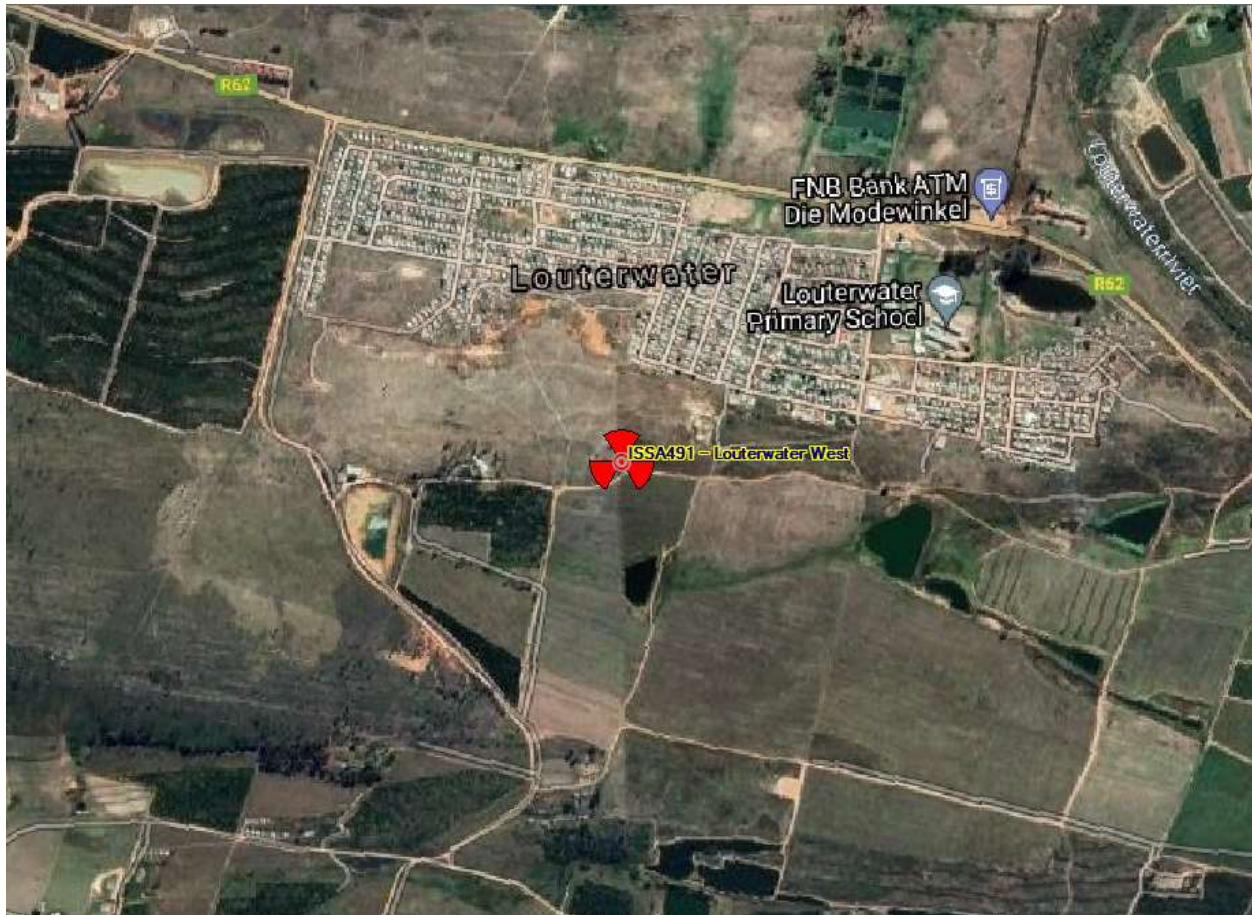
1. None (MNO Infrastructure)

Latitude: °

Longitude: °

Height, --m, <undefined> Mast.

All heights are estimations.



Locality view showing the proposed new site, ISSA491 – Louterwater West, including the known, existing sites in the area. There are no known sites near to the location of the proposed new Insite Towers Infrastructure. The coverage shown in subsequent pictures is an expected average of all operators combined. The actual existing coverage varies considerably between operators.

Recommendations:

There doesn't appear to be any sites within 1 Km of the proposed new Insite Towers location, there is a possibility that there is speech coverage but, there will not be high speed data coverage in the area. This location will need at least one additional site to provide adequate coverage as the settlement is quite sprawling over the terrain. There seems to be a fair density of subscribers in the area that would not have had any coverage until the proposed infrastructure has been built. This will be new coverage. The radio predictions are based on the SA Broadband requirements and are biased to 5G coverage. This area appears to be suburban to rural. The coverage area of the new site will expand the data footprint to subscribers that have had weak or no high speed data coverage before. The new Insite Towers structure will expand the network to provide high speed data, improve the quality of the speech offering and improve the overall coverage by filling in the weak areas, providing homes and businesses with good in-building new coverage and high speed data within the footprint of the proposed infrastructure. The requirement for the 5G incoming technology needs to have the sites much closer together than ever before. Note: while the new site will greatly improve the coverage footprint of all operators that use the Insite Towers Infrastructure, data levels will still only be compliant to 2016 requirements. The existing sites are too far apart to adequately satisfy the SA Broadband requirements. As a result; there are areas of good coverage bounded by areas of poor to inconsistent coverage. This area will need more sites to comply with the Broadband requirements.

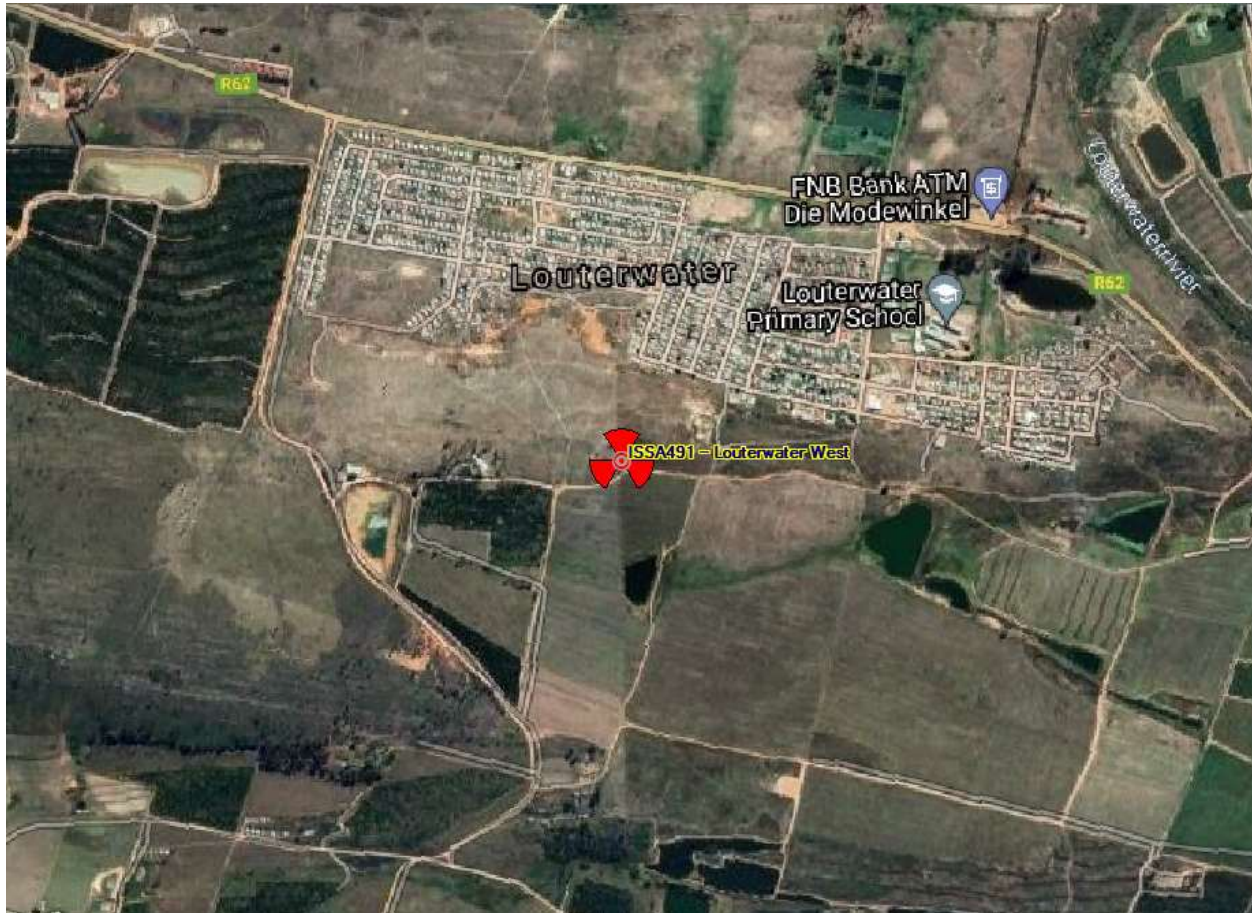
Coverage Mapping:

The South African broadband policy requires all telecommunications operators to provide high-speed, broadband connectivity of 100 Mbps by 2030. Targets have been set starting with an average user experience speed of 5 Mbps to be reached by 2016 and available to 50% of the population and, by 2020, available to 90%. To allow wireless providers to attain the targets, additional sites on a much closer nominal site spacing are essential. Sites will need to be located closer together as signal strength is directly proportional to the data rates achievable. The stronger the signal received by the mobile device (acting as the router), the higher the data throughput the device will have, up to the router's limit. Fixed line operators are currently incapable of providing the required capacity that this broadband policy requires as they would require a massive rollout of optic fibre to all homes to increase their broadband offering. The cost and upheaval would be immense! That leaves most of the connectivity requirements in the hands of wireless providers. Infrastructure providing companies are uniquely positioned to facilitate the higher density network requirements. Without a site sharing vendor, each and every cellular and wireless broadband company would need to install antennas on virtually every street corner and light pole. A common high site on a logical, nominal layout, which unrelated operators can use to prevent unnecessary visual clutter is a far more elegant and controlled solution.

Coverage from existing towers:

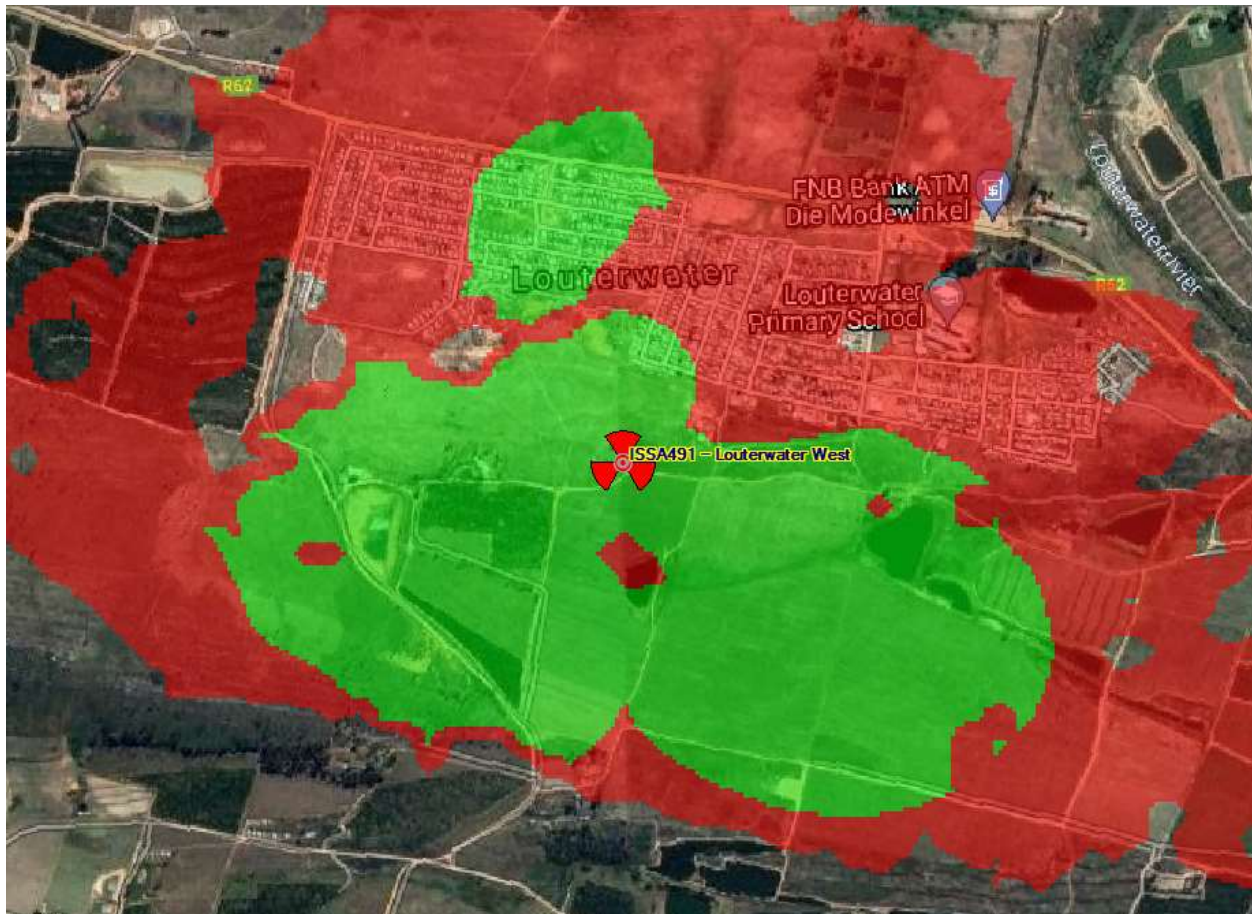
Predicted existing coverage (average) provided by all of the operators before activating the new structure.

- Green – Good to excellent network coverage
- Red – Limited to no coverage – in some areas only 2G will be available (voice)
- Where no colour is shown, the signal is outside of the prediction radius and has not been drawn.



a) Predicted new Coverage after the Installation of the new structure:

- Green – Good to excellent network coverage
- Red – Limited to no coverage – in some areas only 2G will be available (voice)
- Where no colour is shown, the signal is outside of the prediction radius and has not been drawn.



As this infrastructure is populated by the cellular providers, the signal quality and data speed will be improved for the homes covered by the green colour in the coverage footprint of the new Insite Towers structure. The addition of the Insite Towers site will extend the coverage for operators that choose to use the Insite Towers Infrastructure to extend and augment their existing sites.

Note that the new Insite Towers site is available for any operator to use.

The overall goal is to achieve a universal average download speed of 100 mbps by 2030. To reach this target in a progressive manner, reviewable targets have been set starting with an average user experience speed of 5 Mbps to be reached by 2016 and available to 50% of the population and to 90% by 2020.

Insite Towers, are committed to the objectives of South Africa's Broadband Policy SOUTH AFRICA CONNECT: CREATING OPPORTUNITIES, ENSURING INCLUSION

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* Electronic Ideas was established in 1993 and has been a member of the Durban Chamber of Commerce since then until 2020. My experience as a Cellular Radio Planning and Optimisation Engineer at MTN is extensive. I have planned and built many in-building systems (DAS picocells), Gateway, uShaka Marine world, King Shaka International airport and many others. I am versed in the development of nominal radio networks so that total RF exposure is minimized while maintaining the highest data throughput and speech quality. I have 14 years' experience as a Cellular Radio Planning and Optimisation Engineer at MTN and, before that, 19 years as a Telecommunications Switching Engineer at Telkom and MTN, a total of 33 years in telecommunications. I am experienced in analog cellular (TACS, C450), rural, dense urban cellular planning, pico cell and microcellular networks. I have in-depth knowledge of GSM, UMTS and LTE. My extensive training as a Cellular Radio Planner by Ericsson and Huawei has been intensive. I have been self-educating on 5G, SON and subsequent technologies. Since retirement in 2015 I have been consulting as a Radio Planning and Optimization specialist.