Report number: CSIR/BE/PSS/ER/2010/0041/B

Evaluation of community social facilities and recreational space in City of Cape Town: current and future provision for 2016 and optimal location of new facilities

PREPARED FOR:

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Authors:
Chéri Green
Gerbrand Mans
Manfred Spocter

PREPARED BY:
CSIR Built Environment
PO Box 395
PRETORIA 0001
Tel: +27 21 888 2508
Fax: +27 21 888 2694
Email: cgreen@csir.co.za

DISCLAIMER

The facilities analysed in this study vary in number over time as new facilities are opened and old or redundant facilities are closed down. The report is thus subject to updating from time to time and the location of facilities shown on the maps in this report may vary from those on the ground at the current time. The data used was correct as at January 2010.

The views and opinions expressed in this document are those of the authors and do not represent the policy of the City of Cape Town Municipality.

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Client
City of Cape Town

Project Management
Norah Walker
Granville van Ross
Quintus Thom

Sector representatives:
John Bennett
Trevor Wright
Ninnie Steyn

Population data:
Ken Sinclair-Smith

Flowmap developer:
Tom de Jong

STUDY TEAM

Chéri Green – CSIR: Built Environment – Project Leader
Gerbrand Mans – CSIR: Built Environment – Urban Geographer and GIS Analyst
Manfred Spocter – CSIR: Built Environment – Urban Geographer
David McKelly – CSIR: Built Environment – GIS Analyst

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The aim of this project was to identify those areas where the supply and demand of facilities were not balanced based on acceptable service provision standards for the current population distribution, as well as in terms of a future scenario for the City of Cape Town's predicted population growth and distribution in 2016. Recommendations of where intervention in respect of facility provision is required have been made. In overall terms, the aim was to assess whether people had access to facilities within reasonable reach and whether these facilities would be able to accommodate future growth in the City's population.

This was done by doing:

1. An audit of the current situation of accessibility (location and capacity) of selected social facilities in Cape Town in respect of both location and size.
2. Modelling and analyses of the future service provision with regard to accessibility in terms of both the location and sufficiency of selected social facilities in Cape Town.
3. Quantification of the total facility demand for specified types.
4. Modelling the optimal location of a select number of new facilities to meet the backlog in current demand and accommodate future growth.</td></tr>
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Section 1:

Introduction and Methodology

May 2010

1 INTRODUCTION AND METHODOLOGY

1.1 Introduction

The CSIR undertook a series of accessibility analyses for the City of Cape Town with regard to its public facilities and social services in 2009/10.

The main objectives of these analyses were to:

- identify those locations where the existing supply and demand for social facilities and recreational space are not balanced;
- identify the optimal areas of location for any new facilities that may be required; and
- model and analyse current and future facility provision in terms of accessibility, location and sufficiency.

The analyses were initially based on the schedule of standards for the provision and clustering of social facilities, public institutions and public recreational spaces which the CSIR had developed for the City of Cape Town in 2007. Planning standards for a range of facilities and categories were reviewed and consolidated in drawing up the schedule. Where required, the line departments made adjustments to the standards to be used and suggested alternative standards for the CSIR to test. The current project also seeks to modify and update this schedule of standards where necessary.

1.2 Specific aim and objectives

The aim of this project was to primarily identify those areas where the supply and demand of facilities were not balanced based on acceptable service provision standards for the current population distribution, as well as in terms of a future scenario for the City of Cape Town's predicted population growth and distribution in 2016. Recommendations of where intervention in respect of facility provision is required have been made. In overall terms, the aim was to assess whether people had access to facilities within reasonable reach and whether these facilities would be able to accommodate future growth in the City's population.

Specifically, the project undertook to:

- test the schedule of standards and guidelines previously prepared by the CSIR;
- inform the preparation of the Spatial Development Framework and the eight District Development Plans for which the responsible department is Spatial Planning and Urban Design;
- inform the Master Planning and Budgeting of the City Parks and Sport and Recreation departments; and
- assist local area planners in the Planning and Building Development Management Department in their negotiations with private developers.

In order to realise the above, the following **objectives** were set:

1. An audit of the current situation of accessibility (location and capacity) of selected social facilities in Cape Town in respect of both location and size.
2. Modelling and analyses of the future service provision with regard to accessibility in terms of both the location and sufficiency of selected social facilities in Cape Town.
3. Quantification of the total facility demand for specified types.
4. Modelling the optimal location of a select number of new facilities to meet the backlog in current demand and accommodate future growth.

1.3 Methodology

1.3.1 Service access planning

Service access planning uses the accessibility analysis tools and service planning methodology that were developed and customised by the CSIR. These can greatly assist in the formulation of district plans and in ensuring that sector facility plans are put in place that are spatially equitable when it comes to the provision of a range of social services. In this case, service access planning was undertaken by auditing the facility provision based on standards recently compiled by the CSIR for the City and using the customised GIS software known as Flowmap. The software was developed by the University of Utrecht's Department of Geographical Sciences specifically for undertaking accessibility analysis for the strategic evaluation of sets of facilities based on both distance and capacity. The CSIR has been working in collaboration with the developers for nearly a decade on various aspects of accessibility analysis. The accessibility software enables the testing of different criteria relating to accessibility, such as the impact of changing threshold and travel time as consolidated for the facility planning standards project.

It is widely acknowledged that it is important for the sectors responsible for the provision of community facilities to locate the facilities in such a way as to serve the majority of residents as equitably as possible. Facilities should be within an acceptable travel time from each household and be of the correct size in order to contribute effectively to the development of quality living environments. Cities are, however, dynamic and continue to develop and expand over time. It is thus important when modelling facility demand and planning new facilities to keep future growth and changes in activity trends in mind to ensure that living environments are sustainable.

A key advantage of using accessibility analysis is that it transcends the measurement of facility sufficiency/quantity with respect to its location **within** the administrative unit in which it is located. Accessibility analysis is a relational evaluation of facilities relative to users' demand measured within a specified distance range and using a detailed movement network. However, rather than only measuring sufficiency based on administrative units, it can be used to identify spatial service backlogs with respect to residential patterns and to test and evaluate optimal facility location, in conjunction with movement networks. Thus this process facilitates the development of facility plans that are spatially more in line with residential density patterns and movement networks than with administrative units. Such plans then contribute to the development of better living environments by supporting the provision of a range of services to residents within reasonable access times and of sufficient capacity/size.

1.3.2 Data requirements and preparation to undertake the accessibility analysis

Who has access to what, where and how? – these are the questions that can be answered when undertaking the accessibility analysis.

In order for the accessibility analysis to take place, the following datasets are of cardinal importance:

- *Population data* – a detailed grid is created to which the population data is then assigned. The population data includes the total population as well as other socio-economic variables that are fundamental to establishing people's access to transport.
  - For this project the original dataset, from which the population data was assigned to the hexagon layer (a grid comprising 40 ha hexagons), was StatsSA's 2001 subplace (SP) layer. The City then undertook population projections for each subplace for the years 2007 and 2016, which the CSIR used in a weighted spatial overlay procedure to allocate to the hexagons the population and relevant social

information, e.g. age and income. The allocation was based on the underlying land use layer, including land use type, extent and relative population density. Two scenarios are presented in the analyses: one using the 2007 population data for the City – referred to as the current scenario; and the other a projection of population for the year 2016 – the future scenario. Figures 1.1 and 1.2 show the population distribution for the City for the two respective scenarios. The population projections were based on infill (densification) in approved new developments in current suburbs, and informal 'infill' (backyard dwellers) and the approximate rate at which this will occur until 2016.

- *Road network* – the road network is used to simulate the way in which people traverse the City area. The advantage of using a road network is that it takes into consideration the topography and built features of the area in question, i.e. a road can only cross a river where there is a bridge, it must bypass buildings, it cannot cross cliffs or other impassable spaces and infrastructure such as railway lines. Using the road network is a major advantage over many GIS-based analyses that generally use straight-line distance only (e.g. creating a buffer zone around an area) to determine the amount of people within a given distance from a facility. Different types of roads also have different speeds/impedances that determine at what rate traffic moves along them.
    - For this project the modelled speeds on each road segment were derived from an EMME/2 transport modelling exercise which the City had undertaken, as well as consultation with transport engineers at the City. Accordingly average speeds for peak and off-peak periods were derived for each road segment, allowing travel time analyses. Off-peak speeds were used to establish the strategic distribution of facilities. In many of the analyses travel distance only was used for analysis purposes at the client's request.

- *Facility data* – the data regarding the facility name and location indicates its location precisely by using its geographical coordinates. Attached to the facility data are attribute data indicating the capacity of the facility and other relevant information which impacts on how the facility serves the community.

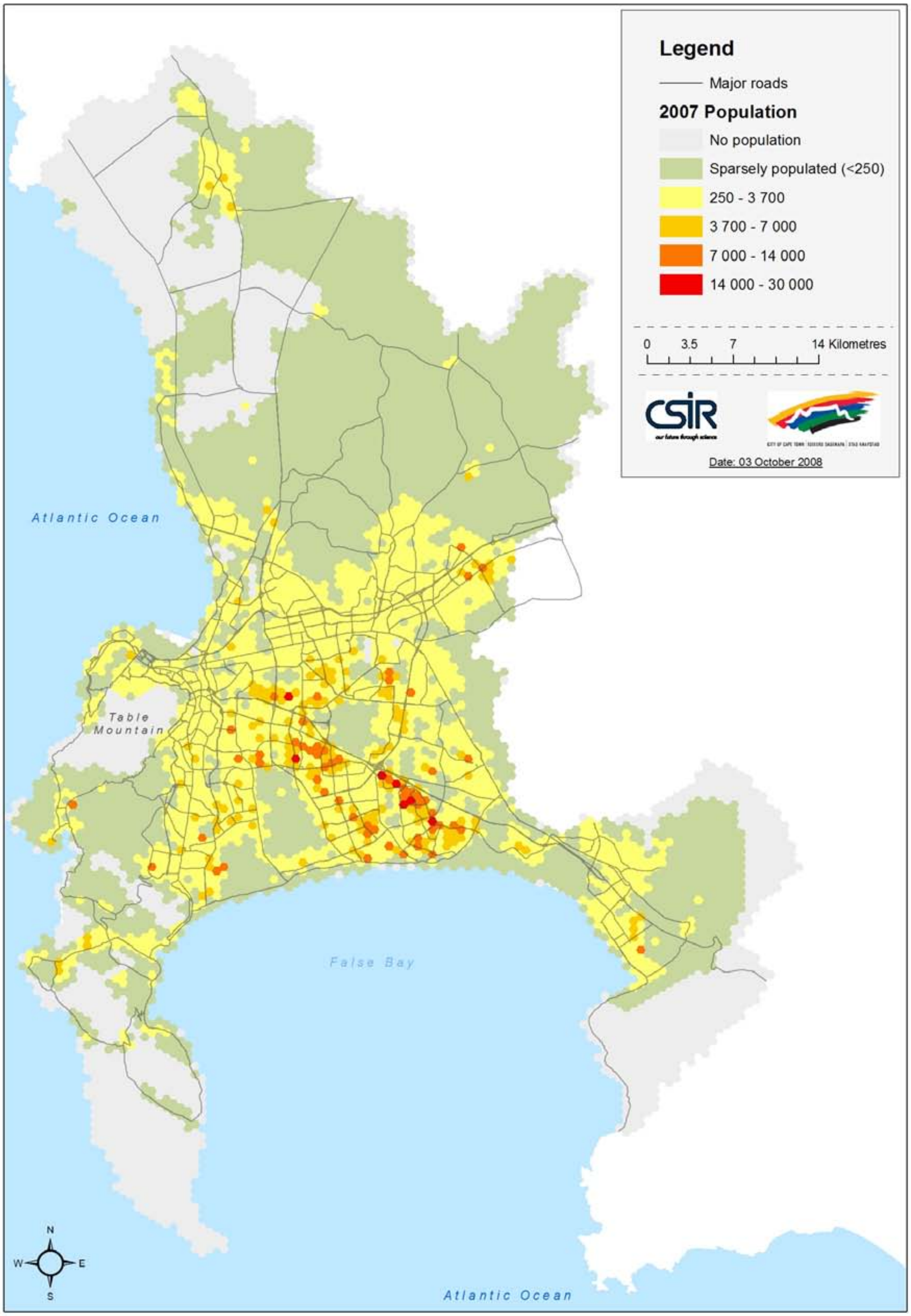

Figure 1.1: Population distribution per hexagon for the City of Cape Town current scenario (2007) [see 1.3.2. above]

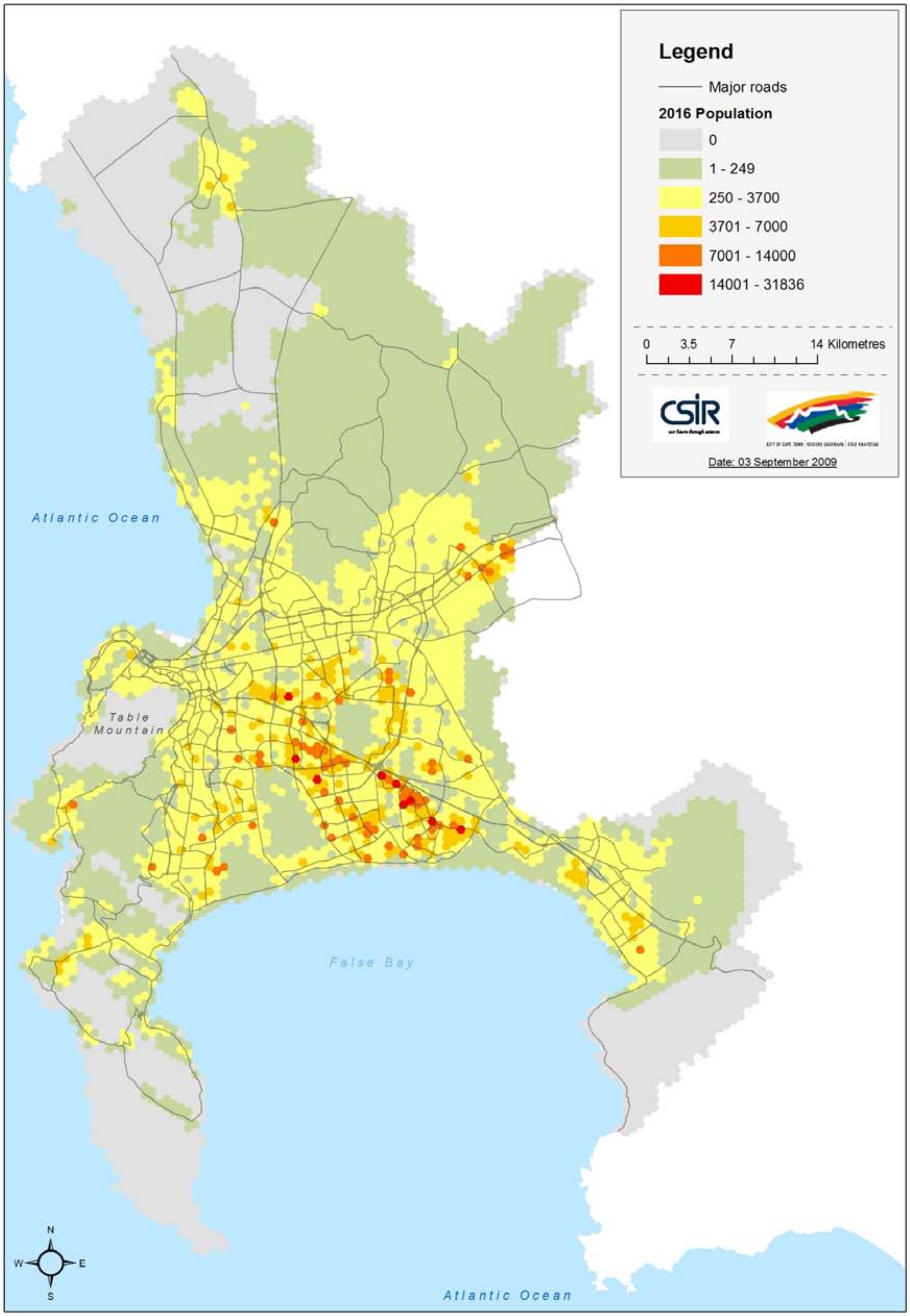

Figure 1.2: Population distribution per hexagon for the City of Cape Town future scenario (2016)

- *Access standards* – the accessibility standards a facility must meet are of cardinal importance in the provision of an equitable service. All residents of a city should have access to the same type and quality of facility within a reasonable distance from where they live even if quantity is adjusted to match demand within the immediate area. Quality of the facility infers the grading or variety of functions available at the facility (for instance a kitchen and toilet facilities at a community hall or a range of services available at a clinic) and the fact that the facility has enough capacity to accommodate the potential population it should serve. It must be noted that, especially from a South African perspective, acceptable travel distances will differ based on the socio-economic status of communities. Consequently socio-economic status has an influence on the kind of transport available, which in turn influences the ease with which people can access a given facility within a given time.
  - The Guidelines and Standards Project had developed guidelines regarding standards for many of the social facilities provided by the City. These standards served as input to the accessibility modelling, but were also tested and revised based on the outcomes of the analyses and further deliberations with the line departments who provide the services.

1.3.3 Key assumptions and explanations

- Only operational facilities were included in supply analysis – sites zoned for a specific facility by not utilised as such were excluded.
- The standards as contained in the document 'Summary Guidelines and Standards for the Planning of City of Cape Town Social Facilities and Recreational Spaces' were used for assessment purposes.
- The 2016 demand scenario includes growth of 15%. This growth was only allocated to areas already approved for development and/or infilling.
- The population profile used to assess the population is a generalised profile and age and income demographics are not considered for this strategic level assessment, except for the education demand. Education-specific age data for each suburb as derived from the 2001 census was used to generate demand for each school type. Currently this data has not been updated.
- The term 'unserved' as used in the tables, maps and text of this reports does not mean that people do not have any access to services. It means the area/population in question does not have access at the standard as outlined in the standards

guideline document. Thus people may be able to use the services specified, but are required to either travel further or longer than the established desirable access distance or time, or have to make use of overburdened facilities.

- The use of the Flowmap model is based on the assumption of rational behaviour, which results in people choosing to use the closest facility. In this case it is assumed to be the one closest to home. It is also assumed that people will not choose use overburdened facilities.

1.3.4 Analysis procedures and outputs

A step-wise process was followed for most of the facility types analysed for the purpose of accessibility auditing and the planning of new facilities. Not all the facilities required the same comprehensive accessibility analysis planning process outlined below. In each case the process was adapted or supplemented based on the specifics relating to the facility type being analysed.

The basic steps were as follows:

- *Step 1: Catchment area analysis* – This analysis used the given standards and the current facility locations and capacities to determine which areas are poorly served or overprovided for, i.e. determining the status quo. The results of this analysis produced two types of outputs:
  - **User-side** analysis classification – maps of the served and unserved areas and travel time;
  - **Service-side** facility classification based on modelled capacity utilisation – tables of possible utilisation or allocation.
- *Step 2*: *Identification of new locations for facilities using proximity counting and/or optimisation analysis* – The software uses the currently unserved population to determine the concentration of unserved demand and/or uses this as input for determining the optimal location for new facilities. The optimal location for facilities is based on the standards for that specific facility type. The output types include:
  - Maps showing the concentration of unserved demand within selected travel times or distances;
  - Maps of the optimal location for new facilities taking into consideration the assessed backlog relative to the standards and the resources to provide new facilities.

- *Step 3*: *Alternate approach to new facilities and rightsizing* – Where sufficient demand for a new facility cannot be achieved within the poorly served areas or there is unserved demand close to an existing service, other options must be considered to meet the demand. These may include questions of whether:
    - existing facilities can be increased in terms of size or operational capacity;
    - longer access times should be accepted;
    - facilities can be relocated or shared with other sectors; or
    - mobile facilities should be provided periodically.

  The types of outputs used to support Step 3 above will vary according to the specific analysis being undertaken, but would usually include facility usage tables that can be used in conjunction with the catchment area and proximity count maps to develop strategies to meet the unserved demand.

1.4 Interpreting the maps in the report

The maps in the report include the following types:

- Demand (population distribution);
- Service coverage (served/unserved population);
- Travel time or distance contour maps;
- Optimised locations of proposed facilities.

More information is given below on interpreting the more complex map types.

1.4.1 Reading the service coverage maps based on catchment area analysis (served and unserved areas)

The analysis process evaluates the demand versus supply (capacity) within a given access time or distance. All catchment area analysis maps are indicated by a pale green for served and from pale yellow to red based on the number of unserved persons per hexagon. The darkest shades indicate areas that have the highest number of unserved people. The latter results either from residential areas being too far from a facility (out of reach) or as a result of the closest facilities being technically fully allocated to people living closer to the facility and thus being in reality overburdened. In areas were the service area around a facility is shown as being very small – compared to service catchment areas of other facilities of the same type – the facility is often too small to serve the local demand. Such a facility could be either a full-scale facility situated in a very **dense** area of demand, or the facility could simply have limited capacity, i.e. a mobile clinic.

1.4.2 Reading the travel time maps (unconstrained)

These are maps that indicate travel times or distance to the closest facility. The dark green colour represents locations that are closest to a facility, while red represents locations that are the furthest from facilities. These maps only depict an evaluation of the time or distance to travel to the closest facility but does not include any analysis of any measure of the facility size or service capacity versus demand.

1.4.3 Reading the optimisation maps (recommendations for new facility investment)

The optimisation maps show the optimal location for the top 10 (in most cases) new facilities based on the unserved demand of the City's population in 2016.

It is important to note that the locations are not precise, but rather indicate the general area of intervention. The most suitable land as close as possible to this point should be considered for the development of the specific facility. Also, the points indicated on the map are not all the sites required to achieve a 100% coverage, but rather the best locations for the set number of facilities specified by the research team and the sector representatives. It should be noted that any change in the number of facilities that are selected will likely influence most if not all the selected sites. For example, if only the two best sites are indicated, these sites may not remain optimal if five facilities are eventually built, because the distribution of facilities will vary depending on the number of service points to be provided.

The optimisation maps show the current facilities together with the proposed new facilities (possible new facilities to be built) that were identified through the optimisation procedure in FlowMap. It is noted that in all cases the software/team will only identify sites that will be able to abstract sufficient demand – unless stated otherwise – provided that there is no overprovision in a specific area. A change in the number of facilities eventually built will not result in redundant facilities, but rather in just not the best possible location.

NOTE: The analyses are based on the Flowmap software and AccessMap approach using inputs specified by and discussed with the relevant sector representatives. The underlying assumption is that users will minimise travel distances to access facilities. The results of the analysis provide a useful tool to ensure that facilities are planned based on an equitable and fair spatial distribution. However, before recommendations are implemented, there is a need to compare the results to actual usage rates at facilities and/or to conduct sample surveys with regard to people's choice of facility and reasons for not using the closest facility.

1.5 Statistics – reporting areas

Where accessibility statistics are given, this is done for two sets of areas. Firstly, the statistics are given for the areas both within and outside the urban edge of the City of Cape Town (see Figure 1.3) – termed urban and non-urban areas respectively. Secondly, the service coverage and access statistics are given for each of the planning districts of the City of Cape Town. This is a common basis for reporting on service delivery. Where applicable, backlogs are calculated for these zones for planning purposes. However, the City boundary was used for analysis and the mapped results provide the best indication of the spatial need rather than only relying on the Planning Area statistics.

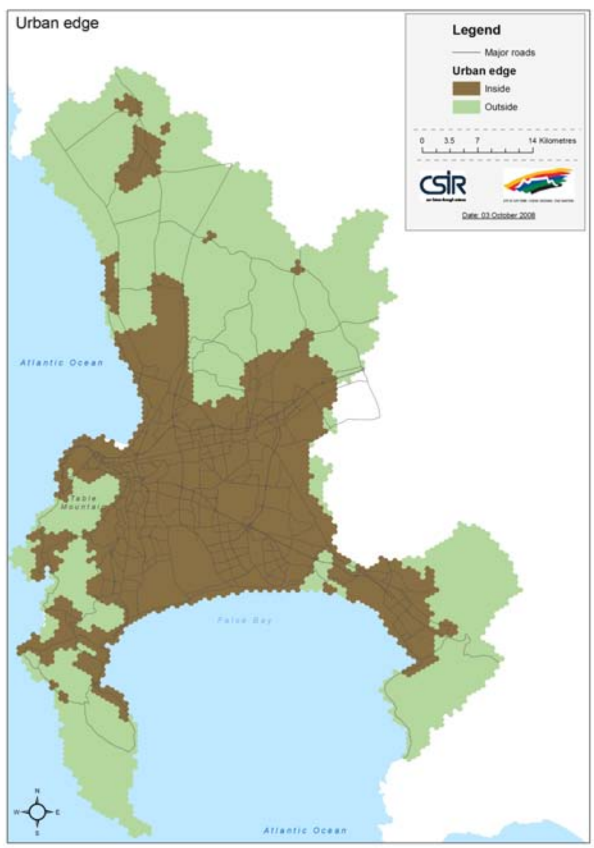

Figure 1.3: Urban edge of City of Cape Town

Figure 1.4 shows the planning district boundaries of the City of Cape Town which arise from the City's latest demarcation process and which were used for final reporting purposes. The relevance and importance of the planning district tables – showing the unserved population per planning district – **should not be overemphasised** and are presented for reporting purposes rather than to inform planning processes. With respect to planning for future facility provision, **the spatial outputs (namely the maps) are far more important when identifying areas requiring more facilities or increased service provision by existing facilities.**

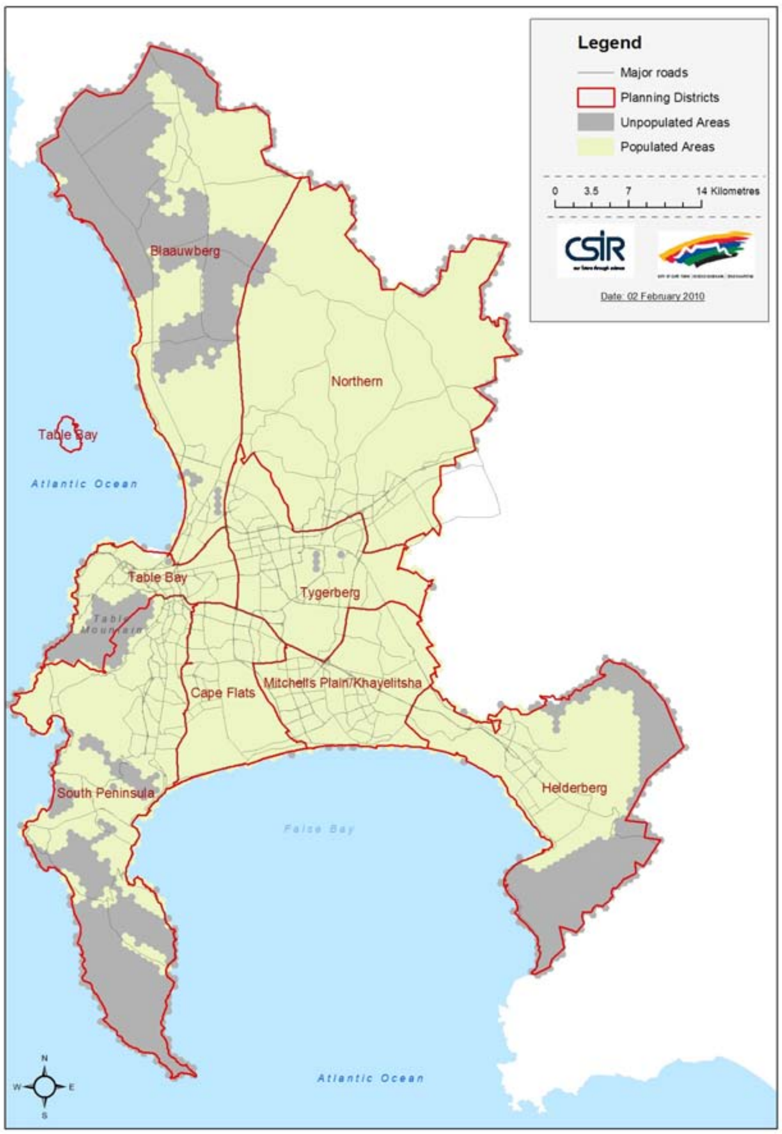

Figure 1.4: City of Cape Town Planning District boundaries

1.6 Report structure

A series of report sections (Sections 2–6), one for each of the facility types analysed, follow (this Introduction and Methodology report comprises Section 1). As each section report deals with a specific facility type and is meant to be able to stand alone and be read independently of the other sections, there is some repetition, particularly in the introductions to these sections.

The analysis reports are generally similar owing to specific requirements, although more detail is provided with respect to the analysis of parks, recreational spaces and sports fields, while the section on public libraries is adjusted to cover two categories of service, namely regional and local facilities.

Section 7 provides the integrated plan for new facility location and investment. Finally, Section 8 provides the gross facility provision requirement for each Planning District based on the standards presented in the document 'Summary Guidelines and Standards for the Planning of City of Cape Town Social Facilities and Recreational Spaces', which was calculated using the Space Planner tool. Also in Section 8 is a description of the Space Planner tool and the user notes.

Section 2:	Community Centres
Section 3:	Public Libraries
Section 4:	Primary & Secondary Schools
Section 5:	Parks
Section 6:	Sports Facilities (general fields, swimming pools, stadia, indoor halls)
Section 7:	Integrated Plan and Recommendations
Addendum A:	Space planner- description, user notes and results for Planning Districts

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Section 2:

Community Centres

May 2010

CSIR

our future through science

2. Community Centres

2.1 Introduction

The accessibility mapping of community centres in Cape Town is part of a larger accessibility audit and facility planning exercise of a range of community social services undertaken by CSIR for the City of Cape Town in 2009/10.

The project as a whole seeks to identify those areas where the supply and demand for facilities are not balanced based on acceptable service provision standards, both for the current population distribution, as well as in terms of a future scenario for the City of Cape Town's predicted population growth and distribution in 2016. Flowing from this, recommendations of where intervention in respect to facility provision is required can be made. The aim is thus to audit whether residents currently have access to facilities within reasonable reach and with capacity, and if these facilities will be able to accommodate future growth of the City's population.

The analysis is essentially based on a schedule of standards for the provision and clustering of social facilities, public institutions and public recreational spaces which the CSIR compiled for the City of Cape Town in 2007; as well as datasets consisting of population, road network, and facility data. Where applicable the relevant line department have adjusted the standards used with respect to capacity and travel time accessibility and the standards document for the City will be updated accordingly. In this case there are different types and varying sizes of community centres and subsequently the capacities of the community centres and their quality are not uniform.

Definition of Community Centres: *The City of Cape Town has graded its community centres depending on their size and the facilities they offer as A, B, C, D or E-grade community centres. E-grade community centres are the smallest type and besides hall space do not offer any additional facilities such as toilets, kitchen, while A-grade community centres are the largest, offering many facilities and form part of a civic centre.*

To ensure fine grained resolution of the modelling results the City of Cape Town area was sub-divided into a detailed grid delineating hexagonal land pieces of 40ha each. The population data was proportionally assigned to this hexagonal grid based on the underlying GIS land use layer. The population data incorporated the total population as well as other socio-economic variables which are fundamental to establishing people's access to transport. More detail on this process is provided in Section 1 (Introduction & Methodology). All other data is then related to this grid.

A step-wise process was followed for most of the facility types analysed, although some facilities require a more tailored approach. The basic process in most cases comprised the following steps:

Step 1: Audit of current service coverage – Using the agreed standards a catchment area analysis is undertaken with respect to the current facility locations and capacities to determine which areas are well served, poorly served or over-provided for, i.e. determining the status quo.

Step 2: Planning for new facilities – The identification of new or expanded facility locations is undertaken using proximity counting and/or optimisation analysis – The software identifies the currently unserved population and taking this into consideration then determines the highest concentrations of unserved demand. Depending on the typical facility size, areas of intervention can be identified. Optimal sites for a set number of new facilities can be identified to prioritise the intervention areas/ location sites for new facilities, if any are required. Closure, expansion or upgrading of existing facilities can also be tested.

More detail on the methodology followed, the analyses procedures and interpreting the outputs (such as the maps) can be found in Section 1 (Introduction & Methodology).

2.2 Analyses criteria and processes undertaken

The criteria used for the analyses of community centres and the processes undertaken are summarised in Table 2.1.

Table 2.1: Criteria and processes for community centres analyses	
Facilities analysed	• All operational community centres (totalling 166). • Most of the facilities (145) are graded – based on their size and available facilities – as A, B, C & D grade community centres • E-grade community centres (21) – the smallest types of centres without any facilities beside a hall – are also included in part of the analysis to test their impact.
Demand	• Demand A: Entire City with current (2007) population figures assigned to hexagon-grid. • Demand B: Entire City with 2016 projected population figures assigned to hexagon-grid.

Supply	• Capacities for community centres were derived from their floor size and the range of facilities they offer and in consultation with the City. • Only the current provision was modelled.
Travel mode and access time	Transport via the existing road network – up to a maximum travel time of 15 minutes in off-peak conditions.
Analyses undertaken	• Catchment area analysis, based on facility capacity and a maximum travel time of 15 minutes (for A, B, C & D-grade centres initially and then including E-grade centres as well); and, • Catchment constrained travel time analysis to the nearest civic centre (each civic centre was assigned a capacity of 200 000 people).

The appendices to this section list all the facilities by category showing the results of the analysis of allocated demand and spare capacities for all community centres (see Appendix 2.1) and for civic centres as a separate category (see Appendix 2.2).

2.3 Discussion of results: Community Centres

2.3.1 Accessibility to A, B, C and D-graded Community Centres

Tables 2.2a and 2.2b show the City's population not served by existing A, B, C & D community centres. The City has been further divided into areas inside and outside the Cape Town urban edge (that is urban or non-urban areas). See 2.1 for a map of the urban edge as specified by the City of Cape Town.

Figure 2.1: Urban edge of City of Cape Town

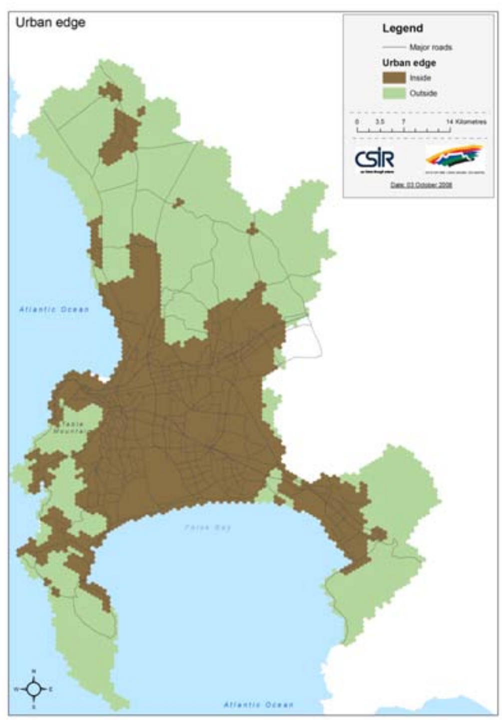

Table 2.2a shows the number of served and unserved population based on the analysis as defined in Table 2.1 for the current scenario (2007 population figures), while Table 2.2b has results based on potential city growth to the year 2016.

Table 2.2a: Current scenario – unserved population by existing A, B, C & D community centres

Area	Total population	Unserved population	% of population unserved
Urban	3 314 706	313 776	9.47%
Non-urban	14 062	4 550	32.36%
Total	3 328 768	318 326	9.56%

Table 2.2b: Projected 2016 scenario - unserved population by existing A, B, C & D community centres

Area	Total population	Unserved population	% of population unserved
Urban	3 823 574	636 051	16.63%
Non-urban	16 535	7 128	43.11%
Total	3 840 109	643 179	16.75%

The results show that based on the current scenario, over 90% of Cape Town's residents are able to reach a community centre within the given standard of 15 minutes of travel time and taking the capacities of the centres into consideration in the analysis. Thus, the available capacity of a particular community centre is compared to demand in conjunction with travel distance to the centre rather than considering travel distance as being the only impediment to accessibility. The percentage of the population unserved is likely to increase to almost 17% when the potential population growth to 2016 is considered and should no new facilities be built.

As can possibly be expected the population beyond the City's urban edge is far less provided for, with almost a third currently unserved by existing community centres and this increases to over 40% in 2016. However, as a proportion of the City of Cape Town's total population the non-urban population is very small at less than half a percent.

Figure 2.2a maps the current served population and concentration of unserved population with regard to existing A, B, C & D community centres (see Table 2.2a), while Figure 2.2b maps this for the projected population of 2016 (see Table 2.2b).

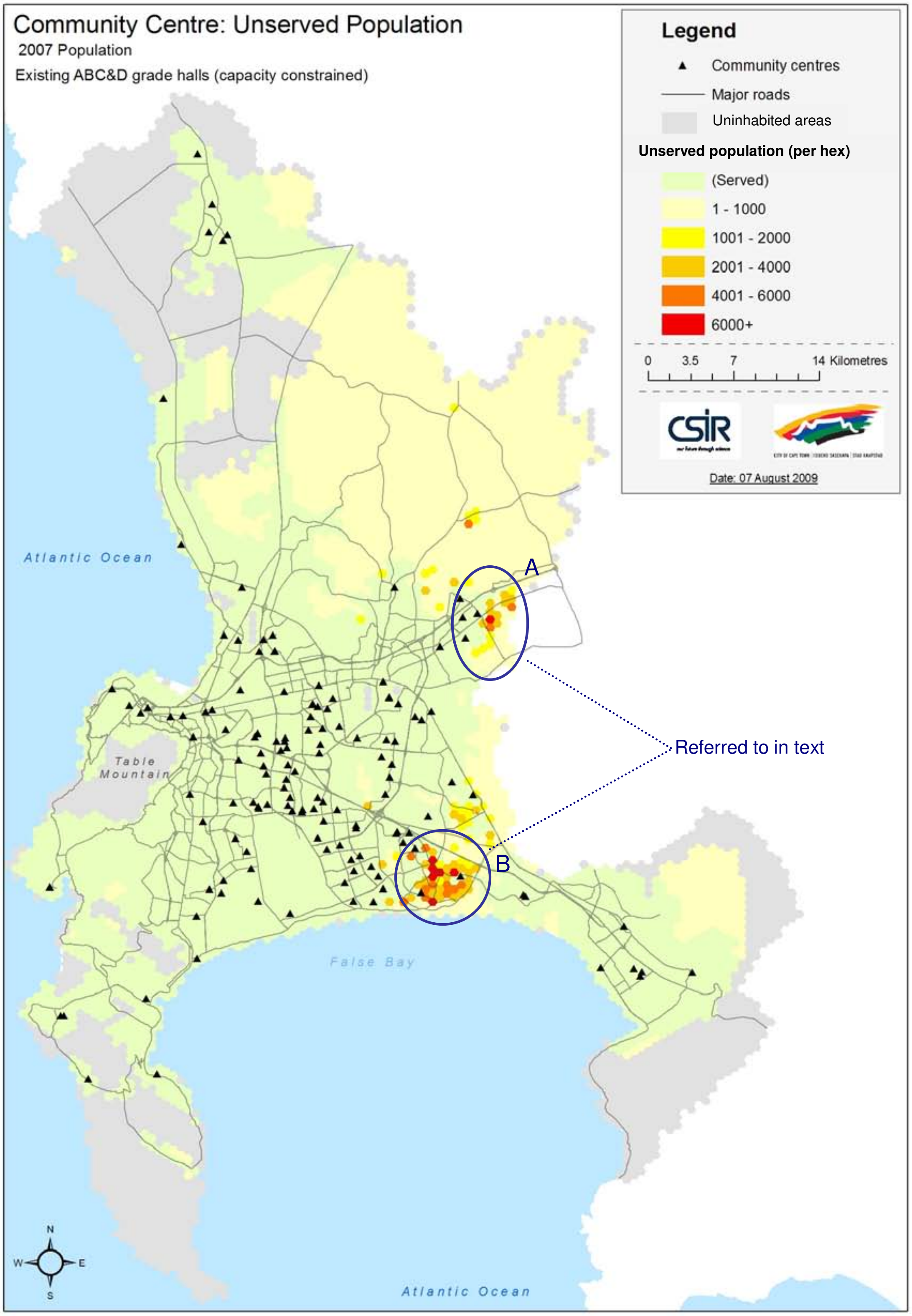

Figure 2.2a: Current scenario of served population and concentration of unserved population – A, B, C & D-grade community centres

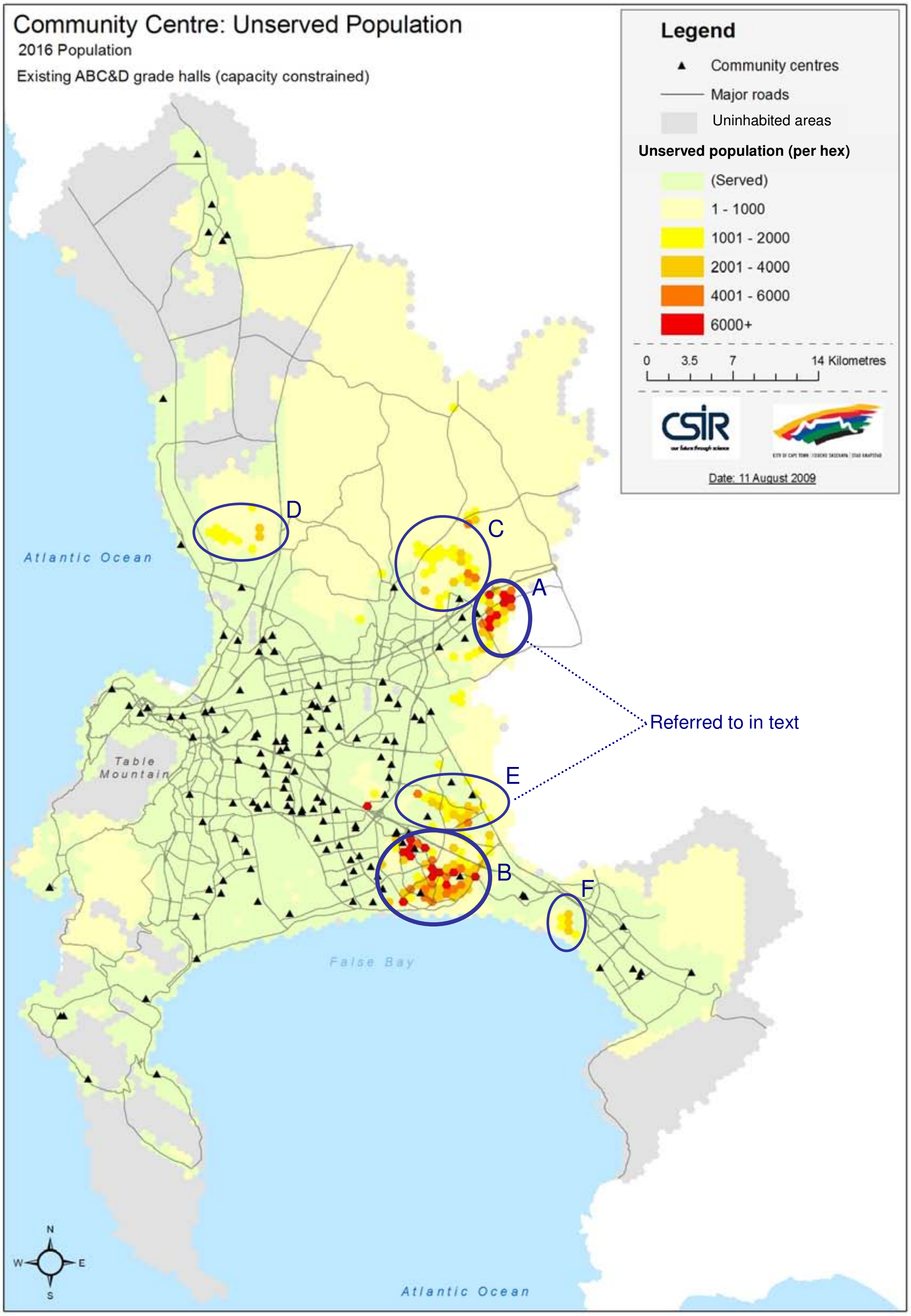

Figure 2.2b: Scenario 2016 of served population and concentration of unserved population – A, B, C & D-grade community centres

The concentration of unserved population occurs specifically in certain areas of the City as shown in Figures 2.2a and 2.2b (depictions of the current and 2016 scenario respectively). In the current scenario there are two areas which show up as being most under provided for in terms of community centres (Figure 2.2a). These being the Kraaifontein/ Wallacedene area indicated by the blue circle marked 'A' and the area south-east of Khayelitsha (circle B). Blue Downs/ Kleinvlei is also an area of under provision in the current scenario, but not as prominent as the aforementioned areas. In general terms, however, meeting a standard of 90% served currently and 83% in the future is good given that this is a non-essential service.

In 2016 (Figure 2.2b) these areas remain problematic, but there is also a significant shortage of provision developing in the north of the City (circles C & D). The Blue Downs/ Kleinvlei area (circle E) is now prominent in terms of under provision and is more extensive, including other areas to the west of it. The Firgrove area (circle F) is a developing problem area in 2016, but not as prominent as the other areas identified.

On a district basis, (see Tables 2.2c & 2.2d) the largest percentages of unserved demand for community centres graded A, B, C and D are found in the districts of Mitchells Plain/ Khayelitsha and Northern for both the current and the 2016 scenario. The other districts seem well provided for in terms of these types of community halls. The Mitchells Plain/ Khayelitsha District percentage of unserved population for that district is as high as 21% currently and will rise to 30% in 2016. The Northern District has higher percentages of unserved people in its district at 34% currently, rising to 50% in 2016. However, in terms of the overall percentage of unserved demand (backlog) for the City of Cape Town that these districts contribute to, the Mitchells Plain/ Khayelitsha District makes up twice as much currently and will contribute 1.5 times more in 2016 than the Northern District in unserved demand since about 30% of Cape Town residents live in the Mitchells Plain/ Khayelitsha District.

Table 2.2c: Current scenario - unserved population by existing A, B, C & D community centres per planning district

District	Name	Pop 2007	Unserved	% Unserved per district	% Unserved to total population
A	Table Bay	183 586	0	0.00%	0.00%
B	Blaauwberg	174 130	503	0.29%	0.02%
C	*Northern*	*282 832*	*95 543*	*33.78%*	*2.87%*
D	Tygerberg	637 983	3 860	0.60%	0.12%
E	Helderberg	181 957	2 989	1.64%	0.09%
F	*Mitchells Plain/Khayelitsha*	*1 014 253*	*215 341*	*21.23%*	*6.47%*
G	Cape Flats	538 530	0	0.00%	0.00%
H	South Peninsula	315 496	91	0.03%	0.00%
TOTAL	City of Cape Town	3 328 768	318 327	9.56%	9.56%

Table 2.2d: Projected 2016 scenario - unserved population by existing A, B, C & D community centres per planning district					
District	**Name**	**Pop 2016**	**Unserved**	**% Unserved per district**	**% Unserved to total population**
A	Table Bay	189 642	3	0.00%	0.00%
B	Blaauwberg	231 868	31 393	13.54%	0.82%
C	*Northern*	402 106	213 733	*53.15%*	*5.57%*
D	Tygerberg	706 376	16 753	2.37%	0.44%
E	Helderberg	276 308	36 428	13.18%	0.95%
F	*Mitchells Plain/Khayelitsha*	1 114 354	334 143	*29.99%*	*8.70%*
G	Cape Flats	573 056	38	0.01%	0.00%
H	South Peninsula	346 399	10 688	3.09%	0.28%
TOTAL	City of Cape Town	3 840 109	643 179	16.75%	16.75%

The relevance and importance of these planning district tables – showing the unserved population per planning district – should not be over emphasised and are presented for reporting purposes rather than to inform planning processes. Residents generally ignore or are oblivious to the boundaries of these regions and will use facilities closest to their homes irrespective of the district in which facilities are sited. In addition, the concentration of population is far higher in certain of the districts and thus these areas are in far greater need than less populous areas. With respect to planning for future facility provision the spatial outputs (namely the maps) are far more important when identifying areas requiring more facilities or increased service provision by existing facilities.

2.3.2 Inclusion of E-grade community centres

Further analysis was undertaken to determine what impact the inclusion of E-grade community centres would have on total service provision when added to that provided by the A, B, C & D-grade community centres previously analysed. Tables 2.3a and 2.3b show the population numbers unserved by the existing A, B, C, D & E community centres for areas inside and outside the urban edge, for the current situation and for the growth in population projected for 2016 respectively. These results have been mapped on Figures 2.3a and 2.3b which follow.

Table 2.3a: Current scenario – unserved population by existing A, B, C, D & E community centres			
Area	**Total population**	**Unserved population**	**% of population unserved**
Urban	3 314 706	174 611	5.27%
Non-urban	14 062	3 653	25.98%
Total	3 328 768	178 264	5.36%

Table 2.3b: Projected 2016 scenario – unserved population by existing A, B, C, D & E community centres			
Area	**Total population**	**Unserved population**	**% of population unserved**
Urban	3 823 574	484 842	12.68%
Non-urban	16 535	5 447	32.94%
Total	3 840 109	490 289	12.77%

Figures 2.3a and 2.3b show the concentration of unserved population for the current and 2016 scenarios once E-grade halls have been included.

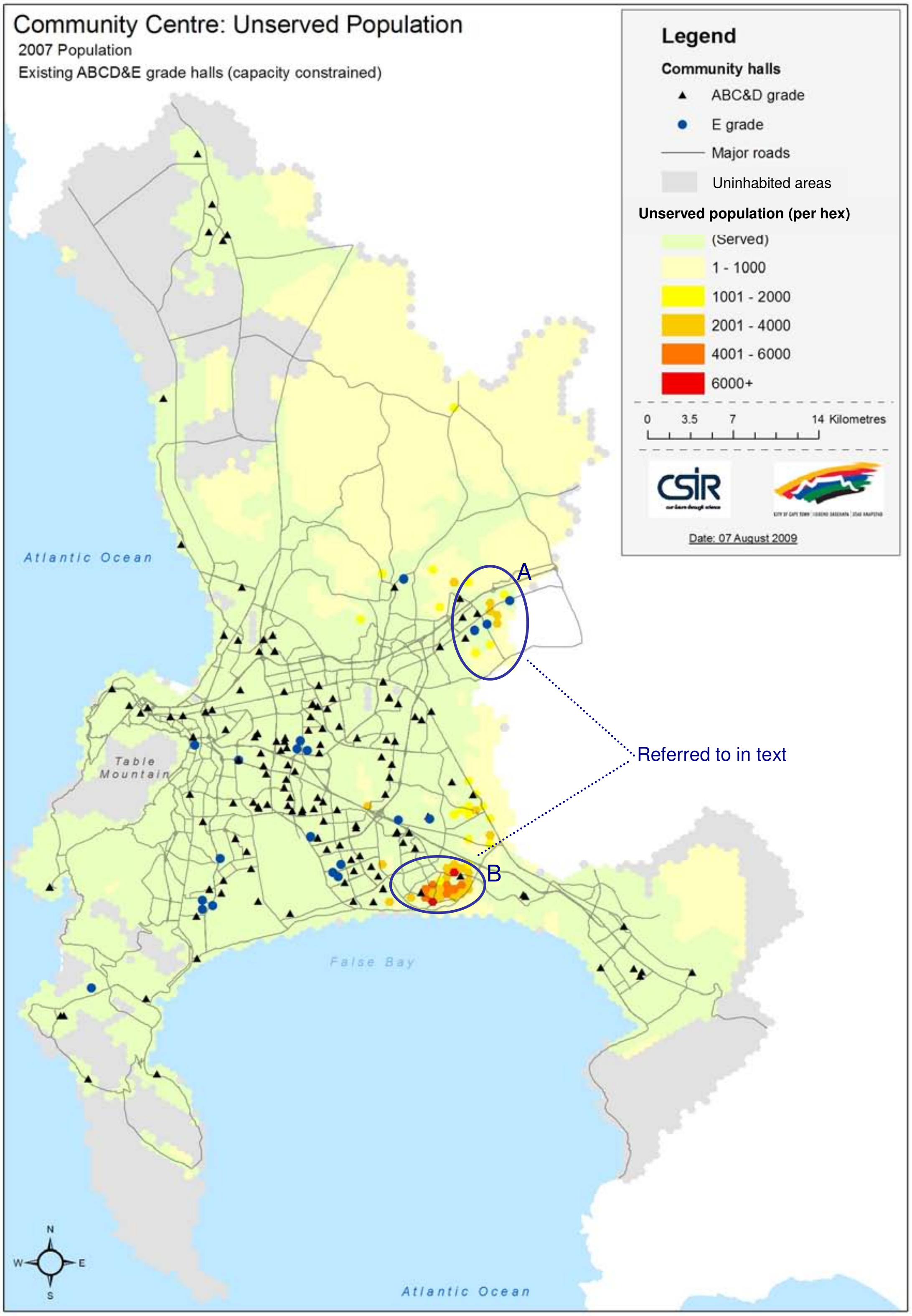

Figure 2.3a: Current scenario of served population and concentration of unserved population – A, B, C, D & E-grade community centres

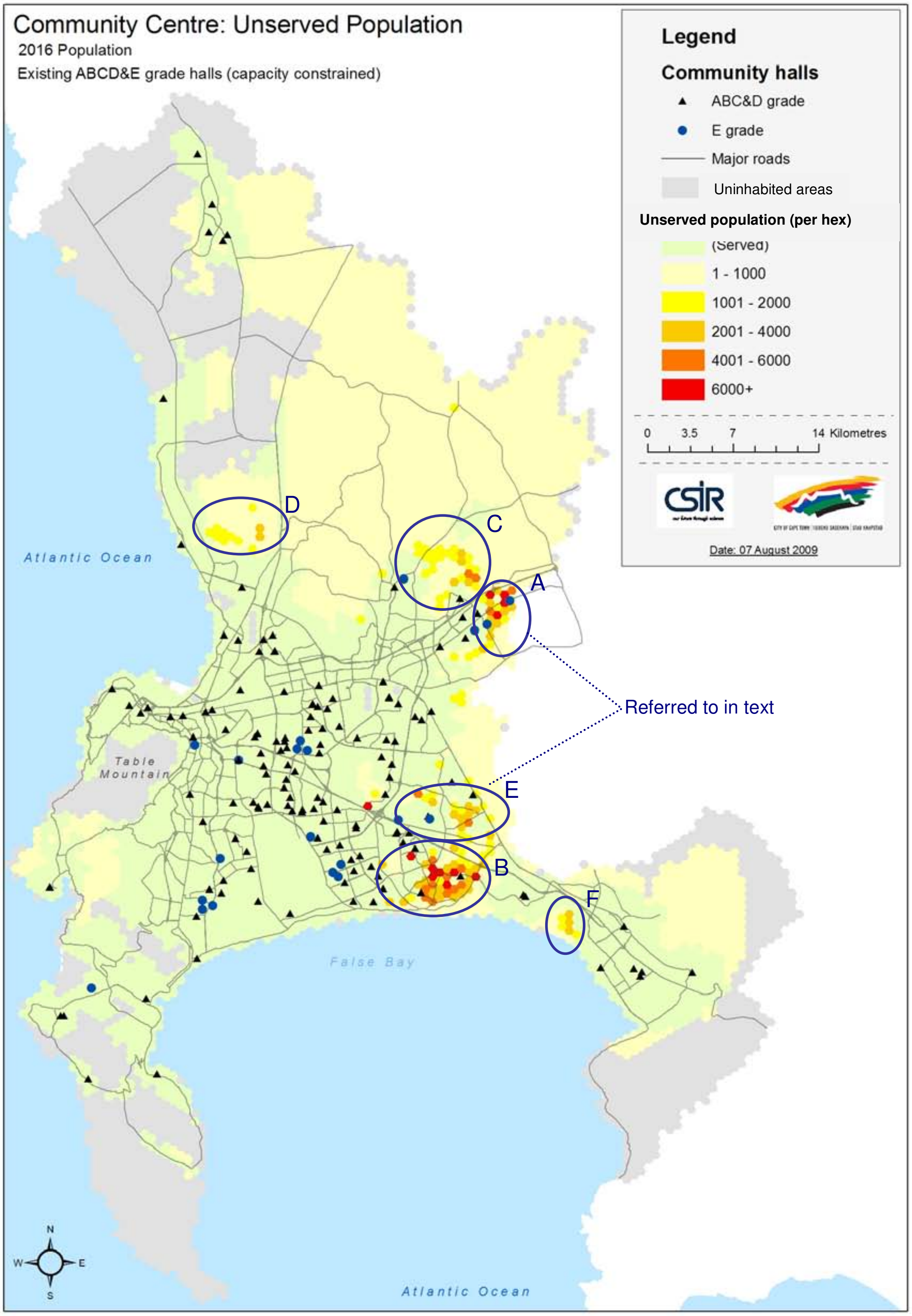

Figure 2.3b: Scenario 2016 of served population and concentration of unserved population – A, B, C, D & E-grade community centres

On a district basis, the inclusion of E-grade community centres has significantly reduced the percentages of unserved demand for community centres in the districts of Mitchells Plain/ Khayelitsha and Northern for both the current and the 2016 scenario (Tables 2.3c & 2.3d). In the current scenario, the unserved demand in these two districts almost halved although the reduction was less for the 2016 scenario. As these two districts contributed most of the unserved demand for community centres in the previous analysis (which included only the centres graded A to D and excluded grade E centres) the overall unserved demand for the City of Cape Town as a whole has also considerably decreased.

Table 2.3c: Current scenario – unserved population by existing A, B, C, D & E community centres per planning district

District	Name	Pop 2007	Unserved	% Unserved per district	% Unserved to total population
A	Table Bay	183 586	0	0.00%	0.00%
B	Blaauwberg	174 130	503	0.29%	0.02%
C	*Northern*	282 832	45 543	*16.10%*	*1.37%*
D	Tygerberg	637 983	3 860	0.60%	0.12%
E	Helderberg	181 957	2 024	1.11%	0.06%
F	*Mitchells Plain/Khayelitsha*	1 014 253	126 305	*12.45%*	*3.79%*
G	Cape Flats	538 530	0	0.00%	0.00%
H	South Peninsula	315 496	29	0.01%	0.00%
TOTAL	City of Cape Town	3 328 768	178 265	5.36%	5.36%

Table 2.3d: Projected 2016 scenario – unserved population by existing A, B, C, D & E community centres per planning district

District	Name	Pop 2016	Unserved	% Unserved per district	% Unserved to total population
A	Table Bay	189 642	2	0.00%	0.00%
B	Blaauwberg	231 868	31 393	13.54%	0.82%
C	*Northern*	402 106	163 733	*40.72%*	*4.26%*
D	Tygerberg	706 376	16 742	2.37%	0.44%
E	Helderberg	276 308	36 428	13.18%	0.95%
F	*Mitchells Plain/Khayelitsha*	1 114 354	239 182	*21.46%*	*6.23%*
G	Cape Flats	573 056	0	0.00%	0.00%
H	South Peninsula	346 399	2 809	0.81%	0.07%
TOTAL	City of Cape Town	3 840 109	490 289	12.77%	12.77%

By adding the E-grade centres to the other community centres in the second round of analysis, it was found – for both the current and the 2016 scenarios (Figures 2.3a & 2.3b) – that the inclusion of the E-grade centres provided an additional 4% of the City's population with a service. The most significant impact in the current scenario in terms of unserved areas was in the Wallacedene/ Bloekombos area. In the 2016 scenario and including the 4% of population served by E-grade centres, the spatial concentration of unserved population remained constant such that it appears in the same areas and at a similar relative intensity as without the E-grade facilities.

The costs of maintaining the E-grade facilities should be carefully measured against the amount of people served to decide whether to continue with the upkeep of these particular facilities as their impact is relatively minor (an additional 4% of the population served).

2.3.3 Population served by distance category to all community centres

The cumulative numbers of served people living in different distance bands from community centres for the current scenario and the 2016 scenario are shown in Table 2.4. There is little difference in the percentage of people living at different distances from a community centre for the two scenarios, although in the 2016 scenario there is a slight decrease in the percentage served for all distance bands and in particular that of 2.5km or less. Almost a third of the population live less than a kilometre from a community centre in both scenarios, and over 73% live less than 2.5km from a centre and over 94% live less than 5km from a centre.

Table 2.4: Population served by distance to all community centres for the current and 2016 scenario (cumulative totals)

Distance Category	Current		2016	
	Number of people served	% of population served	Number of people served	% of population served
0 - 1km	1 050 375	31.55%	1 116 162	29.07%
0 - 2.5km	2 583 794	77.62%	2 812 513	73.24%
0 - 5km	3 227 707	96.96%	3 626 958	94.45%
More than 5km	101 061	3.04%	213 136	5.55%
More than 5km	3 328 768	100.00%	3 840 094	100.00%

2.3.4 Accessibility to Civic Centres

In addition, a catchment area analysis of Civic Centres only was undertaken separately from the analysis of the community centres. Each Civic Centre was assigned a capacity of 200 000 (higher than when only considered as having a local community hall function as an A-grade community hall).

Based on this catchment area analysis, the accessibility of residents to the Civic Centres in the City of Cape Town for the current and 2016 scenarios respectively is depicted in Figures 2.4a and 2.4b. Although, the capacity of the Civic Centres was limited to serving 200 000 people, the travel time to reach such a facility was not restricted. It was found that currently all residents could reach a Civic Centre with capacity. Some areas however - mostly outside the urban edge, and including Atlantis – are beyond an acceptable 15 minute travel time to a Civic Centre. A similar situation was found for the 2016 scenario.

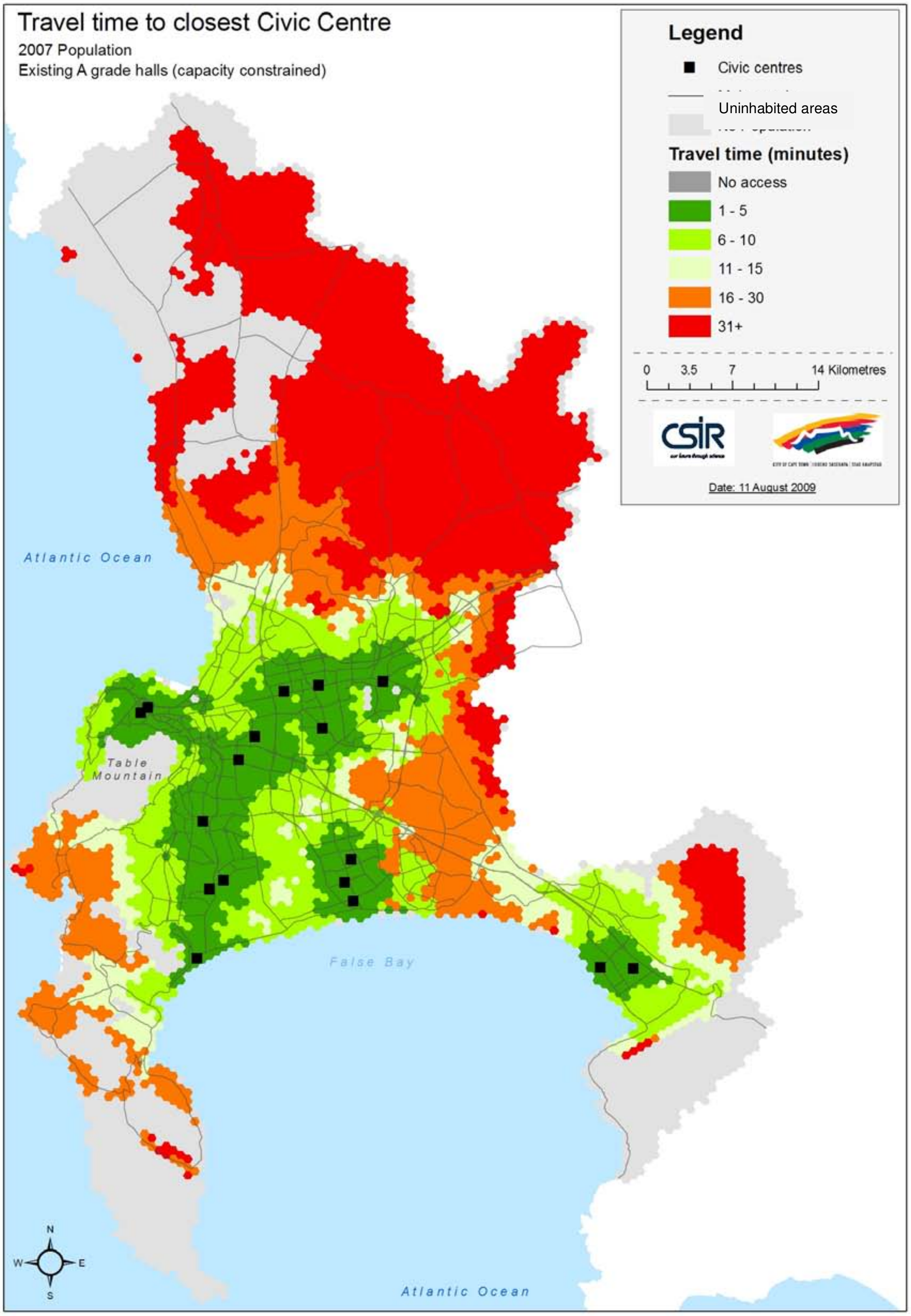

Figure 2.4a: Current accessibility (travel time) to nearest civic centre (A-grade centres only) under capacity constraints

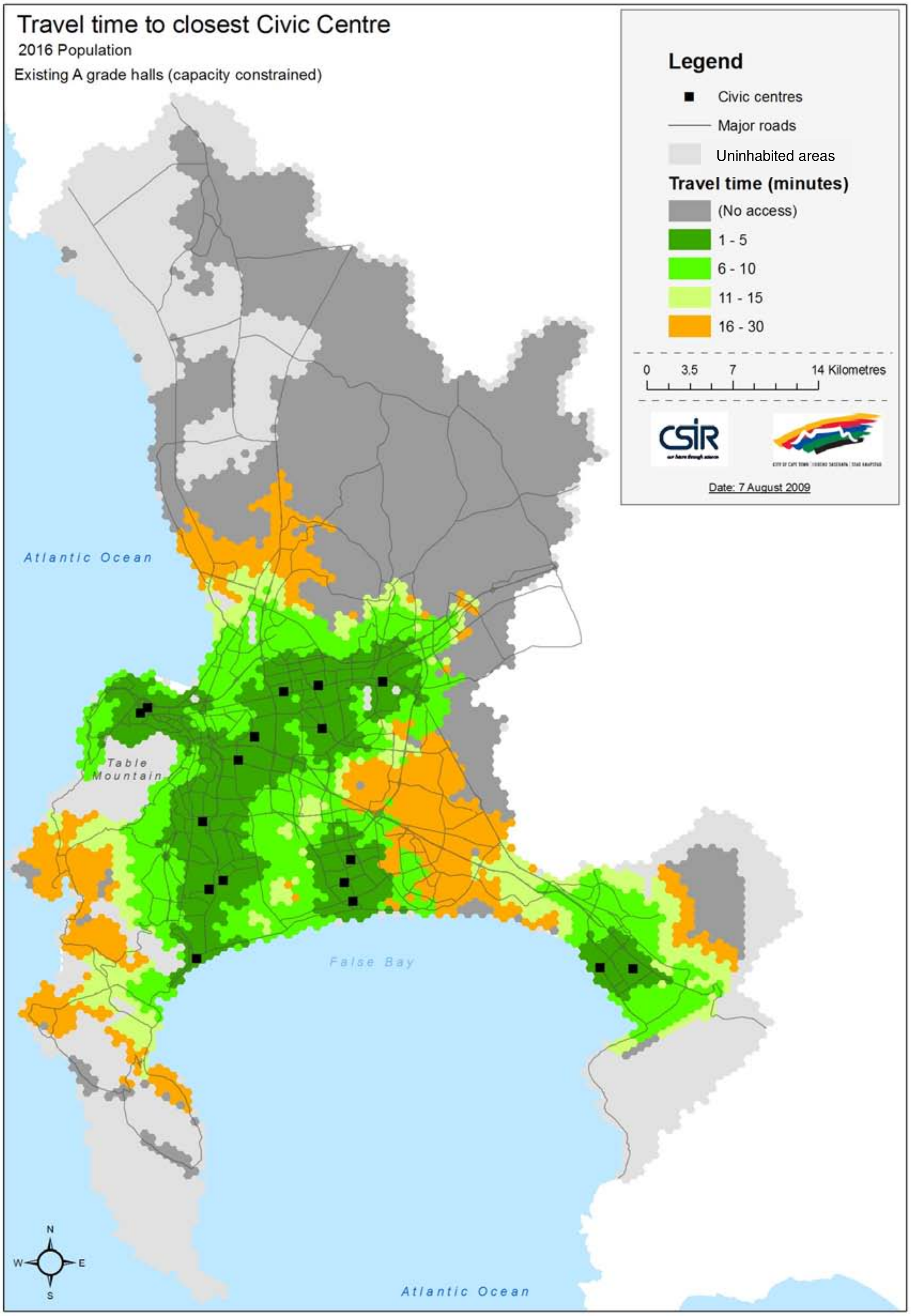

Figure 2.4b: Projected 2016 accessibility (travel time) to nearest civic centre (A-grade centres only) under capacity constraints

2.4 Recommendations/ Optimization for Community Centres

Community Centres in Cape Town have a range of service capacities ranging from providing for 10 000 residents (Grade E centres) to 60 000 residents (Grade A centres), at an average threshold capacity of 21 500 people per community centre. Currently, 178 264 people are unserved – taking into account the standard of travelling less than 15 minutes to reach a community centre with capacity. Thus there is currently a backlog of about 8 community centres. In the 2016 scenario, this would increase to a backlog of as many as 23 community centres for the City of Cape Town.

The ten best optimal locations for situating new community centres to serve the 2016 demand are shown in Figure 2.5. These locations are located to best address the unserved demand in certain areas of the City to achieve best overall accessibility and thus indicate the most appropriate sites for community centre development. The exact locations of community centres in respect of these optimal locations must be selected by the City of Cape Town with due consideration given to factors such as land availability and adjacent land uses.

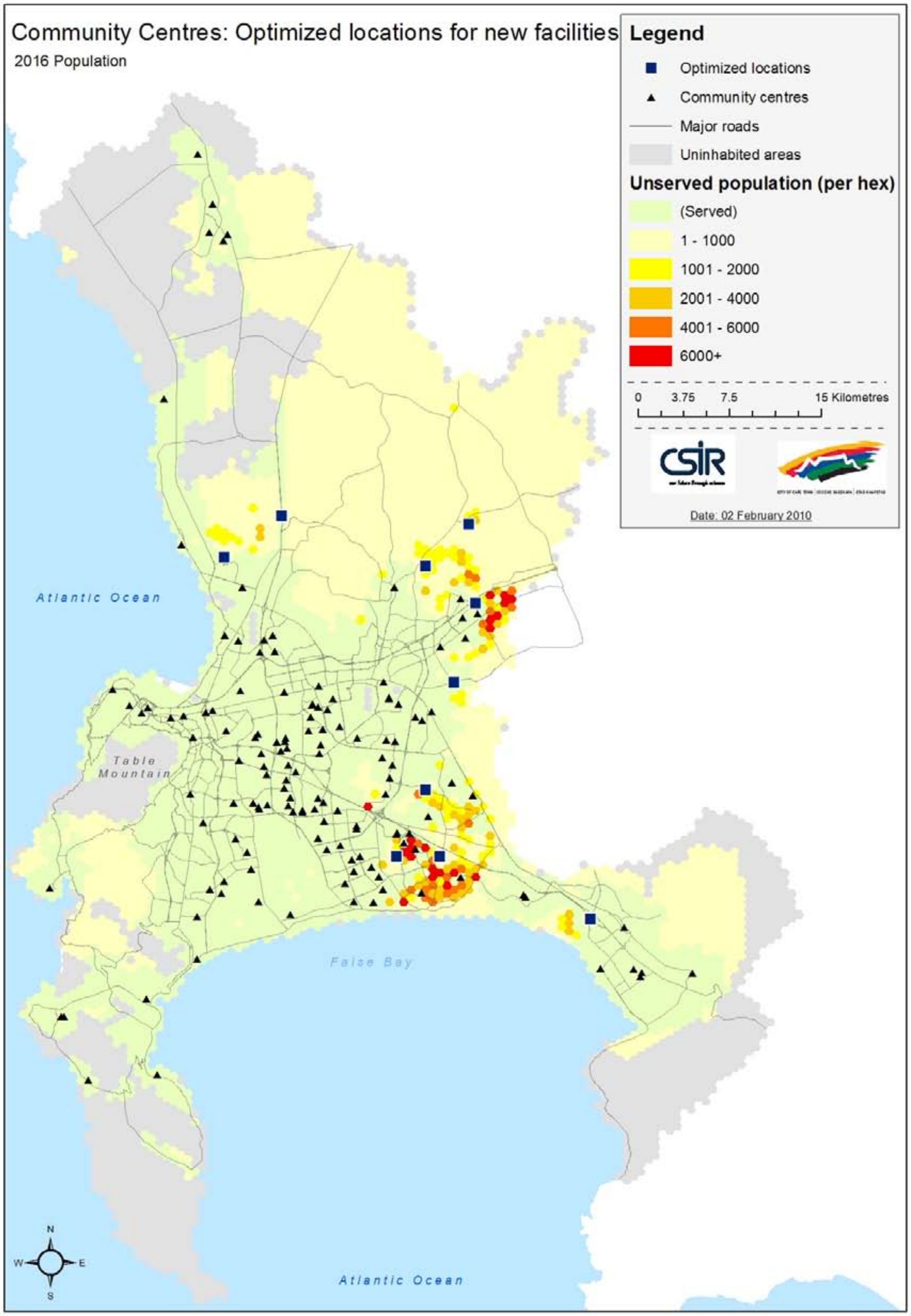

Figure 2.5: Optimised locations for community centres in 2016

2.5 Potential spare capacity for Community and Civic Centres

There is no spare capacity with respect to Civic Centres and only minor spare capacity with respect to community centres. All Civic Centres play a dual role but some of these are not required based on their local needs (demand) but are not surplus to capacity in terms of wider city needs. No facilities are indicated as having spare capacity for both roles. The spare capacity – which is very limited in any case – is only summarised for B-grade halls and below. Given the major shortfall for community centres consideration of rationalisations are not essential, unless it is shown that communities no longer use the facilities in the localised area of oversupply (Southern Suburbs/ Cape Flats).

Table 2.5: Potential Spare capacity for existing B, C, D & E community centres per planning district -2016 scenario

District	Name	Pop 2016	Unserved	Potential Spare Capacity	Comments
A	Table Bay	189 642	2	21 021	Limited spare capacity
B	Blaauwberg	231 868	31 393	1 235	
C	*Northern*	*402 106*	*163 733*		
D	Tygerberg	706 376	16 742		
E	Helderberg	276 308	36 428		
F	*Mitchells Plain/Khayelitsha*	*1 114 354*	*239 182*		
G	Cape Flats	573 056	0	23 306	Potentially some over-supply in localised area
H	South Peninsula	346 399	2 809	23 579	
TOTAL	City of Cape Town	3 840 109	490 289	69 141	

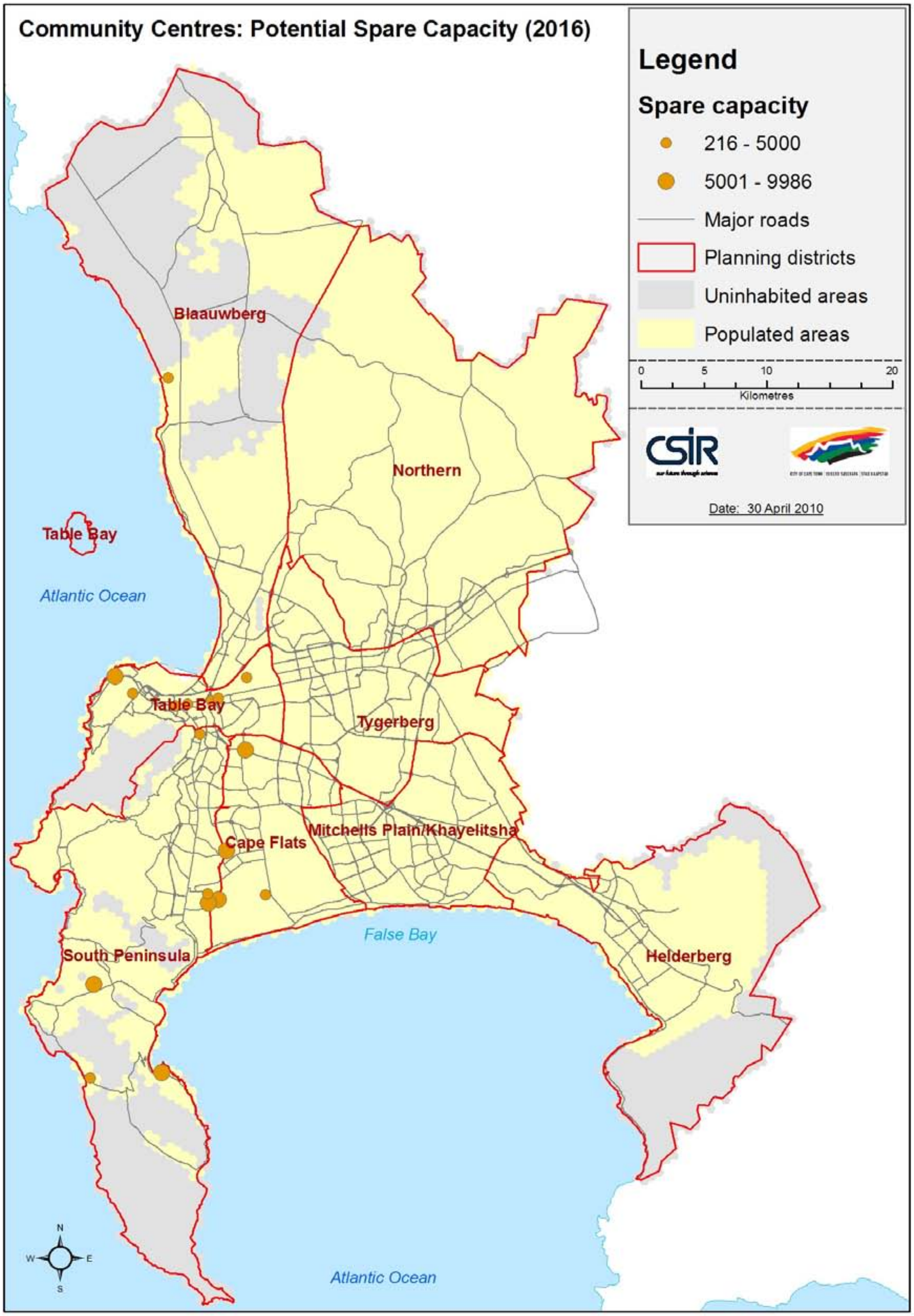

Figure 2.6: Potential spare capacity for community centres (2016)

APPENDIX 2.1: Capacities and allocated demand for each community centre

FACILITY NAME	CATEGORY	CAPACITY	ALLOCATED DEMAND 2007		ALLOCATED DEMAND 2016	
			Demand	***Spare capacity***	**Demand**	***Spare capacity***
Cape Town Civic Centre Podium Hall	A	60 000	5 135	*91.44%*	5 273	*91.21%*
Cape Town City Hall	A	60 000	15 224	*74.63%*	15 676	*73.87%*
Nomzamo Sport and Recreation Centre	A	60 000	17 264	*71.23%*	60 000	*0.00%*
Goodwood Civic Centre	A	60 000	37 636	*37.27%*	60 000	*0.00%*
Grassy Park Civic Centre	A	60 000	53 250	*11.25%*	60 000	*0.00%*
Muizenberg Civic Centre	A	60 000	55 133	*8.11%*	60 000	*0.00%*
Wittebome Civic Centre	A	60 000	59 306	*1.16%*	60 000	*0.00%*
Parow Civic Centre	A	60 000	60 000	*0.00%*	60 000	*0.00%*
Langa Civic Hall	A	60 000	60 000	*0.00%*	60 000	*0.00%*
Athlone Civic	A	60 000	60 000	*0.00%*	60 000	*0.00%*
Bellville Civic	A	60 000	60 000	*0.00%*	60 000	*0.00%*
Strand Town Hall	A	60 000	60 000	*0.00%*	60 000	*0.00%*
Rocklands Civic	A	60 000	60 000	*0.00%*	60 000	*0.00%*
Retreat Community Centre	A	60 000	60 000	*0.00%*	60 000	*0.00%*
Westridge Civic	A	60 000	60 000	*0.00%*	60 000	*0.00%*
Lentegeur Civic	A	60 000	60 000	*0.00%*	60 000	*0.00%*
Adriaanse Civic	A	60 000	60 000	*0.00%*	60 000	*0.00%*
(Unknown)	B	30 000	11 055	*63.15%*	17 645	*41.18%*
Sea Point Civic	B	30 000	21 559	*28.14%*	22 219	*25.94%*
Fish Hoek Civic Hall	B	30 000	25 295	*15.68%*	30 000	*0.00%*
Kensington Civic	B	30 000	25 941	*13.53%*	27 050	*9.83%*
Hanover Park Civic	B	30 000	30 000	*0.00%*	30 000	*0.00%*
Kraaifontein	B	30 000	30 000	*0.00%*	30 000	*0.00%*
Rylands Hall/ Gatesville Civic	B	30 000	30 000	*0.00%*	30 000	*0.00%*
Hanover Park Community Centre	B	30 000	30 000	*0.00%*	30 000	*0.00%*
Kuilsriver Human Resource Centre	B	30 000	30 000	*0.00%*	30 000	*0.00%*
Leonsdale Community Centre	C	20 000	4 114	*79.43%*	20 000	*0.00%*
Lwandle Hall	C	20 000	4 891	*75.54%*	20 000	*0.00%*
Salt River Hall	C	20 000	5 670	*71.65%*	5 890	*70.55%*
Woodstock Hall	C	20 000	13 559	*32.20%*	15 799	*21.01%*
Edgemead Hall	C	20 000	14 771	*26.14%*	20 000	*0.00%*
Rebecca Van Amsterdam Hall	C	20 000	15 714	*21.43%*	20 000	*0.00%*
Elsies River Civic Centre	C	20 000	16 316	*18.42%*	20 000	*0.00%*
Schotschekloof Hall	C	20 000	16 718	*16.41%*	17 957	*10.22%*
Sir Lowry's Pass Community Hall	C	20 000	16 964	*15.18%*	20 000	*0.00%*
Leonsdale Hall	C	20 000	18 216	*8.92%*	20 000	*0.00%*
Grassy Park Sport and Recreation Centre	C	20 000	18 676	*6.62%*	20 000	*0.00%*
KTC Community Hall	C	20 000	20 000	*0.00%*	20 000	*0.00%*

FACILITY NAME	CATEGORY	CAPACITY	ALLOCATED DEMAND 2007		ALLOCATED DEMAND 2016	
			Demand	***Spare capacity***	**Demand**	***Spare capacity***
Endlovini Sport and Recreation Centre	C	20 000	20 000	*0.00%*	20 000	*0.00%*
Crossroads Hall (ONE)	C	20 000	20 000	*0.00%*	20 000	*0.00%*
MC Fick Hall	C	20 000	20 000	*0.00%*	20 000	*0.00%*
New Community Hall	C	20 000	20 000	*0.00%*	20 000	*0.00%*
Millers Camp Hall	C	20 000	20 000	*0.00%*	20 000	*0.00%*
Colorado Hall	C	20 000	20 000	*0.00%*	20 000	*0.00%*
Weltevreden Community Centre	C	20 000	20 000	*0.00%*	20 000	*0.00%*
Browns Farm Hall	C	20 000	20 000	*0.00%*	20 000	*0.00%*
Philippi East Hall	C	20 000	20 000	*0.00%*	20 000	*0.00%*
Bellville South Civic	C	20 000	20 000	*0.00%*	20 000	*0.00%*
Proteaville Sport and Recreation Centre	C	20 000	20 000	*0.00%*	20 000	*0.00%*
De Wet Road Hall	C	20 000	20 000	*0.00%*	20 000	*0.00%*
Somerset West Hall	C	20 000	20 000	*0.00%*	20 000	*0.00%*
Tafelsig Hall	C	20 000	20 000	*0.00%*	20 000	*0.00%*
Macassar New Hall	C	20 000	20 000	*0.00%*	20 000	*0.00%*
Kleinvlei Hall, Eersterivier	C	20 000	20 000	*0.00%*	20 000	*0.00%*
Eyethu	C	20 000	20 000	*0.00%*	20 000	*0.00%*
Eersteriver	C	20 000	20 000	*0.00%*	20 000	*0.00%*
Bardale	C	20 000	20 000	*0.00%*	20 000	*0.00%*
Ocean View Multi Purpose Centre	C	20 000	20 000	*0.00%*	20 000	*0.00%*
Gugulethu Civic Hall	C	20 000	20 000	*0.00%*	20 000	*0.00%*
Brighton Civic	C	20 000	20 000	*0.00%*	20 000	*0.00%*
Zolani Sport and Recreation Centre	C	20 000	20 000	*0.00%*	20 000	*0.00%*
Delft South Hall	C	20 000	20 000	*0.00%*	20 000	*0.00%*
Claremont Civic Centre	C	20 000	20 000	*0.00%*	20 000	*0.00%*
Delft Civic	C	20 000	20 000	*0.00%*	20 000	*0.00%*
Blackheath Community Centre	C	20 000	20 000	*0.00%*	20 000	*0.00%*
Bonteheuwel Civic	C	20 000	20 000	*0.00%*	20 000	*0.00%*
Belhar Civic	C	20 000	20 000	*0.00%*	20 000	*0.00%*
Sarepta Hall	C	20 000	20 000	*0.00%*	20 000	*0.00%*
Brackenfell Town Hall	C	20 000	20 000	*0.00%*	20 000	*0.00%*
Bothasig Hall	C	20 000	20 000	*0.00%*	20 000	*0.00%*
Durbanville Civic Centre	C	20 000	20 000	*0.00%*	20 000	*0.00%*
Leibrandt Van Niekerk Hall	C	20 000	20 000	*0.00%*	20 000	*0.00%*
Matroosfontein Civic Centre	C	20 000	20 000	*0.00%*	20 000	*0.00%*
Van Riebeeck Hall	C	20 000	20 000	*0.00%*	20 000	*0.00%*
Desmond Tutu Sports and Recreational Centre	C	20 000	20 000	*0.00%*	20 000	*0.00%*
Macassar Old Hall	C	20 000	20 000	*0.00%*	20 000	*0.00%*
Mew Way Hall	C	20 000	20 000	*0.00%*	20 000	*0.00%*
Site C Community Centre	C	20 000	20 000	*0.00%*	20 000	*0.00%*

FACILITY NAME	CATEGORY	CAPACITY	ALLOCATED DEMAND 2007		ALLOCATED DEMAND 2016	
			Demand	*Spare capacity*	Demand	*Spare capacity*
Elukhanyisweni Multi Purpose Centre	C	20 000	20 000	*0.00%*	20 000	*0.00%*
Sherwood Park Multi Purpose Centre	C	20 000	20 000	*0.00%*	20 000	*0.00%*
Bonteheuwel Multi Purpose Centre	C	20 000	20 000	*0.00%*	20 000	*0.00%*
Lwanndle Community Centre	C	20 000	20 000	*0.00%*	20 000	*0.00%*
Cravenby Hall	C	20 000	20 000	*0.00%*	20 000	*0.00%*
Observatory Sport and Recreation Centre	C	20 000	20 000	*0.00%*	20 000	*0.00%*
Mandela Peace Park Sport and Recreation Centre	C	20 000	20 000	*0.00%*	20 000	*0.00%*
Tehician Community Collaborative Multi Purpose Centre	D	15 000	0	*100.00%*	15 000	*0.00%*
Scarborough Hall	D	15 000	2 654	*82.31%*	4 021	*73.19%*
Maitland Town Hall	D	15 000	3 224	*78.51%*	3 570	*76.20%*
Simons Town Hall	D	15 000	4 648	*69.01%*	8 538	*43.08%*
Milnerton Hall	D	15 000	9 027	*39.82%*	15 000	*0.00%*
Mamre Hall	D	15 000	9 335	*37.77%*	15 000	*0.00%*
Pelican Park Community Hall	D	15 000	10 199	*32.01%*	14 784	*1.44%*
M/G Village Comm Centre	D	15 000	11 340	*24.40%*	13 508	*9.95%*
Hangberg Sport and Recreation Centre	D	15 000	13 509	*9.94%*	15 000	*0.00%*
Summer Greens Hall	D	15 000	14 092	*6.05%*	15 000	*0.00%*
Saxon Sea Hall	D	15 000	15 000	*0.00%*	15 000	*0.00%*
Avondale Hall	D	15 000	15 000	*0.00%*	15 000	*0.00%*
Robinvale Hall	D	15 000	15 000	*0.00%*	15 000	*0.00%*
Bloubergstrand Hall	D	15 000	15 000	*0.00%*	15 000	*0.00%*
Strandfontein Hall	D	15 000	15 000	*0.00%*	15 000	*0.00%*
Northwood Community Centre	D	15 000	15 000	*0.00%*	15 000	*0.00%*
Pinelands Hall	D	15 000	15 000	*0.00%*	15 000	*0.00%*
Monwabisi Community Centre	D	15 000	15 000	*0.00%*	15 000	*0.00%*
Bridgetown Community Centre	D	15 000	15 000	*0.00%*	15 000	*0.00%*
Lansdowne Civic	D	15 000	15 000	*0.00%*	15 000	*0.00%*
Northpine Hall	D	15 000	15 000	*0.00%*	15 000	*0.00%*
FF Erasmus Hall	D	15 000	15 000	*0.00%*	15 000	*0.00%*
Dulce Howe Community Centre	D	15 000	15 000	*0.00%*	15 000	*0.00%*
Ottery Community Centre	D	15 000	15 000	*0.00%*	15 000	*0.00%*
Blomvlei Community Centre	D	15 000	15 000	*0.00%*	15 000	*0.00%*
Coniston Park Community Centre	D	15 000	15 000	*0.00%*	15 000	*0.00%*
Masimbabane Hall	D	15 000	15 000	*0.00%*	15 000	*0.00%*
Tafelsig Community	D	15 000	15 000	*0.00%*	15 000	*0.00%*

FACILITY NAME	CATEGORY	CAPACITY	ALLOCATED DEMAND 2007		ALLOCATED DEMAND 2016	
			Demand	*Spare capacity*	Demand	*Spare capacity*
Hall						
Lotus River Community Centre	D	15 000	15 000	*0.00%*	15 000	*0.00%*
Eastridge Community Centre	D	15 000	15 000	*0.00%*	15 000	*0.00%*
Portlands Hall	D	15 000	15 000	*0.00%*	15 000	*0.00%*
Beacon Valley Community Centre	D	15 000	15 000	*0.00%*	15 000	*0.00%*
Andile Msizi Community Hall	D	15 000	15 000	*0.00%*	15 000	*0.00%*
Lobelia Hall	D	15 000	15 000	*0.00%*	15 000	*0.00%*
Imizamo Yethu	D	15 000	15 000	*0.00%*	15 000	*0.00%*
Mandalay	D	15 000	15 000	*0.00%*	15 000	*0.00%*
Wesbank	D	15 000	15 000	*0.00%*	15 000	*0.00%*
Ocean View Community Centre	D	15 000	15 000	*0.00%*	15 000	*0.00%*
Druiwevlei Community Centre	D	15 000	15 000	*0.00%*	15 000	*0.00%*
Bishop Lavis Hall	D	15 000	15 000	*0.00%*	15 000	*0.00%*
Uitsicht Hall	D	15 000	15 000	*0.00%*	15 000	*0.00%*
The Downs Community Centre	D	15 000	15 000	*0.00%*	15 000	*0.00%*
Duinefontein Community Centre	D	15 000	15 000	*0.00%*	15 000	*0.00%*
Huguenot Square Hall	D	15 000	15 000	*0.00%*	15 000	*0.00%*
Belhar Minor Hall	D	15 000	15 000	*0.00%*	15 000	*0.00%*
Bonteheuwel Community Centre	D	15 000	15 000	*0.00%*	15 000	*0.00%*
Bluegum Community Centre	D	15 000	15 000	*0.00%*	15 000	*0.00%*
Vanguard Hall	D	15 000	15 000	*0.00%*	15 000	*0.00%*
Joe Slovo Sport and Recreation Centre	D	15 000	15 000	*0.00%*	15 000	*0.00%*
Edgemead Community Centre	D	15 000	15 000	*0.00%*	15 000	*0.00%*
The Hague Community Centre	D	15 000	15 000	*0.00%*	15 000	*0.00%*
Manenberg Community Centre	D	15 000	15 000	*0.00%*	15 000	*0.00%*
Lansport Community Centre	D	15 000	15 000	*0.00%*	15 000	*0.00%*
Silvertown Community Centre	D	15 000	15 000	*0.00%*	15 000	*0.00%*
Heideveld Community Centre	D	15 000	15 000	*0.00%*	15 000	*0.00%*
Cathkin Community Centre	D	15 000	15 000	*0.00%*	15 000	*0.00%*
Site B Community Hall	D	15 000	15 000	*0.00%*	15 000	*0.00%*
Site B Community Hall	D	15 000	15 000	*0.00%*	15 000	*0.00%*
Bothasig Community Centre	D	15 000	15 000	*0.00%*	15 000	*0.00%*
Nooitgedacht Hall	D	15 000	15 000	*0.00%*	15 000	*0.00%*
Retreat Community Centre	E	10 000	0	*100.00%*	0	*100.00%*

FACILITY NAME	CATEGORY	CAPACITY	ALLOCATED DEMAND 2007		ALLOCATED DEMAND 2016	
			Demand	***Spare capacity***	**Demand**	***Spare capacity***
Mowbray Town Hall	E	10 000	0	*100.00%*	0	*100.00%*
Lavender Hill Community Centre	E	10 000	0	*100.00%*	14	*99.86%*
Parkwood Community Centre	E	10 000	0	*100.00%*	1 900	*81.00%*
Athlone Community Centre	E	10 000	0	*100.00%*	4 996	*50.04%*
Steenberg Community Centre	E	10 000	6	*99.94%*	2 412	*75.88%*
Masiphumelele Community Hall	E	10 000	56	*99.44%*	3 568	*64.32%*
Tsogy Environmental Centre	E	10 000	10 000	*0.00%*	10 000	*0.00%*
Scotsdene Community Hall	E	10 000	10 000	*0.00%*	10 000	*0.00%*
Wallacedene Hall	E	10 000	10 000	*0.00%*	10 000	*0.00%*
Dagbreek Hall	E	10 000	10 000	*0.00%*	10 000	*0.00%*
Woodlands Community Centre	E	10 000	10 000	*0.00%*	10 000	*0.00%*
Mfuleni Community Centre Centre	E	10 000	10 000	*0.00%*	10 000	*0.00%*
Fisantekraal	E	10 000	10 000	*0.00%*	10 000	*0.00%*
Netreg Community Centre	E	10 000	10 000	*0.00%*	10 000	*0.00%*
Bloekombos Hall	E	10 000	10 000	*0.00%*	10 000	*0.00%*
Morningstar Community Centre	E	10 000	10 000	*0.00%*	10 000	*0.00%*
Valhalla Community Centre	E	10 000	10 000	*0.00%*	10 000	*0.00%*
Kalksteen Community Centre	E	10 000	10 000	*0.00%*	10 000	*0.00%*
Drift Sands Hall	E	10 000	10 000	*0.00%*	10 000	*0.00%*
Stephan Reagan	E	10 000	10 000	*0.00%*	10 000	*0.00%*
Totals		3 580 000	3 150 500	*12.00%*	3 349 820	*6.43%*

APPENDIX 2.2: Capacities and allocated demand for each civic centre

FACILITY NAME	CAPACITY	ALLOCATED DEMAND 2007		ALLOCATED DEMAND 2016	
		Demand	***Spare capacity***	**Demand**	***Spare capacity***
Muizenberg Civic Centre	200 000	147 024	26.49%	200 000	0.00%
Retreat Community Centre	200 000	181 743	9.13%	200 000	0.00%
Cape Town Civic Centre Podium Hall	200 000	200 000	0.00%	200 000	0.00%
Cape Town City Hall	200 000	200 000	0.00%	200 000	0.00%
Nomzamo Sport and Recreation Centre	200 000	200 000	0.00%	200 000	0.00%
Goodwood Civic Centre	200 000	200 000	0.00%	200 000	0.00%
Grassy Park Civic Centre	200 000	200 000	0.00%	200 000	0.00%
Wittebome Civic Centre	200 000	200 000	0.00%	200 000	0.00%
Parow Civic Centre	200 000	200 000	0.00%	200 000	0.00%
Langa Civic Hall	200 000	200 000	0.00%	200 000	0.00%
Athlone Civic	200 000	200 000	0.00%	200 000	0.00%
Bellville Civic	200 000	200 000	0.00%	200 000	0.00%
Strand Town Hall	200 000	200 000	0.00%	200 000	0.00%
Rocklands Civic	200 000	200 000	0.00%	200 000	0.00%
Westridge Civic	200 000	200 000	0.00%	200 000	0.00%
Lentegeur Civic	200 000	200 000	0.00%	200 000	0.00%
Adriaanse Civic	200 000	200 000	0.00%	200 000	0.00%
Totals	3 400 000	3 328 768	2.10%	3 400 000	0.00%

Evaluation of community social services and recreational space in City of Cape Town: current and future provision for 2016 and optimal location of new facilities

Section 3:

Public Libraries

May 2010

3. Public Libraries

3.1 Introduction

The accessibility mapping of libraries in Cape Town is part of a larger accessibility audit and facility planning exercise of a range of community social services undertaken by CSIR for the City of Cape Town in 2009/10.

The project as a whole seeks to identify those areas where the supply and demand for facilities are not balanced based on acceptable service provision standards, both for the current population distribution, as well as in terms of a future scenario for the City of Cape Town's predicted population growth and distribution in 2016. Flowing from this, recommendations of where intervention in respect to facility provision is required can be made. The aim is thus to audit whether residents currently have access to facilities with capacity within reasonable reach, and if these facilities will be able to accommodate future growth of the City's population.

The analysis was based on a schedule of standards for the provision and clustering of social facilities, public institutions and public recreational spaces which the CSIR compiled for the City of Cape Town in 2007; as well as datasets consisting of population, road network, and facility data. Discussion and interactions with the line departments led to a range of different access travel times and facility size standards being tested. In this case there are different types and varying sizes of libraries and subsequently the capacities and type of the libraries are not uniform.

Definition of Libraries:

Public Libraries provide resources and services in a variety of media to meet the needs of the general public for education, information and personal development. The City of Cape Town has classified its libraries according to their distribution, the range of facilities offered and size (of catchment areas). Only public libraries have been included in these analyses and have been categorised as being of two types: Local Libraries are expected to serve areas within a 3km radius and have a service capacity derived from their floor space (ranging from 17 500 to 100 000 people); whilst Regional Libraries are deemed to serve people within a 6km range and to have a set capacity of 100 000 people.

[It should be noted that these two sets are not mutually exclusive. Some libraries operate as both local and regional facilities – thus having different roles and resultant capacity.]

To ensure fine grained resolution of the modelling results the study area was sub-divided into a detailed grid delineated into hexagonal land pieces of 40ha each. The population data was proportionally assigned to this hexagonal grid based on the underlying GIS land use layer.

The population data incorporated the total population as well as other socio-economic variables which are fundamental to establishing demand for services and people's access to transport. More detail on this process is provided in Section 1 (Introduction & Methodology). All other data is then related to this grid.

A step-wise process was followed for most of the facility types analysed, although some facilities require a more tailored approach. The basic process in most cases comprised the following steps:

Step 1: Audit of current service coverage – Using the agreed standards a catchment area analysis is undertaken with respect to the current facility locations and capacities versus demand to determine which areas are well served, poorly served or over-provided for, i.e. determining the status quo.

Step 2: Planning for new facilities – The Identification of new or expanded facility locations is undertaken using proximity counting and/or optimisation analysis – The software identifies the currently unserved population and taking this into consideration then determines the highest concentrations of unserved demand. Depending on the typical facility size required, areas of intervention can be identified. Optimal sites for a set number of new facilities can be identified to prioritise the intervention areas/ location sites for new facilities, if any are required. Closure, expansion or upgrading of existing facilities can also be investigated.

Further detail on the methodology followed, the analyses procedures and interpreting the outputs (such as the maps) can be found in Section 1 (Introduction & Methodology).

3.2 Analyses criteria and processes undertaken

The criteria used for the analyses of public libraries and the processes undertaken are summarised in Table 3.1.

Table 3.1: Criteria and processes for public libraries analyses	
Facilities analysed	• All operational local libraries (totalling 102) and 2 libraries in Khayelitsha presently under construction • 30 regional libraries: 17 already operational; 5 accepted for upgrading; and 8 new proposals awaiting acceptance (subset of above local libraries)
Demand	• Demand A: Entire City with 2007 population figures assigned to hexagon-grid representing current demand • Demand B: Entire City with 2016 projected population figures assigned to hexagon-grid
Supply	• Capacities of the local libraries were derived from their floor size • The capacities of regional libraries was set at 100 000 people per library
Travel mode and access time	• Travel distance on the road network up to 3km for local libraries (various distances were tested for) • Travel distance on the road network was tested up to 6km for regional libraries [A 15 minute travel time was also tested but was considered to be not suitable in these circumstances]
Analyses undertaken	• Unconstrained capacity and travel time and travel distance analysis to establish travel time for the whole City's population to the nearest library • Catchment area analysis, based on library capacity and a maximum travel distance of 3km - local libraries • Catchment area analysis, based on library capacity and maximum travel distance of 6km - regional libraries

[Note on demand: In determining the demand for public library services, the entire population of the City of Cape Town is deemed to be users of public library services in some way or the other.]

Appendices 3.1 and 3.2 respectively list for local and regional libraries all the libraries in that category together with their associated capacity and allocated demand (with percentage spare capacity) for the current scenario and the 2016 scenario. (It should be remembered that these lists are not mutually exclusive)

3.3 Discussion of results: Local Public Libraries

3.3.1 Catchment area analysis

Tables 3.2a and 3.2b show the population numbers served or not served by existing local public libraries (including two libraries presently under construction in Khayelitsha) and based on the libraries' capacities. For reporting purposes the City has been further divided into areas inside and outside the Cape Town urban edge – that is urban and non-urban areas. See Figure 3.1 for a map of the urban edge as specified by the City of Cape Town.

Figure 3.1: Urban edge of City of Cape Town

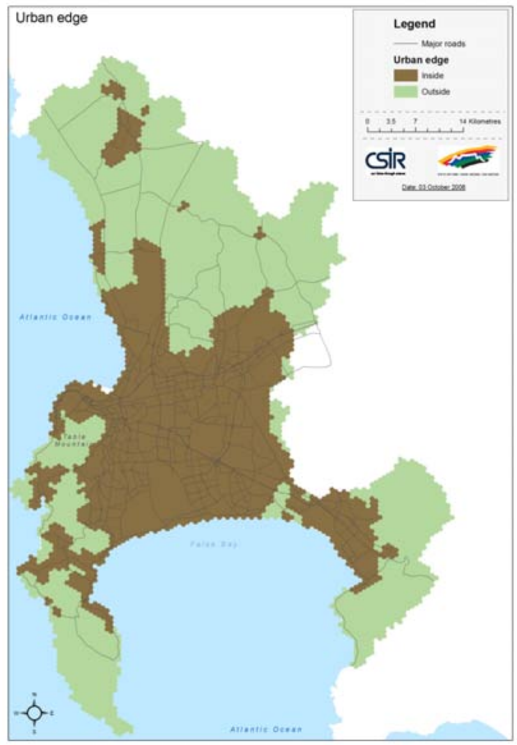

Table 3.2a shows the unserved population with respect to local libraries in Cape Town currently (2007 population figures), while Table 3.2b has results based on the potential population growth to the year 2016. These results also indicate the unserved populations within urban and non-urban areas.

Table 3.2a: Current scenario – unserved population by local libraries

Areas	Total population	Unserved population	% of population unserved
Urban	3 314 706	1 130 579	34.11%
Non-urban	14 062	9 649	68.62%
Total	3 328 768	1 140 228	34.25%

Table 3.2b: Projected 2016 scenario - unserved population by local libraries			
Area	**Total population**	**Unserved population**	**% of population unserved**
Urban	3 823 574	1 555 641	40.69%
Non-urban	16 535	12 646	76.48%
Total	3 840 109	1 568 287	40.84%

Results show that based on the current scenario, almost a third (34%) of the City's population are unable to reach a local library within the given standard of a travel distance of 3km when the capacities of the libraries are considered in the analysis. In other words, access is a measure of both reach (i.e. distance of 3km) and sufficient serving capacity in relation to the number of people living within the catchment area of the library.

The percentage of the unserved population is likely to increase to 40% if the potential population growth to 2016 is considered and should no new facilities be built. As can possibly be expected the population beyond the City's urban edge is far less well provided for, with almost 69% currently unserved by local libraries and increasing to over 76% in 2016. However, this should be seen in perspective since as a proportion of the City of Cape Town's total population the non-urban population is very small at less than half a percent. It may prove uneconomic to provide fixed services to meet this demand in non-urban areas and other deployment methods may need to be considered.

Figure 3.2a maps the current served and density of unserved population with regard to local libraries (see Table 3.2a), while Figure 3.2b maps this for the projected population of 2016 (see Table 3.2b).

Unlike that of some of the other types of facilities in the City of Cape Town, the unserved population in terms of local libraries is distributed throughout the City. This can be seen in Figures 3.2a and 3.2b (depictions of the current and 2016 scenario respectively).

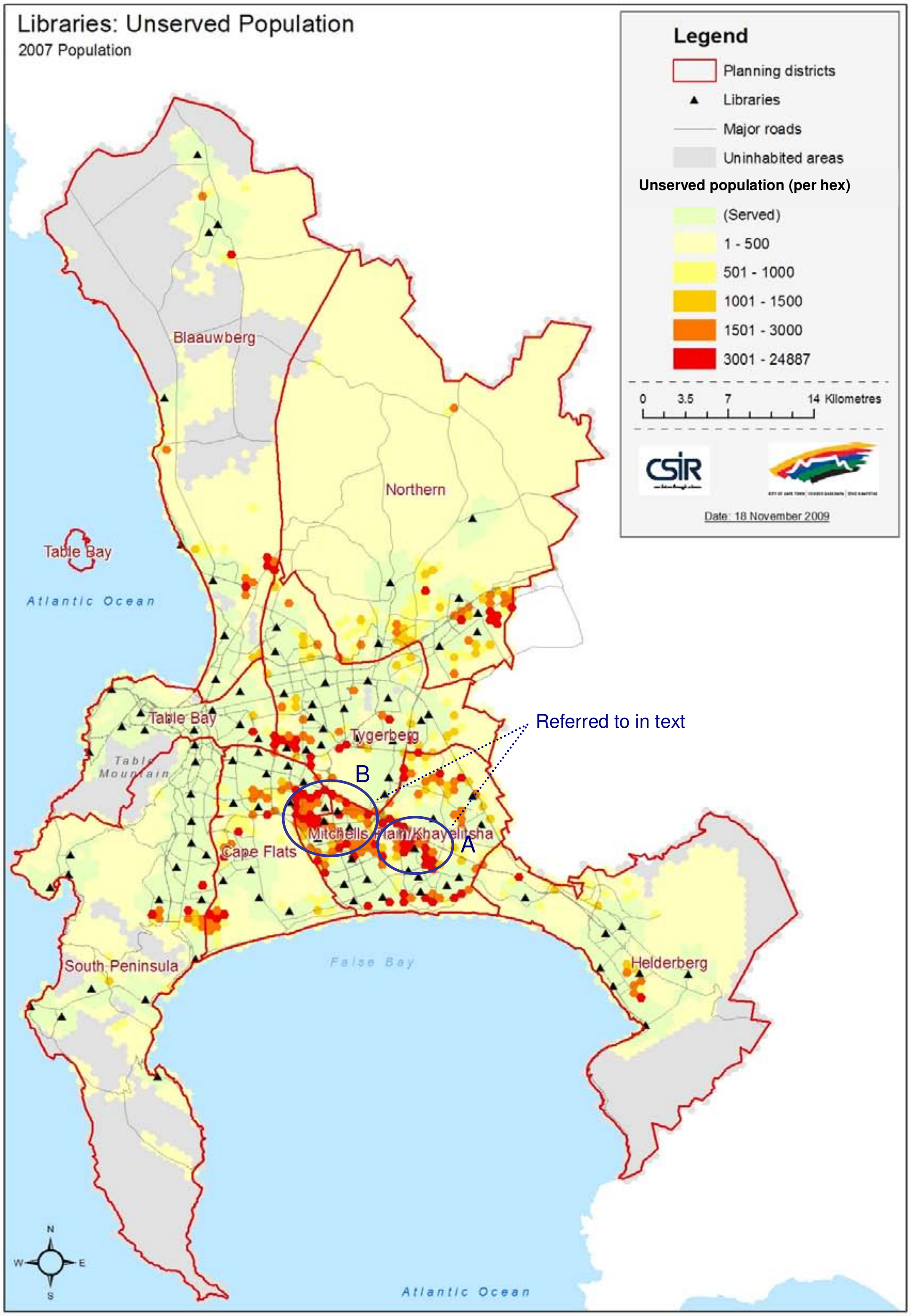

Figure 3.2a: Current scenario of served population and concentration of unserved population – Local Libraries

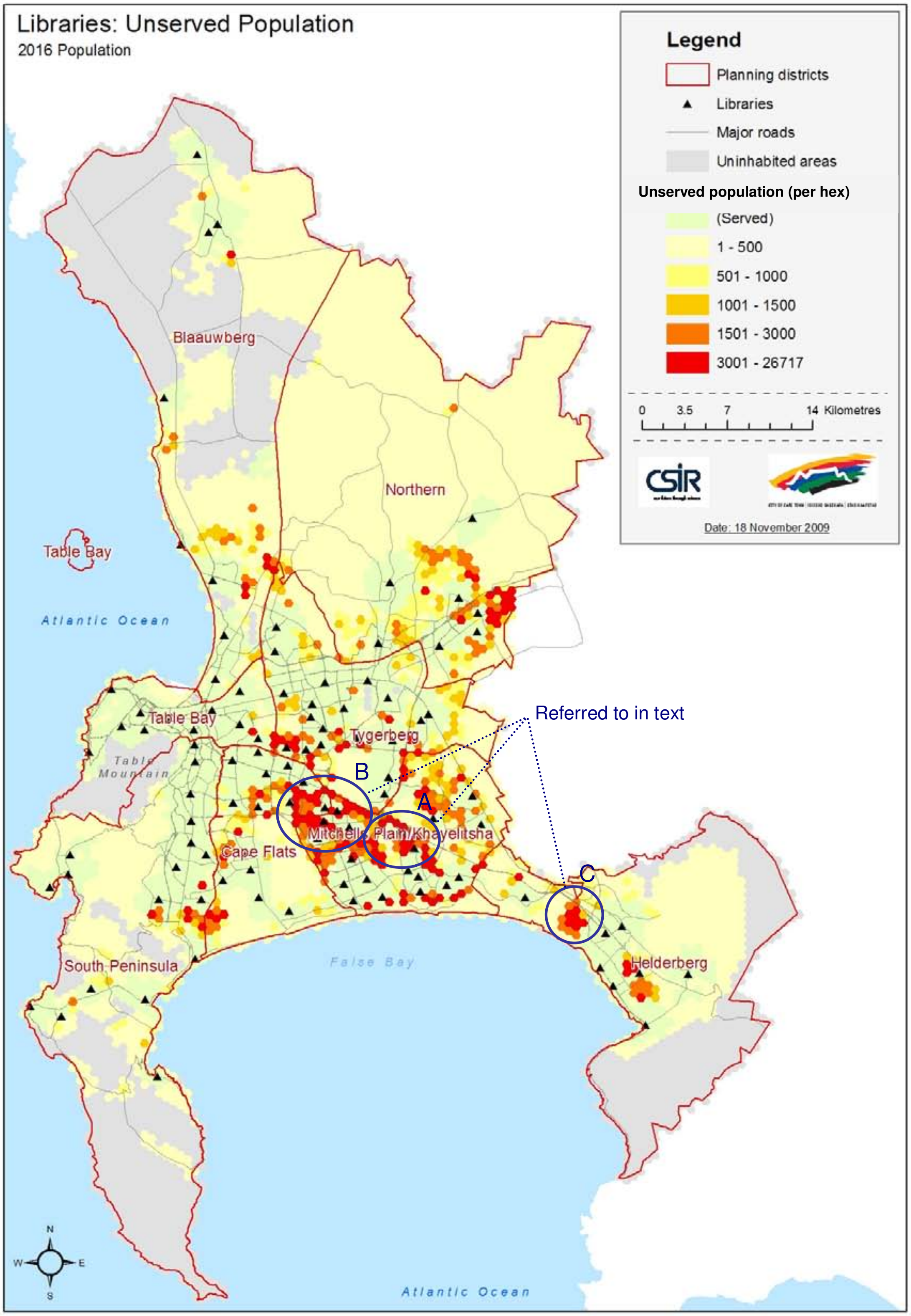

Figure 3.2b: Projected scenario 2016 of served population and concentration of unserved population – Local Libraries

A closer study of the unserved population distribution does reveal some pattern however, which provides guidance with respect to the key areas of intervention with regard to local library provision or expansion of services. In both the scenarios the unserved population is concentrated on the fringes of the urban areas, along the northern and eastern boundaries of the City and also to the south of the southern suburbs. However, in Khayelitsha (circle A) and the Nyanga/ Gugulethu areas (circle B) there is a significant concentration of unserved population. In the 2016 scenario, the Firgrove area (circle C) also becomes a prominent area of unserved population. It must, however, be reiterated that the need for extra libraries, based on walking access distance, is scattered throughout the City. **Thus, consideration of some people having to travel somewhat further to access libraries and a limited expansion of existing facilities may be the most effective means of meeting this demand.**

The relevance and importance of the planning district tables (Tables 3.2c & 3.2d) – showing the unserved population per planning district – should not be over emphasised and are presented for reporting purposes rather than to inform planning processes. Residents generally ignore or are oblivious to the boundaries of these regions and will use facilities closest to their homes irrespective of the district in which facilities are sited. In addition, the concentration of population is far higher in certain of the districts and thus these areas are in far greater need than less populous areas. With respect to planning for future facility provision the spatial outputs (namely the maps) are far more important when identifying areas requiring more facilities or increased service provision by existing facilities.

On a district basis, the largest percentages of unserved demand for local libraries are found in the districts of Mitchells Plain/ Khayelitsha and Northern District for both the current and the 2016 scenario (Tables 3.2c & 3.2d). However, in 2016 the Northern District has a larger shortfall than the Mitchells Plain/ Khayelitsha District and as much as 60% of the Northern District population is then unserved. In both scenarios, Table Bay District is best provided for in terms of local libraries with less than 16% of its population being unserved. However, in terms of the overall percentage of unserved demand for the City of Cape Town's local libraries more than a third of the unserved demand arises from the Mitchells Plain/ Khayelitsha District which is very much in line with the maps and the demand shown in circle A.

Table 3.2c: Current scenario – unserved population by local libraries per planning district					
District	**Name**	**Population 2007**	**Unserved**	**% Unserved per district**	**% Unserved to total population**
A	Table Bay	183,586	28,528	15.54%	0.86%
B	*Blaauwberg*	*174,130*	*61,895*	*35.55%*	*1.86%*
C	*Northern*	*282,832*	*130,935*	*46.29%*	*3.93%*
D	Tygerberg	637,983	135,318	21.21%	4.07%
E	Helderberg	181,957	54,428	29.91%	1.64%
F	*Mitchells Plain/Khayelitsha*	*1,014,253*	*471,346*	*46.47%*	*14.16%*
G	*Cape Flats*	*538,530*	*185,231*	*34.40%*	*5.56%*
H	South Peninsula	315,496	72,547	22.99%	2.18%
ALL	City of Cape Town	3,328,768	1,140,228	34.25%	34.25%

Table 3.2d: Projected 2016 scenario - unserved population by local libraries per planning district					
District	**Name**	**Population 2016**	**Unserved**	**% Unserved per district**	**% Unserved to total population**
A	Table Bay	189,642	29,937	15.79%	0.78%
B	*Blaauwberg*	*231,868*	*98,723*	*42.58%*	*2.57%*
C	*Northern*	*402,106*	*244,816*	*60.88%*	*6.38%*
D	Tygerberg	706,376	183,427	25.97%	4.78%
E	*Helderberg*	*276,308*	*130,956*	*47.39%*	*3.41%*
F	*Mitchells Plain/Khayelitsha*	*1,114,354*	*566,158*	*50.81%*	*14.74%*
G	Cape Flats	573,056	221,994	38.74%	5.78%
H	South Peninsula	346,399	92,276	26.64%	2.40%
ALL	City of Cape Town	3,840,109	1,568,287	40.84%	40.84%

3.3.2 Travel distance analysis – Local Public Libraries

If the size of the library is not an important operational issue but only access to local libraries, one can look at Figure 3.3a for the travel distance analysis results. This figure shows accessibility in terms of travel distances to the nearest local library without taking the capacities of the facilities into consideration. Examination of Figure 3.3 shows the general accessibility to local library facilities within the City (without taking capacity into consideration) is good. All areas of highest population densities appear to be within reach of a local library (3km).

Although (as shown in Table 3.3), 87% of the City's population is currently within a 3km distance from a local library, only 26% of this population is within a good walking distance of 1km or less. There is a slight decline in the percentages of population served in each distance category for 2016 by local libraries.

Table 3.3: City access to local libraries by distance				
DISTANCE CATEGORY	**POPULATION SERVED (CUMULATIVE)**			
	Current (2007)		**2016**	
0 - 1km	877 005	*26.35%*	939 473	*24.46%*
0 - 2.5km	2 598 268	*78.05%*	2 839 765	*73.95%*
0 - 3km	2 885 638	*86.69%*	3 166 879	*82.47%*
0 - 5km	3 266 476	*98.13%*	3 703 828	*96.45%*
More than 5km	62 292	*1.87%*	136 266	*3.55%*
TOTAL	3 328 768	*100.00%*	3 840 094	*100.00%*

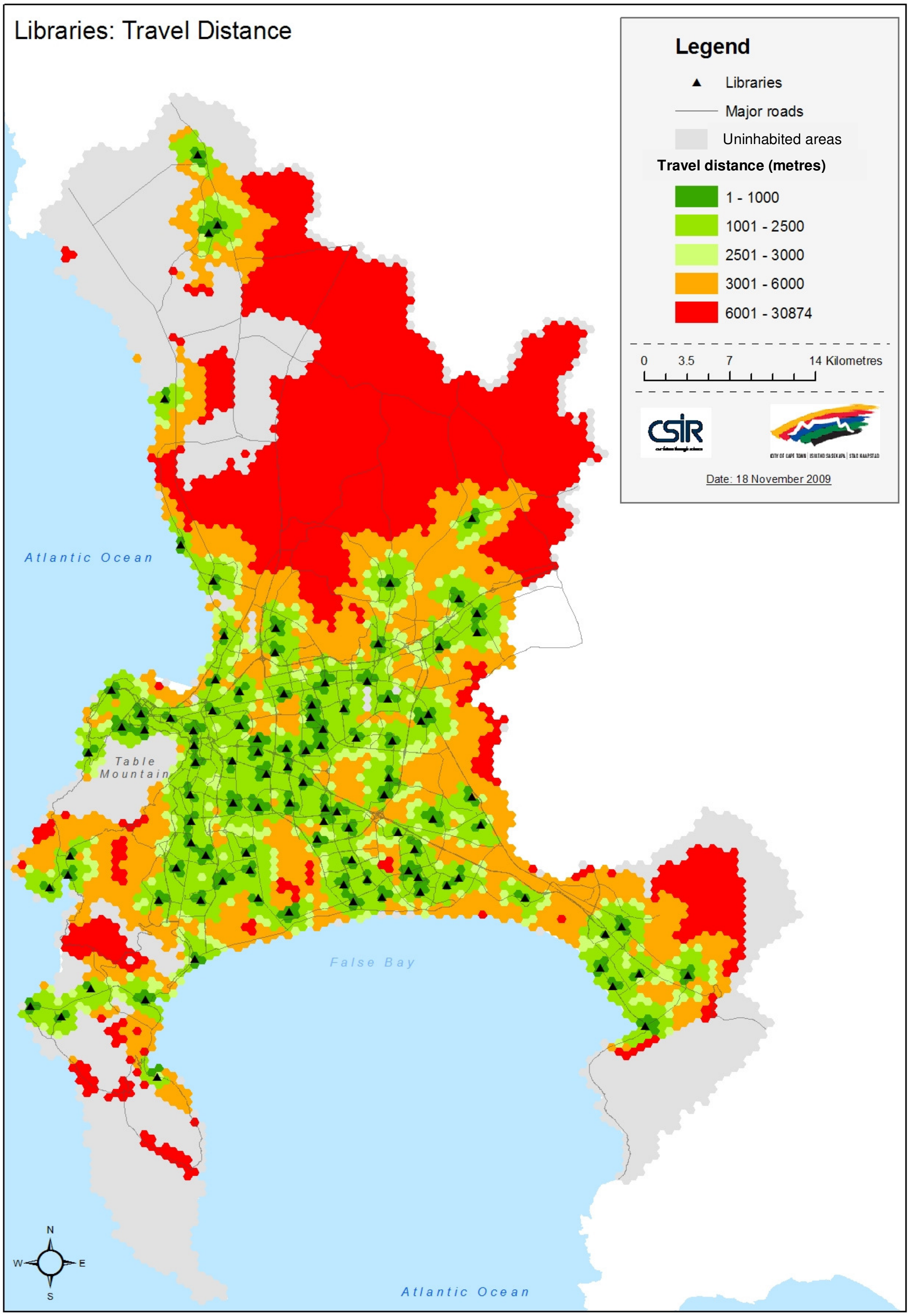

Figure 3.3: Travel distances to nearest local library (no capacity constraints)

3.4 Recommendations/ Optimisation for Local libraries

When assessing total population demand against capacity and travel time requirements, the unserved population for local libraries was found to currently number 1 140 228 people and is predicted to rise to 1 568 287 in 2016 (Tables 3.2a & 3.2b). If one takes the average service capacity of a local library to be 33 000 people (based on the current average in City of Cape Town) then there is currently a backlog of at least 34 local libraries which would increase to more than 47 in 2016 if no new facilities had been built. Given that most areas are well located with respect to travel distance the most appropriate strategy to increase service is to expand the capacity of local libraries. Since the demand for library use was considered to be all citizens there may inherently be an over estimation of demand. The City strategy should thus be to make use of current usage figures to plan the expansion of libraries in a rational manner.

The **ten** optimal locations for best serving the current backlog and the 2016 demand for local libraries are shown in Figure 3.4. These locations would best address the concentrated unserved demand of the City on a global level and thus form a general recommendation of where to site new local libraries or plan major expansion. Due consideration must still be given to factors such as land availability, closeness to residential areas, road networks and the current usage of library services before deciding on the exact locations of new local libraries within these areas of high demand.

In order to identify the area in which these optimised locations reside the name of the suburb in which the optimal point is situated is indicated with each point on the map.

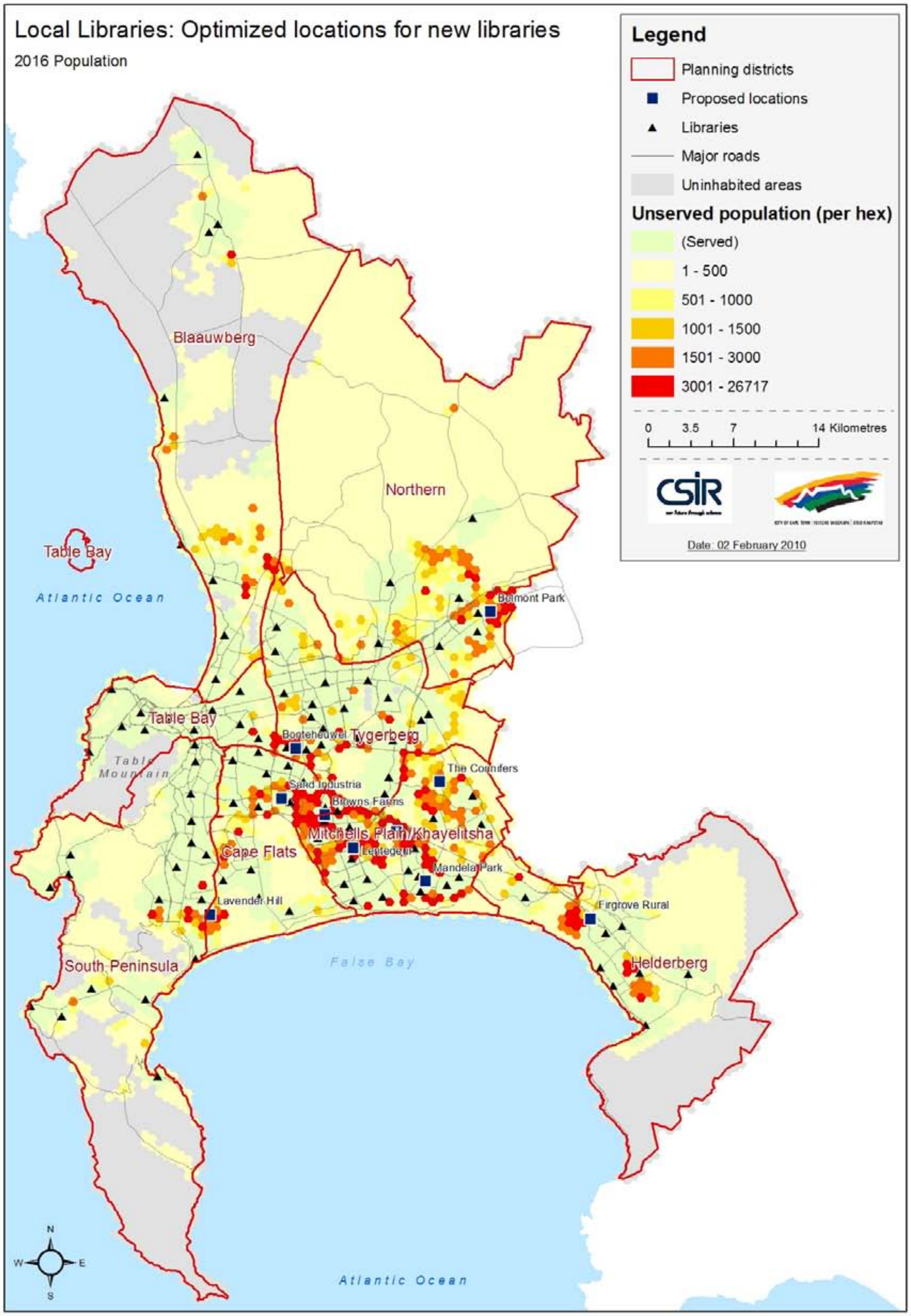

Figure 3.4: Optimised locations for local libraries in 2016

3.5 Discussion of results: Regional Libraries

3.5.1 Catchment area analysis

A similar analysis to that of local libraries was undertaken with respect to regional libraries of the City of Cape Town. Regional libraries are identified generally by having larger floor spaces, more facilities and larger collections of books than local libraries but could also by virtue of their location be deemed to serve a wider area and thus of necessity being larger than other local libraries. As higher order facilities there are far fewer in the City but they have higher service capacities than local libraries and double the distance reach than local libraries.

Tables 3.4a and 3.4b show the population not served by current and proposed (by the City) regional libraries for areas inside (urban) and outside (non-urban) the urban edge, for the current situation and for the growth in population projected for 2016 respectively. (See Figure 3.1 for a map of the urban edge.)

Table 3.4a: Current scenario – unserved population by regional libraries

Areas	Total population	Unserved population	% of population unserved
Urban	3 314 706	1 048 228	31.62%
Non-urban	14 062	12 741	90.61%
Total	3 328 768	1 060 969	31.87%

Table 3.4b: Projected 2016 scenario – unserved population by regional libraries

Areas	Total population	Unserved population	% of population unserved
Urban	3 823 574	1 379 823	36.09%
Non-urban	16 535	15 429	93.31%
Total	3 840 109	1 395 252	36.33%

For the catchment area analysis (service audit), an access travel distance of 6km was used for regional libraries and the potential service capacity of each regional library was set at 100 000 people. It was found that currently 70% of the City's population meet these requirements and can thus be considered to be served by regional libraries. However, taking the potential population growth of the City into consideration this decreases to 64% served in 2016. As expected, more than 90% of the non-urban population is not served by regional libraries in either of the scenarios, but due to the number in question cannot be considered as significant.

On a district basis, the largest percentages of unserved demand for regional libraries are found in the districts of Helderberg, Table Bay, Cape Flats and Tygerberg (Tables 3.4c & 3.4d). This is somewhat different to the unserved district demand for local libraries discussed earlier (Tables 3.2c & 3.2d) as these districts were in that case far better provided for than the districts of Mitchells Plain/ Khayelitsha and Northern. As much as 58% of the Helderberg District's population is unserved currently by a regional library while in 2016 this will increase to 64% considerably more than the other districts. However when we look at the statistics on a city level, Tygerberg District shows the highest percentage of unserved (8%), followed by the districts of the Cape Flats (7%) and Mitchells Plain/Khayelitsha (5%).

It should be borne in mind that sometimes populations which are unserved by the local libraries fall within the catchment of regional services and vice versa, as discussed in the last section of this report, so that the proportions of the population unserved per district by the different categories of library may be less pronounced than the district tables suggest (Tables 3.2c, 3.2b, 3.4c & 3.4d).

Table 3.4c: Current scenario – unserved population by regional libraries per planning district

District	Name	Population 2007	Unserved	% Unserved per district	% Unserved to total population
A	*Table Bay*	*183 586*	*81 245*	*44.25%*	*2.44%*
B	Blaauwberg	174 130	38 788	22.28%	1.17%
C	Northern	282 832	62 661	22.15%	1.88%
D	*Tygerberg*	*637 983*	*267 535*	*41.93%*	*8.04%*
E	*Helderberg*	*181 957*	*106 183*	*58.36%*	*3.19%*
F	Mitchells Plain/Khayelitsha	1 014 253	176 660	17.42%	5.31%
G	*Cape Flats*	*538 530*	*225 838*	*41.94%*	*6.78%*
H	South Peninsula	315 496	102 061	32.35%	3.07%
ALL	City of Cape Town	3 328 768	1 060 970	31.87%	31.87%

Table 3.4d: Projected 2016 scenario – unserved population by regional libraries per planning district

District	Name	Population 2016	Unserved	% Unserved per district	% Unserved to total population
A	*Table Bay*	*189 642*	*84 888*	*44.76%*	*2.21%*
B	Blaauwberg	231 868	57 781	24.92%	1.50%
C	Northern	402 106	153 470	38.17%	4.00%
D	*Tygerberg*	*706 376*	*317 659*	*44.97%*	*8.27%*
E	*Helderberg*	*276 308*	*175 679*	*63.58%*	*4.57%*
F	Mitchells Plain/Khayelitsha	1 114 354	226 646	20.34%	5.90%
G	*Cape Flats*	*573 056*	*260 513*	*45.46%*	*6.78%*
H	South Peninsula	346 399	118 616	34.24%	3.09%
ALL	City of Cape Town	3 840 109	1 395 252	36.33%	36.33%

At this point it should be remembered that all regional libraries were considered in the analyses to provide a local function as well, but not *vice versa*.

Figures 3.4a and 3.4b show spatially the concentration of the unserved population in terms of regional libraries for the current and 2016 scenarios respectively. As can be seen in these two figures, there are three classifications for the regional libraries as indicated by the figure legends. These are: firstly, the already "Existing" libraries (in other words those libraries that are already operational), and secondly, "Proposed" regional libraries (local libraries identified by Library and Information Services (LIS) as service points to be upgraded/ expanded to regional level services). The last category of regional libraries is that of potential regional libraries (indicated as "Possible" on the map legends). LIS wishes to achieve a ratio of 3-to-1 to 4-to-1 in terms of the number of local libraries to regional libraries. Based on this, the researchers identified a further eight local libraries which could be expanded/ upgraded to regional facilities based on their location relative to other libraries and public demand for the service and these were included as such for the purpose of analysis. See Table 3.4e for the names of the libraries and to which category they belong.

Table 3.4e: Regional library categories

NAME	CLASSIFICATION
Fish Hoek Public Library	Existing
Somerset West Public Library	Existing
Mitchell's Plain Public Library	Existing
Grassy Park Public Library	Existing
Meadowridge Public Library	Existing
Wynberg Public Library	Existing
Claremont Public Library	Existing
Athlone Public Library	Existing
Rondebosch Public Library	Existing
Pinelands Public Library	Existing
Goodwood Public Library	Existing
Parow Public Library	Existing
Edgemead Public Library	Existing
Milnerton Public Library	Existing
Durbanville Public Library	Existing
Table View Public Library	Existing
Brakenfell Public Library	Existing
Masakhane Public Library	Proposed
Wesfleur Public Library	Proposed
Melton Rose Public Library	Proposed
Delft South Public Library	Proposed
Guguletu Public Library	Proposed
Crossroads Public Library	Possible
Moses Mabhida Public Library	Possible
Mfuleni Public Library	Possible
Tafelsig Public Library	Possible
Khayelitsha Public Library	Possible
Huguenot Square Public Library	Possible
Scottsdene Public Library	Possible
Kuyasa (new library by donor funding)	Possible

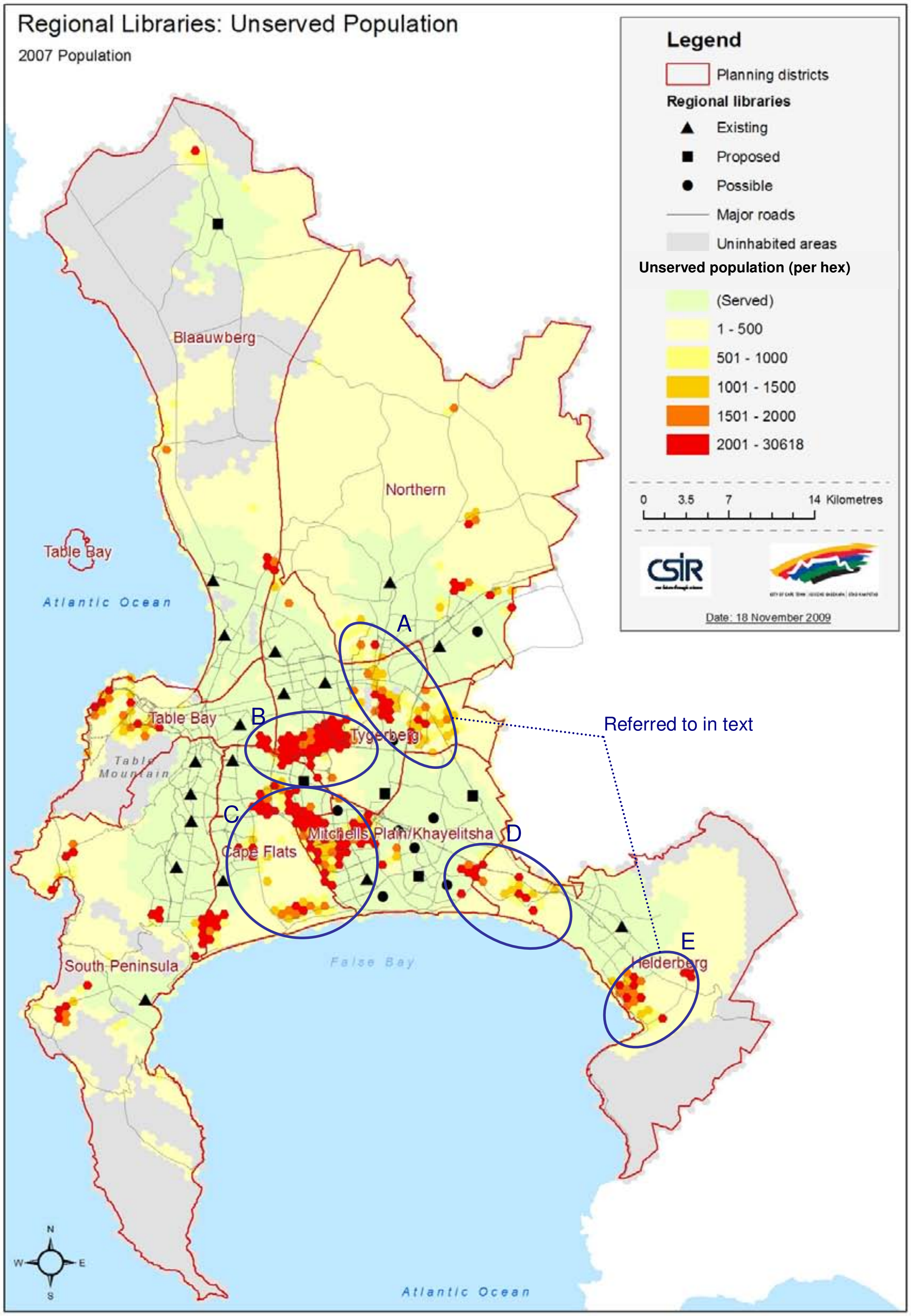

Figure 3.5a: Current scenario of served population and concentration of unserved population for regional libraries

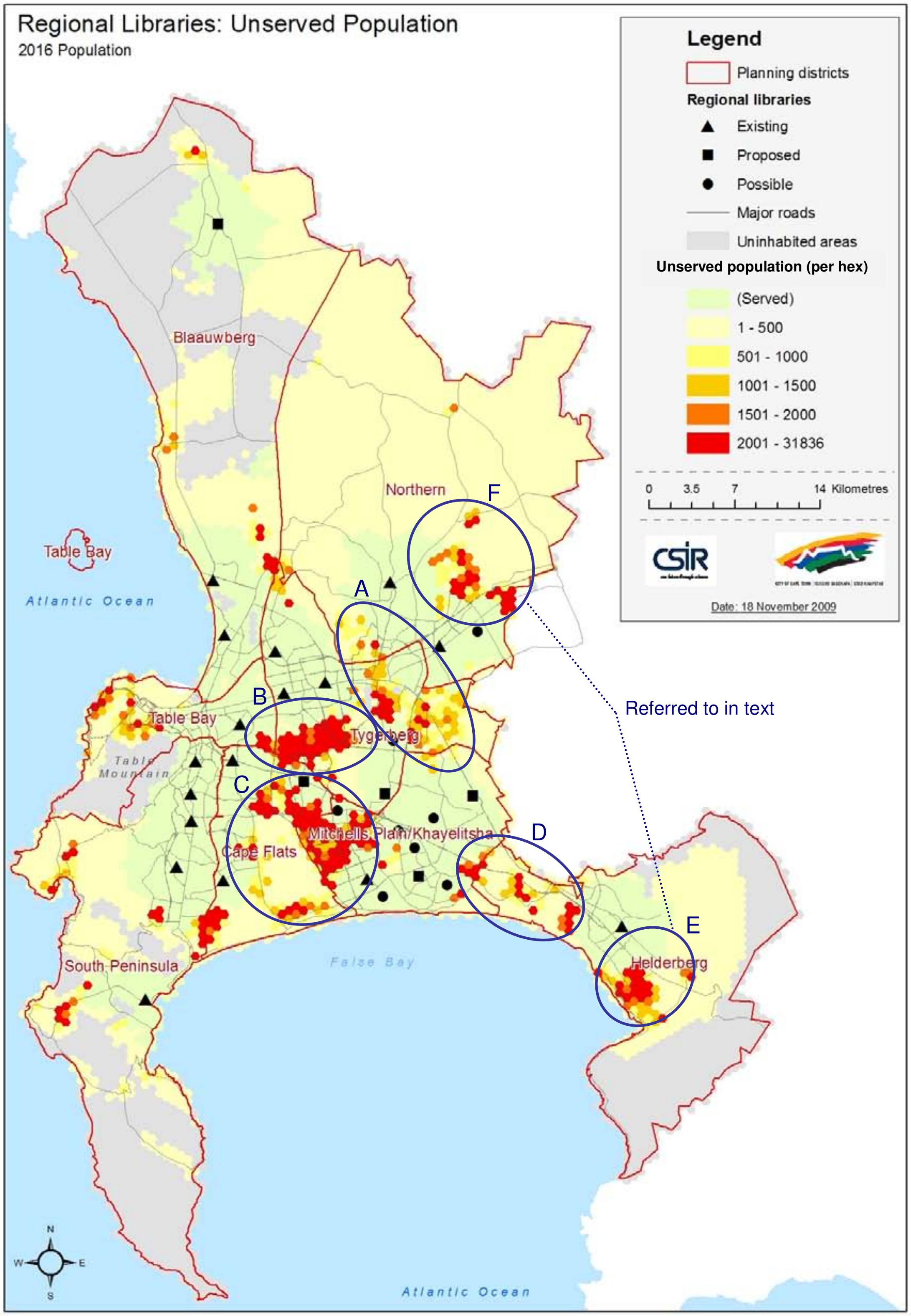

Figure 3.5b: Projected scenario 2016 of served population and concentration of unserved population for regional libraries

The analysis was again undertaken for the two time periods – 2007 for the current supply and demand scenario and 2016 for the potential future scenario. As was found to be the case with the local libraries, the population unserved by regional libraries is distributed throughout the City to a greater or lesser degree.

For the current scenario (Figure 3.5a) there are five areas showing up prominently as being under provided for and requiring attention with regard to the expansion of existing capacity or the building of new facilities. The first area is stretched out over quite a distance from the Welgemoed area southward over the N1 and then all along Voortrekker road to Kuilsriver (circle A). The second area is found in Langa through to the Valhalla Park and Bonteheuwel areas south of Settlers Way and Modderdam Road (circle B). Circle C indicates the area directly north and east of the Philippi farms, and includes Hanover Park, Mannenberg, Gugulethu and parts of Mitchell's Plain. The last two areas are that of Firgove and other less well served areas between Cape Town and Somerset West (circle D), and the Strand Gordon's Bay area (circle E).

In the future scenario (Figure 3.5b), the same areas are prominent in term of under provision by the present regional libraries. There is, however, one new area of significant under provision which becomes prominent in 2016, and this lies east of Kraaifontein and to the north of the N1 in the Joostenberg area (circle F).

3.5.2 Travel distance analysis – Regional Public Libraries

If one looks at Figure 3.6 which shows the general accessibility to regional library facilities in terms of distance but without consideration of facility capacities, the same trend becomes apparent as for local libraries. This being that the general access (without taking capacity into consideration) is good, with the accessibility within 6km to a regional library covering all the areas of highest population densities. Although (as shown in Table 3.5), 87% of the City's population is within a 6km distance from a regional library, only 8% of the population is within a good walking distance of 1km or less. There is a slight decline in the percentages of population served by regional libraries in 2016.

Table 3.5: City access to regional libraries by distance

DISTANCE CATEGORY	POPULATION SERVED (CUMULATIVE)			
	Current (2007)		2016	
0 - 1km	271 174	*8.15%*	297 616	*7.75%*
0 - 3km	1 625 389	*48.83%*	1 760 625	*45.85%*
0 - 6km	2 879 515	*86.50%*	3 248 638	*84.60%*
0 - 9km	3 201 941	*96.19%*	3 669 969	*95.57%*
More than 9km	126 827	*3.81%*	170 125	*4.43%*
TOTAL	3 328 768	*100.00%*	3 840 094	*100.00%*

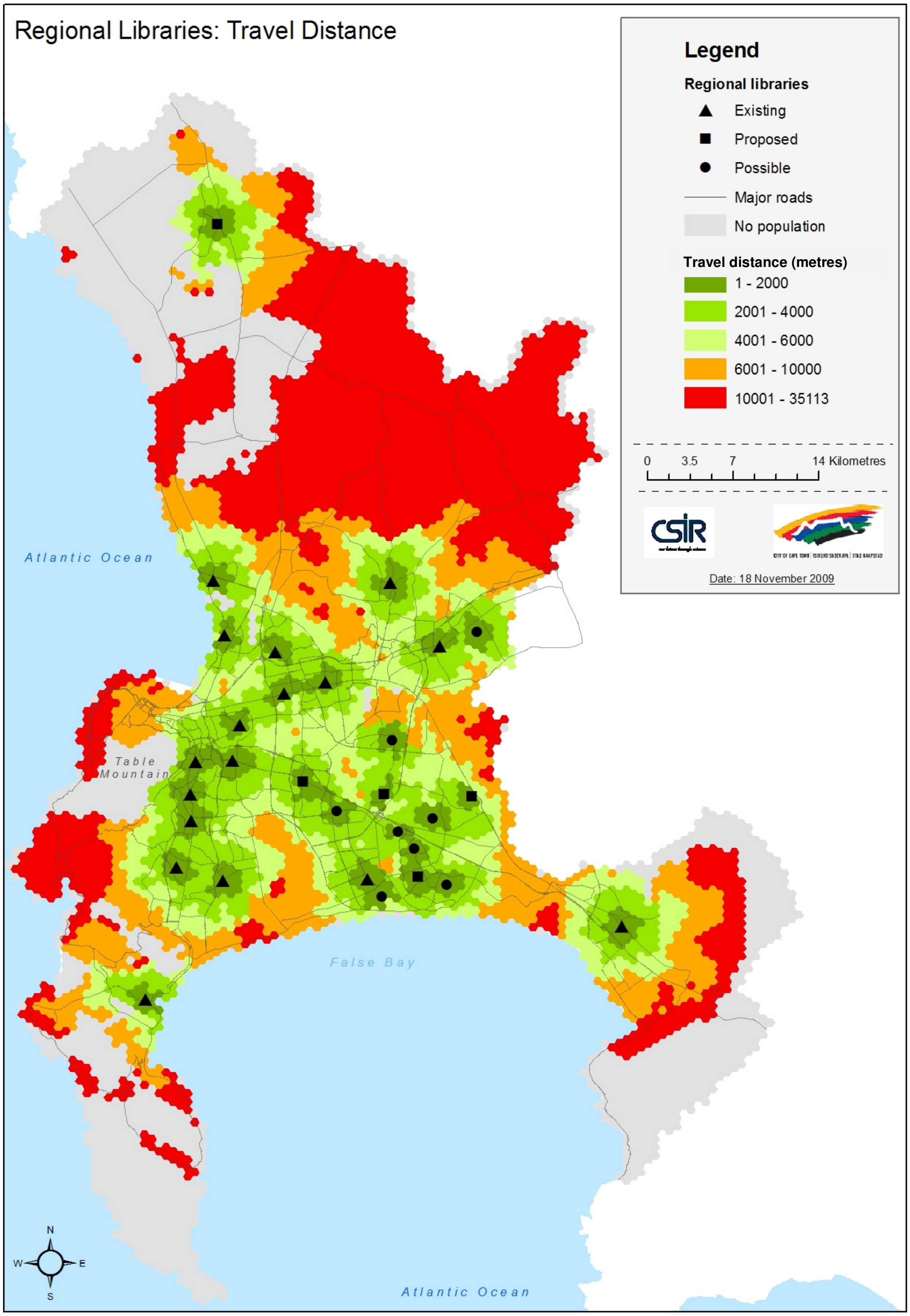

Figure 3.6: Distances to the nearest regional library without taking capacity into consideration

3.6 Recommendations/ Optimisation: Regional libraries

The unserved population currently numbers 1 060 969 people and is predicted to rise to 1 395 252 in 2016 (Tables 3.4a & 3.4b). Regional libraries were given a set service capacity of 100 000 people (Tables 3.5a & 3.5b) thus giving rise to a backlog of almost 10 regional libraries. In 2016 the backlog would stand at as many as 14 regional libraries if no new facilities had been built before then or the current ones expanded.

The unserved demand in 2016 for regional library services would be best met by locating any new facilities or expanding existing facilities close to the 10 optimal locations shown in Figure 3.7. New or expanded facilities close to these locations would best address the majority of unserved demand at a City wide level but are general recommendations only. The influence of factors such as land availability, compatible uses, road networks and usage of library services must be considered before deciding on the exact locations of new regional libraries or expanded services.

The optimised location for new/ expanded regional facilities can be seen in Figure 3.7. Please note that despite the optimised locations there is also a 3-tiered classification of the current regional libraries. Please refer to Section 3.4.1 for an explanation on this classification.

In order to identify the area in which these optimised locations reside the name of the suburb in which the optimal point is situated is indicated with each point on the map.

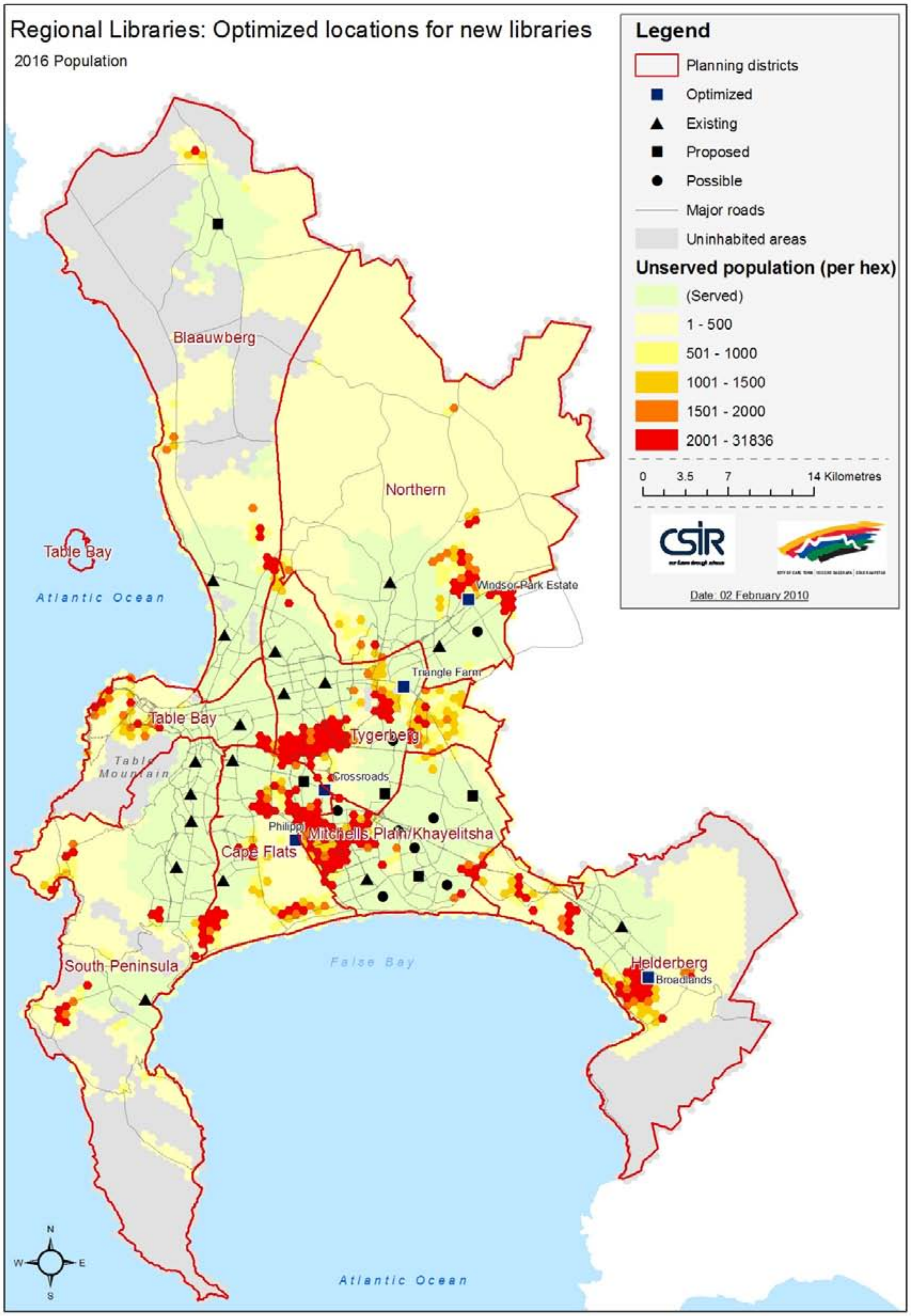

Figure 3.7: Optimised locations for regional libraries in 2016

3.7 Catchment area overlaps of local and regional libraries

The overlap of regional libraries' catchments with respect to the served population and unserved population of the local libraries for the current (2007) and 2016 scenarios is shown in Figures 3.8a and 3.8b respectively. The catchment areas of the regional libraries are indicated by purple lines. In several instances populations which are unserved by the local libraries fall within the catchment of regional services and this means that most people have access to either a local or regional library.

There is only one area that falls outside the reach of both levels of facilities for both the current and 2016 scenario. This is, however, a relatively large area, reaching from Mannenberg through to Gugulethu and the north western parts of Mitchell's Plain (circled on Figures 3.8a and 3.8b) and this area must thus form the major focus of any new library implementation programme.

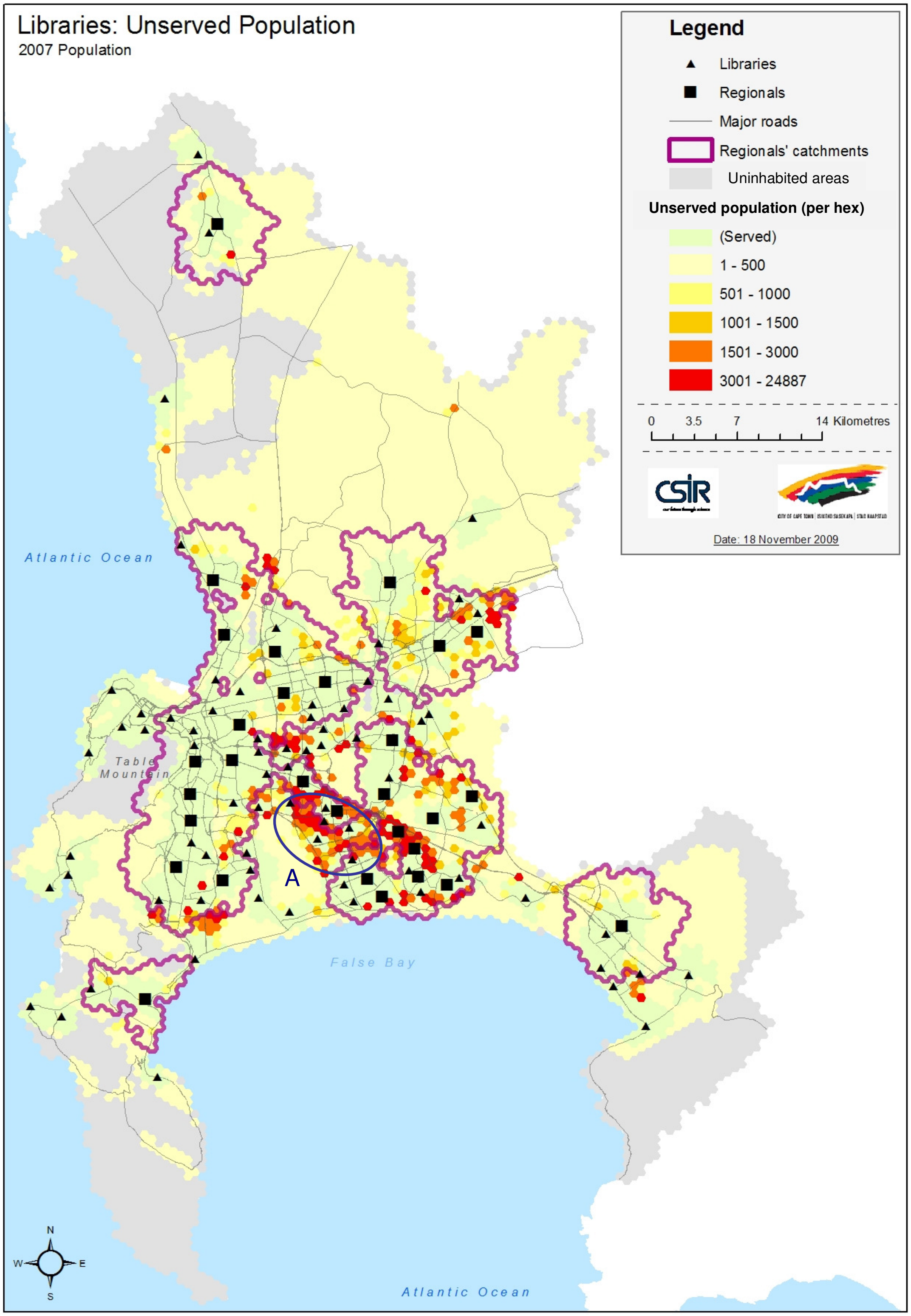

Figure 3.8a: Current scenario showing the overlap of regional libraries' catchments with the served population and concentration of unserved population of the local libraries

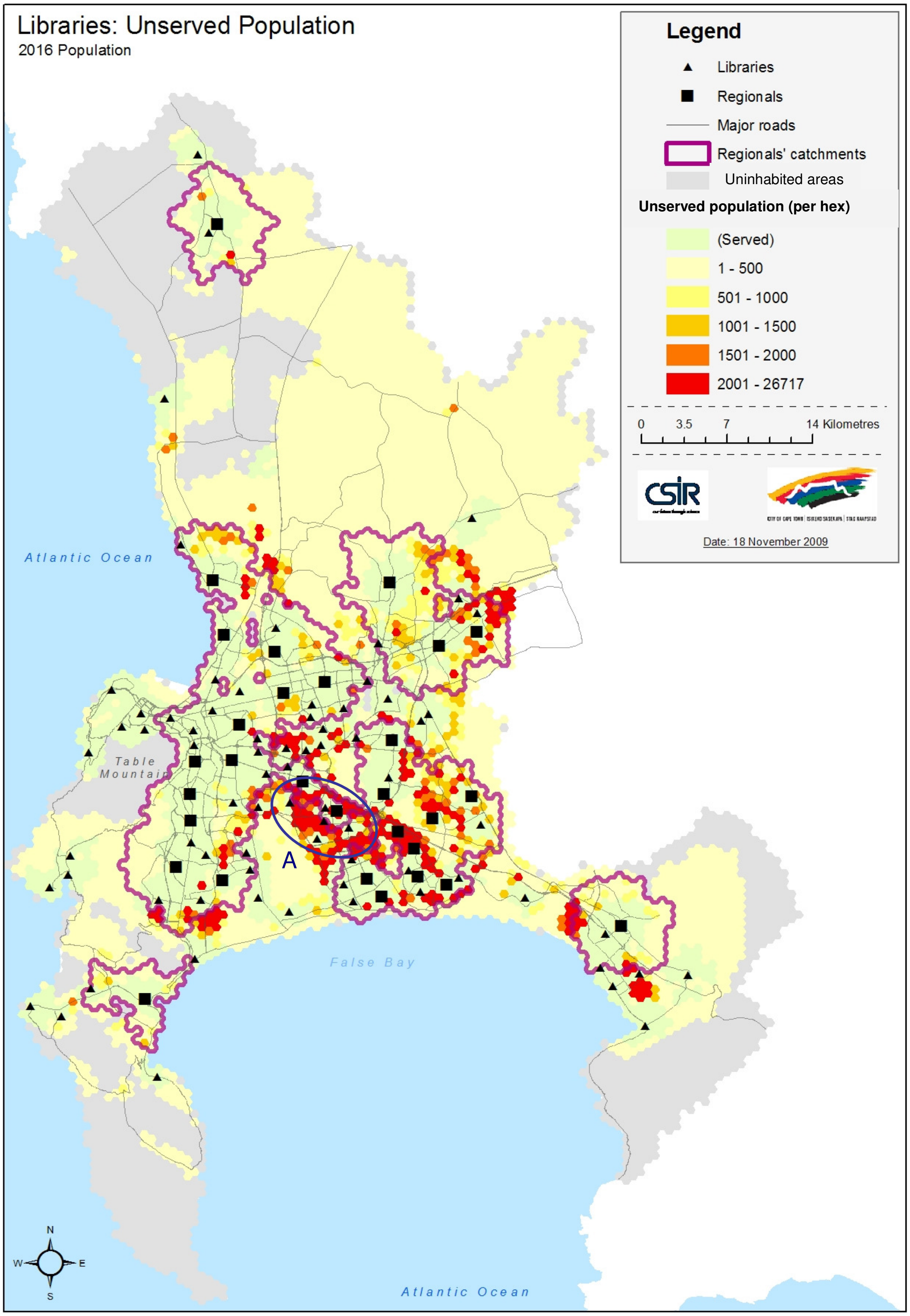

Figure 3.8b: Projected scenario 2016 showing the overlap of regional libraries' catchments with the served population and concentration of unserved population of the local libraries

3.8 Potentially spare or surplus capacity

A summary of the number of residents (2016 population) who cannot reach a library based on the standards used for analysis – as well as an indication of the potentially spare capacity which falls within a specific planning district – is given in Table 3.6. As can be seen from Table 3.6, in some cases there is a net over-provision whilst in others a net shortfall occurs. However, in all cases the potentially spare capacity is poorly located with respect to the residential population. Before the capacity at these facilities can be considered as redundant, detail analysis of the usage figure of each facility is required. Owing to historical factors, ie. being located close to schools or shopping centres *et cetera* and users having greater private mobility than the norm, the facilities may actually be well utilised. The library access standard of a 3km walking distance is suitable for lower income communities but may be less so for to more mobile communities. The 3km walking distance access standard is very limiting, especially in metropolitan context.

However, based on the assumption that every member of society should have access to a library and ignoring the travel distance requirement, the total library shortfall in terms of the threshold standard only is 836 082 persons, or approximately 12 libraries of 70 000 capacity each, to address the demand in 2016. (This shortfall being the difference between the 'unserved' and 'potentially spare' capacity of the libraries.)

The amount of potentially spare capacity per local library and where it is located is depicted in Figure 3.9.

Table 3.6: Projected 2016 scenario – Comparison of backlog and potential spare capacity of local libraries per planning district

District	Name	Population 2016	Unserved with respect to standards	Potential Spare capacity	Comments
A	Table Bay	189 642	29 937	59 933	Net over-provision. Some poorly located facilities beyond a 3km walk distance. However, most residents have access to private transport.
B	Blaauwberg	231 868	98 723	173 922	
C	Northern	402 106	244 816	54 811	Net shortfall & limited spare capacity beyond 3km walk distance.
D	Tygerberg	706 376	183 427	81 543	Net shortfall but over 50% spare capacity beyond 3km walk distance. However, most residents have access to private transport.
E	Helderberg	276 308	130 956	24 839	Net shortfall and limited spare capacity beyond acceptable travel distance.
F	Mitchells Plain/ Khayelitsha	1 114 354	566 158	56 380	
G	Cape Flats	573 056	221 994	0	Net shortfall.
H	South Peninsula	346 399	92 276	280 776	Theoretical net over-provision and some facilities are beyond 3km. However, most residents have access to private transport.
TOTAL	City of Cape Town	3 840 109	1 568 287	732 205	Net shortfall and some poor location of facilities with respect to population concentrations.

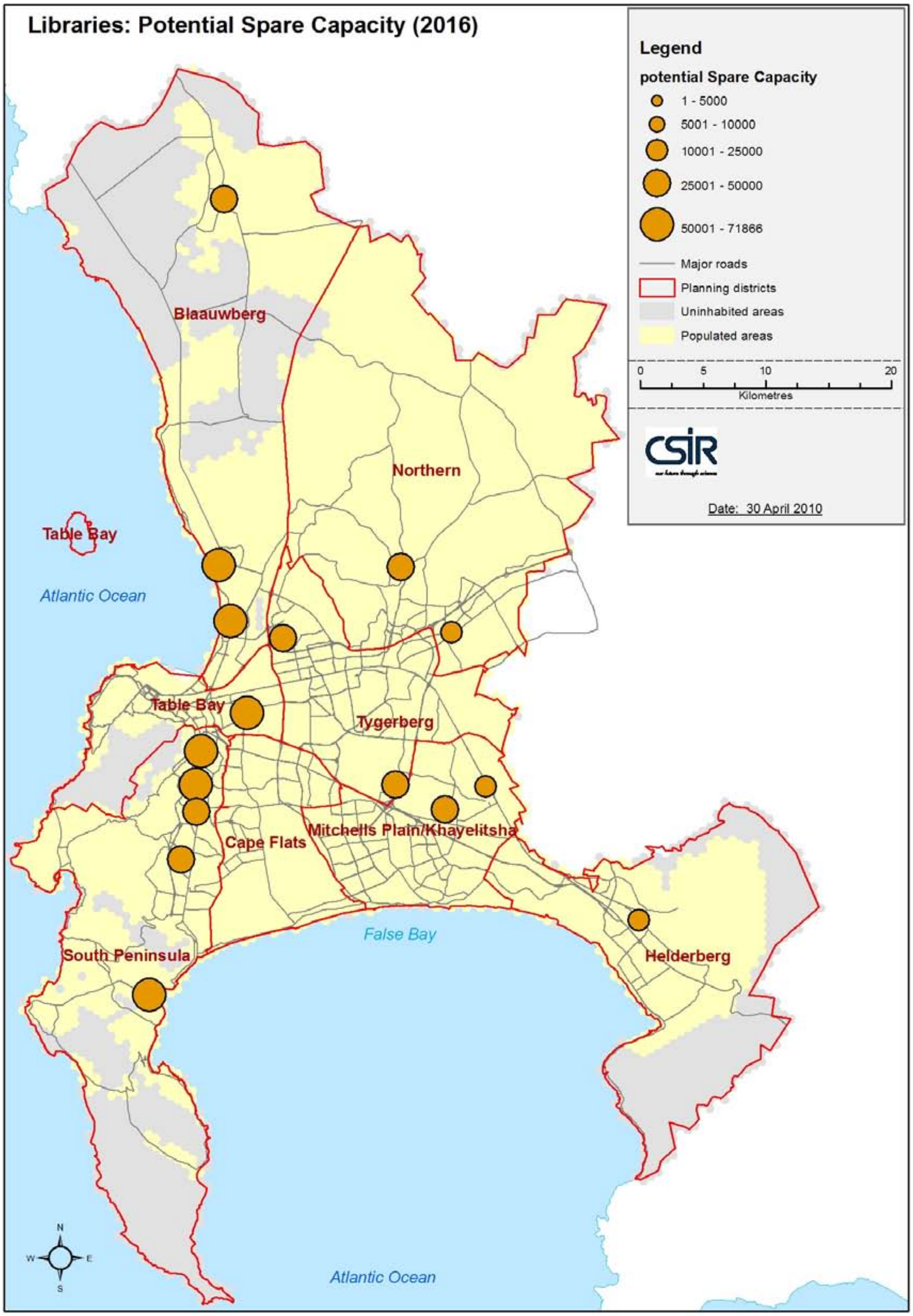

Figure 3.9: Potential spare capacity of local libraries (2016)

APPENDIX 3.1: Capacities and allocated demand for each local library

FACILITY NAME	CAPACITY	ALLOCATED DEMAND CURRENT (2007)		ALLOCATED DEMAND 2016	
		Demand	*Spare capacity*	Demand	*Spare capacity*
Central Library	100,000	10,388	*89.61%*	10,703	*89.30%*
Bellville Public Library	100,000	24,322	*75.68%*	25,329	*74.67%*
Pinelands Public Library	71,128	10,317	*85.50%*	10,656	*85.02%*
Rondebosch Public Library	71,128	10,554	*85.16%*	10,971	*84.58%*
Fish Hoek Public Library	71,128	11,690	*83.56%*	12,735	*82.10%*
Milnerton Public Library	71,128	15,467	*78.25%*	18,092	*74.56%*
Strand Public Library	71,128	17,162	*75.87%*	22,060	*68.99%*
Somerset West Public Library	71,128	21,007	*70.47%*	24,359	*65.75%*
Sea Point Public Library	71,128	21,043	*70.42%*	21,642	*69.57%*
Durbanville Public Library	71,128	23,833	*66.49%*	25,426	*64.25%*
Delft South Public Library	71,128	24,779	*65.16%*	28,881	*59.40%*
Claremont Public Library	71,128	27,713	*61.04%*	28,744	*59.59%*
Goodwood Public Library	71,128	30,309	*57.39%*	31,374	*55.89%*
Delft Public Library	71,128	32,232	*54.68%*	39,856	*43.97%*
Brakenfell Public Library	71,128	32,580	*54.20%*	34,634	*51.31%*
Parow Public Library	71,128	34,697	*51.22%*	35,749	*49.74%*
Wesfleur Public Library	71,128	38,145	*46.37%*	50,108	*29.55%*
Athlone Public Library	71,128	46,532	*34.58%*	48,602	*31.67%*
Nazeema Isaacs Public Library	71,128	71,128	*0.00%*	71,128	*0.00%*
Mitchell's Plain Public Library	71,128	71,128	*0.00%*	71,128	*0.00%*
Huguenot Square Public Library	71,128	71,128	*0.00%*	71,128	*0.00%*
Mamre Public Library	28,451	7,407	*73.97%*	9,141	*67.87%*
Hout Bay Public Library	28,451	7,968	*71.99%*	10,864	*61.82%*
Fisantekraal	28,451	9,410	*66.93%*	10,934	*61.57%*
Brooklyn Public Library	28,451	10,503	*63.08%*	11,694	*58.90%*
Avondale Public Library	28,451	12,360	*56.56%*	12,767	*55.13%*
Table View Public Library	28,451	14,768	*48.09%*	16,080	*43.48%*
Meadowridge Public Library	28,451	14,797	*47.99%*	15,707	*44.79%*
Bothasig Public Library	28,451	14,869	*47.74%*	16,161	*43.20%*
Wynberg Public Library	28,451	20,882	*26.60%*	21,526	*24.34%*
Rocklands Public Library	28,451	20,934	*26.42%*	21,942	*22.88%*
Edgemead Public Library	28,451	22,273	*21.71%*	22,966	*19.28%*
Kensington Public Library	28,451	25,941	*8.82%*	27,050	*4.92%*
Bellville South Public Library	28,451	27,028	*5.00%*	28,301	*0.53%*
Leonsdale Public Library	28,451	27,540	*3.20%*	28,451	*0.00%*
Khayelitsha 1 (under construction)	28,451	28,451	*0.00%*	28,451	*0.00%*
Khayelitsha 2 (under construction)	28,451	28,451	*0.00%*	28,451	*0.00%*
Moses Mabhida Public Library	28,451	28,451	*0.00%*	28,451	*0.00%*
Mfuleni Public Library	28,451	28,451	*0.00%*	28,451	*0.00%*
Tafelsig Public Library	28,451	28,451	*0.00%*	28,451	*0.00%*
Westridge Public Library	28,451	28,451	*0.00%*	28,451	*0.00%*
Grassy Park Public Library	28,451	28,451	*0.00%*	28,451	*0.00%*
Lotus River Public Library	28,451	28,451	*0.00%*	28,451	*0.00%*
Lentegeur Public Library	28,451	28,451	*0.00%*	28,451	*0.00%*

FACILITY NAME	CAPACITY	ALLOCATED DEMAND CURRENT (2007)		ALLOCATED DEMAND 2016	
		Demand	*Spare capacity*	Demand	*Spare capacity*
Eersteriver Public Library	28,451	28,451	*0.00%*	28,451	*0.00%*
Hanover Park Public Library	28,451	28,451	*0.00%*	28,451	*0.00%*
Melton Rose Public Library	28,451	28,451	*0.00%*	28,451	*0.00%*
Nyanga Public Library	28,451	28,451	*0.00%*	28,451	*0.00%*
Manenberg Public Library	28,451	28,451	*0.00%*	28,451	*0.00%*
Rylands Public Library	28,451	28,451	*0.00%*	28,451	*0.00%*
Guguletu Public Library	28,451	28,451	*0.00%*	28,451	*0.00%*
Heideveld Public Library	28,451	28,451	*0.00%*	28,451	*0.00%*
Bishop Lavis Public Library	28,451	28,451	*0.00%*	28,451	*0.00%*
Langa Public Library	28,451	28,451	*0.00%*	28,451	*0.00%*
Adriaanse Public Library	28,451	28,451	*0.00%*	28,451	*0.00%*
Masakhane Public Library	28,451	28,451	*0.00%*	28,451	*0.00%*
Elsies River Public Library	28,451	28,451	*0.00%*	28,451	*0.00%*
Ravensmead Public Library	28,451	28,451	*0.00%*	28,451	*0.00%*
Scottsdene Public Library	28,451	28,451	*0.00%*	28,451	*0.00%*
Kraaifontein Public Library	28,451	28,451	*0.00%*	28,451	*0.00%*
Simon's Town Public Library	17,782	2,220	*87.52%*	2,776	*84.39%*
Kommetjie Public Library	17,782	2,410	*86.45%*	2,919	*83.58%*
Helderzicht Public Library	17,782	2,467	*86.13%*	11,440	*35.67%*
Pelican Park Satellite	17,782	3,448	*80.61%*	6,181	*65.24%*
Koeberg Public Library	17,782	4,170	*76.55%*	4,175	*76.52%*
Bloubergstrand Public Library	17,782	4,403	*75.24%*	6,021	*66.14%*
Camps Bay Public Library	17,782	4,454	*74.95%*	4,696	*73.59%*
Hangberg Public Library	17,782	5,826	*67.24%*	6,600	*62.88%*
Observatory Public Library	17,782	6,958	*60.87%*	7,185	*59.59%*
Maitland Public Library	17,782	7,425	*58.24%*	7,957	*55.25%*
Sir Lowry's Pass Public Library	17,782	8,391	*52.81%*	8,809	*50.46%*
Mowbray Public Library	17,782	8,944	*49.70%*	9,209	*48.21%*
Bridgetown Public Library	17,782	9,921	*44.21%*	10,418	*41.41%*
Kloof Street Public Library	17,782	10,186	*42.72%*	10,553	*40.65%*
Imizamo Yethu Satellite	17,782	10,548	*40.68%*	11,026	*37.99%*
Vredehoek Public Library	17,782	11,564	*34.97%*	11,886	*33.16%*
Woodstock Public Library	17,782	13,870	*22.00%*	14,360	*19.24%*
Plumstead Public Library	17,782	14,523	*18.33%*	15,115	*15.00%*
Masiphumilele Satellite	17,782	17,782	*0.00%*	17,782	*0.00%*
Crossroads Public Library	17,782	17,782	*0.00%*	17,782	*0.00%*
Brown's Farm Public Library	17,782	17,782	*0.00%*	17,782	*0.00%*
Phillipi East Library	17,782	17,782	*0.00%*	17,782	*0.00%*
Ocean View Public Library	17,782	17,782	*0.00%*	17,782	*0.00%*
Gordon's Bay Public Library	17,782	17,782	*0.00%*	17,782	*0.00%*
Suider Strand Public Library	17,782	17,782	*0.00%*	17,782	*0.00%*
Strandfontein Public Library	17,782	17,782	*0.00%*	17,782	*0.00%*
Tokai Public Library	17,782	17,782	*0.00%*	17,782	*0.00%*
Macassar Public Library	17,782	17,782	*0.00%*	17,782	*0.00%*
Retreat Public Library	17,782	17,782	*0.00%*	17,782	*0.00%*
Kulani Public Library	17,782	17,782	*0.00%*	17,782	*0.00%*
Ottery Satellite	17,782	17,782	*0.00%*	17,782	*0.00%*

FACILITY NAME	CAPACITY	ALLOCATED DEMAND CURRENT (2007)		ALLOCATED DEMAND 2016	
		Demand	***Spare capacity***	**Demand**	***Spare capacity***
Weltevreden Public Library	17,782	17,782	*0.00%*	17,782	*0.00%*
Khayelitsha Public Library	17,782	17,782	*0.00%*	17,782	*0.00%*
Southfield Public Library	17,782	17,782	*0.00%*	17,782	*0.00%*
Lansdowne Public Library	17,782	17,782	*0.00%*	17,782	*0.00%*
Muizenberg Public Library	17,782	17,782	*0.00%*	17,782	*0.00%*
Valhalla Park Public Library	17,782	17,782	*0.00%*	17,782	*0.00%*
Bonteheuwel Public Library	17,782	17,782	*0.00%*	17,782	*0.00%*
Belhar Public Library	17,782	17,782	*0.00%*	17,782	*0.00%*
P D Paulse Public Library	17,782	17,782	*0.00%*	17,782	*0.00%*
Kuilsriver Public Library	17,782	17,782	*0.00%*	17,782	*0.00%*
Tygervalley Public Library	17,782	17,782	*0.00%*	17,782	*0.00%*
Eikendal Public Library	17,782	17,782	*0.00%*	17,782	*0.00%*
Hector Peterson Memorial Library	17,782	17,782	*0.00%*	17,782	*0.00%*
TOTAL	3,443,429	2,188,170	*36.45%*	2,271,822	*34.02%*

APPENDIX 3.2: Capacities and allocated demand for each regional library

FACILITY NAME	CAPACITY	ALLOCATED DEMAND 2007		ALLOCATED DEMAND 2016	
		Demand	*Spare capacity*	Demand	*Spare capacity*
Milnerton Public Library	100,000	28,134	*71.87%*	32,783	*67.22%*
Fish Hoek Public Library	100,000	31,329	*68.67%*	36,444	*63.56%*
Claremont Public Library	100,000	33,407	*66.59%*	34,743	*65.26%*
Table View Public Library	100,000	36,775	*63.22%*	57,499	*42.50%*
Rondebosch Public Library	100,000	39,146	*60.85%*	40,513	*59.49%*
Pinelands Public Library	100,000	40,067	*59.93%*	42,246	*57.75%*
Edgemead Public Library	100,000	52,492	*47.51%*	55,698	*44.30%*
Wynberg Public Library	100,000	53,251	*46.75%*	60,822	*39.18%*
Durbanville Public Library	100,000	57,921	*42.08%*	72,199	*27.80%*
Mfuleni Public Library	100,000	61,139	*38.86%*	94,255	*5.75%*
Wesfleur Public Library	100,000	61,169	*38.83%*	73,875	*26.13%*
Meadowridge Public Library	100,000	62,091	*37.91%*	69,727	*30.27%*
Delft South Public Library	100,000	65,965	*34.04%*	81,704	*18.30%*
Somerset West Public Library	100,000	75,161	*24.84%*	100,000	*0.00%*
Melton Rose Public Library	100,000	82,481	*17.52%*	92,349	*7.65%*
Brakenfell Public Library	100,000	87,268	*12.73%*	100,000	*0.00%*
Proposed02	100,000	100,000	*0.00%*	100,000	*0.00%*
Crossroads Public Library	100,000	100,000	*0.00%*	100,000	*0.00%*
Moses Mabhida Public Library	100,000	100,000	*0.00%*	100,000	*0.00%*
Tafelsig Public Library	100,000	100,000	*0.00%*	100,000	*0.00%*
Mitchell's Plain Public Library	100,000	100,000	*0.00%*	100,000	*0.00%*
Grassy Park Public Library	100,000	100,000	*0.00%*	100,000	*0.00%*
Khayelitsha Public Library	100,000	100,000	*0.00%*	100,000	*0.00%*
Guguletu Public Library	100,000	100,000	*0.00%*	100,000	*0.00%*
Athlone Public Library	100,000	100,000	*0.00%*	100,000	*0.00%*
Huguenot Square Public Library	100,000	100,000	*0.00%*	100,000	*0.00%*
Masakhane Public Library	100,000	100,000	*0.00%*	100,000	*0.00%*
Goodwood Public Library	100,000	100,000	*0.00%*	100,000	*0.00%*
Parow Public Library	100,000	100,000	*0.00%*	100,000	*0.00%*
Scottsdene Public Library	100,000	100,000	*0.00%*	100,000	*0.00%*
TOTAL	3,000,000	2,267,795	*24.41%*	2,444,857	*18.50%*

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Evaluation of community social facilities and recreational space in City of Cape Town: current and future provision for 2016 and optimal location of new facilities

Section 4:

Primary and Secondary Schools

May 2010

CSIR

our future through science

4. Primary and Secondary Schools

4.1 Introduction

The accessibility mapping of public primary and secondary schools in Cape Town is part of a larger accessibility audit and facility planning exercise of a range of community social services undertaken by CSIR for the City of Cape Town in 2009/10.

The project as a whole seeks to identify those areas where the supply and demand for facilities are not balanced based on acceptable service provision standards, both for the current population distribution, as well as in terms of a future scenario for the City of Cape Town's predicted population growth and distribution in 2016. Flowing from this, recommendations of where intervention in respect to facility provision is required can be made. The aim is thus to audit whether residents currently have access to facilities within reasonable reach and with capacity, and if these facilities will be able to accommodate future growth of the City's population.

The analysis is essentially based on a schedule of standards for the provision and clustering of social facilities, public institutions and public recreational spaces which the CSIR compiled for the City of Cape Town in 2007; as well as datasets consisting of population, road network, and facility data. Where applicable the relevant line department have adjusted the standards used with respect to capacity and travel time accessibility and the standards document for the City will be updated accordingly.

Definition of primary and secondary schools: *Primary schools offer education in grades R to 7, while secondary schools offer education in grades 8 to 12. (Only public government funded schools were included in the analyses.)*

To ensure fine grained resolution of the modelling results the City of Cape Town area was sub-divided into a detailed grid delineating hexagonal land pieces of 40ha each. The population data was proportionally assigned to this hexagonal grid based on the underlying GIS land use layer. The population data incorporated the total population as well as other socio-economic variables which are fundamental to establishing people's access to transport. More detail on this process is provided in Section 1 (Introduction & Methodology). All other data is then related to this grid.

A step-wise process was followed for most of the facility types analysed, although some facilities require a more tailored approach. The basic process in most cases comprised the following steps:

Step 1: Audit of current service coverage – Using the agreed standards a catchment area analysis is undertaken with respect to the current facility locations and capacities to determine which areas are well served, poorly served or over-provided for, i.e. determining the status quo.

Step 2: Planning for new facilities – The identification of new or expanded facility locations is undertaken using proximity counting and/or optimisation analysis – The software identifies the currently unserved population and taking this into consideration then determines the highest concentrations of unserved demand. Depending on the typical facility size, areas of intervention can be identified. Optimal sites for a set number of new facilities can be identified to prioritise the intervention areas/ location sites for new facilities, if any are required. Closure, expansion or upgrading of existing facilities can also be tested.

More detail on the methodology followed, the analyses procedures and interpreting the outputs (such as the maps) can be found in Section 1 (Introduction & Methodology).

4.2 Primary Schools

4.2.1 Analyses criteria and processes undertaken

The criteria used for the analyses of primary schools and the processes undertaken are summarised in Table 4.1.

Table 4.1: Criteria and processes for primary schools analyses	
Facilities analysed	All operational public primary schools (totalling 534)
Demand	• **Demand A:** Entire city with 2007 projected population figures for children aged 6 to 13 years old* assigned to a hexagon-grid. • **Demand B:** Entire city with 2016 projected population figures for children aged 6 to 13 years old* assigned to a hexagon-grid. (*i.e. 14% of the City's total population)
Supply	The capacity of a school is based on the maximum number of learners which can be enrolled at the school (**see note following)

Travel mode and access time	• Based on the Provincial Department of Education's standard of a maximum 5km walking distance to the nearest school (worst case scenario). • For the analysis, routes were based on the existing road network/ sidewalks.
Analyses undertaken	• Unconstrained capacity and travel time analysis to establish travel time for the City's children aged 6 to 13 years old to the nearest primary school. • Catchment area analysis based on schools' capacities and a maximum travel time of 15 minutes.

*(**It should be noted that as only public primary schools were covered in the analyses, the supply of private schools which cater for more than 6 300 primary school learners in Cape Town was not included. Thus, only the current capacity of the public primary schools (to serve a total of 387 813 learners) was considered and did not include the more than 1.6% capacity provided currently by private schools. The allocated learner demand – based on the population numbers of all 6 to 13 year old children in Cape Town – for the current scenario was 375 872 and for the 2016 scenario 380 119.)*

4.2.2 Discussion of results: Primary Schools

Tables 4.2a and 4.2b show the population numbers served or not served by existing primary schools based on these schools' capacities. The results have been further divided into areas inside and outside the Cape Town urban edge (that is urban and non-urban areas). See Figure 4.1 for a map of the urban edge as specified by the City of Cape Town.

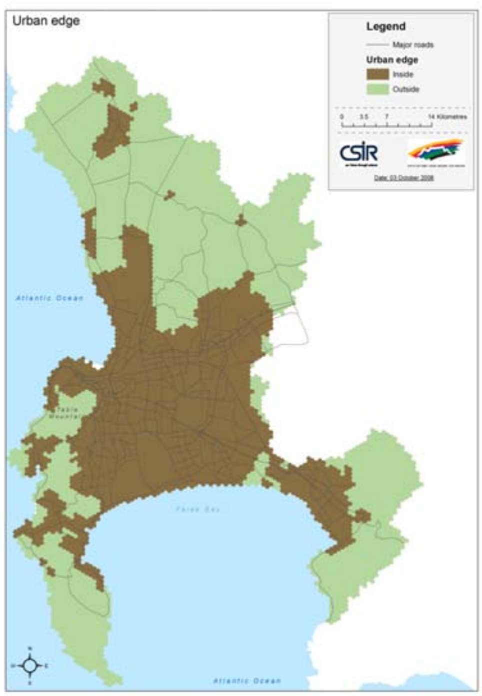


Figure 4.1: City of Cape Town urban edge

Table 4.2a shows the results for the current scenario (2007 population figures), while Table 4.2b has results based on potential city growth to the year 2016. Figures 4.2a and 4.2b map these results for the City of Cape Town.

Table 4.2a: Current scenario – unserved population by current primary schools

Urban edge	Primary School Pop 2007	Unserved	% Unserved
Urban	469 118	93 735	19.98%
Non-urban	1 866	1 378	73.85%
Total	470 984	95 113	20.19%

Table 4.2b: Projected 2016 scenario – unserved population by current primary schools

Urban edge	Primary School Pop 2016	Unserved	% Unserved
Urban	541 096	161 328	29.82%
Non-urban	2 212	1 863	84.22%
Total	543 308	163 191	30.04%

Results show that based on the current scenario, 20% of the City's population between the ages 6 to 13 years old are unable to reach a primary school within the given standard of a maximum travel distance of 5km when the capacities of the primary schools are taken into consideration. The percentage of the unserved primary school population is likely to increase to 30% when the potential population growth to 2016 is considered and should no new facilities be built and if private facilities are excluded. As can be expected the population outside the urban edge is less provided for, but the people in these areas as a proportion to the total population of the City is very small at less than half a percent.

It must be kept in mind that these statistics do not necessarily imply that 20% of the City's primary school children are not in a school, but show that 20% of the learners must attend a school that is overburdened or must travel further than the recommended distance of 5km or may attend a private school.

Figure 4.2a indicates that there are two main areas (circles A and B) in the City that are currently short of primary schools. Circle A primarily indicates the Crossroads area while circle B is in Khayelitsha, but more specifically shows a concentration of unserved learners in the north-west of Khayelitsha.

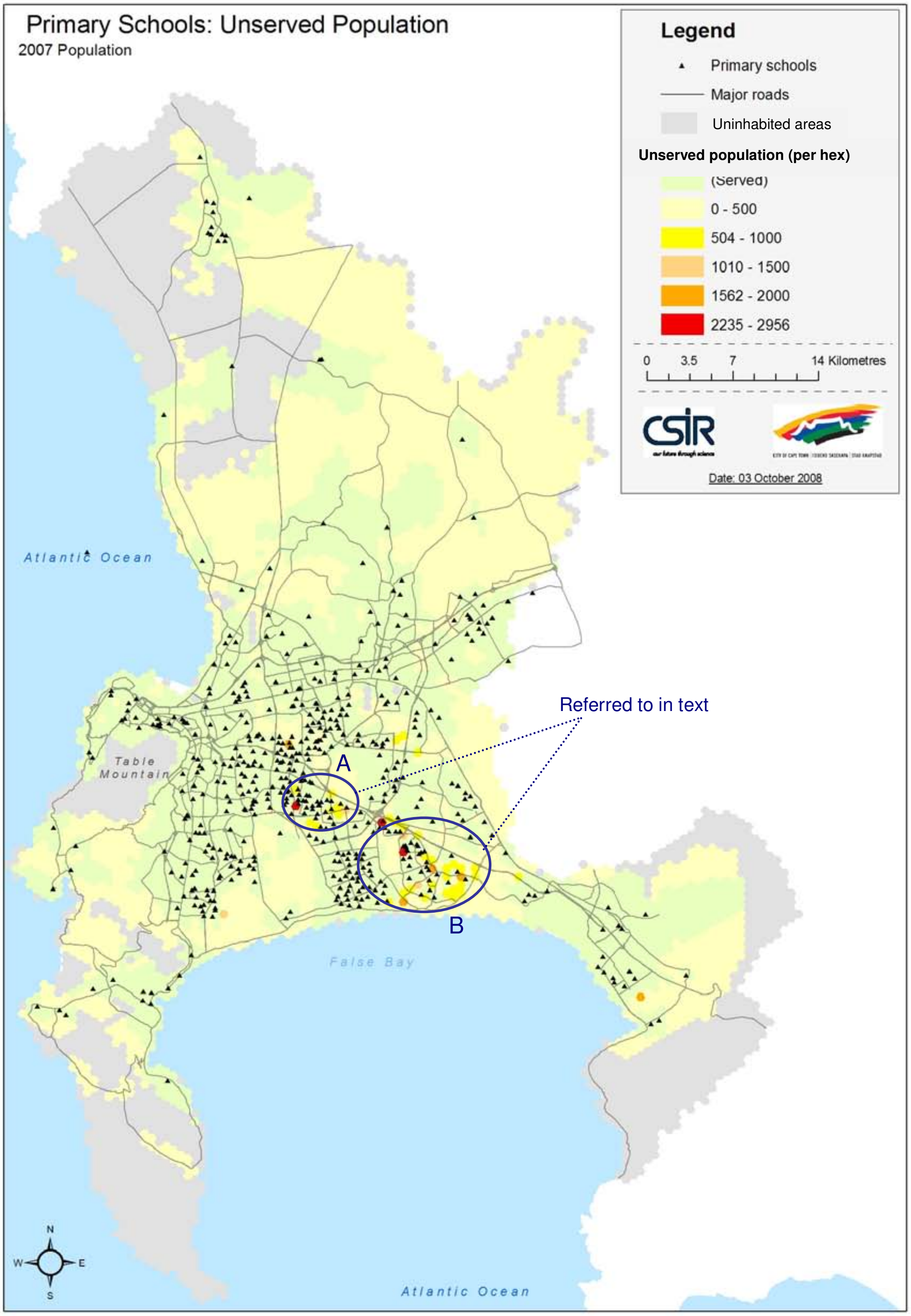


Figure 4.2a maps the current served and concentration of the unserved population (6-13 years old) with regard to existing primary schools

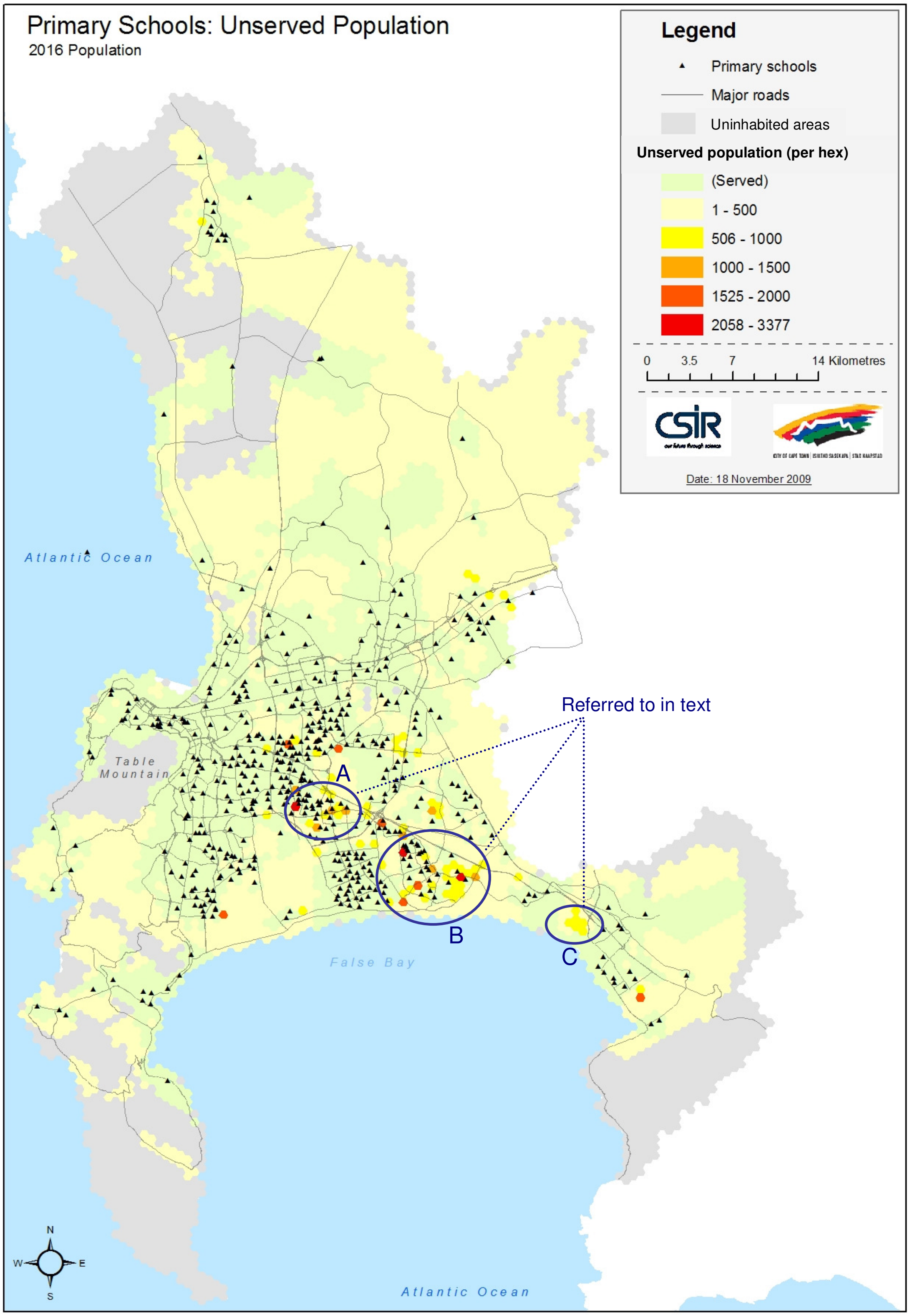


Figure 4.2b maps the projected (2016) served and concentration of the unserved population (6-13 years old) with regard to existing primary schools

In the projected scenario for 2016 (Figure 4.2b), the unserved primary school population is more scattered throughout the City. Besides the general concentration of unserved population in circle A found again, the unserved population is scattered over a larger area which includes Nyanga, Gugulethu and the northern parts of Mitchell's Plain. Circle B is found in the same area as in the current scenario, but for 2016 the concentration of unserved children becomes more intense in this area. There is one new fairly large concentration of unserved population appearing in the 2016 scenario though, and that is the Firgrove-area to the west of Somerset West (shown by circle C).

The relevance and importance of the following planning district tables (Tables 4.2c & 4.2d) – showing the unserved population per planning district – should not be over emphasised and are presented for reporting purposes rather than to inform planning processes. Residents generally ignore or are oblivious to the boundaries of these regions and will use facilities closest to their homes irrespective of the district in which facilities are sited. In addition, the concentration of population is far higher in certain of the districts and thus these areas are in far greater need than less populous areas. With respect to planning for future facility provision the spatial outputs (namely the maps) are far more important when identifying areas requiring more facilities or increased service provision by existing facilities.

Looking at the unserved demand on a planning district basis, the largest percentages of unserved primary school learners within districts are found in the Mitchells Plain/ Khayelitsha (30%), Helderberg (24%), and Blaauwberg (22%) districts for both the current scenario and the 2016 scenario (Tables 4.2c & 4.2d).

However, in the 2016 scenario the Northern district also becomes a district with high unserved demand, with 42% of the primary school population not being served. It should always be borne in mind that the overall percentage of unserved demand for the City of Cape Town originates for both scenarios mainly from the Mitchells Plain/ Khayelitsha district as this district houses a third of all the primary school learners in the City.

Table 4.2c: Current scenario – unserved population by current primary schools per planning district					
District	**Name**	**Primary School Pop 2007**	**Unserved in district**	**% Unserved in district**	**% Unserved for City of Cape Town**
A	Table Bay	19 107	791	4.14%	0.83%
B	*Blaauwberg*	*23 277*	*5 260*	*22.60%*	5.53%
C	Northern	35 998	6 104	16.96%	6.42%
D	Tygerberg	90 269	11 746	13.01%	12.35%
E	*Helderberg*	*25 066*	*6 062*	*24.18%*	6.37%
F	*Mitchells Plain/ Khayelitsha*	*161 541*	*48 150*	*29.81%*	50.62%
G	Cape Flats	80 757	10 997	13.62%	11.56%
H	South Peninsula	34 971	6 004	17.17%	6.31%
ALL	City of Cape Town	470 985	95 114	20.19%	100.00%

Table 4.2d: Projected 2016 scenario – unserved population by current primary schools per planning district					
District	**Name**	**Primary School Pop 2016**	**Unserved**	**% Unserved**	**% Unserved for City of Cape Town**
A	Table Bay	19 749	1 240	6.28%	0.76%
B	*Blaauwberg*	*30 132*	*11 440*	*37.97%*	7.01%
C	*Northern*	*51 909*	*21 828*	*42.05%*	13.38%
D	Tygerberg	101 248	22 422	22.15%	13.74%
E	*Helderberg*	37 800	17 430	*46.11%*	10.68%
F	*Mitchells Plain/Khayelitsha*	177 957	63 847	*35.88%*	39.12%
G	Cape Flats	85 975	16 372	19.04%	10.03%
H	South Peninsula	38 539	8 612	22.35%	5.28%
ALL	City of Cape Town	543 310	163 192	30.04%	100.00%

Appendix 4.1 shows all the primary schools analysed by their capacities and their allocated demand (with theoretical percentage spare capacity) for the current scenario and for the 2016 scenario.

Figure 4.3 is a general travel distance map for all City of Cape Town residents aged 6 - 13 years old to the nearest primary school, i.e. how far these learners must travel to reach their closest primary school (with the capacity of the primary schools being unlimited in this analysis). The dark and middle green areas on Figure 4.3 show that the majority of the City's learners can reach a primary school within 2.5km. Most learners in the City, except for a few in the rural areas, can reach a primary school within 5km. Thus, the primary schools in the City are spatially located correctly. However, when the capacities of the schools are taken into consideration there are areas of unserved population as discussed previously and there is evidence of children commuting across the City to access schools sometimes by choice.

Table 4.3 confirms the findings displayed by Figure 4.3, in that 95% of the City's learners are currently within 2.5km of a primary school and 99.6% within 5km. In 2016, there would be only a slight reduction in this accessibility. The capacities of the schools were not taken into account in this analysis, i.e. all learners were assigned to their nearest primary school. The table thus gives a global overview of the accessibility of primary schools in a 'walking city'.

Table 4.3: Learners' (6 – 13 years olds) access to primary schools within certain travel distance bands and with no school capacity constraints

DISTANCE CATEGORY	POPULATION SERVED			
	2007		2016	
0 - 1km	318 593	*67.64%*	346 615	*63.80%*
0 - 2.5km	445 975	*94.69%*	498 997	*91.84%*
0 - 5km	468 889	*99.55%*	538 927	*99.19%*
More than 5km	2 096	*0.55%*	4 383	*0.81%*
TOTAL	470 985	*100.00%*	543 310	*100.00%*

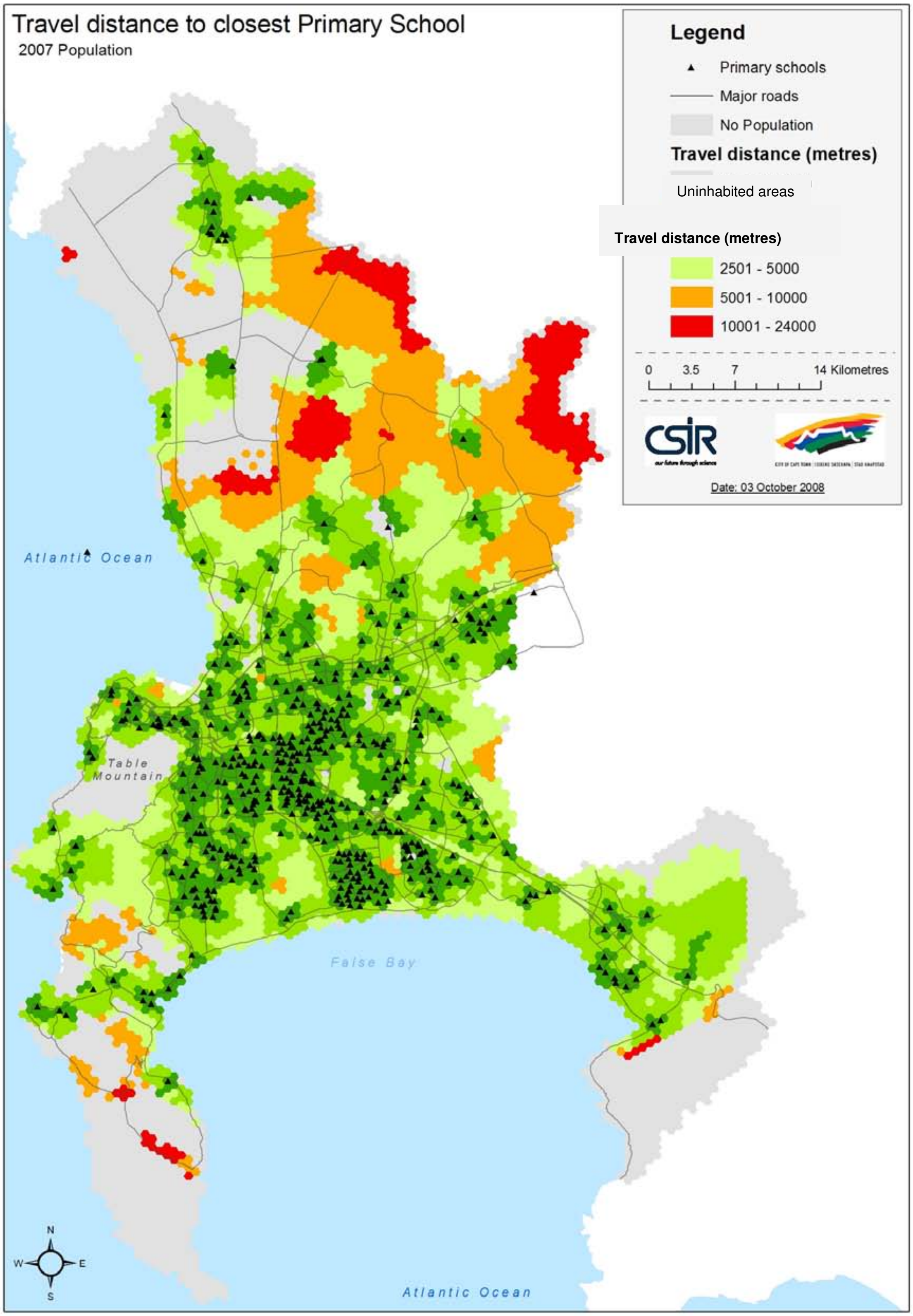


Figure 4.3: Travel time to closest primary school

4.3 Recommendations/ Optimisation for Primary Schools

If one takes the average capacity of a primary school to be 750 learners (as is now the case in Cape Town), the current backlog in primary school provision equates to 127 primary schools to provide all learners with a school within 5km with capacity. In 2016 it is projected that there would be a total unserved population of Cape Town primary school learners of 163 191 (based on the current provision of schools) and this would then equate to a backlog of about 218 primary schools.

As previously discussed, this unserved demand is concentrated in certain areas of the City and the best 10 locations for situating new schools to serve this demand optimally in 2016 was analysed and are shown in Figure 4.4. These recommended locations should be seen as being indicative of the 10 sites most accessible to the highest concentrations of unserved learners where the provision of primary schools will have the greatest relative impact on backlog eradication. Planning decisions on the exact locations of primary schools taking into consideration land use, road networks and other factors is still required to be undertaken by the City of Cape Town.

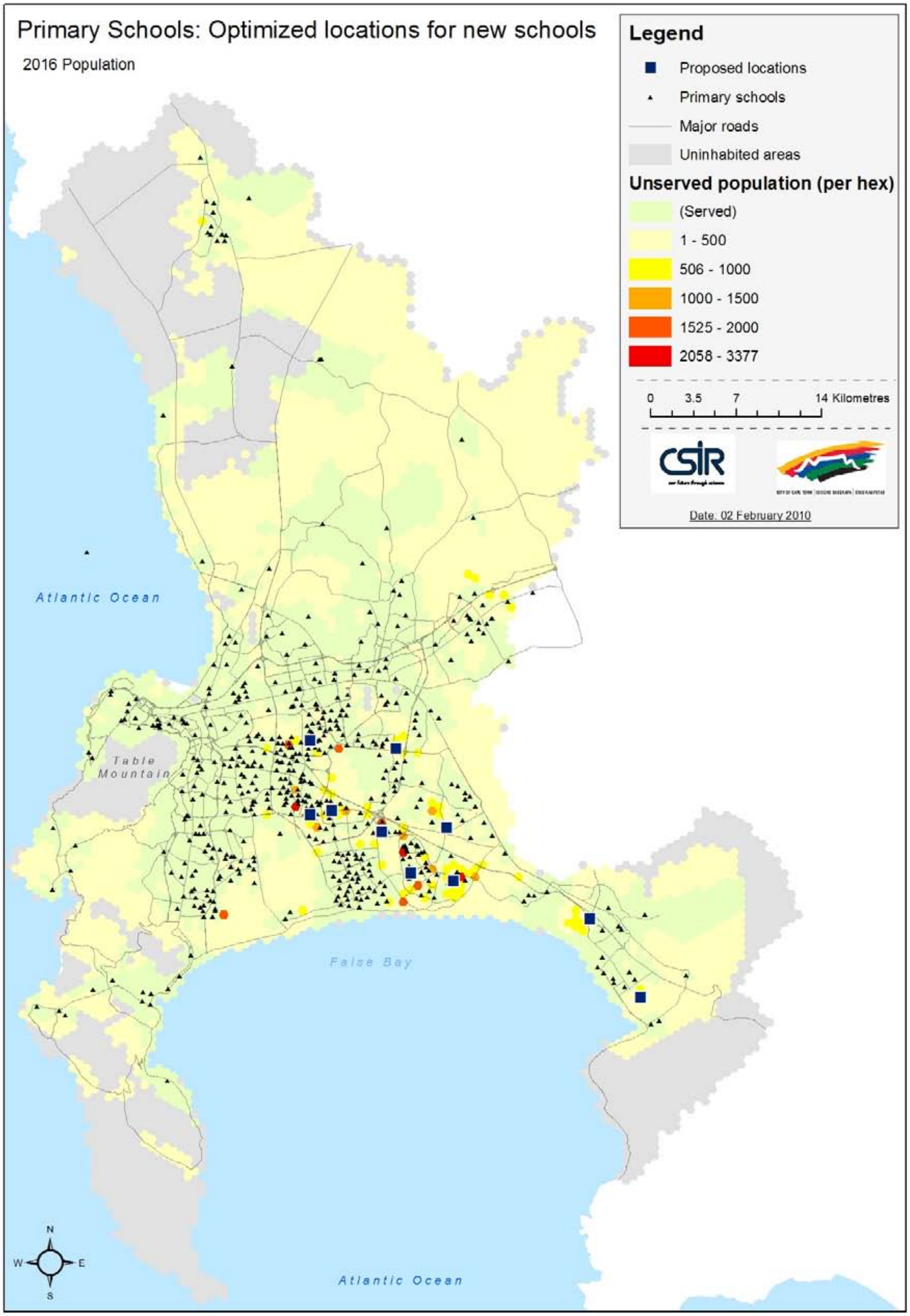


Figure 4.4: Optimised locations for primary schools in 2016.

4.4 Potentially spare capacity for Primary Schools

The maps of spare capacity as indicated in Figure 4.5 (next page) should be considered in the context of the total shortfall of primary school capacity. Based on the analysis discussed in section 4.3 the shortage of primary schools is approximately 218 schools of 750 learners each. Table 4.4 below is a summary of poorly located spare capacity. Numbers are small but should generally not be considered superfluous.

Table 4.4: Projected 2016 scenario – Potential spare capacity by current primary schools per planning district

District	Name	Primary School pop 2016	Unserved population	Potential Spare Capacity	Comments
A	Table Bay	19 749	1 240	3 994	Surplus to local demand but with good city wide accessibility & quality schools
B	Blaauwberg	30 132	11 440	147	Negligible poorly located supply but net shortfall
C	Northern	51 909	21 828	536	Small local surplus due to application of travel distance limit
D	Tygerberg	101 248	22 422	0	Net shortfall
E	Helderberg	37 800	17 430	0	Net shortfall
F	Mitchells Plain/ Khayelitsha	177 957	63 847	648	Some poorly located facilities but enormous demand in adjacent vicinity
G	Cape Flats	85 975	16 372	276	Small localised surplus but net shortfall evident
H	South Peninsula	38 539	8 612	2 092	Localised surplus due to travel distance limits with net shortfall
ALL	City of Cape Town	543 310	163 192	7 694	Limited poorly located facilities with major net shortfall

Rationalisation can only be considered with respect to specialised schools that are unable to attract learners living more than 15 minutes travel time (in-vehicle) from the school. Rationalisation of schools and / or densification of areas close to schools with spare capacity is likely to deny learners from poorer areas access to well established schools in higher income areas which they currently travel to from the periphery of the City / lower income areas.

The optimised results only indicated the top 10 locations for new schools but many more are required, thus the spare capacity with respect to schools needs to be carefully considered.

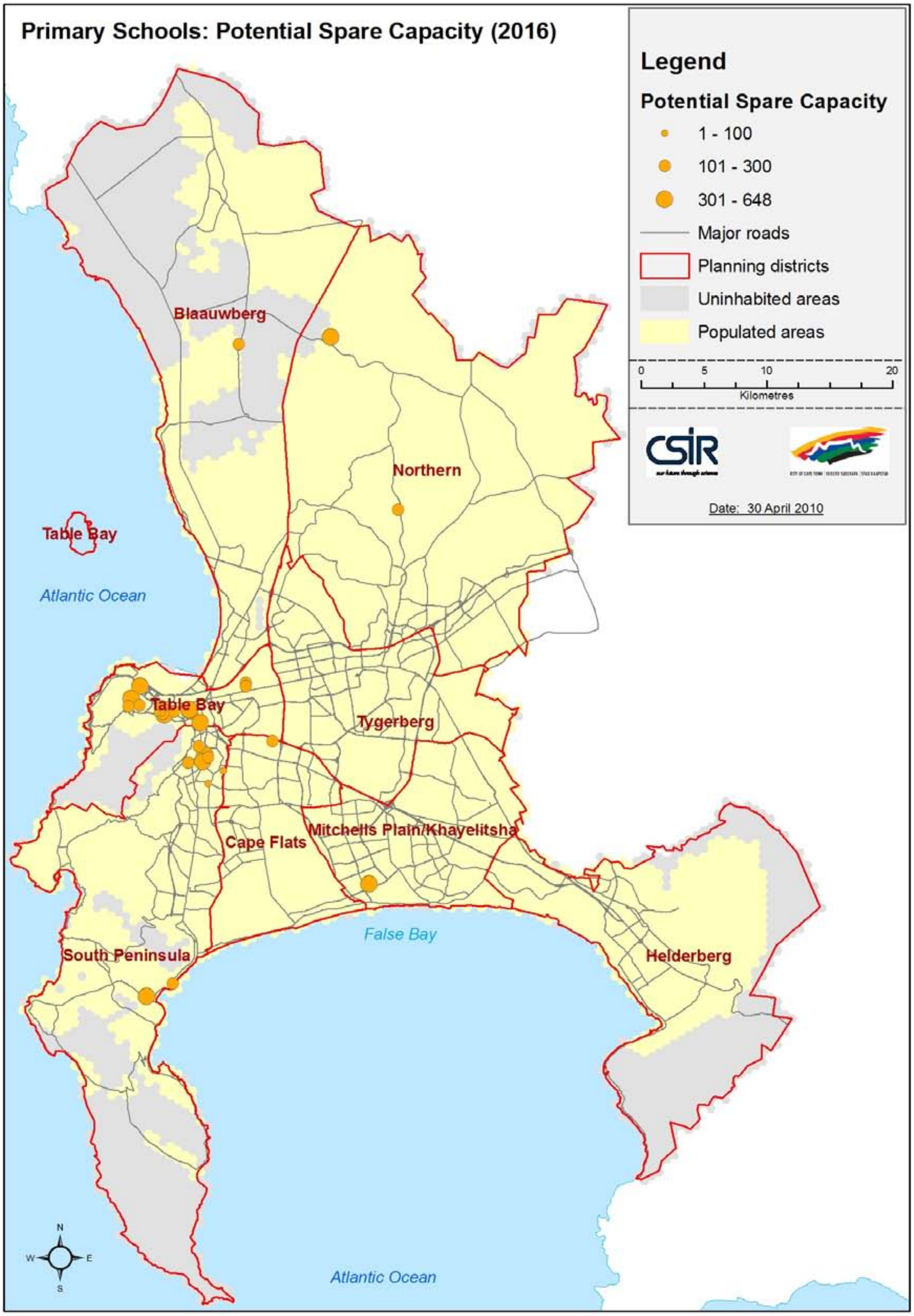


Figure 4.5: Potential spare capacity for primary schools (2016)

4.5 Secondary Schools

4.5.1 Analyses criteria and processes undertaken

The criteria used for the analyses of secondary schools and the processes undertaken are summarised in Table 4.4.

Table 4.5: Criteria and processes for secondary schools analyses	
Facilities analysed	All operational secondary schools (totalling 211)
Demand	• **Demand A:** Entire city with 2007 population figures for children aged 14 to 18 years old* assigned to a hexagon-grid representing current demand. • **Demand B:** Entire city with 2016 projected population figures for children aged 14 to 18 years old* assigned to a hexagon-grid. (*It was established from the Dept. of Education that for the Western Cape there is a drop out rate of 35% of learners aged 16 to 18 years. This drop out rate was applied to lower the demand on secondary schools, thus secondary learners make up 8% of the City's total population.)
Supply	The capacity of a school is based on the maximum number of learners which can be enrolled at the school (**see note below)
Travel mode and access time	• Based on the Department of Education's standard of a maximum 5km walking distance to the nearest school. • For the analysis, routes were based on the existing road network.
Analyses undertaken	• Unconstrained capacity and travel time analysis to establish travel time for the City's children aged 14 to 18 years old to the nearest secondary school • Catchment area analysis, based on school capacity and a maximum travel time of 15 minutes

*(**It should be noted that as only public secondary schools were covered in the analyses, the supply of private schools which cater for more than 5 600 secondary school learners in Cape Town was not included. Thus, only the current capacity of the public secondary schools (to serve a total of 204 305 learners) was considered and did not include the more than 2.7% capacity provided currently by private schools. The allocated learner demand – based on the population numbers of all 14 to 18 year old children in Cape Town after the drop out rate was applied – for the current scenario was 190 732 and for the 2016 scenario 194 859.)*

Appendix 4.2 shows all the secondary schools analysed by their capacities and their allocated demand (with percentage theoretical spare capacity) for the current scenario and for the 2016 scenario. Please note that the analyses do not consider learners commuting by choice and only covers the number of learners living within the closest catchment area to a school.

4.5.2 Discussion of results: Secondary Schools

Tables 4.5a and 4.5b show the population numbers not served by existing secondary schools based on the schools' capacities. The City has been further divided into areas inside and outside the Cape Town urban edge (that is urban and non-urban areas). See Figure 4.1 (at start of this section) for a map of the urban edge as specified by the City of Cape Town.

Table 4.5a shows the results for the current scenario (2007 population figures), while Table 4.5b has results based on potential city growth to the year 2016.

Table 4.6a: Current scenario – unserved population by current secondary schools

Areas	Total secondary school population	Unserved population	% of population unserved
Urban	253 579	62 946	24.82%
Non-urban	940	841	89.47%
Total	254 519	63 787	25.06%

Table 4.6b: Projected 2016 scenario – unserved population by current secondary schools

Area	Total secondary school population	Unserved population	% of population unserved
Urban	290 645	95 855	32.98%
Non-urban	1113	1041	93.53%
Total	291 758	96 896	33.21%

Results show that based on the current scenario (Table 4.5a), as many as 25% of the City's population between the ages 14 to 18 years old are unable to reach a secondary school within the given standard of a travel distance of 5km when the capacities of the secondary schools are taken into consideration. This percentage of unserved secondary school learners is projected to increase to 33% if the potential population growth to 2016 is considered and should no new facilities be built. As can be expected the population outside the urban edge is much less provided for, but the people in these areas as a proportion to the total population of the City is less than half a percent.

It must be kept in mind that these statistics do not imply that almost 25% of the City's secondary school children are not in a school currently, but that 25% of the learners must go to a school that is either overburdened, is privately provided or must travel further than the recommended distance of 5km.

Figures 4.5a and 4.5b map the served and unserved populations for the current and 2016 scenarios respectively.

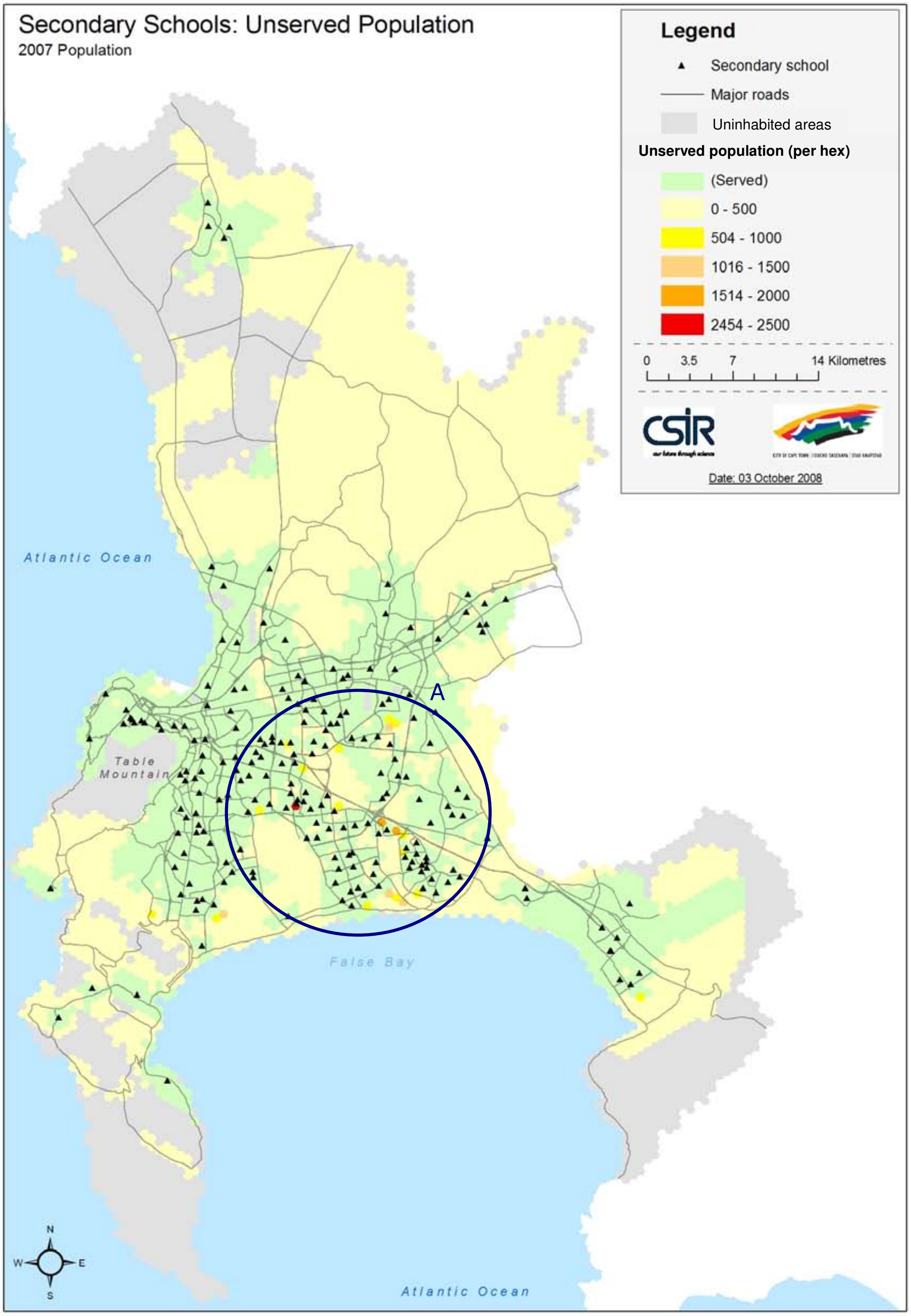


Figure 4.6a: maps the current served and concentration of the unserved population (14-18 years old) with regard to existing secondary schools.

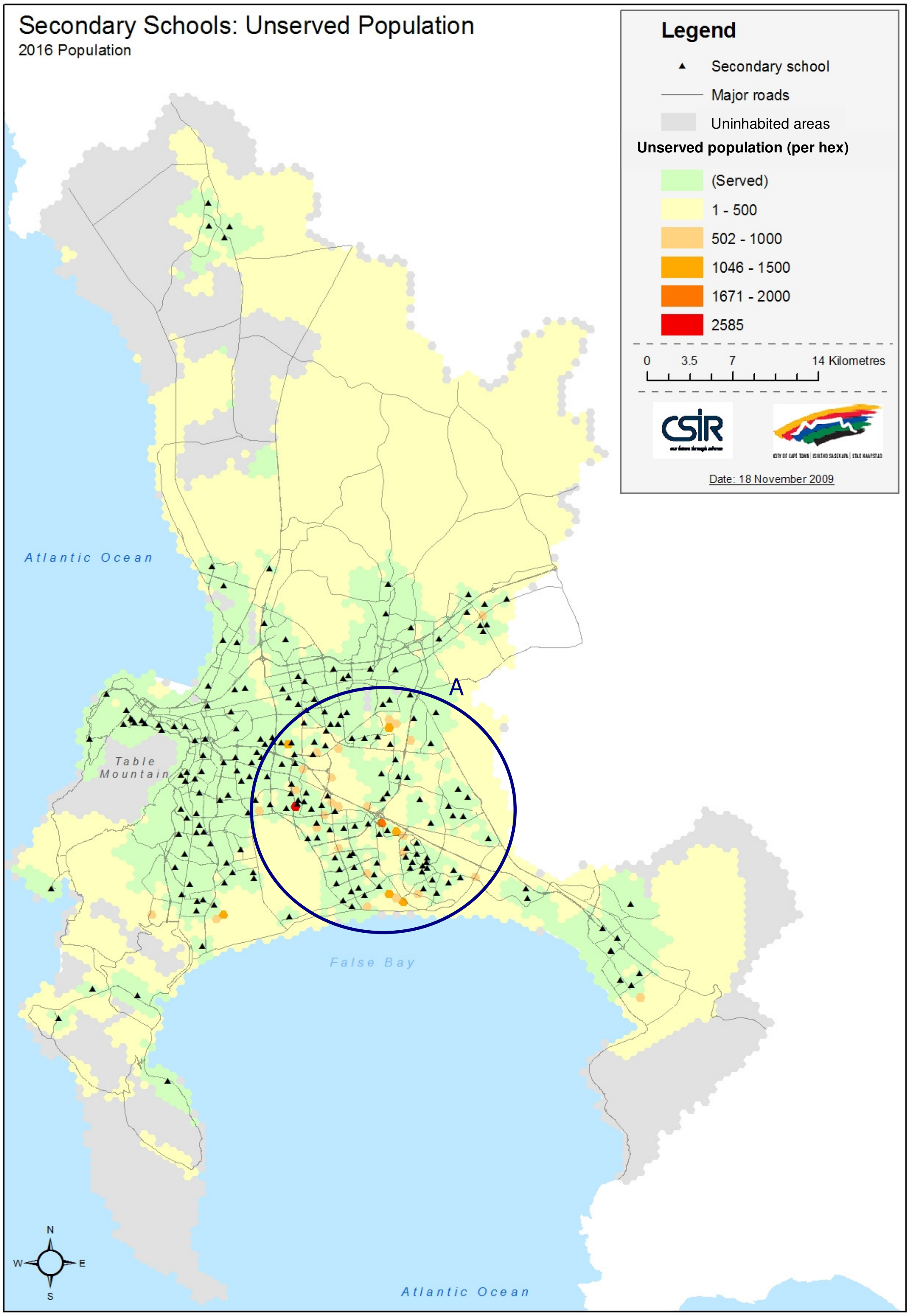


Figure 4.6b: maps the projected (2016) served and concentration of the unserved population (14-18 years old) with regard to existing secondary schools.

Looking at Figures 4.5a and 4.5b it is apparent that it is not possible to define a specific area where there is a concentration of unserved population. However, taking a step back and looking at the City in general there is a widespread area which contains the highest numbers of unserved secondary school learners. This is depicted by circle A in both the figures and includes an extensive areas north and south of the N2 and excludes the southern and northern suburbs of the City. This is also an area that is unlikely to be served by private schools and has the furthest distances to travel to schools with spare capacity.

There is also not much difference between the current (2007) and 2016 scenarios. It is just that for the 2016 scenario, the number of unserved population within each of the already unserved areas increases further.

The relevance and importance of the planning district tables (Tables 4.5c & 4.5d)– showing the unserved population per planning district – should not be over emphasised and are presented for reporting purposes rather than to inform planning processes. Residents generally ignore or are oblivious to the boundaries of these regions and will use facilities closest to their homes irrespective of the district in which facilities are sited. In addition, the concentration of population is far higher in certain of the districts and thus these areas are in far greater need than less populous areas. With respect to planning for future facility provision the spatial outputs (namely the maps) are far more important when identifying areas requiring more facilities or increased service provision by existing facilities.

On a planning district basis, the largest percentages of unserved demand from secondary school learners within districts are found in the Helderberg (32%), Mitchells Plain/ Khayelitsha (30%), and Northern (26%) districts for both the current scenario and the 2016 scenario (Tables 4.5c & 4.5d).

In the 2016 scenario, the Blaauwberg district also becomes a district with high unserved demand, as 39% of the secondary school population are not served. As for the primary school learners, however, the overall percentage of unserved demand for the City of Cape Town originated for both scenarios mainly from the Mitchells Plain/ Khayelitsha district which contributes as much as 40% (current scenario) and 35% (2016 scenario) to the total amount of unserved demand for secondary schools.

Table 4.6c: Current scenario – unserved population by current secondary schools per planning district					
District	**Name**	**Secondary School Pop 2007**	**Unserved**	**% Unserved**	**% Unserved for City of Cape Town**
A	Table Bay	11 552	133	1.15%	0.21%
B	Blaauwberg	11 858	2 504	21.12%	3.93%
C	*Northern*	18 596	4 842	*26.04%*	7.59%
D	Tygerberg	51 506	12 125	23.54%	19.01%
E	*Helderberg*	12 362	3 899	*31.54%*	6.11%
F	*Mitchells Plain/Khayelitsha*	85 387	25 269	*29.59%*	39.61%
G	Cape Flats	42 419	10 041	23.67%	15.74%
H	South Peninsula	20 840	4 974	23.87%	7.80%
ALL	City of Cape Town	254 520	63 787	25.06%	100.00%

Table 4.6d: Projected 2016 scenario – unserved population by current secondary schools per planning district					
District	**Name**	**Secondary School Pop 2016**	**Unserved**	**% Unserved**	**% Unserved for City of Cape Town**
A	Table Bay	11 932	137	1.15%	0.14%
B	*Blaauwberg*	*15 562*	*6 041*	*38.82%*	6.23%
C	*Northern*	*26 438*	*12 476*	*47.19%*	12.88%
D	Tygerberg	57 594	18 059	31.36%	18.64%
E	*Helderberg*	18 552	7 380	*39.78%*	7.62%
F	*Mitchells Plain/Khayelitsha*	93 754	34 213	*36.49%*	35.31%
G	Cape Flats	45 171	12 079	26.74%	12.47%
H	South Peninsula	22 755	6 512	28.62%	6.72%
ALL	City of Cape Town	291 759	96 897	33.21%	100.00%

Figure 4.6 is a general travel distance map for all of the City's secondary school learners to their nearest public secondary school, i.e. how far these learners must travel to reach their closest secondary schools (the capacity of the secondary schools was not limited in this analysis). The dark and middle green areas on Figure 4.6 indicate that the majority of the City's learners can reach a secondary school within 2.5km. For the entire city, all learners except for a few in the rural areas can reach a secondary school within 5km.

Thus, the secondary schools in the City are spatially correctly located. However, when the capacities of the schools are taken into consideration there are areas of unserved population as discussed previously. These are generally the higher density, poorer parts of the city to the east and south east.

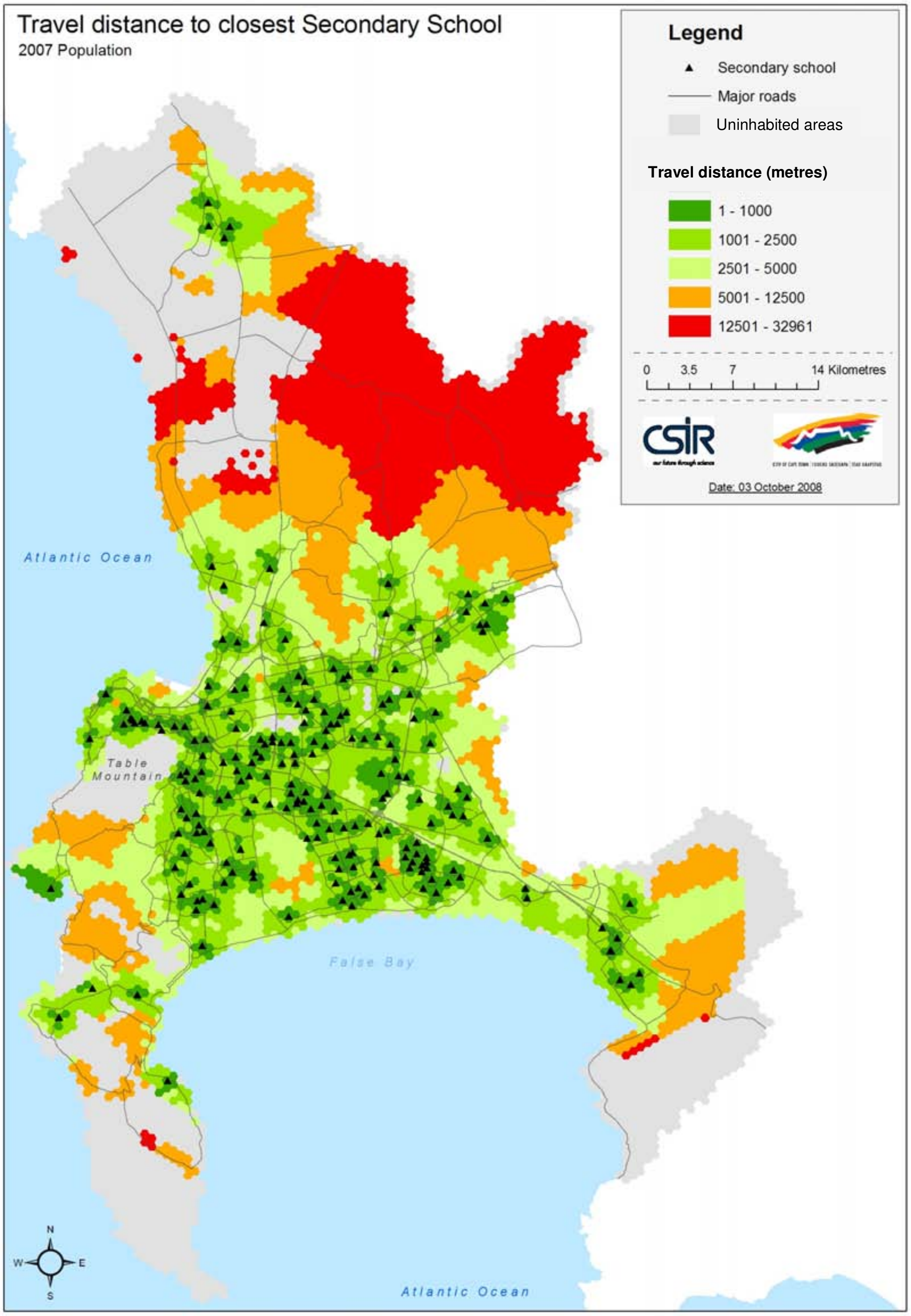


Figure 4.7: Travel time to closest secondary school

Table 4.6 confirms the previous discussion on Figure 4.6, in that 89% of the City's secondary school learners are currently within 2.5km of a secondary school and 98% are within 5km.

Table 4.7: Learners (14-18 years old) access to secondary schools within certain travel distance bands and with no school capacity constraints				
DISTANCE CATEGORY	POPULATION SERVED			
	2007		2016	
0 - 1km	117 067	*46.00%*	127 792	*43.80%*
0 - 2.5km	226 205	*88.88%*	252 337	*86.49%*
0 - 5km	248 353	*97.58%*	282 529	*96.84%*
More than 5km	6 167	*2.42%*	9 230	*3.16%*
TOTAL	254 520	*100.00%*	291 759	*100.00%*

The capacity of the secondary schools was not taken into consideration in this analysis, i.e. all learners were assigned to their nearest secondary school. There is a slight decrease in accessibility for the 2016 scenario if it is assumed that no new facilities will be built but that there will be increases in population.

It should be noted that the National Department of Education is currently considering guidelines to limit school catchment areas to a radius of 3km or less (thus a total walking distance to and from schools of 6kms or less) and proposes maximum school sizes of 930 learners for primary schools and 1 000 learners for secondary schools. If these standards are implemented it would have major implications for the provision of schools in the City – resulting in even larger backlogs.

Table 4.6 gives a global overview of the accessibility of secondary schools in a 'walking city'.

4.6 Recommendations/ Optimisation for Secondary Schools

At an average capacity of 1 000 learners per secondary school and a total number of unserved secondary school learners of 96 896 in 2016 (based on the current provision of schools), as many as 97 new secondary schools would have to be provided to serve this demand within the current standards. Currently, the backlog can be considered to be almost 64 secondary schools in the City of Cape Town as 63 787 secondary school learners must travel further than 5km to reach a public school with spare capacity.

The ten best optimal locations for any new secondary schools to serve the 2016 demand for secondary schools are shown in Figure 4.7. These locations would best address the unserved demand in some areas of the City but these recommended locations should not be seen as being prescriptive. The exact locations of secondary schools within areas of high demand must be planned for by the City of Cape Town with due consideration of land use, residential areas, road networks and other factors such as alternative education facilities being available. Alternative education strategies such as platooning or double shifts also need to be considered.

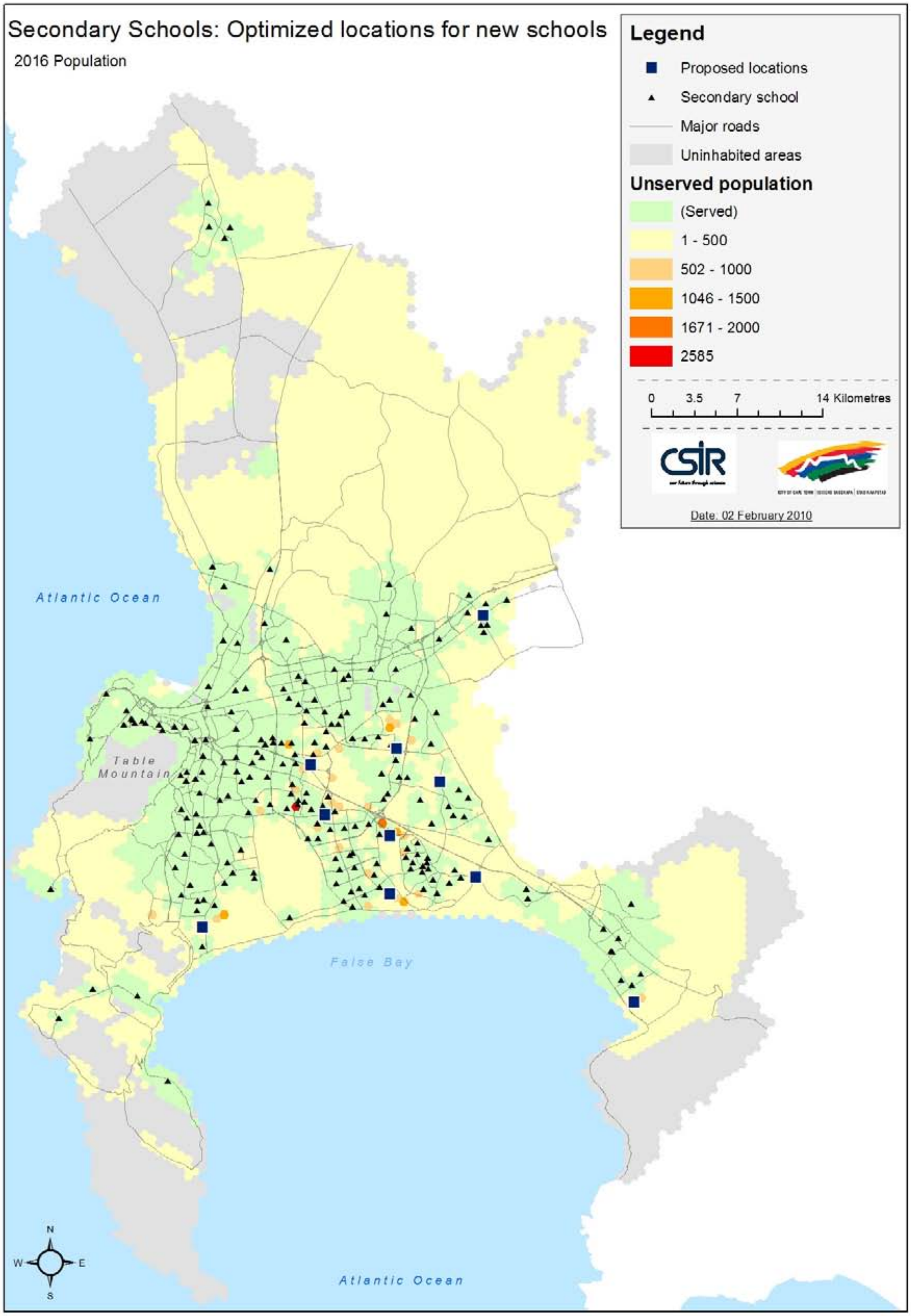


Figure 4.8: Optimised locations for secondary schools in 2016

4.7 Potentially spare capacity for Secondary Schools

As indicated in Section 4.6 there is a shortfall of 97 Secondary Schools of 1 000 pupils each. Figure 4.9 shows a spatial indicated of the limited spare capacity at Secondary Schools. The main 'surplus' is close to the CBD / Newlands area. These areas have good schools and good connectivity and thus are accessible to many who cannot afford to live in the area and have a wider catchment than the theoretical 15 travel time limit used for analysis.

Table 4.8: Projected 2016 scenario – unserved population by current secondary schools per planning district

District	Name	Secondary School Pop 2016	Unserved	Potential Spare capacity	Comments
A	Table Bay	11 932	137	3185	Surplus to local demand but with good city wide accessibility & quality schools
B	Blaauwberg	15 562	6 041	63	
C	Northern	26 438	12 476	0	
D	Tygerberg	57 594	18 059	636	Some poorly located supply
E	Helderberg	18 552	7 380	0	
F	Mitchells Plain/ Khayelitsha	93 754	34 213	0	
G	Cape Flats	45 171	12 079	300	Limited poorly located supply beyond travel distance
H	South Peninsula	22 755	6 512	5262	Surplus is less than the net shortfall and longer travel distances for learners is to be expected.
ALL	City of Cape Town	291 759	96 897	9446	Net shortfall

Rationalisation can only be considered with respect to specialised schools that are unable to attract learners living more than 15 minutes travel time (in-vehicle) from the school. Rationalisation of schools and / or densification of areas close to schools with spare capacity is likely to deny learners from poorer areas access to well established schools in higher income areas which they currently travel to from the periphery of the City / lower income areas.

The optimised results only indicated the top 10 locations for new schools but many more are required, thus the spare capacity with respect to schools needs to be carefully considered.

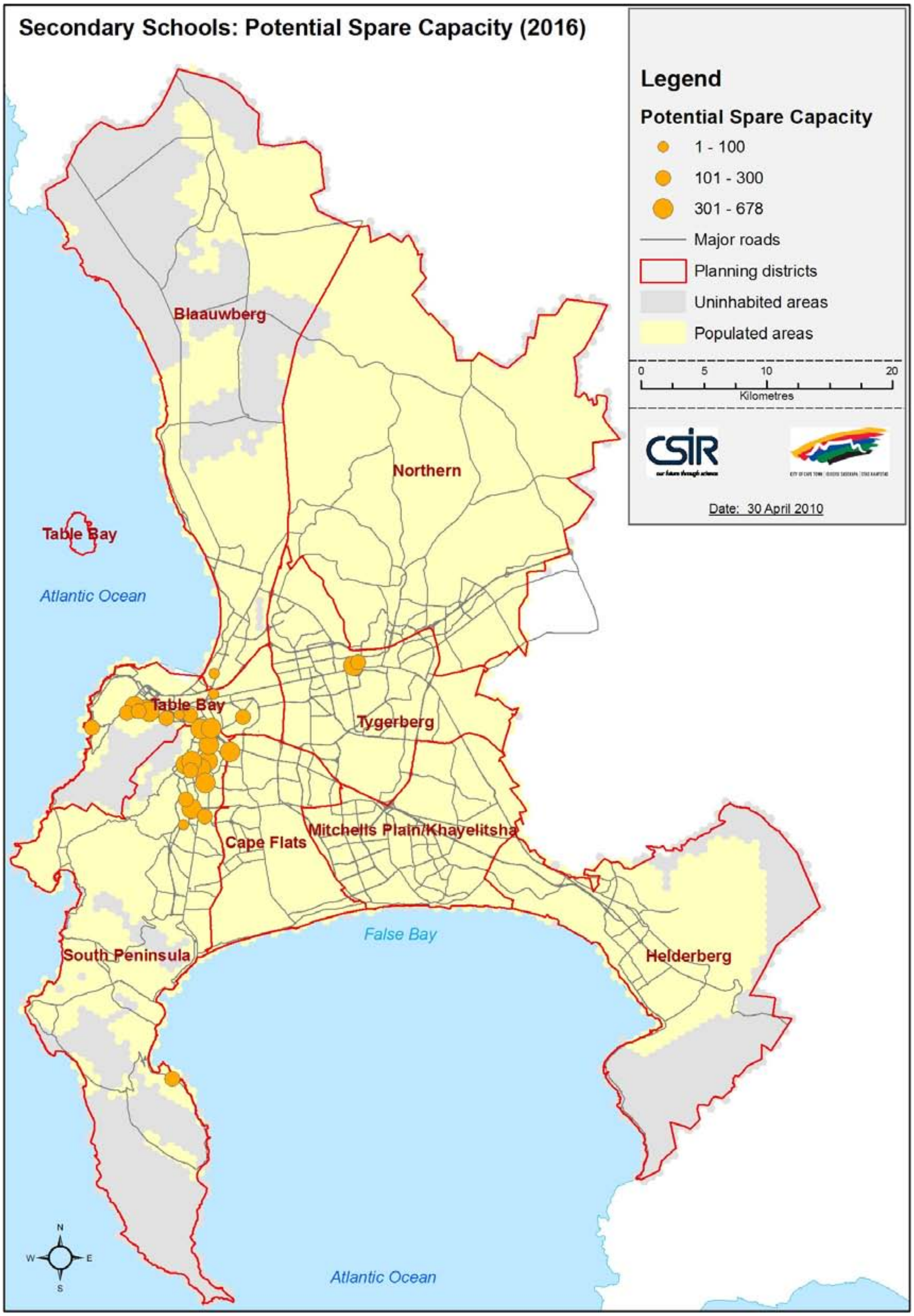


Figure 4.9: Potential spare capacity for secondary schools (2016)

APPENDIX 4.1: Capacities and allocated demand for each primary school

FACILITY NAME	CAPACITY	ALLOCATED DEMAND 2007		ALLOCATED DEMAND 2016	
		Demand	*Spare capacity*	Demand	*Spare capacity*
ZONNEBLOEM GIRLS PRAC. SCH.	280	0	*100.00%*	0	*100.00%*
WALMER ESTATE PRIM.	311	0	*100.00%*	0	*100.00%*
VAATJIE MOR PRIM.	152	9	*94.00%*	5	*97.02%*
RONDEBOSCH BOYS' PREP.	698	42	*93.95%*	53	*92.40%*
VISSERSHOK PRIM.	356	24	*93.17%*	356	*0.00%*
ATTIE VAN WYK VGK PRIM.	140	13	*90.81%*	11	*92.21%*
MEULENHOF PRIM.	465	51	*89.08%*	58	*87.61%*
CECIL ROAD PRIM.	495	65	*86.96%*	107	*78.29%*
GROOTE SCHUUR PRIM.	381	71	*81.34%*	73	*80.72%*
FISH HOEK PRIM.	682	134	*80.34%*	188	*72.48%*
PRESTWICH STREET PRIM.	642	132	*79.46%*	136	*78.85%*
DRYDEN STREET PRIM	567	138	*75.68%*	150	*73.51%*
MONTAGU DRIVE PRIM.	1,065	276	*74.07%*	417	*60.83%*
OBSERVATORY JUNIOR	620	187	*69.83%*	232	*62.55%*
OAKHURST GIRLS' PRIM.	225	71	*68.35%*	75	*66.73%*
MUHAMMADEYAH MOS PRIM.	800	277	*65.40%*	800	*0.00%*
ST. PAUL'S PRIM. (WYNB)	692	248	*64.17%*	267	*61.37%*
HOLY CROSS RC PRIM.	540	215	*60.24%*	223	*58.79%*
A.C.J. PHAKADE PRIM	1,775	745	*58.04%*	1,775	*0.00%*
ST. MARY'S PRIM.	274	133	*51.47%*	139	*49.11%*
JAN VAN RIEBEECK PRIM.	316	165	*47.79%*	187	*40.74%*
BRIDGEVILLE PRIM.	625	338	*45.87%*	349	*44.21%*
ST. JAMES RC PRIM.	260	147	*43.52%*	154	*40.95%*
CHAPEL STREET PRIM.	541	313	*42.21%*	321	*40.70%*
SIMON'S TOWN SCHOOL	271	158	*41.71%*	271	*0.17%*
BUCKINGHAM PRIM.	1,385	902	*34.89%*	1,385	*0.00%*
RUSTENBURG GIRLS' JUNIOR.	586	403	*31.16%*	417	*28.82%*
PELLA MOR PRIM.	343	236	*31.06%*	343	*0.00%*
S.A. COLLEGE JUNIOR.	695	496	*28.67%*	574	*17.45%*
KENMERE PRIM.	974	696	*28.56%*	816	*16.18%*
MOUNTAIN ROAD PRIM.	668	484	*27.57%*	521	*21.99%*
LOCHNERHOF LS.	802	614	*23.40%*	802	*0.00%*
BOTTELARY PRIM.	391	300	*23.18%*	391	*0.00%*
WINDERMERE PRIM.	695	540	*22.32%*	595	*14.45%*
WOODBRIDGE PRIM.	515	401	*22.06%*	515	*0.00%*
GOLDEN GROVE PRIM.	854	677	*20.69%*	802	*6.08%*
DANIE ACKERMANN PRIM.	979	832	*15.04%*	979	*0.00%*
ZONNEBLOEM BOYS PRIM.	318	271	*14.89%*	278	*12.70%*
RAHMANIYEH MOS PRIM.	310	264	*14.82%*	276	*10.94%*
CAMPS BAY PRIM.	256	222	*13.09%*	256	*0.00%*
FISH HOEK MIDDLE SCHOOL	439	393	*10.53%*	439	*0.00%*
ROSMEAD CENTRAL PRIM.	721	655	*9.22%*	675	*6.35%*
PANORAMA LS.	1,531	1,422	*7.09%*	1,531	*0.00%*
SEAVIEW PRIM.	820	770	*6.15%*	820	*0.00%*
PHILADELPHIA PRIM.	150	148	*1.60%*	150	*0.00%*
KENRIDGE PRIM.	1,519	1,506	*0.87%*	1,519	*0.00%*
GARDEN VILLAGE PRIM.	278	278	*0.00%*	278	*0.00%*

FACILITY NAME	CAPACITY	ALLOCATED DEMAND 2007		ALLOCATED DEMAND 2016	
		Demand	*Spare capacity*	Demand	*Spare capacity*
SCHOTSCHEKLOOF MOS PRIM.	362	362	*0.00%*	362	*0.00%*
WESLEY MET. PRACTISING SCHOOL	309	309	*0.00%*	309	*0.00%*
FACTRETON PRIM.	471	471	*0.00%*	471	*0.00%*
H.J. KRONEBERG JUN. PRIM.	440	440	*0.00%*	440	*0.00%*
SUNDERLAND PRIM.	549	549	*0.00%*	549	*0.00%*
W.D. HENDRICKS PRIM.	241	241	*0.00%*	241	*0.00%*
WINGFIELD PRIM.	276	276	*0.00%*	276	*0.00%*
MARCONI BEAM PRIM	1,187	1,187	*0.00%*	1,187	*0.00%*
ST. JOHN'S RC PRIM.	517	517	*0.00%*	517	*0.00%*
UKHANYO PRIM.	1,331	1,331	*0.00%*	1,331	*0.00%*
STAR OF THE SEA CONVENT PRIM.	296	296	*0.00%*	296	*0.00%*
BAY PRIM.	410	410	*0.00%*	410	*0.00%*
KOMMETJIE PRIM.	189	189	*0.00%*	189	*0.00%*
MUIZENBERG JUNIOR	570	570	*0.00%*	570	*0.00%*
PAUL GREYLING PRIM.	144	144	*0.00%*	144	*0.00%*
SUN VALLEY PRIM.	780	780	*0.00%*	780	*0.00%*
KLEINBERG PRIM.	967	967	*0.00%*	967	*0.00%*
MARINE PRIM.	1,226	1,226	*0.00%*	1,226	*0.00%*
STARLING PRIMARY	260	260	*0.00%*	260	*0.00%*
RYLANDS PRIM.	613	613	*0.00%*	613	*0.00%*
PELICAN PARK PRIMARY	394	394	*0.00%*	394	*0.00%*
MARIST BROTHERS' JUNIOR	309	309	*0.00%*	309	*0.00%*
ST. ANNE'S PRIM.	277	277	*0.00%*	277	*0.00%*
PLUMSTEAD PREP.	572	572	*0.00%*	572	*0.00%*
WINDSOR PREP.	361	361	*0.00%*	361	*0.00%*
BERGVLIET PRIM.	723	723	*0.00%*	723	*0.00%*
CLAREMONT PRIM.	288	288	*0.00%*	288	*0.00%*
FERNDALE PRIM.	699	699	*0.00%*	699	*0.00%*
GREENFIELD GIRLS' PRIM.	227	227	*0.00%*	227	*0.00%*
GROVE PRIM.	703	703	*0.00%*	703	*0.00%*
JOHN GRAHAM PRIM.	596	596	*0.00%*	596	*0.00%*
KIRSTENHOF PRIM.	718	718	*0.00%*	718	*0.00%*
KRONENDAL PRIM.	331	331	*0.00%*	331	*0.00%*
LLANDUDNO PRIM.	210	210	*0.00%*	210	*0.00%*
RONDEBOSCH EAST PRIM.	628	628	*0.00%*	628	*0.00%*
ROSEBANK JUNIOR	238	238	*0.00%*	238	*0.00%*
SIMON VAN DER STEL PRIM.	193	193	*0.00%*	193	*0.00%*
DE GRENDEL SSKV PRIM.	578	578	*0.00%*	578	*0.00%*
KRAAIFONTEIN AME PRIM.	405	405	*0.00%*	405	*0.00%*
TREVOR MANUEL PRIM.	1,242	1,242	*0.00%*	1,242	*0.00%*
BLUE MOUNTAINS PRIM.	165	165	*0.00%*	165	*0.00%*
AKASIAPARK LS.	76	76	*0.00%*	76	*0.00%*
SIGCAWU PUBLIC PRIM.	1,120	1,120	*0.00%*	1,120	*0.00%*
MOKONE PRIM.	402	402	*0.00%*	402	*0.00%*
MOSHESH PRIM.	525	525	*0.00%*	525	*0.00%*
SIYABULELA PRIM.	796	796	*0.00%*	796	*0.00%*
THEMBANI PRIM.	994	994	*0.00%*	994	*0.00%*
ZIMASA PRIM.	1,474	1,474	*0.00%*	1,474	*0.00%*

FACILITY NAME	CAPACITY	ALLOCATED DEMAND 2007		ALLOCATED DEMAND 2016	
		Demand	*Spare capacity*	Demand	*Spare capacity*
CRAVENBY SEC	580	580	*0.00%*	580	*0.00%*
VRIJZEE VOORB.	680	680	*0.00%*	680	*0.00%*
BOSMANSDAM PRIM.	675	675	*0.00%*	675	*0.00%*
DE VRIJE ZEE PRIM.	778	778	*0.00%*	778	*0.00%*
EDGEMEAD PRIM.	1,182	1,182	*0.00%*	1,182	*0.00%*
GOODWOOD PARK PRIM.	1,265	1,265	*0.00%*	1,265	*0.00%*
KOOS SADIE PRIM.	856	856	*0.00%*	856	*0.00%*
MONTE VISTA PRIM.	657	657	*0.00%*	657	*0.00%*
PINEHURST PRIM.	399	399	*0.00%*	399	*0.00%*
THE PINELANDS PRIM.	442	442	*0.00%*	442	*0.00%*
PINELANDS NORTH PRIM.	445	445	*0.00%*	445	*0.00%*
THORNTON PRIM.	443	443	*0.00%*	443	*0.00%*
WOLRAAD WOLTEMADE PRIM.	618	618	*0.00%*	618	*0.00%*
EURECON PRIM.	520	520	*0.00%*	520	*0.00%*
ARCADIA PRIM.	802	802	*0.00%*	802	*0.00%*
AVONWOOD PRIM.	630	630	*0.00%*	630	*0.00%*
BALVENIE PRIM.	717	717	*0.00%*	717	*0.00%*
BERGSIG PRIM	783	783	*0.00%*	783	*0.00%*
BERGVILLE PRIM.	384	384	*0.00%*	384	*0.00%*
BISHOP LAVIS PRIM.	606	606	*0.00%*	606	*0.00%*
BRAMBLE WAY PRIM.	326	326	*0.00%*	326	*0.00%*
BOUNDARY PRIM.	425	425	*0.00%*	425	*0.00%*
CEDAR PRIM.	362	362	*0.00%*	362	*0.00%*
CENTRAL PARK PRIM.	326	326	*0.00%*	326	*0.00%*
CINDA PARK PRIM.	627	627	*0.00%*	627	*0.00%*
CLARKE PRIM.	370	370	*0.00%*	370	*0.00%*
C.L. WILMOT PRIM.	356	356	*0.00%*	356	*0.00%*
DISA PRIM.	386	386	*0.00%*	386	*0.00%*
EDWARD PRIM.	495	495	*0.00%*	495	*0.00%*
ELNOR PRIM.	364	364	*0.00%*	364	*0.00%*
ELSBURY PRIM.	497	497	*0.00%*	497	*0.00%*
ELDENE PRIM.	395	395	*0.00%*	395	*0.00%*
ELSWOOD PRIM.	626	626	*0.00%*	626	*0.00%*
EUREKA PRIM.	916	916	*0.00%*	916	*0.00%*
GREENLANDS PRIM.	971	971	*0.00%*	971	*0.00%*
HELDERBERG PRIM.	363	363	*0.00%*	363	*0.00%*
HILLSIDE PRIM.	469	469	*0.00%*	469	*0.00%*
J.S. KLOPPER PRIM.	1,142	1,142	*0.00%*	1,142	*0.00%*
KALKSTEENFONTEIN PRIM.	366	366	*0.00%*	366	*0.00%*
VALPARK PRIM.	398	398	*0.00%*	398	*0.00%*
DURBANVILLE VOORB.	782	782	*0.00%*	782	*0.00%*
PAROW VOORB.	359	359	*0.00%*	359	*0.00%*
PAROWVALLEI VOORB.	448	448	*0.00%*	448	*0.00%*
RUYTERWACHT VOORB.	475	475	*0.00%*	475	*0.00%*
ARISTEA PRIM.	937	937	*0.00%*	937	*0.00%*
BELLPARK PRIM.	895	895	*0.00%*	895	*0.00%*
BELLVILLE PRIM.	483	483	*0.00%*	483	*0.00%*
BELLVILLE-NOORD PRIM.	536	536	*0.00%*	536	*0.00%*
BOSTON PRIM.	650	650	*0.00%*	650	*0.00%*
DE TYGER PRIM.	628	628	*0.00%*	628	*0.00%*

FACILITY NAME	CAPACITY	ALLOCATED DEMAND 2007		ALLOCATED DEMAND 2016	
		Demand	*Spare capacity*	Demand	*Spare capacity*
DURBANVILLE PRIM.	877	877	*0.00%*	877	*0.00%*
EVERSDAL PRIM.	1,137	1,137	*0.00%*	1,137	*0.00%*
EXCELSIOR PRIM. (Bellville)	726	726	*0.00%*	726	*0.00%*
FANIE THERON PRIM.	1,076	1,076	*0.00%*	1,076	*0.00%*
GENE LOUW PRIM.	1,304	1,304	*0.00%*	1,304	*0.00%*
LABIANCE PRIM.	590	590	*0.00%*	590	*0.00%*
PAROW-NOORD PRIM.	533	533	*0.00%*	533	*0.00%*
PAROW-WES PRIM.	1,014	1,014	*0.00%*	1,014	*0.00%*
PAROW-OOS LS.	749	749	*0.00%*	749	*0.00%*
SAFFIER PRIM.	722	722	*0.00%*	722	*0.00%*
SIMONSBERG PRIM.	1,093	1,093	*0.00%*	1,093	*0.00%*
TOTIUS PRIM.	475	475	*0.00%*	475	*0.00%*
VREDELUST PRIM.	401	401	*0.00%*	401	*0.00%*
WELGEMOED PRIM.	739	739	*0.00%*	739	*0.00%*
DE WAVEREN PRIM.	407	407	*0.00%*	407	*0.00%*
NORTHWAY PRIM.	667	667	*0.00%*	667	*0.00%*
BELLVILLE-SUID PRIM.	578	578	*0.00%*	578	*0.00%*
GOEIE HOOP PRIM.	844	844	*0.00%*	844	*0.00%*
LAWRENSIA PRIM.	280	280	*0.00%*	280	*0.00%*
NEBO PRIM.	277	277	*0.00%*	277	*0.00%*
WEBNERSTRAAT PRIM.	761	761	*0.00%*	761	*0.00%*
KASSELSVLEI PRIM.	728	728	*0.00%*	728	*0.00%*
PINEDENE PRIM.	1,048	1,048	*0.00%*	1,048	*0.00%*
VORENTOE PRIM.	337	337	*0.00%*	337	*0.00%*
ALPHA PRIM.	821	821	*0.00%*	821	*0.00%*
PARKDENE PRIM. (Bellville)	1,502	1,502	*0.00%*	1,502	*0.00%*
CAVALLERIA PRIM	1,186	1,186	*0.00%*	1,186	*0.00%*
WINSLEY PRIM.	719	719	*0.00%*	719	*0.00%*
ERICA PRIM.	868	868	*0.00%*	868	*0.00%*
BELHAR PRIM.	1,112	1,112	*0.00%*	1,112	*0.00%*
GARDENIA PRIM.	564	564	*0.00%*	564	*0.00%*
EIKENDAL PRIM.	1,114	1,114	*0.00%*	1,114	*0.00%*
BELVUE PRIM.	816	816	*0.00%*	816	*0.00%*
SYMPHONY PRIM.	759	759	*0.00%*	759	*0.00%*
ACCORDIONSTRAAT PRIM.	797	797	*0.00%*	797	*0.00%*
WATSONIA PRIM.	920	920	*0.00%*	920	*0.00%*
MATROOSBERGWEG PRIM.	288	288	*0.00%*	288	*0.00%*
THE VALLEY PRIM.	182	182	*0.00%*	182	*0.00%*
DR. VAN DER ROSS PRIM.	1,125	1,125	*0.00%*	1,125	*0.00%*
RIEBEECKSTRAAT PRIM.	1,110	1,110	*0.00%*	1,110	*0.00%*
ST. AUGUSTINE'S RC PRIM. PAROW	1,124	1,124	*0.00%*	1,124	*0.00%*
PARKVALE PRIM.	947	947	*0.00%*	947	*0.00%*
KLIPFONTEIN PRIM.	402	402	*0.00%*	402	*0.00%*
LAVISRYLAAN PRIM.	147	147	*0.00%*	147	*0.00%*
LEONSDALE PRIM.	242	242	*0.00%*	242	*0.00%*
MATROOSFONTEIN PRIM.	854	854	*0.00%*	854	*0.00%*
MIMOSA PRIM.	631	631	*0.00%*	631	*0.00%*
MONTANA PRIM.	663	663	*0.00%*	663	*0.00%*
NERINA PRIM.	639	639	*0.00%*	639	*0.00%*

FACILITY NAME	CAPACITY	ALLOCATED DEMAND 2007		ALLOCATED DEMAND 2016	
		Demand	*Spare capacity*	Demand	*Spare capacity*
NOOITGEDACHT PRIM.	743	743	*0.00%*	743	*0.00%*
NORWOOD SENTRAAL PRIM.	768	768	*0.00%*	768	*0.00%*
PROTEA PRIM. (BONTEH.)	255	255	*0.00%*	255	*0.00%*
RANGE PRIM.	301	301	*0.00%*	301	*0.00%*
RIVERTON PRIM.	325	325	*0.00%*	325	*0.00%*
ROSEWOOD PRIM.	654	654	*0.00%*	654	*0.00%*
TYGERSIG PRIM.	696	696	*0.00%*	696	*0.00%*
UITSIG PRIM.	804	804	*0.00%*	804	*0.00%*
VALHALLA PRIM.	949	949	*0.00%*	949	*0.00%*
WILLIAM MASON PRIM.	69	69	*0.00%*	69	*0.00%*
MONTEVIDEO PRIM.	975	975	*0.00%*	975	*0.00%*
ST. LOUIS (RC) PRIM.	324	324	*0.00%*	324	*0.00%*
MATROOS. HOLY TRINITY RC PRIM.	899	899	*0.00%*	899	*0.00%*
SOPHAKAMA PRIM.	1,179	1,179	*0.00%*	1,179	*0.00%*
ST. AGNES'S PRIM.	342	342	*0.00%*	342	*0.00%*
CAMPS BAY PREP.	213	213	*0.00%*	213	*0.00%*
YSTERPLAAT JUNIOR PRIM.	401	401	*0.00%*	401	*0.00%*
BLOUBERG RIDGE PRIM.	897	897	*0.00%*	897	*0.00%*
ELLERTON PRIM.	339	339	*0.00%*	339	*0.00%*
GOOD HOPE SEMINARY JUNIOR	276	276	*0.00%*	276	*0.00%*
MILNERTON PRIM.	560	560	*0.00%*	560	*0.00%*
KOEBERG PRIM.	448	448	*0.00%*	448	*0.00%*
SEA POINT PRIM.	448	448	*0.00%*	448	*0.00%*
SEAMOUNT PRIM.	365	365	*0.00%*	365	*0.00%*
TABLE VIEW PRIM.	1,409	1,409	*0.00%*	1,409	*0.00%*
TAMBOERSKLOOF PRIM.	443	443	*0.00%*	443	*0.00%*
TYGERHOF PRIM.	469	469	*0.00%*	469	*0.00%*
YSTERPLAAT PRIM.	429	429	*0.00%*	429	*0.00%*
ROBBENEILAND PRIM.	12	12	*0.00%*	12	*0.00%*
SALT RIVER MOSLEM PRIM.	201	201	*0.00%*	201	*0.00%*
SOUTHFIELD PRIM.	269	269	*0.00%*	269	*0.00%*
SUNLANDS PRIM.	826	826	*0.00%*	826	*0.00%*
SWEET VALLEY PRIM.	929	929	*0.00%*	929	*0.00%*
TIMOUR HALL PRIM.	722	722	*0.00%*	722	*0.00%*
WESTCOTT PRIM.	402	402	*0.00%*	402	*0.00%*
KENWYN PRIM.	528	528	*0.00%*	528	*0.00%*
WYNBERG BOYS' JUNIOR	648	648	*0.00%*	648	*0.00%*
WYNBERG GIRLS' JUNIOR.	687	687	*0.00%*	687	*0.00%*
ZWAANSWYK ACADAMY/AKADEMIE	474	474	*0.00%*	474	*0.00%*
CONSTANTIA PRIM.	281	281	*0.00%*	281	*0.00%*
LOTUS RIVER PRIM.	441	441	*0.00%*	441	*0.00%*
DOUGLAS ROAD PRIM.	317	317	*0.00%*	317	*0.00%*
STEENBERG PRIM	809	809	*0.00%*	809	*0.00%*
THOMAS WILDSCHUTT JUN. PRIM.	456	456	*0.00%*	456	*0.00%*
HAZENDAL PRIM.	655	655	*0.00%*	655	*0.00%*
HARMONY PRIM.	672	672	*0.00%*	672	*0.00%*
KANNEMEYER PRIM.	532	532	*0.00%*	532	*0.00%*
SID G. RULE PRIM.	838	838	*0.00%*	838	*0.00%*

FACILITY NAME	CAPACITY	ALLOCATED DEMAND 2007		ALLOCATED DEMAND 2016	
		Demand	*Spare capacity*	Demand	*Spare capacity*
PARKWOOD PRIM.	472	472	*0.00%*	472	*0.00%*
SULLIVAN PRIM.	579	579	*0.00%*	579	*0.00%*
DELTA PRIM.	829	829	*0.00%*	829	*0.00%*
PERIVALE PRIM.	448	448	*0.00%*	448	*0.00%*
FLOREAT PRIM.	608	608	*0.00%*	608	*0.00%*
LOURIER PRIM.	471	471	*0.00%*	471	*0.00%*
CAFDA PRIM.	180	180	*0.00%*	180	*0.00%*
SQUARE HILL PRIM.	1,045	1,045	*0.00%*	1,045	*0.00%*
THOMAS WILDSCHUTT PRIM.	507	507	*0.00%*	507	*0.00%*
MONTAGU'S GIFT PRIM.	391	391	*0.00%*	391	*0.00%*
HEATHFIELD PRIM.	488	488	*0.00%*	488	*0.00%*
ACACIA LAER.	143	143	*0.00%*	143	*0.00%*
ATHWOOD PRIM.	460	460	*0.00%*	460	*0.00%*
BLOMVLEI PRIM.	818	818	*0.00%*	818	*0.00%*
PLANTATION PRIM.	894	894	*0.00%*	894	*0.00%*
HYDE PARK PRIM.	930	930	*0.00%*	930	*0.00%*
PARKFIELDS PRIM.	837	837	*0.00%*	837	*0.00%*
SUMMIT PRIM.	712	712	*0.00%*	712	*0.00%*
FAIRVIEW PRIM.	984	984	*0.00%*	984	*0.00%*
VOORSPOED PRIM.	997	997	*0.00%*	997	*0.00%*
MORGENSON PRIM.	346	346	*0.00%*	346	*0.00%*
HILLWOOD PRIM.	985	985	*0.00%*	985	*0.00%*
LEVANA PRIM.	1,069	1,069	*0.00%*	1,069	*0.00%*
BELMOR PRIM.	873	873	*0.00%*	873	*0.00%*
PRINCE GEORGE INTER.	764	764	*0.00%*	764	*0.00%*
ZERILDA PARK PRIM.	1,159	1,159	*0.00%*	1,159	*0.00%*
SENTINEL PRIM.	1,019	1,019	*0.00%*	1,019	*0.00%*
ST. ANTHONY'S RC PRIM.	705	705	*0.00%*	705	*0.00%*
GRASSY PARK EC PRIM.	415	415	*0.00%*	415	*0.00%*
ST. AUGUSTINE'S RC PRIM.	846	846	*0.00%*	846	*0.00%*
OTTERY ROAD (METH.) PRIM.	331	331	*0.00%*	331	*0.00%*
ST. MARY'S RC PRIM.	654	654	*0.00%*	654	*0.00%*
CHRISTIAN DAVID MOR PRIM.	411	411	*0.00%*	411	*0.00%*
ORANJEKLOOF MOR PRIM.	1,174	1,174	*0.00%*	1,174	*0.00%*
ST. CLEMENTS RC PRIM.	286	286	*0.00%*	286	*0.00%*
BATTSWOOD OEFEN NGK PRIM.	616	616	*0.00%*	616	*0.00%*
ALICEDALE PRIM.	462	462	*0.00%*	462	*0.00%*
ATHLONE NORTH PRIM.	625	625	*0.00%*	625	*0.00%*
BELTHORN PRIM.	247	247	*0.00%*	247	*0.00%*
BLOSSOM STREET PRIM.	561	561	*0.00%*	561	*0.00%*
CYPRESS PRIM.	334	334	*0.00%*	334	*0.00%*
DAGBREEK PRIM.	325	325	*0.00%*	325	*0.00%*
DOWNEVILLE PRIM.	810	810	*0.00%*	810	*0.00%*
EASTER PEAK PRIM.	560	560	*0.00%*	560	*0.00%*
EDENDALE PRIM.	424	424	*0.00%*	424	*0.00%*
GARLANDALE PRIM.	451	451	*0.00%*	451	*0.00%*
HEATHERDALE PRIM.	391	391	*0.00%*	391	*0.00%*
HEIDEVELD PRIM.	783	783	*0.00%*	783	*0.00%*
KEWTOWN PRIM.	260	260	*0.00%*	260	*0.00%*
MANENBERG PRIM.	579	579	*0.00%*	579	*0.00%*

FACILITY NAME	CAPACITY	ALLOCATED DEMAND 2007		ALLOCATED DEMAND 2016	
		Demand	*Spare capacity*	Demand	*Spare capacity*
NORMA ROAD PRIM.	631	631	*0.00%*	631	*0.00%*
E. A. JANARI PRIM	491	491	*0.00%*	491	*0.00%*
PORTIA PRIM.	725	725	*0.00%*	725	*0.00%*
PRIMROSE PARK PRIM.	437	437	*0.00%*	437	*0.00%*
RED RIVER PRIM.	652	652	*0.00%*	652	*0.00%*
RIO GRANDE PRIM.	465	465	*0.00%*	465	*0.00%*
SAAMBOU PRIM.	416	416	*0.00%*	416	*0.00%*
TALFALAH PRIM.	1,060	1,060	*0.00%*	1,060	*0.00%*
SILVERLEA PRIM.	743	743	*0.00%*	743	*0.00%*
SILVERSTREAM PRIM.	632	632	*0.00%*	632	*0.00%*
SONDEREND PRIM.	729	729	*0.00%*	729	*0.00%*
SUNNYSIDE PRIM.	604	604	*0.00%*	604	*0.00%*
SURREY PRIM.	793	793	*0.00%*	793	*0.00%*
THORNTONWEG PRIM.	190	190	*0.00%*	190	*0.00%*
TURFHALL PRIM.	1,145	1,145	*0.00%*	1,145	*0.00%*
VANGUARD PRIM.	867	867	*0.00%*	867	*0.00%*
WELCOME PRIM.	493	493	*0.00%*	493	*0.00%*
WILLOWS PRIM.	1,017	1,017	*0.00%*	1,017	*0.00%*
WOODLANDS PRIM.	363	363	*0.00%*	363	*0.00%*
YORK ROAD PRIM.	847	847	*0.00%*	847	*0.00%*
NEWFIELDS PRIM.	440	440	*0.00%*	440	*0.00%*
BOKMAKIERIE PRIM.	291	291	*0.00%*	291	*0.00%*
PORTAVUE PRIM.	1,094	1,094	*0.00%*	1,094	*0.00%*
HABIBIA PRIM.	856	856	*0.00%*	856	*0.00%*
REGINA COELI RC PRIM.	375	375	*0.00%*	375	*0.00%*
ST. RAPHAEL'S RC PRIM.	622	622	*0.00%*	622	*0.00%*
ST. THERESA R.C. PRIM.	611	611	*0.00%*	611	*0.00%*
BUCK ROAD PRIM.	733	733	*0.00%*	733	*0.00%*
STEPHENWEG PRIM.	656	656	*0.00%*	656	*0.00%*
ZEEKOEVLEI PRIM.	478	478	*0.00%*	478	*0.00%*
DIE DUINE PRIM.	610	610	*0.00%*	610	*0.00%*
BONGOLETHU PRIM.(NYANGA)	907	907	*0.00%*	907	*0.00%*
NAL'UXULO PRIM.	1,100	1,100	*0.00%*	1,100	*0.00%*
WELTEVREDEN VALLEY CORE PRIM.	1,093	1,093	*0.00%*	1,093	*0.00%*
MASIVUKE PRIM.	1,275	1,275	*0.00%*	1,275	*0.00%*
VUKANI PRIM.	1,192	1,192	*0.00%*	1,192	*0.00%*
MITCHELL HEIGHTS PRIM.	827	827	*0.00%*	827	*0.00%*
HOMBA PRIM.	709	709	*0.00%*	709	*0.00%*
INJONGO PRIM.	906	906	*0.00%*	906	*0.00%*
KUKHANYILE PUBL. PRIM.	745	745	*0.00%*	745	*0.00%*
LWANDLE PRIM.	780	780	*0.00%*	780	*0.00%*
SAKUMLANDELA PRIM.	1,028	1,028	*0.00%*	1,028	*0.00%*
SOBAMBISANA PRIM.	1,195	1,195	*0.00%*	1,195	*0.00%*
SOYISILE PRIM.	1,134	1,134	*0.00%*	1,134	*0.00%*
UMMANGALISO PRIM.	1,029	1,029	*0.00%*	1,029	*0.00%*
VUZAMANZI PUBL. PRIM.	1,221	1,221	*0.00%*	1,221	*0.00%*
VUSELELA PRIM.	1,006	1,006	*0.00%*	1,006	*0.00%*
IKHWEZI leSIZWE PRIM.	611	611	*0.00%*	611	*0.00%*
YOMELELA PRIM.	908	908	*0.00%*	908	*0.00%*

FACILITY NAME	CAPACITY	ALLOCATED DEMAND 2007		ALLOCATED DEMAND 2016	
		Demand	*Spare capacity*	Demand	*Spare capacity*
ELUXOLWENI PRIM.	929	929	*0.00%*	929	*0.00%*
CHUMISA PRIM.	1,118	1,118	*0.00%*	1,118	*0.00%*
NTWASAHLOBO PRIM.	653	653	*0.00%*	653	*0.00%*
IKHUSI PRIM.	1,037	1,037	*0.00%*	1,037	*0.00%*
SOSEBENZA PRIM.	1,265	1,265	*0.00%*	1,265	*0.00%*
IMPENDULO PUBL. PRIM.	1,279	1,279	*0.00%*	1,279	*0.00%*
SIVILE PRIM.	878	878	*0.00%*	878	*0.00%*
MZAMOMHLE PRIM.	1,039	1,039	*0.00%*	1,039	*0.00%*
NOMSA MAPONGWANA PRIM.	1,586	1,586	*0.00%*	1,586	*0.00%*
QINGQA-MNTWANA PRIM.	1,316	1,316	*0.00%*	1,316	*0.00%*
HOPOLANG PRIM.	619	619	*0.00%*	619	*0.00%*
CHUMA PUBL. PRIM.	1,190	1,190	*0.00%*	1,190	*0.00%*
NKAZIMLO PRIM.	1,129	1,129	*0.00%*	1,129	*0.00%*
SIYAZAKHA PRIM.	1,108	1,108	*0.00%*	1,108	*0.00%*
UMTHAWELANGA PRIM.	1,082	1,082	*0.00%*	1,082	*0.00%*
LULEKA PRIM.	1,180	1,180	*0.00%*	1,180	*0.00%*
SIVUYISENI PUBL. PRIM.	810	810	*0.00%*	810	*0.00%*
INTSHAYELELO PRIM.	1,069	1,069	*0.00%*	1,069	*0.00%*
LWAZI PRIM.	1,067	1,067	*0.00%*	1,067	*0.00%*
NOBANTU PRIM.	406	406	*0.00%*	406	*0.00%*
NOMLINGANISELO PRIM.	775	775	*0.00%*	775	*0.00%*
SIVIWE PRIM.	560	560	*0.00%*	560	*0.00%*
SONWABO PRIM.	978	978	*0.00%*	978	*0.00%*
VUKUKHANYE PRIM.	643	643	*0.00%*	643	*0.00%*
BONGA LOWER PRIM.	404	404	*0.00%*	404	*0.00%*
HLENGISA PRIM.	1,147	1,147	*0.00%*	1,147	*0.00%*
IKETLO PRIM.	38	38	*0.00%*	38	*0.00%*
INTSHINGA PRIM.	329	329	*0.00%*	329	*0.00%*
JOHN PAMA PRIM.	905	905	*0.00%*	905	*0.00%*
LEHLOHONOLO PRIM.	241	241	*0.00%*	241	*0.00%*
LINGE PRIM.	745	745	*0.00%*	745	*0.00%*
MSEKI PRIM.	469	469	*0.00%*	469	*0.00%*
SIYAZINGISA PRIM.	958	958	*0.00%*	958	*0.00%*
SOKHANYO PRIM.	512	512	*0.00%*	512	*0.00%*
WALTER TEKA PUB. PRIM.	535	535	*0.00%*	535	*0.00%*
IMBASA PRIM.	626	626	*0.00%*	626	*0.00%*
ANDILE PRIM.	708	708	*0.00%*	708	*0.00%*
LITHA PRIM.	452	452	*0.00%*	452	*0.00%*
LIWA PRIM.	406	406	*0.00%*	406	*0.00%*
LUZUKO PRIM.	422	422	*0.00%*	422	*0.00%*
SIKELELA IMIZAMO PRIM.	778	778	*0.00%*	778	*0.00%*
MKHANYISELI PRIM.	746	746	*0.00%*	746	*0.00%*
SONGEZE PRIM.	630	630	*0.00%*	630	*0.00%*
VUYANI PRIM.	777	777	*0.00%*	777	*0.00%*
XOLANI PRIM.	513	513	*0.00%*	513	*0.00%*
KHANYA PRIM	1,395	1,395	*0.00%*	1,395	*0.00%*
HEINZ PARK PRIM.	970	970	*0.00%*	970	*0.00%*
SAMORA MACHEL PRIM	910	910	*0.00%*	910	*0.00%*
ISIKHOKELO PRIM.	1,015	1,015	*0.00%*	1,015	*0.00%*
ISIPHIWO PRIM.	1,301	1,301	*0.00%*	1,301	*0.00%*

FACILITY NAME	CAPACITY	ALLOCATED DEMAND 2007		ALLOCATED DEMAND 2016	
		Demand	*Spare capacity*	Demand	*Spare capacity*
ENCOTSHENI PRIM.	914	914	*0.00%*	914	*0.00%*
FAKU PRIM	1,116	1,116	*0.00%*	1,116	*0.00%*
ZANEMFUNDO PRIM.	937	937	*0.00%*	937	*0.00%*
KUYASA PRIM	1,605	1,605	*0.00%*	1,605	*0.00%*
NOLUNGILE PRIM.	903	903	*0.00%*	903	*0.00%*
MZAMOMTSHA PRIM.	272	272	*0.00%*	272	*0.00%*
DIETRICH MOR PRIM.	230	230	*0.00%*	230	*0.00%*
ALOE JUN. HS	918	918	*0.00%*	918	*0.00%*
EASTVILLE PRIM.	1,098	1,098	*0.00%*	1,098	*0.00%*
CASCADE PRIM.	879	879	*0.00%*	879	*0.00%*
CARADALE PRIM.	649	649	*0.00%*	649	*0.00%*
CARAVELLE PRIM.	658	658	*0.00%*	658	*0.00%*
CORNFLOWER PRIM.	1,273	1,273	*0.00%*	1,273	*0.00%*
DUNESIDE PRIM.	380	380	*0.00%*	380	*0.00%*
EISLEBEN ROAD PRIM.	867	867	*0.00%*	867	*0.00%*
HARVESTER PRIM.	752	752	*0.00%*	752	*0.00%*
HAZELDENE PRIM	795	795	*0.00%*	795	*0.00%*
HIGHLANDS PRIM.	614	614	*0.00%*	614	*0.00%*
HILLSIDE PRIM. (M/PLAIN)	560	560	*0.00%*	560	*0.00%*
HUGUENOT PRIM.	1,099	1,099	*0.00%*	1,099	*0.00%*
HYACINTH PRIM.	1,047	1,047	*0.00%*	1,047	*0.00%*
JAMAICAWEG PRIM.	659	659	*0.00%*	659	*0.00%*
LANTANA PRIM.	1,041	1,041	*0.00%*	1,041	*0.00%*
LIESBEECK PRIM.	880	880	*0.00%*	880	*0.00%*
MEADOWRIDGE PRIM.	932	932	*0.00%*	932	*0.00%*
MERRYDALE PRIM.	783	783	*0.00%*	783	*0.00%*
MITCHELL'S PLAIN PRIMARY	1,043	1,043	*0.00%*	1,043	*0.00%*
NORTHWOOD PRIM.	756	756	*0.00%*	756	*0.00%*
TAFELSIG PRIM.	1,129	1,129	*0.00%*	1,129	*0.00%*
PARKHURST PRIM.	1,150	1,150	*0.00%*	1,150	*0.00%*
PORTLAND PRIM.	581	581	*0.00%*	581	*0.00%*
RIDGEVILLE PRIM.	368	368	*0.00%*	368	*0.00%*
ROCKLANDS PRIM	617	617	*0.00%*	617	*0.00%*
YELLOWWOOD PRIM.	776	776	*0.00%*	776	*0.00%*
SPINE VIEW PRIM.	513	513	*0.00%*	513	*0.00%*
SPRINGDALE PRIM.	909	909	*0.00%*	909	*0.00%*
LITTLEWOOD PRIM.	1,306	1,306	*0.00%*	1,306	*0.00%*
STRANDFONTEIN PRIM.	876	876	*0.00%*	876	*0.00%*
WESPOORT PRIM.	961	961	*0.00%*	961	*0.00%*
WAVECREST PRIM.	585	585	*0.00%*	585	*0.00%*
WEST END PRIM.	1,223	1,223	*0.00%*	1,223	*0.00%*
WESTVILLE PRIM.	844	844	*0.00%*	844	*0.00%*
WOODVILLE PRIM.	988	988	*0.00%*	988	*0.00%*
IMPERIAL PRIM.	1,919	1,919	*0.00%*	1,919	*0.00%*
WELTEVREDEN PRIM.	278	278	*0.00%*	278	*0.00%*
BEACON VIEW PRIM.	1,393	1,393	*0.00%*	1,393	*0.00%*
ALPINE PRIM.	1,209	1,209	*0.00%*	1,209	*0.00%*
DENNEGEUR PRIM.	873	873	*0.00%*	873	*0.00%*
A.Z. BERMAN PRIM.	1,401	1,401	*0.00%*	1,401	*0.00%*
SEARIDGE PARK PRIM.	831	831	*0.00%*	831	*0.00%*

FACILITY NAME	CAPACITY	ALLOCATED DEMAND 2007		ALLOCATED DEMAND 2016	
		Demand	*Spare capacity*	Demand	*Spare capacity*
MANDALAY PRIM.	1,103	1,103	*0.00%*	1,103	*0.00%*
ST. MARY'S (RC) PRIM	612	612	*0.00%*	612	*0.00%*
KLIPFONTEIN MET PRIM.	440	440	*0.00%*	440	*0.00%*
SUNRAY PRIM	1,219	1,219	*0.00%*	1,219	*0.00%*
DELFT-SOUTH PRIM	1,032	1,032	*0.00%*	1,032	*0.00%*
WALLACEDENE SEC	607	607	*0.00%*	607	*0.00%*
LEIDEN PRIM.	780	780	*0.00%*	780	*0.00%*
LEIDEN AVENUE PRIM.	1,201	1,201	*0.00%*	1,201	*0.00%*
KALKFONTEIN PRIM	830	830	*0.00%*	830	*0.00%*
ITSITSA PRIM.	791	791	*0.00%*	791	*0.00%*
MFULENI PRIM.	1,097	1,097	*0.00%*	1,097	*0.00%*
BASTION PRIM.	1,407	1,407	*0.00%*	1,407	*0.00%*
BRACKENFELL PRIM.	1,516	1,516	*0.00%*	1,516	*0.00%*
DE KUILEN PRIM.	1,028	1,028	*0.00%*	1,028	*0.00%*
MIKRO LS	987	987	*0.00%*	987	*0.00%*
WEST BANK NO. 1 PRIM.	1,181	1,181	*0.00%*	1,181	*0.00%*
KUILS RIVER PRIM.	1,358	1,358	*0.00%*	1,358	*0.00%*
SAREPTA PRIM.	1,028	1,028	*0.00%*	1,028	*0.00%*
R.R. FRANKS PRIM.	866	866	*0.00%*	866	*0.00%*
SCOTTSVILLE PRIM.	559	559	*0.00%*	559	*0.00%*
MELTON PRIM.	908	908	*0.00%*	908	*0.00%*
PETUNIA PRIM.	663	663	*0.00%*	663	*0.00%*
IRISTA PRIM.	1,105	1,105	*0.00%*	1,105	*0.00%*
BLACKHEATH PRIM.	1,863	1,863	*0.00%*	1,863	*0.00%*
HELDERKRUIN PRIM.	1,465	1,465	*0.00%*	1,465	*0.00%*
NORTHPINE PRIM.	704	704	*0.00%*	704	*0.00%*
FOREST HEIGHTS PRIM.	1,227	1,227	*0.00%*	1,227	*0.00%*
TUSCANY GLEN PRIM.	1,213	1,213	*0.00%*	1,213	*0.00%*
DELFT PRIM.	1,163	1,163	*0.00%*	1,163	*0.00%*
STRATFORD PRIM.	1,496	1,496	*0.00%*	1,496	*0.00%*
DENNEMERE PRIM.	1,107	1,107	*0.00%*	1,107	*0.00%*
BEVERLEY PARK PRIM.	989	989	*0.00%*	989	*0.00%*
VERGENOEGD PRIM.	1,266	1,266	*0.00%*	1,266	*0.00%*
ROSENDAL LAER.	1,275	1,275	*0.00%*	1,275	*0.00%*
SPURWING PRIM.	1,261	1,261	*0.00%*	1,261	*0.00%*
EINDHOVEN PRIM.	1,185	1,185	*0.00%*	1,185	*0.00%*
SILVERSANDS PRIM	1,162	1,162	*0.00%*	1,162	*0.00%*
BROOKLANDS PRIM.	824	824	*0.00%*	824	*0.00%*
THE HAGUE PRIM.	1,172	1,172	*0.00%*	1,172	*0.00%*
ENKULULEKWENI PRIM.	1,614	1,614	*0.00%*	1,614	*0.00%*
PALM PARK PRIM	1,192	1,192	*0.00%*	1,192	*0.00%*
MASONWABE PRIM	1,630	1,630	*0.00%*	1,630	*0.00%*
EKUTHULENI PRIM.	1,094	1,094	*0.00%*	1,094	*0.00%*
IMVUMELWANO PRIM.	1,078	1,078	*0.00%*	1,078	*0.00%*
KAIROS PRIM.	1,411	1,411	*0.00%*	1,411	*0.00%*
NYAMEKO PRIM	1,116	1,116	*0.00%*	1,116	*0.00%*
BLOEKOMBOS PRIM	1,014	1,014	*0.00%*	1,014	*0.00%*
RAINBOW PRIM.	1,113	1,113	*0.00%*	1,113	*0.00%*
HOOFWEG PRIM	1,207	1,207	*0.00%*	1,207	*0.00%*
NAL'IKAMVA PRIM	1,244	1,244	*0.00%*	1,244	*0.00%*

FACILITY NAME	CAPACITY	ALLOCATED DEMAND 2007		ALLOCATED DEMAND 2016	
		Demand	*Spare capacity*	Demand	*Spare capacity*
ACADEMIA PRIM.	633	633	*0.00%*	633	*0.00%*
ST. PAUL'S PRIM.	143	143	*0.00%*	143	*0.00%*
BEAUMONT PRIM.	1,021	1,021	*0.00%*	1,021	*0.00%*
DE HOOP LS.	1,034	1,034	*0.00%*	1,034	*0.00%*
SOMERSET-WES LS.	749	749	*0.00%*	749	*0.00%*
MACASSAR PRIM.	1,095	1,095	*0.00%*	1,095	*0.00%*
OKLAHOMASTRAAT PRIM.	1,016	1,016	*0.00%*	1,016	*0.00%*
MARVIN PARK PRIM.	1,095	1,095	*0.00%*	1,095	*0.00%*
FIRGROVE PRIM.	720	720	*0.00%*	720	*0.00%*
SIR LOWRY'S PASS PRIM.	880	880	*0.00%*	880	*0.00%*
SOMERSET-WES MET PRIM.	755	755	*0.00%*	755	*0.00%*
MASIPHUMELELE PRIM	1,189	1,189	*0.00%*	1,189	*0.00%*
LORETO PRIM.	284	284	*0.00%*	284	*0.00%*
UMNQOPHISO PRIMARY	1,294	1,294	*0.00%*	1,294	*0.00%*
GORDONSBAAI LS.	668	668	*0.00%*	668	*0.00%*
HENDRIK LOUW LS.	842	842	*0.00%*	842	*0.00%*
TEMPERANCE TOWN PRIM.	340	340	*0.00%*	340	*0.00%*
RUSTHOF PRIM.	1,297	1,297	*0.00%*	1,297	*0.00%*
DR. G.J. JOUBERT PRIM.	1,156	1,156	*0.00%*	1,156	*0.00%*
STRAND MOS PRIM.	779	779	*0.00%*	779	*0.00%*
SILUKHANYO PRIM	1,646	1,646	*0.00%*	1,646	*0.00%*
VAN RIEBEECKSTRAND LS.	735	735	*0.00%*	735	*0.00%*
KLIPHEUWEL PRIM.	262	262	*0.00%*	262	*0.00%*
AVONDALE PRIM.	1,077	1,077	*0.00%*	1,077	*0.00%*
BERZELIA PRIM.	402	402	*0.00%*	402	*0.00%*
GROSVENOR PRIM.	826	826	*0.00%*	826	*0.00%*
HERMESLAAN PRIM.	443	443	*0.00%*	443	*0.00%*
KERRIA PRIM.	780	780	*0.00%*	780	*0.00%*
PARKVIEW PRIM.	786	786	*0.00%*	786	*0.00%*
PROTEA PARK PRIM.	850	850	*0.00%*	850	*0.00%*
REYGERSDAL PRIM.	937	937	*0.00%*	937	*0.00%*
SAXONSEA PRIM.	1,417	1,417	*0.00%*	1,417	*0.00%*
WESFLEUR PRIM.	1,341	1,341	*0.00%*	1,341	*0.00%*
MAMRE PRIM.	697	697	*0.00%*	697	*0.00%*
TOTAL	387,813	375,872	*3.08%*	380,119	*1.98%*

APPENDIX 4.2: Capacities and allocated demand for each secondary school

FACILITY NAME	CAPACITY	ALLOCATED DEMAND 2007		ALLOCATED DEMAND 2016	
		Demand	*Spare capacity*	Demand	*Spare capacity*
WALMER SEC.	228	0	*100.00%*	2	*98.91%*
GARDENS COMMERCIAL HS.	545	27	*94.97%*	28	*94.84%*
GROOTE SCHUUR HS.	592	87	*85.27%*	90	*84.81%*
RONDEBOSCH BOYS' HS.	803	156	*80.54%*	163	*79.68%*
WYNBERG GIRLS' HS.	865	181	*79.09%*	187	*78.44%*
RUSTENBURG GIRLS' HS.	774	170	*78.06%*	177	*77.11%*
SIMANYENE SEC.	1,677	403	*75.94%*	1,677	*0.00%*
S.A. COLLEGE HS.	701	187	*73.38%*	204	*70.93%*
HAROLD CRESSY HS.	705	196	*72.23%*	201	*71.49%*
CAPE TOWN HS.	670	219	*67.26%*	252	*62.37%*
SIMON'S TOWN SCHOOL	271	89	*67.24%*	168	*37.84%*
WITTEBOME HS.	924	389	*57.88%*	696	*24.70%*
GORDON SEK.	1,320	562	*57.43%*	1,320	*0.00%*
GOOD HOPE SEMINARY HS.	400	175	*56.29%*	180	*55.02%*
THANDOKHULU SEC	1,088	501	*53.99%*	514	*52.71%*
RHODES HS.	830	423	*49.03%*	440	*46.98%*
TRAFALGAR SEC.	716	388	*45.85%*	405	*43.49%*
WESTERFORD HS.	881	515	*41.59%*	532	*39.63%*
GARLANDALE SEK.	886	531	*40.04%*	586	*33.86%*
LIVINGSTONE HS.	942	567	*39.80%*	587	*37.67%*
PAROW HS.	1,054	648	*38.53%*	669	*36.57%*
JAN VAN RIEBEECK HS.	627	390	*37.83%*	404	*35.53%*
HOTTENTOTS-HOLLAND HS.	965	602	*37.60%*	965	*0.00%*
SALT RIVER SEC	694	434	*37.44%*	451	*34.99%*
THE SETTLERS HS.	1,155	754	*34.72%*	905	*21.66%*
PINELANDS HS.	943	624	*33.88%*	646	*31.52%*
STRAND HS	1,101	733	*33.43%*	1,101	*0.00%*
CAMPS BAY HS.	497	342	*31.13%*	359	*27.78%*
WYNBERG BOYS' HS.	814	564	*30.70%*	587	*27.92%*
SANS SOUCI GIRLS' HS.	402	286	*28.76%*	299	*25.64%*
MAITLAND SEK.	1,037	825	*20.41%*	961	*7.30%*
BUREN HS.	531	424	*20.24%*	468	*11.93%*
MILNERTON HS.	917	814	*11.21%*	917	*0.00%*
FAIRMONT HS.	1,208	1,095	*9.38%*	1,208	*0.00%*
NORMAN HENSHILWOOD HS.	671	619	*7.79%*	652	*2.87%*
QUEEN'S PARK HS.	460	432	*6.12%*	448	*2.68%*
PEAK VIEW SEK.	657	627	*4.61%*	657	*0.00%*
BELLVILLE HTS.	1,048	1,048	*0.00%*	1,048	*0.00%*
BELLVILLE HS.	1,276	1,276	*0.00%*	1,276	*0.00%*
D.F. MALAN HS.	1,037	1,037	*0.00%*	1,037	*0.00%*
DURBANVILLE HS.	852	852	*0.00%*	852	*0.00%*
EBEN DONGES HS.	803	803	*0.00%*	803	*0.00%*
MONUMENT PARK HS.	1,039	1,039	*0.00%*	1,039	*0.00%*
TYGERBERG HS.	1,128	1,128	*0.00%*	1,128	*0.00%*
STELLENBERG HS.	1,377	1,377	*0.00%*	1,377	*0.00%*
SCOTTSDENE SEK.	1,149	1,149	*0.00%*	1,149	*0.00%*
BELLVILLE-SUID SEK.	1,038	1,038	*0.00%*	1,038	*0.00%*

FACILITY NAME	CAPACITY	ALLOCATED DEMAND 2007		ALLOCATED DEMAND 2016	
		Demand	*Spare capacity*	Demand	*Spare capacity*
FLORIDA SEK.	985	985	*0.00%*	985	*0.00%*
BELHAR SEK.	1,200	1,200	*0.00%*	1,200	*0.00%*
KASSELSVLEI KOMPREHENSIEWE HS	1,125	1,125	*0.00%*	1,125	*0.00%*
EXCELSIOR SEK.	1,226	1,226	*0.00%*	1,226	*0.00%*
RAVENSMEAD SEK.	1,298	1,298	*0.00%*	1,298	*0.00%*
SCOTTSVILLE SEK.	977	977	*0.00%*	977	*0.00%*
SYMPHONY SEK.	753	753	*0.00%*	753	*0.00%*
BERNADINO HEIGHTS SEK.	1,392	1,392	*0.00%*	1,392	*0.00%*
PERSEVERANCE SEK	769	769	*0.00%*	769	*0.00%*
IKAMVALETHU FINISHING SCHOOL	666	666	*0.00%*	666	*0.00%*
LANGA SEC.	997	997	*0.00%*	997	*0.00%*
ISILIMELA SEC	1,252	1,252	*0.00%*	1,252	*0.00%*
KULANI SEC	1,214	1,214	*0.00%*	1,214	*0.00%*
CRAVENBY SEC	580	580	*0.00%*	580	*0.00%*
BOSMANSDAM HS.	747	747	*0.00%*	747	*0.00%*
GOODWOOD KOLLEGE	527	527	*0.00%*	527	*0.00%*
EDGEMEAD HS.	1,169	1,169	*0.00%*	1,169	*0.00%*
FAIRBAIRN COLLEGE	974	974	*0.00%*	974	*0.00%*
J.G. MEIRING HS.	971	971	*0.00%*	971	*0.00%*
PRESIDENT HS.	830	830	*0.00%*	830	*0.00%*
ESANGWENI SEC.	1,011	1,011	*0.00%*	1,011	*0.00%*
ARCADIA SEN. SEK.	693	693	*0.00%*	693	*0.00%*
BEAUVALLON SEK.	505	505	*0.00%*	505	*0.00%*
BISHOP LAVIS SEK.	1,321	1,321	*0.00%*	1,321	*0.00%*
BONTEHEUWEL SEK.	716	716	*0.00%*	716	*0.00%*
ELSIESRIVIER SEK.	1,661	1,661	*0.00%*	1,661	*0.00%*
ELSWOOD SEK.	648	648	*0.00%*	648	*0.00%*
JOHN RAMSAY SEK.	679	679	*0.00%*	679	*0.00%*
MODDERDAM SEK.	1,276	1,276	*0.00%*	1,276	*0.00%*
RANGE SEK.	425	425	*0.00%*	425	*0.00%*
UITZIG SEK.	435	435	*0.00%*	435	*0.00%*
VALHALLA SEK	410	410	*0.00%*	410	*0.00%*
ST. ANDREW'S SEK.	1,638	1,638	*0.00%*	1,638	*0.00%*
ZOLA SENIOR SEC	779	779	*0.00%*	779	*0.00%*
MARIAN RC SEC.	490	490	*0.00%*	490	*0.00%*
BLOUBERGRANT SEC	303	303	*0.00%*	303	*0.00%*
OUDE MOLEN HTS.	761	761	*0.00%*	761	*0.00%*
SEA POINT HS.	373	373	*0.00%*	373	*0.00%*
TABLE VIEW HS.	943	943	*0.00%*	943	*0.00%*
ZONNEBLOEM NEST SENIOR SCHOOL	302	302	*0.00%*	302	*0.00%*
VISTA HS.	500	500	*0.00%*	500	*0.00%*
MASIBAMBISANE SEC.	1,140	1,140	*0.00%*	1,140	*0.00%*
THEMBELIHLE HS.	860	860	*0.00%*	860	*0.00%*
KENSINGTON SEC.	1,187	1,187	*0.00%*	1,187	*0.00%*
WINDERMERE SEK.	652	652	*0.00%*	652	*0.00%*
HARRY GWALA SEC.	1,211	1,211	*0.00%*	1,211	*0.00%*
USASAZO SEC.	1,185	1,185	*0.00%*	1,185	*0.00%*
SINENJONGO HS	649	649	*0.00%*	649	*0.00%*

FACILITY NAME	CAPACITY	ALLOCATED DEMAND 2007		ALLOCATED DEMAND 2016	
		Demand	*Spare capacity*	Demand	*Spare capacity*
INKWENKWEZI SEC	1,069	1,069	*0.00%*	1,069	*0.00%*
MUIZENBERG HS.	641	641	*0.00%*	641	*0.00%*
OCEAN VIEW SEC.	1,075	1,075	*0.00%*	1,075	*0.00%*
FISH HOEK SENIOR HS.	648	648	*0.00%*	648	*0.00%*
MASIPHUMELELE HS	1,014	1,014	*0.00%*	1,014	*0.00%*
PELICAN PARK HIGH SCHOOL	417	417	*0.00%*	417	*0.00%*
RYLANDS HS.	1,036	1,036	*0.00%*	1,036	*0.00%*
BERGVLIET HS.	1,122	1,122	*0.00%*	1,122	*0.00%*
PLUMSTEAD HS.	962	962	*0.00%*	962	*0.00%*
VOORTREKKER HS.	352	352	*0.00%*	352	*0.00%*
WINDSOR HS.	786	786	*0.00%*	786	*0.00%*
ZWAANSWYK HS.	434	434	*0.00%*	434	*0.00%*
SIBELIUS HS.	695	695	*0.00%*	695	*0.00%*
SOUTH PENINSULA HS.	1,022	1,022	*0.00%*	1,022	*0.00%*
GRASSY PARK SEC.	1,101	1,101	*0.00%*	1,101	*0.00%*
OAKLANDS SEK.	981	981	*0.00%*	981	*0.00%*
HEATHFIELD HS	795	795	*0.00%*	795	*0.00%*
STEENBERG SEC.	1,035	1,035	*0.00%*	1,035	*0.00%*
CRESTWAY SEC.	1,049	1,049	*0.00%*	1,049	*0.00%*
CRYSTAL SEK.	1,032	1,032	*0.00%*	1,032	*0.00%*
MOUNT VIEW SEC.	748	748	*0.00%*	748	*0.00%*
LAVENDER HILL SEC.	1,068	1,068	*0.00%*	1,068	*0.00%*
WYNBERG SEK.	775	775	*0.00%*	775	*0.00%*
FAIRMOUNT SEC.	956	956	*0.00%*	956	*0.00%*
GRASSDALE HOeR	757	757	*0.00%*	757	*0.00%*
ZEEKOEVLEI SEC.	568	568	*0.00%*	568	*0.00%*
HOUTBAAI SEK.	568	568	*0.00%*	568	*0.00%*
IMMACULATA RK SEC.	557	557	*0.00%*	557	*0.00%*
ALEXANDER SINTON SEC.	974	974	*0.00%*	974	*0.00%*
ATHLONE SEC.	846	846	*0.00%*	846	*0.00%*
BELGRAVIA SEC.	965	965	*0.00%*	965	*0.00%*
BRIDGETOWN SEC.	709	709	*0.00%*	709	*0.00%*
CATHKIN SEC.	561	561	*0.00%*	561	*0.00%*
GROENVLEI SEC.	953	953	*0.00%*	953	*0.00%*
HEIDEVELD SEK.	1,357	1,357	*0.00%*	1,357	*0.00%*
MANENBERG SEK.	885	885	*0.00%*	885	*0.00%*
PHOENIX SEK.	760	760	*0.00%*	760	*0.00%*
NED DOMAN HS.	550	550	*0.00%*	550	*0.00%*
SPES BONA HS.	853	853	*0.00%*	853	*0.00%*
SILVERSTREAM SEK.	843	843	*0.00%*	843	*0.00%*
LOTUS SEK.	516	516	*0.00%*	516	*0.00%*
SOPHUMELELA SEC	1,021	1,021	*0.00%*	1,021	*0.00%*
ZISUKHANYO SEC.	1,191	1,191	*0.00%*	1,191	*0.00%*
PHANDULWAZI HS.	1,094	1,094	*0.00%*	1,094	*0.00%*
PHILLIPI SEC	408	408	*0.00%*	408	*0.00%*
LUHLAZA SEC	1,434	1,434	*0.00%*	1,434	*0.00%*
MATTHEW GONIWE MEMORIAL HS.	1,455	1,455	*0.00%*	1,455	*0.00%*
MASIYILE SENIOR SEC	1,240	1,240	*0.00%*	1,240	*0.00%*
BULUMKO SEC	1,564	1,564	*0.00%*	1,564	*0.00%*
JOE SLOVO SEC.	1,167	1,167	*0.00%*	1,167	*0.00%*

FACILITY NAME	CAPACITY	ALLOCATED DEMAND 2007		ALLOCATED DEMAND 2016	
		Demand	*Spare capacity*	Demand	*Spare capacity*
SINETHEMBA SEC.	1,256	1,256	*0.00%*	1,256	*0.00%*
INTLANGANISO SEC	1,243	1,243	*0.00%*	1,243	*0.00%*
CHRIS HANI SEC	1,373	1,373	*0.00%*	1,373	*0.00%*
UXOLO HS.	1,331	1,331	*0.00%*	1,331	*0.00%*
VUYISEKA SEC.	851	851	*0.00%*	851	*0.00%*
SITHEMBELE MATISO SEC	1,221	1,221	*0.00%*	1,221	*0.00%*
INTSHUKUMO SEC.	1,281	1,281	*0.00%*	1,281	*0.00%*
FEZEKA SEC	1,670	1,670	*0.00%*	1,670	*0.00%*
OSCAR MPETHA HS	1,147	1,147	*0.00%*	1,147	*0.00%*
I. D. MKIZE SEN SEC	1,041	1,041	*0.00%*	1,041	*0.00%*
DR. NELSON R. MANDELA HS.	1,424	1,424	*0.00%*	1,424	*0.00%*
PHAKAMA SEC.	1,087	1,087	*0.00%*	1,087	*0.00%*
KWAMFUNDO SEC.	1,445	1,445	*0.00%*	1,445	*0.00%*
SIZIMISELE SEC.	1,301	1,301	*0.00%*	1,301	*0.00%*
INTSEBENZISWANO SEC	1,207	1,207	*0.00%*	1,207	*0.00%*
SIPHAMANDLA SEC.	1,173	1,173	*0.00%*	1,173	*0.00%*
IQHAYIYA SEC	1,017	1,017	*0.00%*	1,017	*0.00%*
MANYANO HS	1,448	1,448	*0.00%*	1,448	*0.00%*
ALOE SEC.	849	849	*0.00%*	849	*0.00%*
BEACON HILL SEK.	1,257	1,257	*0.00%*	1,257	*0.00%*
CEDAR SEC.	1,215	1,215	*0.00%*	1,215	*0.00%*
MONDALE HS.	1,319	1,319	*0.00%*	1,319	*0.00%*
PORTLAND SEC.	1,266	1,266	*0.00%*	1,266	*0.00%*
ROCKLANDS SEC.	1,333	1,333	*0.00%*	1,333	*0.00%*
LENTEGEUR SEC.	1,555	1,555	*0.00%*	1,555	*0.00%*
STRANDFONTEIN SEK.	741	741	*0.00%*	741	*0.00%*
TAFELSIG SEK.	1,309	1,309	*0.00%*	1,309	*0.00%*
SPINE ROAD SEC.	1,225	1,225	*0.00%*	1,225	*0.00%*
GLENDALE SEC.	1,110	1,110	*0.00%*	1,110	*0.00%*
WESTRIDGE SEC.	919	919	*0.00%*	919	*0.00%*
WOODLANDS SEC.	1,024	1,024	*0.00%*	1,024	*0.00%*
PRINCETON SEC.	1,182	1,182	*0.00%*	1,182	*0.00%*
OVAL NORTH SEC.	1,261	1,261	*0.00%*	1,261	*0.00%*
NEW EISLEBEN SEC	1,031	1,031	*0.00%*	1,031	*0.00%*
SIMUNYE SEK.	1,354	1,354	*0.00%*	1,354	*0.00%*
LEIDEN SEC.	951	951	*0.00%*	951	*0.00%*
MFULENI SEC	1,342	1,342	*0.00%*	1,342	*0.00%*
BRACKENFELL HS.	1,659	1,659	*0.00%*	1,659	*0.00%*
DE KUILEN HS.	1,178	1,178	*0.00%*	1,178	*0.00%*
ROSENDAAL SEK.	1,231	1,231	*0.00%*	1,231	*0.00%*
HECTOR PETERSON SEC.	1,443	1,443	*0.00%*	1,443	*0.00%*
TUSCANY GLEN SEC.	1,021	1,021	*0.00%*	1,021	*0.00%*
KLEINVLEI SEK.	1,140	1,140	*0.00%*	1,140	*0.00%*
SAREPTA SEK.	1,227	1,227	*0.00%*	1,227	*0.00%*
MALIBU SEK.	1,442	1,442	*0.00%*	1,442	*0.00%*
VOORBRUG SEK.	1,325	1,325	*0.00%*	1,325	*0.00%*
FOREST HEIGHTS HS.	1,305	1,305	*0.00%*	1,305	*0.00%*
EERSTERIVIER SEK.	1,442	1,442	*0.00%*	1,442	*0.00%*
BLACKHEATH SEK.	1,076	1,076	*0.00%*	1,076	*0.00%*
KUILS RIVER TECHNICAL SEC	765	765	*0.00%*	765	*0.00%*

FACILITY NAME	CAPACITY	ALLOCATED DEMAND 2007		ALLOCATED DEMAND 2016	
		Demand	*Spare capacity*	Demand	*Spare capacity*
WESBANK SEK.	1,180	1,180	*0.00%*	1,180	*0.00%*
MASIBAMBANE SEC	1,232	1,232	*0.00%*	1,232	*0.00%*
KHAYELITSHA NO 1 SENIOR SEC	1,212	1,212	*0.00%*	1,212	*0.00%*
PAREL VALLEI HS.	1,142	1,142	*0.00%*	1,142	*0.00%*
MACASSAR SEK	770	770	*0.00%*	770	*0.00%*
ZANDVLIET HS.	1,212	1,212	*0.00%*	1,212	*0.00%*
STRAND SEK.	892	892	*0.00%*	892	*0.00%*
RUSTHOF SEK.	1,120	1,120	*0.00%*	1,120	*0.00%*
KHANYOLWETHU SEC	973	973	*0.00%*	973	*0.00%*
ATLANTIS SEK.	1,521	1,521	*0.00%*	1,521	*0.00%*
SAXONSEA SEK.	1,043	1,043	*0.00%*	1,043	*0.00%*
PROTEUS SEK.	1,192	1,192	*0.00%*	1,192	*0.00%*
ROBINVALE HS	1,063	1,063	*0.00%*	1,063	*0.00%*
MANZOMTHOMBO SEC.	1,428	1,428	*0.00%*	1,428	*0.00%*
TOTAL	204,305	190,732	*6.64%*	194,859	*4.62%*

Evaluation of community social facilities and recreational space in City of Cape Town: current and future provision for 2016 and optimal location of new facilities

Section 5:

District and Community Parks

May 2010

5. District and Community Parks

5.1 Introduction

The accessibility mapping of public community and district parks in Cape Town is part of a larger accessibility audit and facility planning exercise of a range of community social services undertaken by CSIR for the City of Cape Town in 2009/10.

> ***Definition of a district park:*** Landscaped open space with recreational facilities which serves the needs of several surrounding local communities or suburbs. Generally multifunctional, can include formal & informal recreational facilities, sports facilities including kick-about areas, playing fields & playgrounds (perhaps with play equipment). The diversity of activities caters for different age groups & may include a special interest component and/or a natural feature (e.g. river, water body or nature conservation area.
>
> ***Definition of a community park:*** Landscaped open space with recreational facilities which serves the needs of the immediate local community or neighbourhood. Can include passive & active recreation areas, small-scale informal sports facilities, kick-about areas, multi-purpose hard courts & playgrounds (perhaps with play equipment). Variety of uses depends on size of park but usually caters for two or more age groups.

The project as a whole seeks to identify those areas where the supply and demand for facilities are not balanced based on acceptable service provision standards, both for the current population distribution, as well as in terms of a future scenario for the City of Cape Town's predicted population growth and distribution in 2016. Flowing from this, recommendations of where intervention in respect to facility provision is required can be made. The aim is thus to audit whether residents currently have access to facilities within reasonable reach and with capacity, and if these facilities will be able to accommodate future growth of the City's population.

The analysis is essentially based on a schedule of standards for the provision and clustering of social facilities, public institutions and public recreational spaces which the CSIR compiled for the City of Cape Town in 2007; as well as datasets consisting of population, road network, and facility data. The relevant line department has adjusted the standards used with respect to capacity and travel time accessibility throughout the project and the standards document for the City will be updated based on the combined outcome of results.

To ensure fine grained resolution of the modelling results the City of Cape Town area was sub-divided into a detailed grid delineating hexagonal land pieces of 40ha each. The population data was proportionally assigned to this hexagonal grid based on the underlying GIS land use layer. The population data variable included the total population as well as other socio-economic variables which are fundamental to establishing people's access to transport. More detail on this process is provided in Section 1 (Introduction & Methodology). All data is then related to this grid.

A step-wise process was followed for most of the facility types analysed, although some facilities require a more tailored approach. The basic process in most cases comprised the following steps:

Step 1: Audit of current service coverage – Using the agreed standards a catchment area analysis is undertaken with respect to the current facility locations and capacities to determine which areas are well served, poorly served or over-provided for, i.e. determining the status quo.

Step 2: Planning for new facilities – The identification of new or expanded facility locations is undertaken using proximity counting and/or optimisation analysis – The software identifies the currently unserved population and taking this into consideration then determines the highest concentrations of unserved demand. Depending on the typical facility size, areas of intervention can be identified. Optimal sites for a set number of new facilities can be identified to prioritise the intervention areas/ location sites for new facilities, if any are required. Closure, expansion or upgrading of existing facilities can also be tested.

More detail on the methodology followed, the analyses procedures and interpreting the outputs (such as the maps) can be found in Section 1 (Introduction & Methodology).

5.2 District Parks

5.2.1 Analyses criteria and processes undertaken

The criteria used for the analyses of district parks and the processes undertaken are summarised in Table 5.1.

Table 5.1: Criteria and processes for district parks analyses

Facilities analysed	11 District parks (totalling 243ha)
Demand	• **Demand A:** Entire city with 2007 population figures. • **Demand B:** Entire city with 2016 projected population figures. *
Supply	Capacity of parks is based on the size (in ha) of each park: • For every 0.2ha of a district park, 1 000 people are served.
Travel mode and access time	Transport via existing road network, and conventional road vehicle transport: • District parks must be accessed within 20min travel time by a vehicle in off peak conditions
Analyses undertaken	• Catchment area analysis, based on capacity and maximum travel time for existing district parks • Optimisation analysis in Flowmap to establish the best locations for possible new parks

5.2.2 Discussion of results: District Parks

The analysis results are contained in Tables 5.2a and 5.2b show the population numbers served or not served by existing district parks based on these parks' capacities as defined in Table 5.1. For reporting purposes results have been divided into areas inside and outside the Cape Town urban edge (that is urban and non-urban areas). See Figure 5.1 for a map of the urban edge as specified by the City of Cape Town.

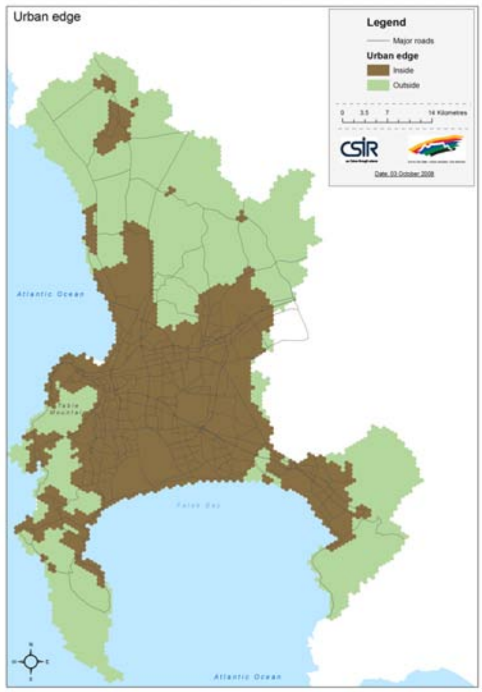


Figure 5.1: City of Cape Town urban edge

Table 5.2a shows the results for the current scenario (2007 population figures), while Table 5.2b has results based on potential city growth to the year 2016. Figures 5.2a and 5.2b provide a visual and spatial representation of served areas as well as showing the numbers of unserved people with respect to the standards. The area shaded the darkest (red in colour) are those areas with the greatest number of unserved people with respect to access to a district park as defined by the standards.

Table 5.2a: Current scenario – unserved population by current district parks			
Urban edge	**Population 2007**	**Unserved**	**% Unserved**
Urban	3314706	2235043	67.43%
Non-urban	14062	12658	90.02%
Total	3,316,713	2,235,043	67.39%

Table 5.2b: Projected 2016 scenario – unserved population by current district parks			
Urban edge	**Population 2016**	**Unserved**	**% Unserved**
Urban	3823574	2679594	70.08%
Non-urban	16535	15098	91.31%
Total	3,825,590	2,679,594	70.04%

Results show that based on the current scenario, 67% of the City's population are unable to reach a district park within the given standard of a maximum travel time of 20 minutes when the capacities of the district parks are taken into consideration. The percentage of the unserved population is likely to increase to 70% when the potential population growth to 2016 is considered and should no new district parks be established and if other facilities like nature reserves, commercial facilities like wine farms, and other similar outdoor entities are excluded. As can be expected the population outside the urban edge is less provided for, but the people in these areas as a proportion of the total population of the City is very small at less than half a percent.

Figure 5.2a indicates that the City is basically divided into two sections; those people that have access to district parks residing in the area stretching from Cape Town central all the way down to Fish Hoek and including Mitchell's Plain in the south, and then the rest of the City which does not have access to district parks. There is one isolated pocket to the north of Durbanville where people have access to a district park within the given standards.

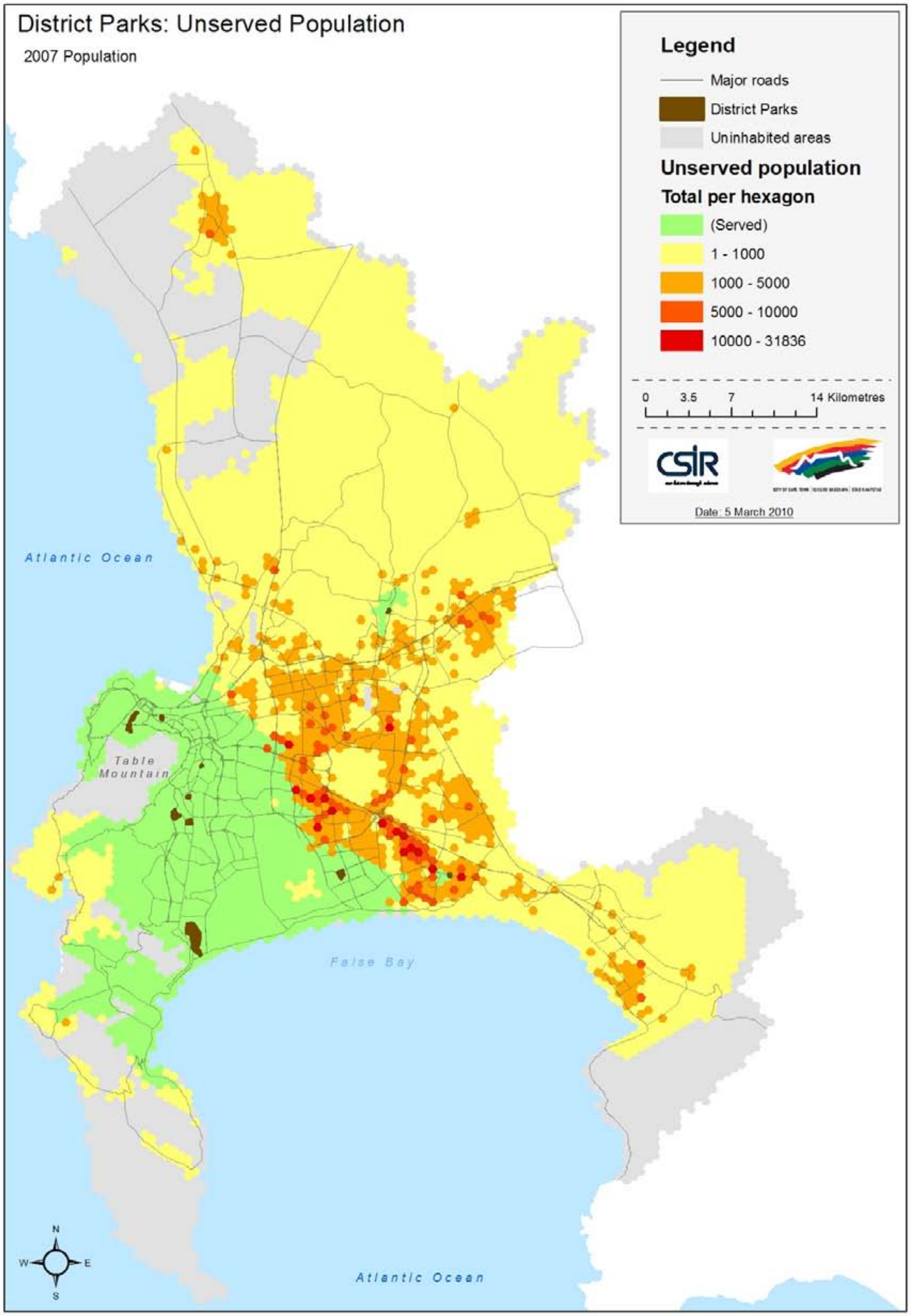


Figure 5.2a: Current served and concentration of the unserved population with regard to existing district parks

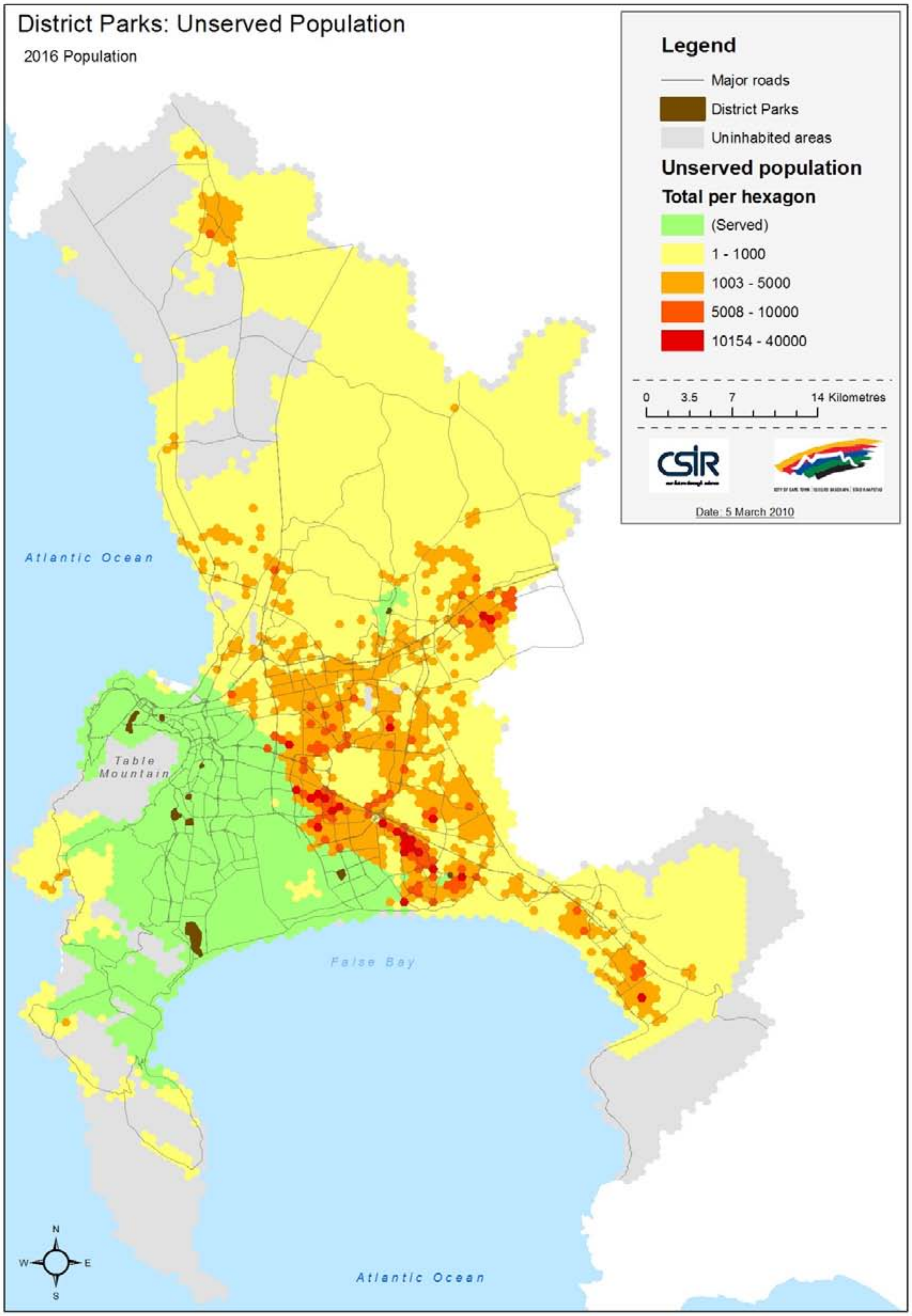


Figure 5.2b: Served and concentration of the unserved population projection to 2016 with regard to existing district parks

In the projected scenario for 2016 (Figure 5.2b), the location of the served and unserved population does not change in relation to the 2007 analysis. However, the total amount of unserved population increases due to population growth in the nine years from 2007 to 2016.

For reporting purposes tables of served people by district were generated, however, the relevance and importance of the planning district tables (Tables 5.2c & 5.2d) – that follow – showing the unserved population per planning district – should not be over emphasised and are presented for reporting purposes rather than to inform planning processes. Residents generally ignore or are oblivious to the boundaries of these regions and will use facilities closest to their homes irrespective of the district in which facilities are sited. In addition, the concentration of population is far higher in certain areas of the districts and thus these areas as seen on the maps are in far greater need than less populous areas. With respect to planning for future facility provision the spatial outputs (namely the maps) are critical when identifying areas requiring more facilities or increased service provision by existing facilities.

Looking at the unserved demand on a planning district basis, the largest percentages of unserved population are found in the Blaauwberg (95%), Northern (97%), Tygerberg (99%), and Helderberg (100%) districts for both the current scenario and the 2016 scenario (Tables 5.2c & 5.2d).

The older well-established Southern suburbs together with the Table Bay area are the areas best provided for.

These tables and maps are the result of the analysis which considers both the size of the park and the access distance to it. As a further step in the process an analysis was generated that looked only at the nearness of a park without considering its size.

Table 5.2c: Current scenario – unserved population by current district parks per planning district					
District	**Name**	**Total Population 2007**	**Unserved in district**	**% Unserved in district**	**% Unserved for City of Cape Town**
A	Table Bay	183,586	49,382	26.90%	1.48%
B	*Blaauwberg*	*174,130*	*165,974*	*95.32%*	4.99%
C	*Northern*	*282,832*	*275,010*	*97.23%*	8.26%
D	*Tygerberg*	*637,983*	*632,572*	*99.15%*	19.00%
E	*Helderberg*	*181,957*	*181,957*	*100.00%*	5.47%
F	Mitchells Plain/Khayelitsha	1,014,253	778,184	76.72%	23.38%
G	Cape Flats	538,530	142,097	26.39%	4.27%
H	South Peninsula	315,496	22,528	7.14%	0.68%
	City of Cape Town	**3,328,768**	**2,247,703**	**67.52%**	**67.52%**

Table 5.2d: Projected 2016 scenario – unserved population by current district parks per planning district					
District	**Name**	**Total Population 2016**	**Unserved**	**% Unserved**	**% Unserved for City of Cape Town**
A	Table Bay	189,642	51,385	27.10%	1.34%
B	*Blaauwberg*	*231,868*	*224,243*	*96.71%*	*5.84%*
C	*Northern*	*402,106*	*394,289*	*98.06%*	*10.27%*
D	*Tygerberg*	*706,376*	*700,626*	*99.19%*	*18.24%*
E	*Helderberg*	*276,308*	*276,308*	*100.00%*	*7.20%*
F	Mitchells Plain/Khayelitsha	1,114,354	867,771	77.87%	22.60%
G	Cape Flats	573,056	151,481	26.43%	3.94%
H	South Peninsula	346,399	28,589	8.25%	0.74%
	City of Cape Town	**3,840,109**	**2,694,692**	**70.17%**	**70.17%**

Figure 5.3 thus represents a general travel time map for all City of Cape Town residents to the nearest district park, i.e. how far these people must travel to reach their closest district park (with the capacity of the parks being unlimited in this case). The dark, middle- and light green areas on Figure 5.3 show that the vast majority of the City's population can reach a district park within 20 minutes. Thus, the district parks in the City are spatially located to allow good access. However, when the capacities of these parks are taken into consideration there are areas of unserved population as discussed previously.

Table 5.3 summarises the findings displayed by Figure 5.3, in that 90% of the City's population are currently within 15 minutes of a district park and 98% within 30 minutes. In 2016, there would be only a slight reduction in this accessibility. As indicated earlier, the capacities of the parks were not taken into account in this analysis, i.e. all people were assigned to their nearest district park. The table thus gives a global overview of the accessibility of district parks. It was concluded that parks are well located, however bringing the 0,2ha per thousand population into the equation means that people theoretically do not have sufficient park space based on the standard. In the CSIR Parks survey of 2009, Cape Town residents had not particularly expressed the need for more park space which may indicate that the current standard for district park provision could be lowered.

Table 5.3: People's access to district parks within defined travel time bands and with no park capacity constraints

DISTANCE CATEGORY	POPULATION SERVED			
	2007		2016	
0 - 10min	2,295,508	*68.96%*	2,469,604	*64.31%*
11 - 15min	737,501	*22.16%*	943,589	*24.57%*
16 - 30 min	224,588	*6.75%*	341,305	*8.89%*
More than 30min	70,921	*2.13%*	85,611	*2.23%*

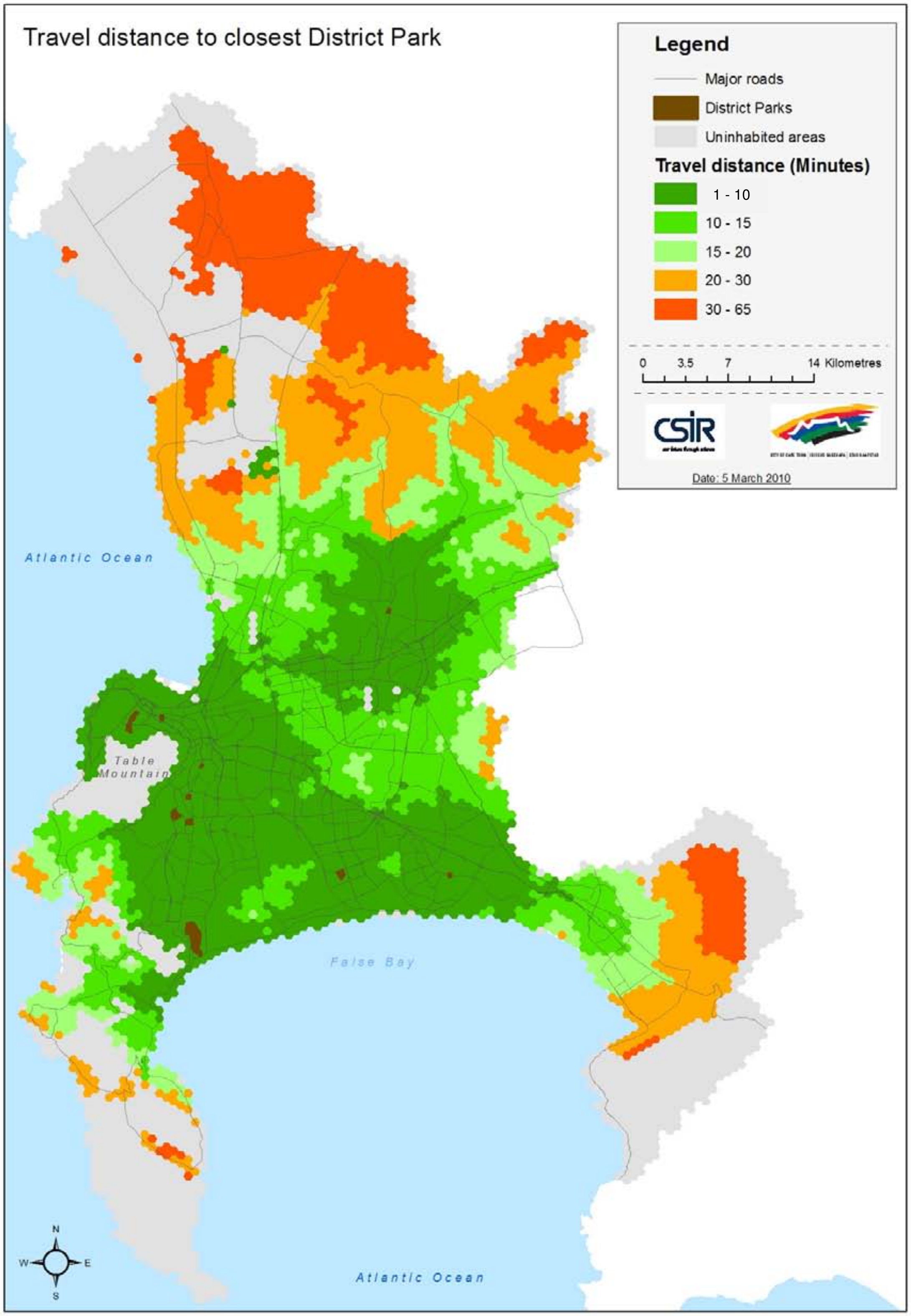


Figure 5.3: Travel time to closest district park

5.3 Recommendations/ Optimisation for District Parks

If one takes the average size of a district park to be in the region of 10 hectares (sizes of the current district parks in the City varies dramatically, from 1ha to 4, 10 and up to 160ha) this translates into providing a service for 50 000 people. Based on this assumption the current backlog in district park provision equates to 44 district parks of 10ha each to provide all people with access to a district park based on the standard. In 2016 it is projected that there would be a total unserved population of 2.6 million (based on the provision of current district parks) and this would then equate to a backlog of about 52 district parks (at an average size of 10ha per district park, i.e. a capacity of 50 000 people).

As previously discussed, this unserved demand is concentrated to the east of the City and the 10 best locations for developing new parks to serve this demand optimally in 2016 was identified. This is shown in Figure 5.4 by the numbered circles which also indicates ranking, no. 1 being the area of highest need. The recommended locations should be seen as being indicative of the 10 sites most accessible to the highest concentrations of unserved people (2016) and where the provision of district parks will have the greatest relative impact on backlog eradication. Planning decisions on the exact locations of district parks that must take into consideration land use, ownership, land availability, road networks and other factors is still required to be undertaken by the City of Cape Town. Other factors possibly influencing the placement of and total demand for district parks, are proximity to other recreational facilities which provide a similar type of activity space such as nature reserves and privately owned recreational areas (e.g. wine farms with picnic areas).

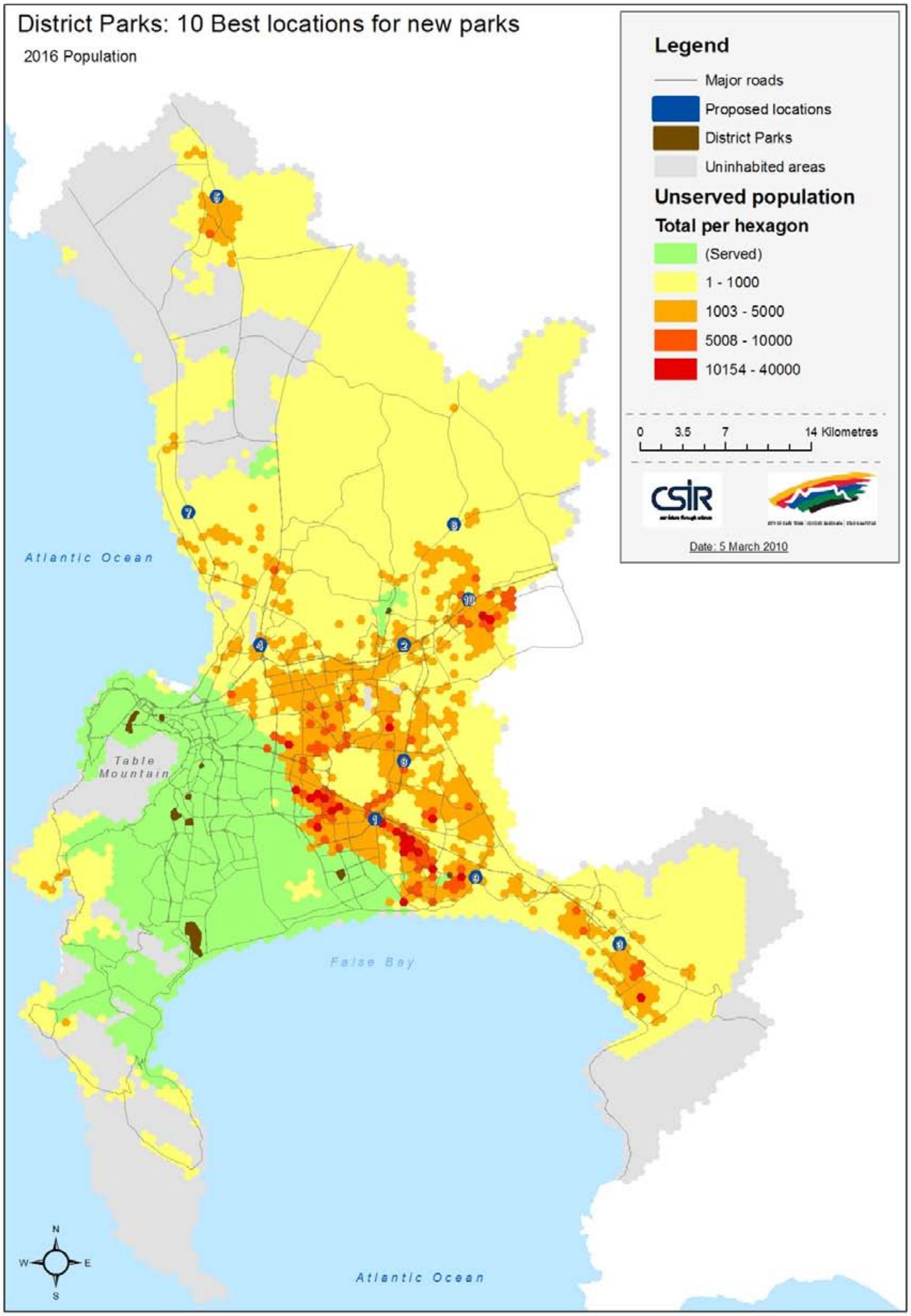


Figure 5.4: Optimised locations for district parks in 2016

5.4 Community Parks

5.4.1 Analyses criteria and processes undertaken

The criteria used for the analyses of community parks and the processes undertaken are summarised in Table 5.4.

Table 5.4: Criteria and processes for community parks analyses	
Facilities analysed	All community parks (3 017 parks totalling 1 381.18ha)
Demand	A. Entire city with 2007 current population figures. B. Entire city with 2016 projected population figures.
Supply	Capacity of parks is based on the size (in ha) of each park: • For every 0.4ha of a community park, 1 000 people are served.
Travel mode and access time	Transport via existing road network, with different standards for the two types of parks: • Community parks must be accessed within 1 000m (approx 20min walking)
Analyses undertaken	• Catchment area analysis, based on capacity and maximum travel time / distance for different capacity and travel distances. • Optimisation analysis in FlowMap to establish the best locations for possible new parks

In addition, preliminary testing was undertaken using other criteria of supply and access time but was not fully analysed and hence is not discussed here. The other testing included:

- 0.5ha provision at distances of 750m and 1 000m, which resulted in 100 000 less people being served.
- 0.4ha provision at distances of 750m, which resulted in 200 000 less people being served.

5.4.2 Discussion of results: Community Parks

After testing a range of standards it was agreed that the most suitable standard was to use a 0.4ha/ 1 000 capacity and access time of 1 000 metres (20 minutes walking). The tables that follow are based on this standard. Tables 5.5a and 5.5b show the population numbers not served by existing community parks based on the parks' capacities. For reporting purposes, the City has been divided into areas inside and outside the Cape Town urban edge (that is urban and non-urban areas). See Figure 5.1 (at the start of this section) for a map of the urban edge as specified by the City of Cape Town.

Table 5.5a shows the results for the current scenario (2007 population figures), while Table 5.5b has results based on potential city growth to the year 2016.

Table 5.5a: Current scenario – unserved population by current community parks			
Urban edge	**Population 2007**	**Unserved**	**% Unserved**
Urban	3314706	1799595	54.29%
Non-urban	14062	13815	98.24%
Total	3,316,713	1,799,595	54.26%

Table 5.5b: Projected 2016 scenario – unserved population by current community parks			
Urban edge	**Population 2016**	**Unserved**	**% Unserved**
Urban	3823574	2230771	58.34%
Non-urban	16535	16289	98.51%
Total	3,825,590	2,230,771	58.31%

Results show that based on the current scenario (Table 5.5a), as many as 54% of the City's population are unable to reach a community park within the given standard of a travel distance of 1km when the capacities of the community parks are taken into consideration. This percentage of unserved demand is projected to increase to 58% if the potential population growth to 2016 is considered and should no new parks be established. As can be expected the population outside the urban edge is much less provided for, but the people in these areas make up less than half a percent of the City's population.

It must be kept in mind that the above statistics do not imply that almost 54% of the City's population do not have access to a community park, but imply that a large proportion of the City's population must travel further than 1km to reach a community park or use 'over crowded' facilities.

Figures 5.5a and 5.5b map the served and unserved populations for the current and 2016 scenarios respectively.

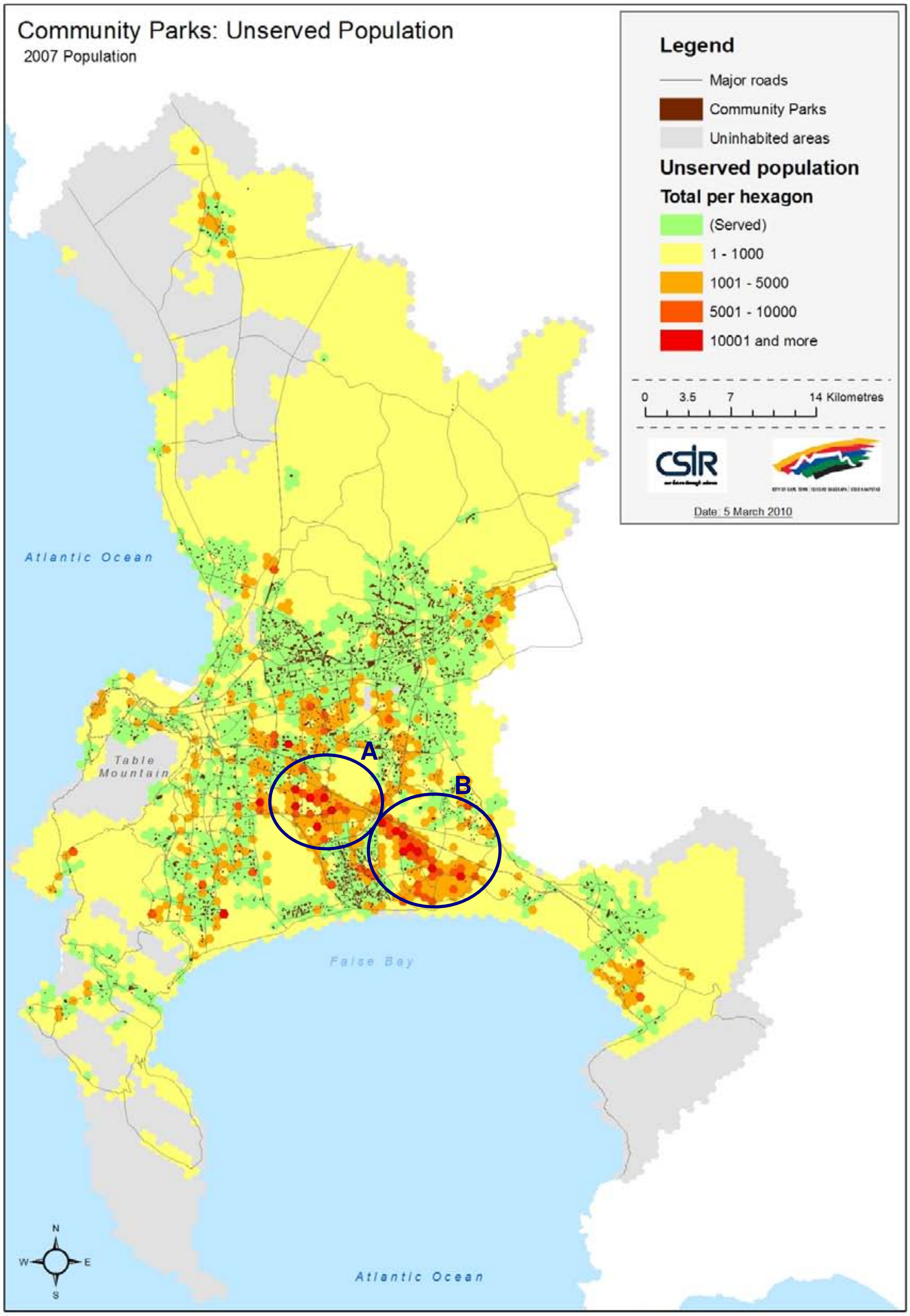


Figure 5.5a: Current served and concentration of the unserved population with regard to existing community parks.

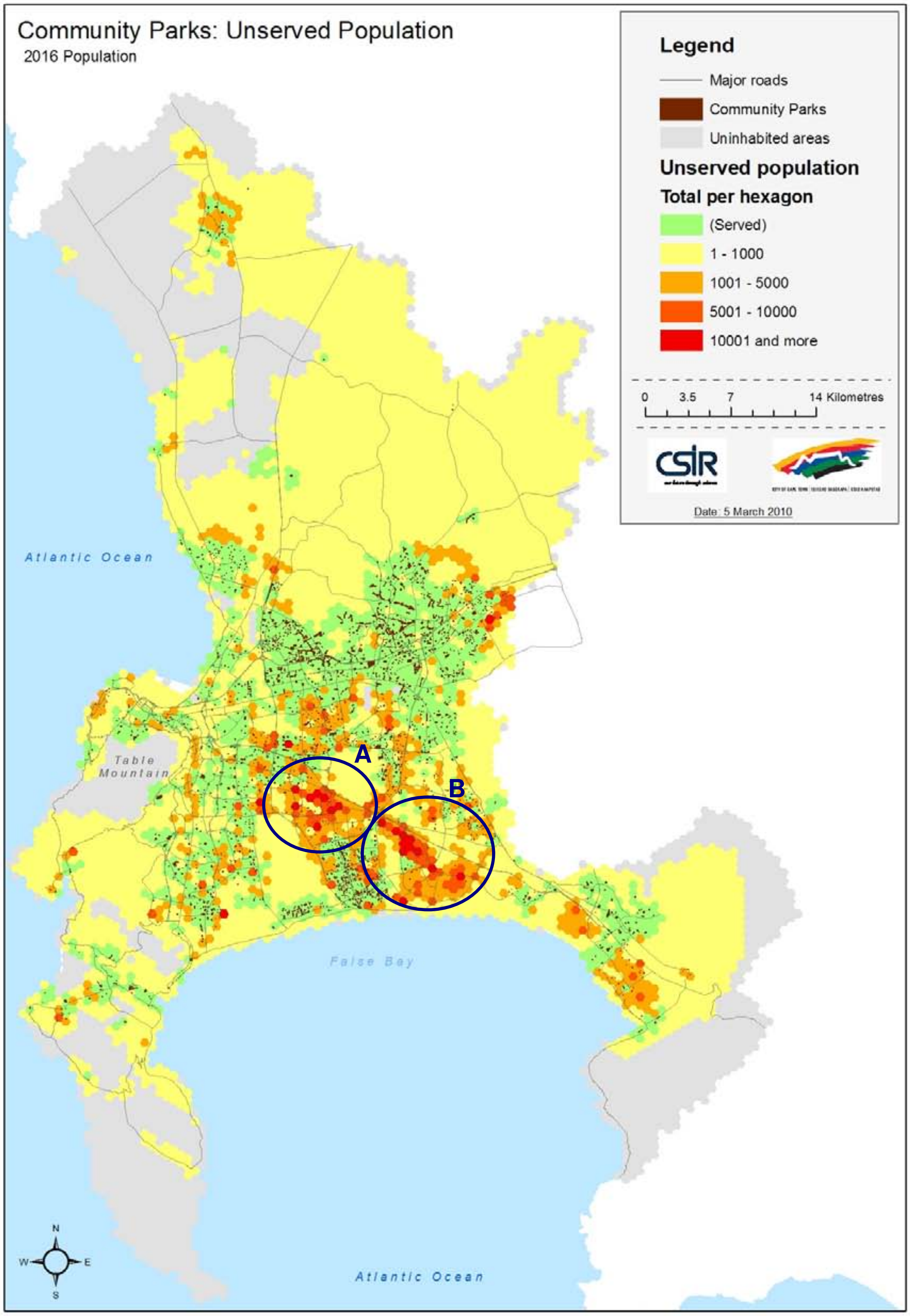


Figure 5.5b: Projected (2016) served and concentration of the unserved population with regard to existing community parks.

From Figures 5.5a and 5.5b it is apparent that it is not possible to define a limited number of areas where there is a concentration of unserved population. However, taking a step back and looking at the City in general there is a widespread area which contains the highest numbers of unserved population. This is depicted by circles A and B and includes the area of Nyanga/Gugulethu (A) and Khayelitsha (B) in both scenarios. This is also an area that is lest likely to have access to nature reserves or to have sport amenities that are abundant enough to be a replacement for passive recreational areas (parks).

There is little difference between the served and unserved areas in the current (2007) and 2016 scenarios. The main differences are that for the 2016 scenario, the number of unserved people within each of the already unserved areas increases.

The relevance and importance of the planning district tables (Tables 5.5c & 5.5d) – showing the unserved population per planning district – should not be over emphasised and are presented here for reporting purposes rather than to inform planning processes. Residents generally ignore or are oblivious to the boundaries of these regions and will use facilities closest to their homes irrespective of the district in which facilities are sited. With respect to planning for future facility provision the spatial outputs (namely the maps) are far more important when identifying areas requiring more facilities or increased service provision by existing facilities.

On a planning district basis, the largest percentages of unserved demand related to community parks are found in the Helderberg (60%-72%), Mitchells Plain/ Khayelitsha (71%-73%), and Cape Flats (60%-61%) districts for both the current and the 2016 scenarios (Tables 5.5c & 5.5d).

In the 2016 scenario, the Blaauwberg district also becomes a district with high unserved demand, as 61% of population are unlikely to be served. The main source of unserved demand for the City of Cape Town for both scenarios originates mainly from the Mitchells Plain/ Khayelitsha district which contributes as much as 22% (current scenario) and 21% (2016 scenario) to the total amount of unserved demand with respect to community parks. This once again highlights the need for intervention with respect to community park provision in this area.

Table 5.5c: Current scenario –population unserved by current community parks per planning district					
District	**Name**	**Total Population 2007**	**Unserved**	**% Unserved**	**% Unserved for City of Cape Town**
A	Table Bay	183,586	91105.38	49.63%	2.74%
B	Blaauwberg	174,130	91565.61	52.58%	2.75%
C	Northern	282,832	67882.7	24.00%	2.04%
D	Tygerberg	637,983	227636.4	35.68%	6.84%
E	*Helderberg*	*181,957*	*109911.2*	*60.40%*	*3.30%*
F	*Mitchells Plain/Khayelitsha*	*1,014,253*	*723486.13*	*71.33%*	*21.73%*
G	*Cape Flats*	*538,530*	*322133.16*	*59.82%*	*9.68%*
H	South Peninsula	315,496	179690.28	56.95%	5.40%
ALL	City of Cape Town	3,328,768	1,813,411	54.48%	54.48%

Table 5.5d: Projected 2016 scenario –population unserved by current community parks per planning district					
District	**Name**	**Total Population 2016**	**Unserved**	**% Unserved**	**% Unserved for City of Cape Town**
A	Table Bay	189,642	95,696	50.46%	2.49%
B	*Blaauwberg*	*231,868*	*141,834*	*61.17%*	*3.69%*
C	Northern	402,106	167,977	41.77%	4.37%
D	Tygerberg	706,376	273,883	38.77%	7.13%
E	*Helderberg*	*276,308*	*198,815*	*71.95%*	*5.18%*
F	*Mitchells Plain/Khayelitsha*	*1,114,354*	*812,721*	*72.93%*	*21.16%*
G	*Cape Flats*	*573,056*	*351,080*	*61.26%*	*9.14%*
H	South Peninsula	346,399	205,055	59.20%	5.34%
ALL	City of Cape Town	3,840,109	2,247,061	58.52%	58.52%

Figure 5.6 represents a general travel time analysis of residents with respect to community parks (smaller local parks). The map shows the travel times of the City's population to the closest community park, i.e. how far people must travel to reach their closest community park (the capacity of the parks was not limited). The dark and middle green areas on Figure 5.6 indicate the areas from which a community park can be reached within 1km or less. As shown in Table 5.6, 80% of the City's population have a park within 1km of their residence, while a further 16% of people can reach a park with 2.5km.

This means, that community parks in the City are generally well provided for and in some areas may be overprovided, whilst other areas are underprovided. Under provision is generally greatest in the higher density, poorer parts of the City to the east and south east.

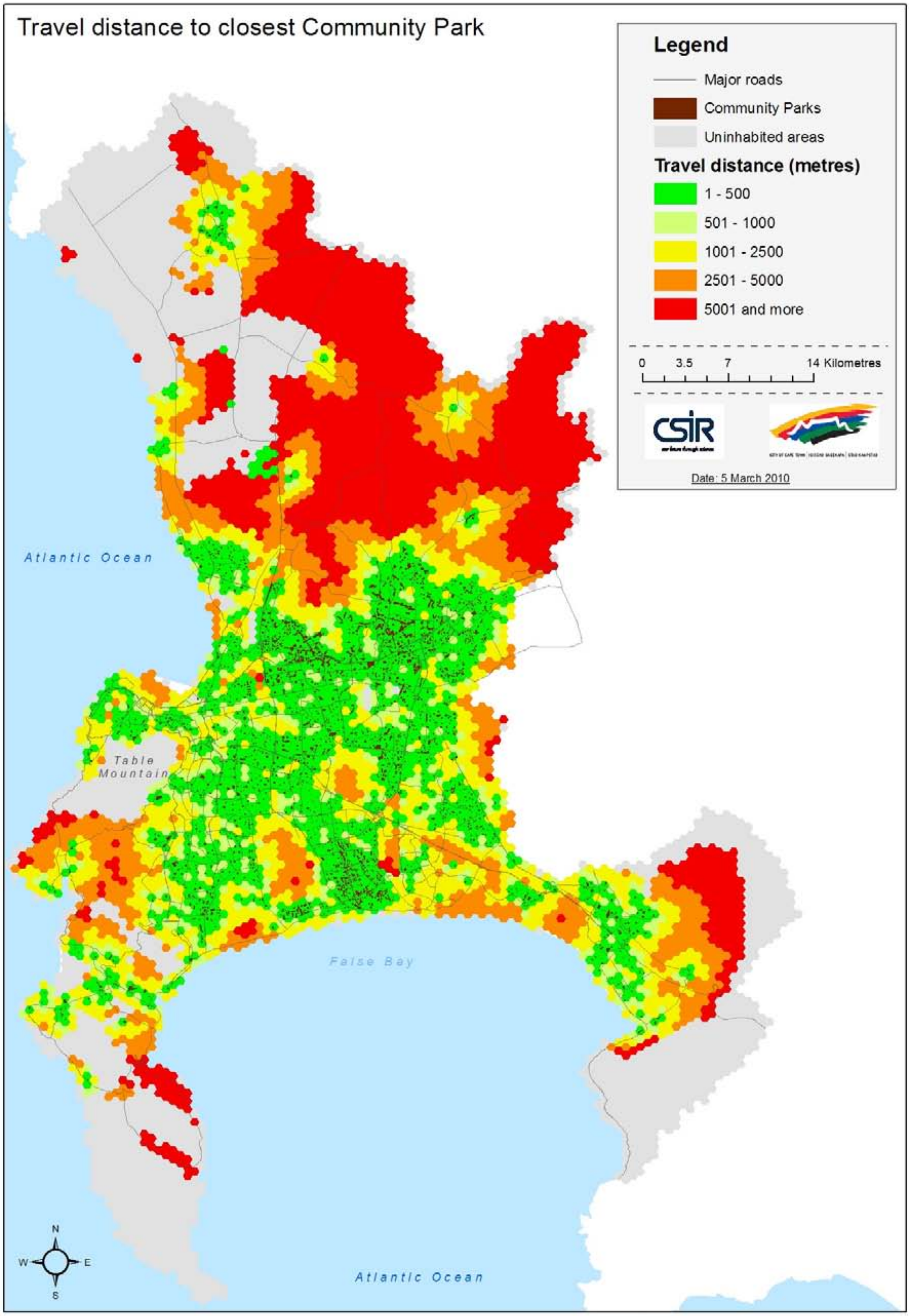


Figure 5.6: Travel time to closest community park

Table 5.6 summarises the outputs of Figure 5.6. This table gives a global overview of the accessibility of community parks in a 'walking city'.

Table 5.6: Populations access to community parks within certain travel distance bands and with no park capacity constraints				
DISTANCE CATEGORY	**POPULATION SERVED**			
	2007		**2016**	
0 - 1km	2,678,340	*80.47%*	2,989,065	*77.84%*
1 - 2.5km	550,263	*16.53%*	677,092	*17.63%*
2.5 - 5km	81,873	*2.46%*	142,996	*3.72%*
More than 5km	18,042	*0.54%*	30,956	*0.81%*
TOTAL	3,328,518	*100.00%*	3,840,109	*100.00%*

The capacity of the community parks was not taken into consideration in this analysis, i.e. all people were assigned to their nearest community park. There is a slight decrease in accessibility for the 2016 scenario if it is assumed that no new facilities will be built but that there will be increases in population.

5.5 Recommendations/ Optimisation for Community Parks

Based on the unserved population numbers and using an average size of community park of approximately 2 hectare (able to serve 5 000 people), the current backlog in community park provision equates to 360 parks (of 2ha each) if one were to provide all people with access to a community park within the given access standard. In 2016 it is projected that there would be a total unserved population of 2.25 million (based on the provision of current community parks) and this would then equate to a backlog of about 450 community parks (if the average size of the district parks is 2ha with a capacity of 5 000 people each).

As previously discussed, this unserved demand is concentrated in the southeast of the City. The best 20 locations for situating new parks to serve this demand optimally in 2016 was analysed and are shown in Figure 5.7 by circles. These recommended locations should be seen as being indicative of the 20 sites most accessible to the highest concentrations of unserved people and where the provision of community parks will have the greatest relative impact on backlog eradication. Planning decisions on the exact locations for new district parks which consider available and suitable land should still be undertaken by the City of Cape Town. Other factors possibly influencing the placement of and total demand for community parks are proximity to other recreational facilities which provide a similar type of activity space such as sporting facilities.

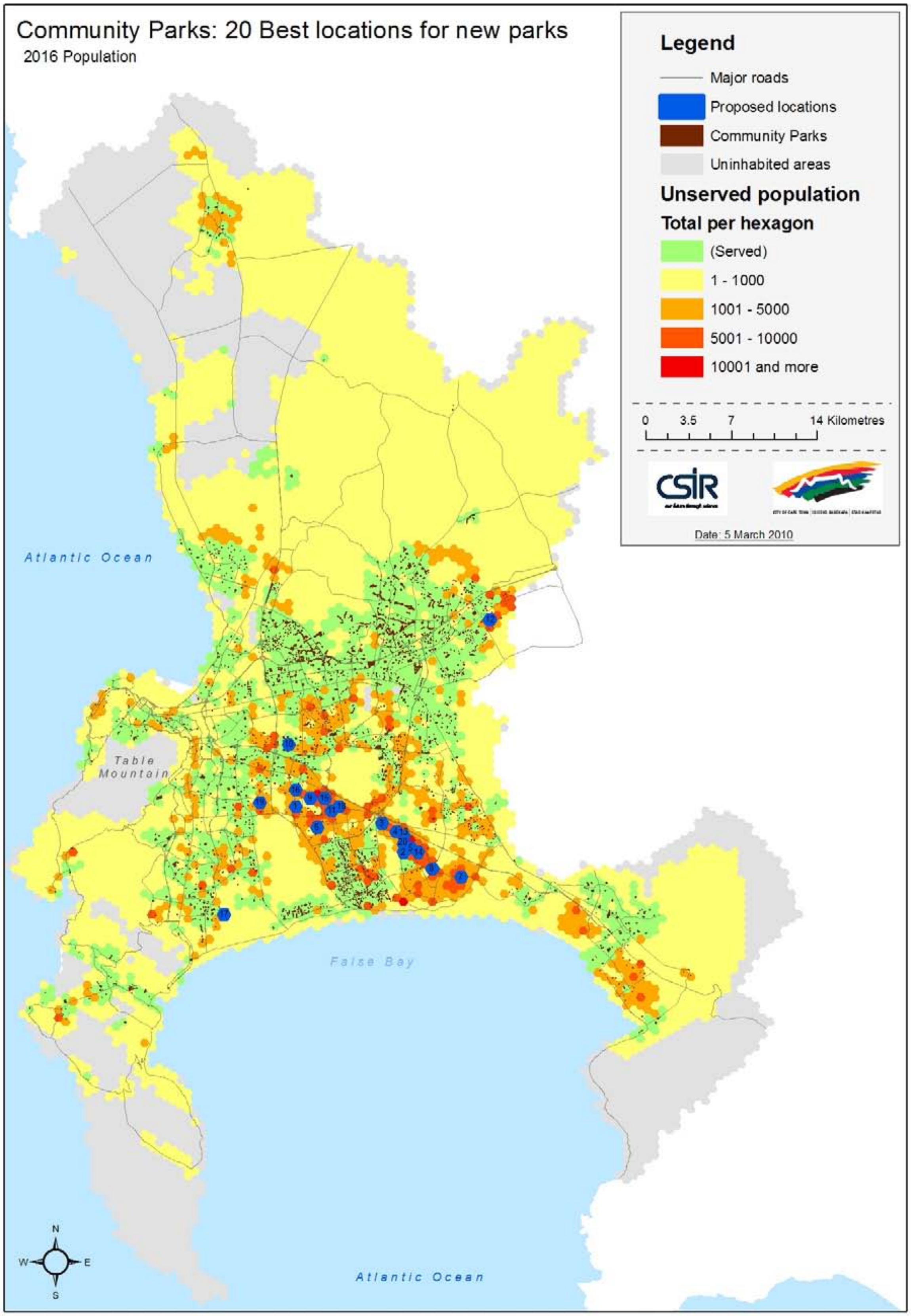


Figure 5.7: Optimised locations for community parks in 2016

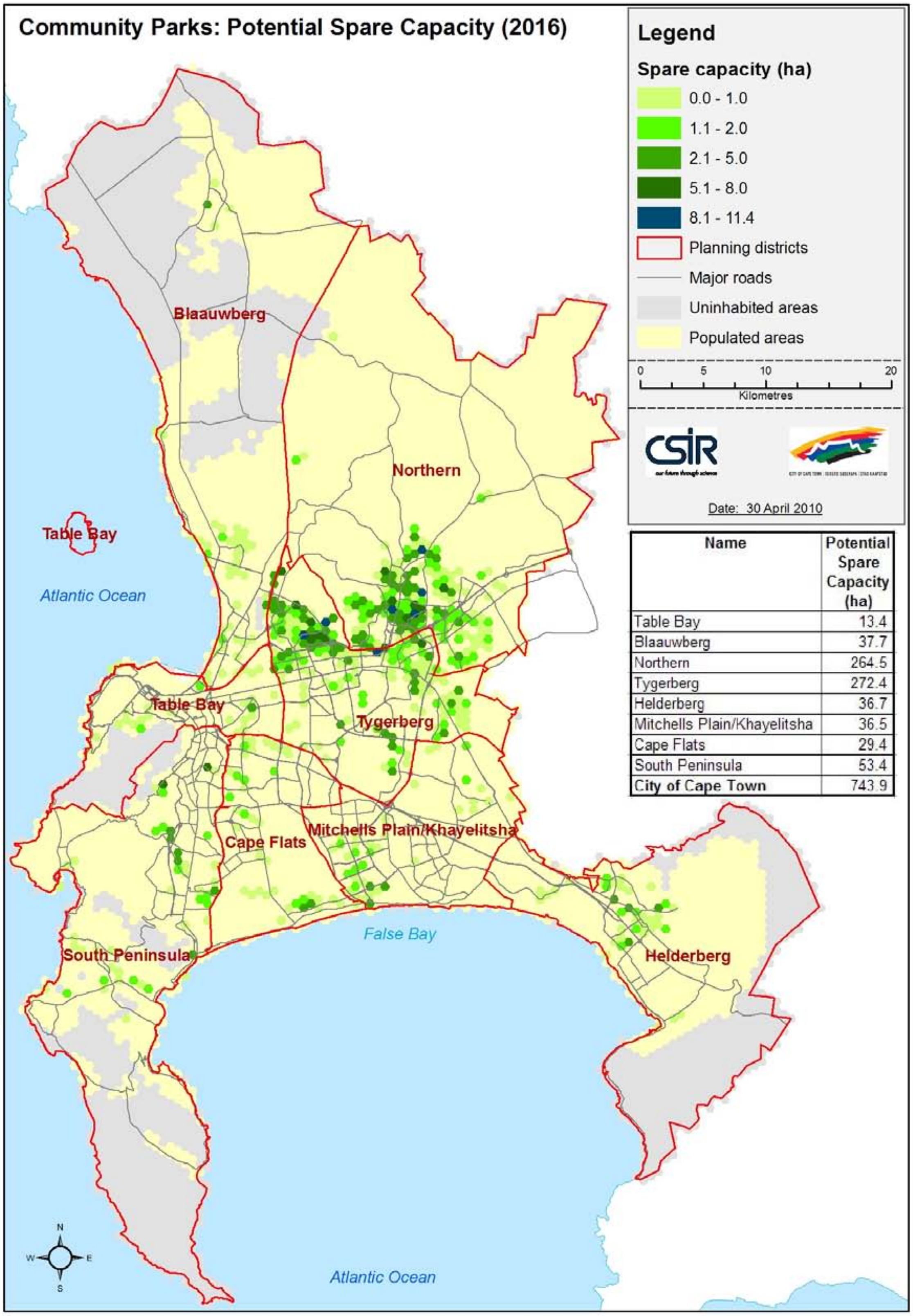
5.6 Potentially spare capacity District and Community parks

As can be seen from the table below the amount of community park space at a city level is almost sufficient. The concern is that parks have been located in areas away from the highest population demand. Thus, although the city can almost meet the standards with respect to quantity of community park space, when we consider accessibility to the parks the standards can only be met for 50% of the city's population.

Table 5.7: Summary of available capacity versus demand of current community parks per planning district

District	Name	Park space required (ha) *	Current park space provided (ha)	Area allocated ito standards (ha) **	Poorly located park space (ha)***	Ha required to meet standards ****	Comments
A	Table Bay	75.86	48.63	25.99	22.64	38.28	Total shortfall and large portion poorly located
B	Blaauwberg	92.75	64.57	18.88	45.69	56.73	Fair provision overall but mostly too far to enable good walking access
C	Northern	160.84	365.77	47.62	318.15	67.19	Major oversupply mostly located too far for residents to walk from home
D	Tygerberg	282.55	449.28	88.24	361.04	109.55	
E	Helderberg	110.52	67.67	25.09	42.58	79.53	Total local shortfall with half the parks too far from the greatest demand
F	Mitchells Plain / Khayelitsha	445.74	155.83	156.18	(0.35)	325.09	Major under provision- mostly in Khayelitsha
G	Cape Flats	229.22	119.64	102.66	16.98	140.43	Under provison
H	South Peninsula	138.56	109.79	44.86	64.93	82.02	
	City of Cape Town	**1 536.04**	**1 381.18**	**509.51**	**871.67**	**898.82**	Park provison is slightly underprovided in terms of total demand but the spatial distribution is out of kilter with population distribution

* Hectares required to meet standards without consideration of distance requirement.
** Hectares that are allocated to use based on capacity (space) and distance to facility requirements.
*** Hectares that are poorly located and could potentially be traded for better located land or used for other social facilities- mostly not surplus to total requirement.
****Hectares that need to be developed in identified areas of shortfall.



Name	Potential Spare Capacity (ha)
Table Bay	13.4
Blaauwberg	37.7
Northern	264.5
Tygerberg	272.4
Helderberg	36.7
Mitchells Plain/Khayelitsha	36.5
Cape Flats	29.4
South Peninsula	53.4
City of Cape Town	743.9

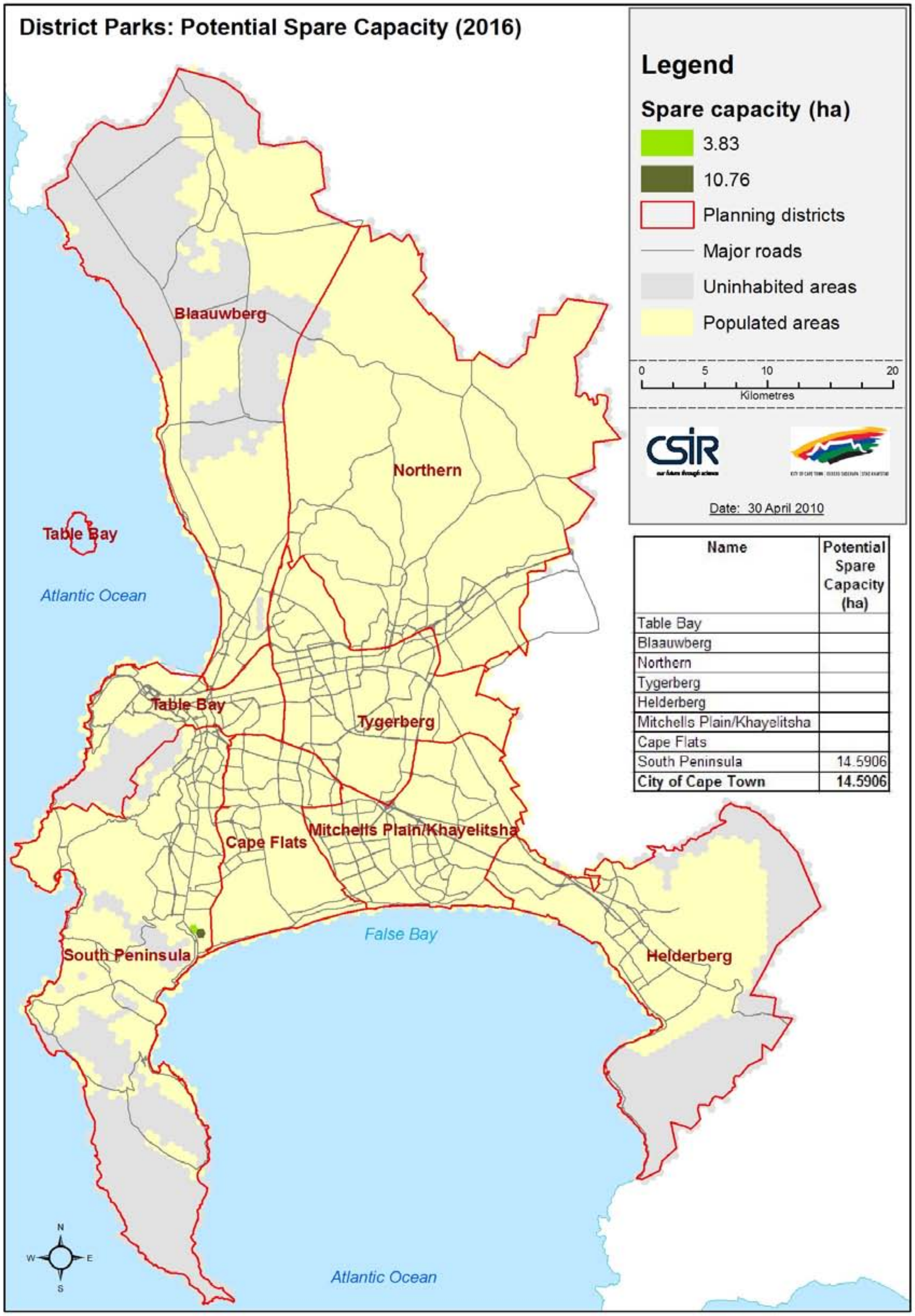
Figure 5.8: Potential spare capacity for community parks (2016)

District parks only meet 33% of needs – with almost no spare capacity - and have only a very small area where provision exceeds demand, namely in ZandVlei area which includes water bodies.

It is noted that areas such as Tygerberg and Northern which have an excess of community parks have a shortage of District Parks. The question must be asked if the classification of parks should be a major concern or if the overall provision of parks should be the over riding concern in well provided districts. It is in those areas of net shortfall of community parks that we need to be most concerned. It is especially those areas having low personal mobility that community parks and local sports facilities (refer to Section 6 of the report on sports facilities) are most in need.

Table 5.8: Potential spare capacity – area by current district parks per planning district

District	Name	Area required (ha)	Area Available (ha)	Area allocated int STD (ha)	Poorly located / Area Spare (ha)	Area required based on STD (in indicated Pockets)	Comments
A	Table Bay	37.90	21.49	0.79	20.70	10.28	Accept longer travel time
B	*Blaauwberg*	*46.40*	*-*	*-*	*-*	*44.85*	Requires District Park
C	*Northern*	*80.40*	*1.56*	*0.13*	*1.43*	*78.86*	These areas have an excess of community parks and should be rezoned as district parks. See above
D	*Tygerberg*	*141.30*	*-*	*-*	*-*	*140.13*	
E	*Helderberg*	*55.30*	*-*	*-*	*-*	*55.26*	Requires District park
F	Mitchells Plain / Khayelitsha	222.90	19.26	1.49	17.77	173.55	Major shortfall
G	Cape Flats	114.60	-	-	-	30.30	Requires District Park
H	South Peninsula	69.30	201.36	3.62	197.75	5.72	Oversupply mainly in vicinity of Zand Vlei
	City of Cape Town	**768.10**	**243.67**	**6.02**	**237.65**	**538.94**	Even accepting longer travel distance there is almost 60% shortage



Name	Potential Spare Capacity (ha)
Table Bay	
Blaauwberg	
Northern	
Tygerberg	
Helderberg	
Mitchells Plain/Khayelitsha	
Cape Flats	
South Peninsula	14.5906
City of Cape Town	**14.5906**

Figure 5.9: Potential spare capacity for district parks (2016)

5.7 General recommendations for parks

For the City to eradicate the backlog in terms of both district (backlog of 440ha) and community parks (backlog of 720ha) may not be financially viable nor feasible as there may not be sufficient vacant land available. From the parks survey done by Lodene Willemse for her Masters study on park provision in the City of Cape Town (see Appendix 5.1 for a summary) it is apparent that people in all income groups (low-, middle- and high-) are in general not dissatisfied about their access to park space. Their main concerns and recommendations for improvement mostly relate to maintenance of these facilities and the safety and security of park users. Furthermore, many of the City's population have access to an abundance of alternative recreational space which serves a similar purpose to parks at the same level. These include the beach front, nature reserves and privately owned recreational areas – for instance commercialised picnic areas on privately owned land/ wine farms, Table Mountain and Kirstenbosch Gardens – that were not included in the analysis. In terms of the global provision of parks versus the population served at a provision ratio of 0.2ha/ 1 000 for district parks and 0.4ha/ 1000 for community parks without considering travel time to access them, Cape Town residents are currently provided with enough community parks, but in the case of district parks only 37% of residents are provided for adequately.

The suggestion is that in the light of these factors it may be sensible for the City of Cape Town to look at a different approach to park provision. That is that these facilities be provided on an intermediate level – between the community and district levels – and/or that the facilities be provided in conjunction with sporting facilities as a combined service (where applicable). The latter suggestion is seen as being more viable due to the multiple uses of recreational areas (people can play sport in a park area as well), better control in terms of personal safety, as well as savings on maintenance costs. A combined facility will also provide a greater feeling of "greenness" and space within residential areas as opposed to smaller pockets of stand-alone facilities. This idea was promoted in the 1989 CPA guideline for recreational facilities and its value should not be underestimated as a solution for safety and security. A recommended provision for such parks would be 0.3 – 0.4ha/ 1 000 people at an intermediate level which will then replace the need for separate community and district facilities as long as this allocation is added to the sporting facility provision (0.56ha) and these are developed as a combined multi-purpose open space facility. A suitable park size may range from 1 to 3 ha. If parks are not combined with sports fields, a higher provision ratio maybe needed ie. 0.45 – 0.5ha/ 1 000 instead. However, in many of the areas finding park space even at a lower provision rate may still prove unrealistic.

APPENDIX 5.1:

Parks Survey

PERCEPTIONS OF AND PREFERENCES FOR THE PROVISION OF COMMUNITY/NEIGHBOURHOOD PARKS IN THE CITY OF CAPE TOWN

EXTRACTS FROM THESIS SUBMITTED BY LODENE WILLEMSE TO STELLENBOSCH UNIVERSITY (31 JANUARY 2010) *WITH SOME LANGUAGE EDITING & REFORMATING*

CONCLUSION: PROVIDING ADEQUATE COMMUNITY/NEIGHBOURHOOD PARKS *(FROM CHAPTER 7)*

Only minor differences are detected between the three income groups (high, middle, income). Overall, respondents in all three income groups also utilize parks in the same way and experience similar park issues as international and South African literature. Parks are generally accessible to high and middle-income respondents, while park accessibility is more problematic for low-income respondents who travel more than 15 minutes, or 1200 metres, to a park. Park size is somewhat of an issue, to especially low-income respondents, who complain about pocket parks only filling in gaps between shacks and not being big enough to do the desired activities in.

A further difference between income groups is that the higher the income group, the more respondents use private transportation to get to a park, while the lower the income group, the more respondents rely upon public transportation to a park. The majority of respondents in all income groups do however, walk to a park.

Children and adults in all income groups visit parks on a regular basis and spend varying amounts of time in a park, where they participate in both active and passive recreational activities. Despite being slightly further away from parks and utilizing public transportation, low-income children visit parks the most often in a week and spend the longest time there. Although in Chapter Three, results have shown that in comparison to other services parks and recreation services are not such an important service for all income groups, the aforementioned statement proves that parks and recreation is an essential service to provide to respondents.

Although respondents in all income groups have various reasons for dissatisfaction with park services, the two park issues that are mentioned repetitively by the majority of respondents in all income groups, are the dissatisfaction with park safety and security and park maintenance and facility concerns. Generally, there is not a shortage of parks in all income groups' suburbs, but respondents want *secure, well maintained* and *developed parks* with *adequate facilities for all ages*, which they feel will encourage the community to utilize parks more often. To conclude, the government will not be able to satisfy the perceptions and preferences of all respondents, but *safety and security,* together with *park and facility management* are the core issues the City Parks Department should focus on to increase park utilization for the majority of respondents in all income groups.

ABSTRACT

The thesis seeks to determine what the City of Cape Town residents' perceptions and preferences are of community/neighbourhood parks, based on three income groups. The research objectives include establishing the income groups, mapping park provision, determining service delivery and outdoor recreation perceptions, the frequency of park utilization, reasons for park non-use, a typology of activities in parks, levels of park satisfaction and making suggestions to the City Parks Department. Data was collected from Flowmap, GIS, 2007 Community Survey, Census 2001 and questionnaires that were distributed through schools. A two-fold Flowmap and GIS accessibility analysis was done. *[Editor's note: As this is reported on in the main report –of which this extract is an appendix – this discussion is not included in these extracts]*

The research findings indicate that minor differences in park utilization occur between income groups. Low-income respondents are more satisfied with service delivery, while all income groups do not see parks as such an important outdoor recreational area. High and middle-income respondents can reach a park mostly within 0-5 minutes. Park accessibility is more problematic for low-income respondents. Children and adults in all income groups mostly walk to a park, but the high-income group also uses private transport. Lower income groups visit a park with public transport. All income groups' children and adults visit parks regularly for varying times for active and passive recreation. Low-income children visit parks the most and the longest. Respondents' fears and dissatisfaction with parks are persistently expressed through safety and maintenance concerns and a lack of park facilities and vegetation. Future research recommendations include a park analysis of more diverse demographic profiles, distributing questionnaires to various places with authority, having an interview questionnaire survey with fewer respondents, integrating research about community/neighbourhood park utilization and the open space system, doing a park accessibility and income distribution analysis on 2016 population and Census 2011 data, and

comparing people in the City of Cape Town's park utilization to rural town dwellers' park utilization.

PERCEPTIONS OF SERVICE DELIVERY AND OUTDOOR RECREATION *(FROM CHAPTER 3)*:

The main issues observed in Chapter Three are the following: the lower the income, the worse the access to cars, gardens, parks and conservation/biodiversity areas are. However, the lower the income of respondents, the more satisfied they are with general service delivery. Parks and recreation are less important to respondents in all income groups, in comparison to other services. Respondents in all income groups also indicate recreating in their own neighbourhood park is less essential than other outdoor recreational areas. On the other hand, confusion is evident in what respondents themselves classify as a park. Respondents (mostly in the low-income group) also see open pieces of land surrounding their home, with no facilities or grass on it, as a park-like area, because no alternatives exist.

3.1 Demographic profiles of respondents

The **average number of household members** increases as income decreases, with high-income averaging four household members and middle and low-income having an average of six and seven people per household, respectively. Table 3.1 indicates most high and middle-income respondents speak Afrikaans and English as their **home language**. A significant 76% of low-income respondents speak an African language. African languages range from IsiZulu, SeSotho, Siswati, but with IsiXhosa being the majority.

Table 3.1 Respondents' home languages

Home language	High-income	Middle-income	Low-income	Total
Afrikaans	49%	54%	17%	39%
English	46%	44%	6%	30%
African language	3%	1%	76%	30%
Other languages	2%	1%	2%	2%

The percentage of respondents who **have a private garden and own a car**, decreases as income decreases. Overall, 83% and 94% of high-income respondents have a private garden and car, respectively, while a mere 12% of respondents have a private garden in the low-income group and only 32% have a car, as shown in Table 3.3. More respondents own a car in the middle and low-income groups than they have a private garden.

Table 3.3 Percentage of respondents who have a private garden and own a car

	High-income	Middle-income	Low-income	All
Private garden	83%	45%	12%	45%
Car ownership	94%	65%	32%	62%

Overall, 74% of high-income respondents indicate their homes are within reasonable driving **distance to a conservation/biodiversity area**. On the contrary, only 38% and 39% of middle and low-income respondents' homes are close to a conservation/biodiversity area, respectively. High-income respondents also **visit a conservation/biodiversity area** most often, with children averaging 16 days and adults 18 days per annum. Middle-income respondents (children and adults) visit a conservation/biodiversity area 11 days a year, while low-income children only manage to visit it 9 days and low-income adults 11 days a year. Table 3.4 shows an example of how often in a year respondents visit a major conservation/biodiversity area (Table Mountain National Park). The majority of respondents across all income groups never visit Table Mountain National Park. The respondents who indicate, "daily visits" are mostly respondents who work in the Table Mountain National Park. The main reasons for not visiting Table Mountain National Park, as seen in Table 3.5, is that high-income respondents visit it once a year or every few years, whereas middle and low-income respondents say it is too expensive, it is too far away and they lack transportation to get there.

Table 3.4 Frequency of Table Mountain National Park use

How often is Table Mountain National Park visited	High-income	Middle-income	Low-income	All
Never	59%	78%	70%	69%
Every two months	31%	18%	21%	23%
Monthly	5%	4%	4%	4%
Weekly	4%	1%	3%	2%
Daily	1%	0.3%	2%	1%

Table 3.5 Reasons for never visiting Table Mountain National Park

Reasons for never visiting Table Mountain National Park	High-income	Middle-income	Low-income	All
It is too expensive	10%	26%	37%	25%
Lack of transportation	3%	12%	12%	9%
It is too far away	8%	8%	7%	8%
Lack of time and / or planning to go	9%	11%	4%	8%

Not sufficiently interested	9%	6%	5%	7%
Visit once a year / every few years	15%	1%	1%	5%
Unsafe	9%	2%	1%	4%
No need to see it again	1%	1%	0.4%	1%

Table 3.6 shows a crosstabulation between income, respondents who "never" visit Table Mountain National Park and respondents who never or only infrequently visit a community/neighbourhood park. The finding could prove that park usage and visiting Table Mountain National Park is not such a popular activity amongst respondents in all income groups.

Table 3.6 Non-visitation to the Table Mountain National Park and a community park

Low intensity park utilization (never/infrequent park use)	**Percentage of respondents who never visit Table Mountain National Park**		
	High-income	**Middle-income**	**Low-income**
Children	75%	83%	84%
Adults	62%	64%	60%

As income decreases, access to a private garden and conservation/biodiversity area decreases as well. Overall, 78%, 62% and 44% of high, low and middle-income respondents, respectively, have a private garden and access to a conservation/biodiversity area located close to the home.

Similarly to the aforementioned, Table 3.7 shows that the higher the income; the better the access to conservation/biodiversity areas and parks are. Overall, 67% of high-income respondents' whose home is close to a conservation/biodiversity area can still reach a park more than 15 minutes away. On the contrary, only 42% of low-income respondents can reach a conservation/biodiversity area and a park that is located 15 minutes from the home. Middle-income results show the opposite of high and low-income results. More middle-income respondents have access to a conservation/biodiversity area and a park that is 0–10 minutes away. However, with an increase in park distance from the home, a mere 29% of middle-income respondents have access to both a conservation/biodiversity area and a park.

Table 3.7 Access to a conservation/biodiversity area and a park

Distance to a park	**Percentage of respondents who have a conservation/ biodiversity area close to the home**		
	High-income	**Middle-income**	**Low-income**
0-5 minutes	76%	43%	34%
6-10 minutes	72%	45%	41%
11-15 minutes	81%	32%	43%
More than 15 minutes	67%	29%	42%
Total	75%	40%	39%

Despite lower income respondents having less access to a private garden, conservation/biodiversity area and a park, 74%, 56% and 52% of high, low and middle-income respondents, respectively, indicate they do not need a **closer park to the home**. Open-ended responses confirm that respondents in all income groups do not need a closer park to the home, but that middle and especially low-income respondents complain about the small size of some parks in their neighbourhoods and the lack of maintenance of it. A high-income respondent states “we have sufficient ‘green areas’, [it] just needs to be properly maintained and protected”, while another respondents writes “there are enough parks [that cater] for children, but a larger park for general use [would be appreciated]”. More “community parks breed unwanted loitering”, declares another high-income respondent. Maintenance and safety aspects are a recurrent theme in middle and low-income areas as one middle-income respondent indicates: “there are sufficient parks in the Plumstead area, but it is not well maintained and it is not safe”. A low-income respondent voices concerns for a closer park as follows: “some parks are being destroyed and have not been repaired yet”.

3.2 Perceptions of service delivery and outdoor recreation

Questionnaire survey results … *(support general findings on perceptions of service delivery)* … because parks and recreation are only the fourth most important service to improve in the high and middle-income groups, which is after safety, clinics and roads and sidewalks, as is seen from Table 3.8. For low-income respondents housing, clinics, safety, and security are the three most important services to improve. Parks and recreation ranks as the least important service to improve in the low-income group and that is together with roads and sidewalks. The results indicate a priority shift from the high to low-income groups, where the focus changes slightly more from “comfort”, such as roads and sidewalks, to more basic human needs such as clinics and housing. Generally, parks are not so important to improve, maybe indicating that respondents are satisfied with the conditions of parks or that the other services are simply more important to improve.

Table 3.8 Services that require improvement or no improvement across the City of Cape Town

Service	**High-income %**		**Middle-income %**		**Low-income %**		**All %**	
	Want service to improve	**Do not want service to improve**	**Want service to improve**	**Do not want service improve**	**Want service to improve**	**Do not want service improve**	**Want service to improve**	**Do not want service improve**
Clinics and health	34%	21%	59%	11%	59%	18%	51%	17%
Housing	10%	47%	34%	21%	60%	19%	36%	28%
Parks and	30%	31%	25%	41%	18%	36%	24%	36%

recreation								
Roads and sidewalks	32%	29%	14%	42%	18%	31%	21%	33%
Safety and security	80%	5%	63%	8%	45%	18%	62%	11%
Streetlights	16%	43%	19%	32%	23%	30%	20%	35%

Table 3.9 specifies that children in all income groups spend most of their **outdoor recreational time** at home, or at school. Sports grounds and in the streets surrounding their homes are places where they also undertake recreational activities. The majority of adults in all income groups do most of their outdoor recreation at home as well. High and middle-income adults also spend time in other parks and/or conservation/biodiversity areas located in other suburbs and at sports grounds. Low-income adults spend more time at community centres and open pieces of land surrounding the home. A possible reason for this is that low-income respondents indicate that conservation/biodiversity areas are located further away from their homes and they have a low car ownership percentage. They require public transportation to visit other parks and/or conservation/biodiversity areas in other neighbourhoods, but also lack the financial resources to pay for public transportation.

Furthermore, Table 3.9 indicates that children and adults do not spend so much time in community/neighbourhood parks, because it is only ranked fourth in the high-income group and even lower in the middle and low-income groups. A possible reason for this could be that some respondents might see existing registered community/neighbourhood parks as only open pieces of land, because there might be no or very little facilities on the land. When adding the community/neighbourhood parks and open pieces of land surrounding the home scores, children and adults in all three income groups spend significantly more time in a park or open piece of land in their neighbourhood. The percentage of respondents in all income groups who spend time in a park and/or conservation/biodiversity area increases even more when the "community parks and/or conservation/biodiversity areas in other suburbs" scores are added to the aforementioned score.

Table 3.9 Outdoor recreation of children and adults

Outdoor recreation location	**High-income**		**Middle-income**		**Low-income**		**All**	
	Children	**Adults**	**Children**	**Adults**	**Children**	**Adults**	**Children**	**Adults**
At community centre	4%	6%	7%	10%	12%	19%	8%	12%
At school	51%	4%	47%	3%	57%	5%	52%	4%
At sports grounds	46%	22%	31%	14%	37%	9%	38%	15%
At your home	74%	79%	69%	73%	46%	61%	62%	70%
In the streets surrounding the home	25%	10%	35%	8%	33%	14%	31%	11%

In your community/ neighbourhood park	32%	20%	21%	7%	29%	9%	28%	12%
Open pieces of land surrounding the home	21%	10%	18%	9%	17%	18%	18%	13%
Other community parks or conservation/ biodiversity areas in other suburbs	24%	23%	17%	16%	15%	12%	18%	17%

A comparison between the income groups, access to a private garden and respondents' choices for outdoor recreation is demonstrated by Table 3.10. An overall trend is observed whereby the percentages increase dramatically from the high to low-income groups, no matter respondents' preferences for outdoor recreational areas. The main reason for this increase is that Table 3.10 shows the percentage of respondents who do not have a private garden. Since more low-income respondents do not have a private garden, as seen in Table 3.3 of earlier, the percentages will be higher amongst this group. Respondents who do not have a private garden fulfil their outdoor recreational needs in almost every outdoor area given as an option in the questionnaire. This is visible from the percentages that do not differ significantly between the outdoor recreational options.

Not having a private garden also does not significantly increase the percentage of children and adults who spend time in a park in their neighbourhood. High-income children and adults mostly frequent community centres. Nevertheless, the high-income group is the only income group who choose a park in their neighbourhood, or other parks or conservation/biodiversity areas in other suburbs, as one of their top three outdoor recreational areas, if they do not have access to a private garden. The reason for this may be that high-income respondents have access to more parks, while middle and especially low-income respondents are marginalised to have less access to park services. Middle-income respondents mostly undertake recreational activities in the streets surrounding the home, but open land surrounding the home is also popular outdoor recreational areas. As seen in Table 3.9 of earlier respondents may see the open land surrounding the home as a park-like area. Low-income children also prefer to amuse themselves in the streets, after which the home and school becomes more important recreational areas. The finding is also similar to Table 3.9 of earlier. Schools, sports grounds, the home and open land surrounding the home are the four most popular places where low-income adults undertake recreational activities outside. Visiting other parks or conservation/biodiversity areas got the lowest score amongst low-income children and adults.

Tables 3.10 Outdoor recreational options of respondents who do not have a private garden

Outdoor recreation	Percentage of respondents who do not have a private garden							
	High-income		Middle-income		Low-income		All	
	Children	Adults	Children	Adults	Children	Adults	Children	Adults
At community centre	29%	30%	54%	54%	86%	86%	8%	12%
At school	18%	22%	54%	40%	90%	100%	52%	4%
At sports grounds	17%	19%	54%	48%	87%	94%	38%	15%
At home	16%	16%	50%	52%	89%	90%	61%	70%
In the streets surrounding the home	15%	8%	63%	61%	91%	85%	31%	11%
In your community/ neighbourhood park	24%	26%	47%	50%	84%	89%	27%	12%
Open pieces of land surrounding the home	15%	5%	52%	53%	85%	90%	18%	13%
Other community parks or conservation/ biodiversity areas in other suburbs	25%	24%	44%	51%	80%	76%	18%	17%

Table 3.11 conveys whether **car ownership** is a factor in **determining where respondents are willing to do their outdoor recreation**. Children whose families have access to a car are willing to travel further to some outdoor recreational areas. Most high-income children visit a sports ground if their family owns a car, whereas a sports ground is the third frequent place where high-income adults go to undertake recreational activities. In contrast to Tables 3.10 of earlier, middle and low-income children and adults are willing to visit other parks or conservation/biodiversity areas in other suburbs, provided they have a car to get them there. This could perhaps be because of the problems they experience with/in parks in their own neighbourhoods. In addition, low-income children also visit community centres and sports grounds when their family has a car.

Tables 3.11 Outdoor recreational options of respondents who own a car

Outdoor recreation	Percentage of respondents who own a car							
	High-income		Middle-income		Low-income		All	
	Children	Adults	Children	Adults	Children	Adults	Children	Adults
At community centre	88%	87%	52%	68%	40%	37%	8%	11%
At school	94%	100%	64%	70%	31%	42%	52%	4%
At sports grounds	96%	96%	65%	69%	34%	30%	38%	15%
At home	95%	94%	66%	66%	33%	33%	62%	70%
In the streets surrounding the home	93%	95%	56%	52%	31%	38%	31%	11%
In your community/ neighbourhood park	92%	90%	63%	75%	33%	23%	28%	12%
Open pieces of land surrounding the home	91%	98%	65%	59%	28%	32%	18%	13%
Other community parks or conservation/ biodiversity areas in other suburbs	92%	94%	75%	77%	40%	43%	18%	17%

The first choice of outdoor recreation for children in all income groups is a park in their own neighbourhood, but only if the park is between 0-5 minutes away from the home, as seen from

Table 3.12. The finding shows the relative importance of a nearby and accessible park to a child's home, which could function as an area where a child can undertake recreational activities in the outdoors.

In contrast to results of the children that show roughly comparable outcomes between income groups, results of where adults spend their outdoor recreation, differs between the three income groups, as seen from Table 3.13. Adults do not perceive a park that is 0-5 minutes away in their neighbourhood, as such an essential outdoor recreational area.

Despite the aforementioned, a park that is located 0-5 minutes from a high-income home is utilized the most by children and adults, while low-income children and middle-income adults use it the least. A reason for the aforementioned finding is that high-income children have more parks available in their suburbs. On the contrary, low-income suburbs have only limited park space available. Furthermore, where park space is available; the low-income group indicates that the parks are mostly just open pieces of sand with only limited play equipment.

Parks that are between 6-10 minutes away from the home are also utilized as the second outdoor recreational place where high and middle-income children play, see Table 3.12. Interestingly, when a neighbourhood park is 6-10 minutes from the home, high-income adults visit it as the number one outdoor recreation destination.

The further a park is from a home, the fewer times children and adults utilize it, as is demonstrated by Tables 3.12 and 3.13. Some exceptions are a significant 26% of middle-income adults and 23% and 20% of low-income adults and children, respectively, who are willing to visit a park in their neighbourhood that are more than 15 minutes away from the home. This could be because there are no closer alternatives and parks further away provide more facilities to suit a variety of needs, … .

Distance to a park in respondents' neighbourhoods does not influence the use of open pieces of land surrounding the home. The reason for the finding is that low and middle-income children and adults utilize open pieces of land surrounding the home, regardless of the distance to a park in their neighbourhood.

Overall, 40% of low-income children visit other parks or conservation/biodiversity areas in other suburbs, when a park in their neighbourhood is between 0-5 minutes away from the home. Other parks or conservation/biodiversity areas in other suburbs are also the second frequent place where high and low-income adults undertake recreational activities when a park is 0-5 minutes away. The reason for low-income respondents visiting other parks or conservation/biodiversity areas might be that these respondents are not satisfied with the conditions of parks in their own neighbourhood. When a neighbourhood park is further than five minutes from a home, high and middle-income children regularly visit other parks or conservation/biodiversity areas in other suburbs. On the contrary, middle-income adults only visit other parks or conservation/biodiversity areas as the second regular outdoor area, when a neighbourhood park in their suburb is more than 15 minutes from the home. Beside from the aforementioned outdoor recreational areas, other outdoor areas where children and adults in all three income groups undertake recreational activities, are similar to the results of Table 3.9 of earlier.

Table 3.12 Children's outdoor recreational options when parks are located with varying distance from the home

Income categories	**Distance to a park**	**Areas where children undertake recreational activities in the outdoors**							
		At community centre	**At school**	**At sports grounds**	**At home**	**In streets surrounding home**	**In your community/ neighbourhood park**	**Open pieces of land surrounding the home**	**Other community parks or conservation/ biodiversity areas in other suburbs**
High-income	0 - 5 minutes	46%	58%	60%	57%	60%	65%	58%	54%
	6 - 10 minutes	23%	20%	18%	23%	18%	22%	20%	22%
	11 - 15 minutes	8%	13%	12%	11%	10%	7%	9%	11%
	More than 15 minutes	23%	9%	9%	10%	12%	6%	13%	13%
Middle-income	0 - 5 minutes	46%	48%	50%	51%	52%	58%	53%	48%
	6 - 10 minutes	41%	25%	26%	25%	23%	27%	23%	27%
	11 - 15 minutes	0%	10%	6%	8%	9%	7%	5%	7%
	More than 15 minutes	14%	17%	18%	17%	17%	9%	18%	19%
Low-income	0 - 5 minutes	40%	42%	41%	43%	39%	48%	35%	40%
	6 - 10 minutes	20%	17%	21%	16%	22%	18%	26%	15%
	11 - 15 minutes	20%	14%	17%	14%	17%	15%	16%	26%
	More than 15 minutes	20%	27%	21%	28%	23%	20%	23%	19%

Table 3.13 Adults' outdoor recreational options when parks are located with varying distance from the home

Income categories	Distance to a park	Areas where adults undertake recreational activities in the outdoors							
		At commu-nity centre	At school	At sports grounds	At home	In streets surrounding home	In your community/ neighbour-hood park	Open pieces of land surrounding the home	Other community parks or conservation/ biodiversity areas in other suburbs
High-income	0 - 5 minutes	70%	50%	58%	57%	60%	52%	54%	60%
	6 - 10 minutes	15%	13%	21%	23%	19%	31%	24%	19%
	11 - 15 minutes	5%	25%	9%	11%	8%	12%	5%	8%
	More than 15 minutes	10%	13%	12%	9%	14%	5%	16%	14%
Middle-income	0 - 5 minutes	42%	57%	40%	53%	57%	41%	66%	48%
	6 - 10 minutes	26%	0%	31%	24%	25%	26%	24%	21%
	11 - 15 minutes	7%	22%	6%	8%	14%	7%	3%	7%
	More than 15 minutes	26%	22%	23%	15%	4%	26%	7%	24%
Low-income	0 - 5 minutes	48%	60%	42%	41%	41%	47%	41%	48%
	6 - 10 minutes	15%	15%	13%	20%	22%	23%	25%	14%
	11 - 15 minutes	10%	10%	23%	13%	16%	7%	18%	16%
	More than 15 minutes	27%	15%	23%	26%	20%	23%	16%	23%

PROVISION OF COMMUNITY/NEIGHBOURHOOD PARKS IN THE CITY OF CAPE TOWN *(FROM CHAPTER 4)*

Although the **most frequent mode of transport** children and adults in all income groups use to a park is walking, a general trend is observed. The higher the income group, the more respondents rely on private transportation, while lower income respondents mostly utilize public transportation to a park.

Respondents in all income groups experience various **problems with park usage**, but the most profound and recurrent reason for park non-use is fear. The fear emerge in the form of safety concerns; fear of antisocial problems – such as the homeless, drug-users, vandals and gangsters who all use parks for "not so average activities"; maintenance concerns in the form of constant litter and vandalism in parks and lack of facilities and vegetation in parks.

Table 4.1 The population's provision of parks in the three income groups in the City of Cape Town

Income category	Population (2007)	Distance to a park	Area (square metres) of community parks
High-income	169 057	0-400 metres	1 110 575
	154 052	401-800 metres	1 622 751
	68 771	801-1200 metres	351 984
	61 477	1201- 9350 metres	130 274
Total for high-income	**453 357**		**3 215 584**
Middle-income	774 885	0-400 metres	1 919 104
	516 219	401-800 metres	2 048 934
	188 946	801-1200 metres	342 108
	220 010	1201-29 907 metres	141 958
Total for middle-income	**1 700 060**		**4 452 104**
Low-income	282 153	0-400 metres	960 481
	302 408	401-800 metres	850 363
	218 855	801-1200 metres	67 060
	368 496	1201-17 629 metres	676 492
Total for low-income	**1 171 912**		**2 554 396**
Grand total for the entire City of Cape Town	**3 325 329**		**10 222 084**

Table 4.2 The total population in the City of Cape Town who can reach a park within varying distances

Distance to a park in metres	Distance to a park in minutes	Percentage of the total population of the City of Cape Town that can reach a park
0-400 metres	0-5 minutes	37%
401-800 metres	6-10 minutes	29%
801-1200 metres	11-15 minutes	14%
More than 1201 metres	More than 15 minutes	20%

Table 4.3 The population of each income group who can reach a park within varying distances

Distance to a park in metres	Distance to a park in minutes	Percentage of the population who can reach a park in an income group		
		High-income	**Middle-income**	**Low-income**
0-400 metres	0-5 minutes	37%	46%	24%
401-800 metres	6-10 minutes	34%	30%	26%
801-1200 metres	11-15 minutes	15%	11%	19%
More than 1201 metres	More than 15 minutes	14%	13%	31%

Overall, 89% of high-income respondents who have a private garden can reach a park more than 15 minutes away. A mere 43% of middle-income respondents can reach a park more than 15 minutes away and have a private garden, whereas only 8% of low-income respondents give a similar response. Table 4.5 shows that the closer a park is located to a respondent's home, the less they require a new park closer to home. High-income respondents require the least number of new parks, followed by middle-income respondents. Finally, the majority of low-income respondents need a park closer to home, regardless of the distance they currently travel to a park, … .

Table 4.4 Access to a private garden and a park with varying distances from home

Distance to a park	Percentage of respondents who have a private garden		
	High-income	Middle-income	Low-income
0-5 minutes	82%	50%	7%
6-10 minutes	83%	49%	13%
11-15 minutes	88%	54%	15%
More than 15 minutes	89%	43%	8%
Total	83%	49%	10%

Table 4.5 Respondents who do not need a closer park

Distance to a park	Percentage of respondents who do not need a closer community park		
	High-income	Middle-income	Low-income
0-5 minutes	57%	46%	39%
6-10 minutes	20%	29%	20%
11-15 minutes	13%	6%	17%
More than 15 minutes	10%	19%	24%

Children and adults in all income groups regard more than 15 minutes to a park as less satisfactory. The result is visible by roughly double the percentage of respondents that indicate they never visit a park, or they make very limited use of a park, compared to middle and high intensity park users. The results of Table 4.6 confirm international research done on accessibility to a park. Park accessibility is an essential element to determine if a park is used or not and the frequency with which it is used (Giles-Corti et al. 2005). The closer a park is to a home, the more often people will use it, which is similar to children and adults in all income groups' park usage patterns (Azuma et al. 2006; Furuseth & Altman 1991; Giles-Corti et al. 2005; Henderson et al. 2001). A distance decay function also exists in the City of Cape Town results, whereby the appeal of a park dramatically declines with increasing distance (Alves et al. 2008; Burgess, Harrison & Limb 1988; Hansen 2006; Kaczynski et al. 2009). Despite the aforementioned, more low and middle-income children and adults travel further than 15 minutes to reach a park than high-income respondents do.

The aforementioned statement is substantiated by the results in Table 4.7. Lack of car ownership does determine the distance high and middle-income respondents travel to a park. There is a significant drop in the percentage in high and middle-income respondents who travel more than 15 minutes to reach a park, without utilizing a car. The reason for this is that the majority of respondents prefer to walk to a closer park, with higher income respondents also utilizing a bicycle to get to a park, as seen from Table 4.8 in section 4.2.2.

Table 4.6 How does distance to a park influence the intensity of park utilization

Income categories	Distance to a park	Intensity of park utilization							
		Low intensity (never/infrequent use)		Middle intensity (1-3 days a week)		High intensity (4-7 days a week)		All	
		Children	Adults	Children	Adults	Children	Adults	Children	Adults
High-income	0 - 5 minutes	50%	54%	62%	63%	70%	71%	59%	59%
	6 - 10 minutes	19%	19%	25%	25%	17%	17%	22%	22%
	11 - 15 minutes	13%	11%	9%	9%	9%	8%	10%	10%
	More than 15 minutes	18%	16%	4%	4%	4%	4%	9%	9%
Middle-income	0 - 5 minutes	38%	45%	60%	59%	71%	59%	51%	50%
	6 - 10 minutes	29%	26%	22%	25%	18%	22%	25%	25%
	11 - 15 minutes	9%	8%	6%	5%	4%	7%	7%	7%
	More than 15 minutes	24%	22%	12%	11%	7%	11%	17%	18%
Low-income	0 - 5 minutes	32%	46%	43%	34%	48%	41%	41%	41%
	6 - 10 minutes	18%	16%	17%	19%	16%	19%	17%	17%
	11 - 15 minutes	11%	11%	19%	22%	17%	22%	16%	16%
	More than 15 minutes	39%	28%	22%	26%	19%	19%	26%	26%

Table 4.7 How does lack of car ownership influence the distance respondents travel to a park

Distance to a park	Percentage of respondents who do not own a car		
	High-income	Middle-income	Low-income
0-5 minutes	6%	36%	67%
6-10 minutes	4%	34%	59%
11-15 minutes	10%	42%	62%
More than 15 minutes	3%	27%	70%
Total	6%	34%	66%

4.2.2 Mode of transport to a park

As seen from Table 4.8 the majority of children and adults across all income groups walk to a park. People in international literature also prefer walking to a park (Alves et al. 2008; Azuma et al. 2006; Burgess, Harrison & Limb 1988; Hansen 2006; Ravenscroft & Markwell 2000).

Table 4.8 Mode of transport children and adults use to get to a park

Mode of transport	High-income		Middle-income		Low-income		All	
	Children	Adults	Children	Adults	Children	Adults	Children	Adults
Walk	59%	54%	58%	48%	51%	36%	56%	45%
Run/Jog	9%	6%	3%	2%	4%	1%	5%	3%
Cycle	16%	7%	3%	1%	4%	1%	8%	3%
Drive with a car	20%	27%	9%	10%	4%	6%	11%	14%
Ride with a motorcycle	1%	0.4%	1%	1%	1%	1%	1%	1%
Go with a taxi	0.2%	0.4%	3%	3%	7%	7%	4%	4%
Go with a bus	0%	0.2%	1%	0.3%	2%	3%	1%	1%
Go by a train	0%	0%	0.3%	0.3%	3%	4%	1%	1%
Other transportation	0.2%	0%	1%	1%	1%	0%	1%	0.2%

Tables 4.10 and 4.11 show how respondents' mode of transport to a park choice, influence the intensity with which they visit a park. Low intensity use represents respondents who never visit a park and those who make very limited use of a park, such as one or two days a year. The results in Tables 4.10 and 4.11 are misleading. An example is 100% of high-income children who use other transportation to a park. The actual meaning of the result is that 100% of respondents, who make use of other transportation to a park, only do so in the group that visits a park 1-3 days a week, for example.

All income groups' children and adults who never visit a park, or only visit a park very infrequently throughout the year, do so by mostly utilizing a car. However, low-income adults mostly use a train or bus to do the same. The finding suggests that these respondents visit parks with a greater distance from the home. Similarly to previous results, the findings imply that the lower the income group, the more respondents use public transportation. Likewise, to Table 4.8, children in all three income groups and high and middle-income adults, who visit a park 1-3 and 4-7 days a week, favour walking, running/jogging and cycling. Low-income adults, who visit a park more regularly during a week, do so by taking a bus, or riding a motorcycle.

Table 4.10 The intensity of children's park utilization with different modes of transportation to a park

Mode of transport children use to a park	**High-income**			**Middle-income**			**Low-income**			**All**
	Low intensity (never/ infrequent use)	**Middle intensity (1-3 days a week)**	**High intensity (4-7 days a week)**	**Low intensity (never/ infrequen t use)**	**Middle intensity (1-3 days a week)**	**High intensity (4-7 days a week)**	**Low intensity (never/ infrequent use)**	**Middle intensity (1-3 days a week)**	**High intensity (4-7 days a week)**	
Walk	19%	63%	19%	30%	42%	28%	23%	51%	27%	51%
Run/Jog	22%	60%	19%	27%	55%	18%	6%	69%	25%	5%
Cycle	8%	72%	20%	18%	46%	36%	25%	69%	6%	7%
Drive with a car	39%	51%	10%	57%	33%	10%	40%	53%	7%	10%
Ride with a motorcycle	33%	33%	33%	0%	100%	0%	0%	100%	0%	1%
Go with a taxi	0%	0%	100%	43%	43%	14%	31%	52%	17%	3%
Go with a bus	0%	0%	0%	67%	33%	0%	56%	33%	11%	1%
Go by a train	0%	0%	0%	100%	0%	0%	57%	21%	21%	1%
Other transportation	0%	100%	0%	50%	25%	25%	25%	75%	0%	1%

Table 4.11 The intensity of adults' park utilization with different modes of transportation to a park

Mode of transport adults use to a park	**High-income**			**Middle-income**			**Low-income**			**All**
	Low intensity (never/ infrequent use)	**Middle intensity (1-3 days a week)**	**High intensity (4-7 days a week)**	**Low intensity (never/ infrequent use)**	**Middle intensity (1-3 days a week)**	**High intensity (4-7 days a week)**	**Low intensity (never/ infrequent use)**	**Middle intensity (1-3 days a week)**	**High intensity (4-7 days a week)**	
Walk	26%	62%	11%	40%	41%	19%	35%	50%	15%	38%
Run/Jog	24%	56%	20%	33%	50%	17%	0%	100%	0%	3%
Cycle	14%	68%	18%	0%	33%	67%	0%	0%	100%	3%
Drive with a car	44%	50%	6%	57%	36%	7%	26%	58%	16%	11%
Ride with a motorcycle	50%	50%	0%	50%	50%	0%	0%	60%	40%	1%
Go with a taxi	50%	0%	50%	67%	17%	17%	28%	44%	28%	3%
Go with a bus	0%	0%	100%	0%	100%	0%	40%	30%	30%	1%
Go by a train	0%	0%	0%	100%	0%	0%	75%	17%	8%	1%
Other transportation	0%	0%	0%	100%	0%	0%	0%	0%	0%	0.2%

4.2.3 Reasons for park non-use

Table 4.14 indicates the reasons why respondents never utilize a park, but also the reasons why they do not make even more use of a park. The main concerns respondents in all income groups have about park utilization appear to be of an intrapersonal and structural nature (Geoffrey et al. 2005; Henderson et al. 2001). Lack of security and fear of crime is not only an international phenomena as the number one reasons why people do not visit a park, (Azuma et al. 2006; Geoffrey et al. 2005; Hansen 2006; Ho et al. 2005; Madge 1997; Mitchell 1995; Ravenscroft & Markwell 2002), but also ranks as one of the top two reasons why respondents in all income groups do not visit a park as often as they want to. Respondents safety concerns are expressed by a high-income respondent who say “people are afraid to go [to a park] alone, even if [they are] walking a dog”. The following statements are reflective of the middle-income group’s opinions: “[we want] a quiet and safe space where we do not constantly have to look over our shoulders”, “a place where I can go with my family without a fear of being mugged”. “[Parks are] not fit to play in, not even to walk your dog in, because it is a danger to adults and children”. Low-income respondents express their safety concerns as follows: “please, it must be secured, because there is too much crime in the area. Even if you go with your child you are not safe” and “we have small children who want to play in a park, but it is not good for them”.

Antisocial behaviour in a park can also be an intimidating factor for people not utilizing a park (Burgess, Harrison & Limb 1988; Hansen 2006; Nielsen & Goodenough 1994). Antisocial behaviour also negatively influences respondents in the City of Cape Town’s park usage. Respondents in the middle and low-income groups have a negative image of drunks, drug-users and gangs in a park, as this particular reason is ranked as the number one reason why they never visit a park or only visit it irregularly. The negative antisocial image is visible throughout middle and low-income questionnaires with a middle-income respondent saying “remove the problem of vagrants, drug-users and the potential violence that accompanies this problem”. Low-income respondents summarize their fear of antisocial behaviour as follows: “many people use parks, but the way [in which they use it] is the problem” and “keep our parks clean, free of drugs and gangsters”. In contrast, 24% of high-income respondents experience problems with the homeless in a park in their suburb.

Also similarly, to international literature, maintenance concerns, in the form of litter and vandalism, occur in parks, which is especially problematic in middle-income suburbs (Azuma et al. 2006; Cranz & Boland 2004; Hansen 2006; Jansen van Vurren 2005; Jim & Chen 2006; Madge 1997;

Pasaogullari & Doratli 2004; Spocter 2008; Wall 1992; Wilson & De Wet 1992; Wilson 1989; Yilmaz, Zengin & Yildiz 2007). One high-income respondent says that their park "is well maintained by a very committed community", while another respondent indicates "[the community] would love to visit parks, if it is more carefully managed". Middle-income respondents complain "existing [parks are] neglected and insufficient" and that "[parks] always look messy – the community uses it as a dumping ground".

Another intrapersonal reason for park non-use that is mentioned only by the high-income group as the main reason why they do not visit a park, or only visit it infrequently, is a lack of time. In South Africa and internationally working unsociable hours can have a negative impact on park utilization, because of limited time availability (Dunnett, Swanwick & Woolley 2002; Geoffrey et al. 2005; Walters 2005).

A structural concern with parks, mentioned by low-income respondents is a lack of trees and natural vegetation, because "[parks} are nothing to speak off. [Parks are] dry fields and it does not look like parks – it is barren, dull, unattractive and too small". Low-income respondents, likewise to international literature, consider these type of parks as monotonous, sterile and boring (Burgess, Harrison & Limb 1988; Giles-Corti et al. 2005; Hansen 2006; Madge 1997; Rishbeth 2001).

Interestingly, high-income respondents give the most explanations for "other reasons" why they do not visit a park. High-income respondents indicate that children are too old to go to a park, children play at home in their own garden, children play sport at sport clubs or schools and that roads surrounding parks are too busy and require speed bumps. Teenagers indicating they are too old to go to a park are also an international phenomena. Teenagers visit parks, but not as often as younger children between the ages of 1-13 years. Many teenagers indicate that parks do not provide challenging facilities for them and as a result, they do not visit a park as often (Hansen 2006; Kaczynski et al. 2009; Seeland, Dübendorfer & Hansmann 2009; Zhang & Gobster 1998). A high-income respondent indicates: "parks are not aimed at the ages 8-17, at the age when children require a safe place to exercise". One middle-income respondent indicate that his/her family has a park facility at home and consequently do not need to visit a park. Meanwhile, low-income respondents indicate they are not interested in going to a park, as the main "other reasons" why they do not visit a park.

Table 4.14 Reasons for park non-use

Reason for park non-use	High-income	Middle-income	Low-income	All
Lack of security and safety	28%	37%	30%	31%
Drunks, drug-users and gang problems	14%	47%	30%	30%
Too little time available	34%	29%	22%	28%
Lack of maintenance of the park	17%	26%	20%	21%
Litter and vandalism	16%	32%	13%	20%
Lack of facilities in the park	16%	26%	19%	20%
Fear of sexual attacks	14%	28%	19%	20%
Homeless are around	24%	22%	14%	19%
Not enough trees and nature	7%	22%	24%	18%
Park not big enough	5%	15%	20%	14%
Fear of racial attacks	8%	10%	21%	13%
Park is too far away	4%	11%	21%	13%
Visit other community parks or conservation/biodiversity areas	11%	11%	12%	12%
Lack of parking	6%	9%	17%	11%
Pet problems	7%	10%	15%	11%
Conflict between park users	3%	11%	12%	9%
Park is too crowded	1%	6%	14%	8%
Not easily accessible	1%	3%	10%	5%
Invisible areas	1%	3%	7%	4%
Other reasons for not visiting the park	4%	2%	5%	4%
Disabled	1%	3%	6%	3%

It is assumed that respondents, who do not have access to a private garden, would necessarily compensate for this loss in outdoor recreational space, by going to a park. However, similarly to research done by Burgess, Harrison & Limb (1988), respondents have various reasons why they do not take a trip to a park, when they do not have a private garden, as seen from Table 4.15. Half of high-income respondents and 91% of middle-income respondents indicate that accessibility is the biggest problem they encounter when wanting to visit a park. These respondents may stay in suburbs where parks are located slightly further from the home, which would affect park accessibility. Research done internationally and in South Africa proves that parks that are less accessible are visited less than more accessible parks (Azuma et al. 2006; City of Cape Town City Planner's Department 1997; CSIR 2000; Furuseth & Altman 1991; Harnik & Simms 2004; Pasaogullari & Doratli 2004; Shafer, Lee & Turner 2000; Spocter 2008; Walters 2005).

The main reasons why low-income respondents never visit a park or only visit a park irregularly are that it is too crowded, litter and vandalism and too little time. Very few low-income respondents have a private garden, which could be an explanation for the crowdedness they experience in a park. Reasons why respondents in the entire City of Cape Town do not use a park, even if they do not have a garden, are very similar to the reasons why respondents do not visit a park in Table 4.14 of earlier. These reasons include lack of safety, problems with drunks, drug-users and gangs and lack of time availability. The findings could indicate that respondents do not necessarily compensate for a lack of a private garden by going to a park, because of lack of freedom to roam and environments that are socially deprived of opportunities to play (Burgess, Harrison & Limb 1988).

Lack of facilities, maintenance and safety concerns (in its various forms) are the main problems adults in all income groups experience in a park.

Table 4.17 The reasons why children do not visit a park as often as they want

Reasons for children not visiting a park	**High-income**			**Middle-income**			**Low-income**		
	Low intensity (never/ infrequent use)	**Middle intensity (1-3 days a week)**	**High intensity (4-7 days a week)**	**Low intensity (never/ infrequent use)**	**Middle intensity (1-3 days a week)**	**High intensity (4-7 days a week)**	**Low intensity (never/ infrequent use)**	**Middle intensity (1-3 days a week)**	**High intensity (4-7 days a week)**
Visit other community parks or conservation/ biodiversity areas	67%	20%	13%	54%	27%	20%	29%	44%	30%
Conflict between park users	64%	18%	18%	43%	18%	40%	33%	42%	25%
Drunks, drug-users and gang problems	37%	35%	7%	69%	22%	14%	41%	41%	18%
Fear of racial attacks	70%	30%	0%	56%	19%	25%	31%	44%	26%
Fear of sexual attacks	67%	26%	8%	67%	18%	15%	37%	46%	17%
Homeless are around	66%	28%	5%	60%	23%	17%	32%	48%	20%
Disabled	75%	0%	25%	17%	33%	50%	29%	38%	33%
Not easily accessible	75%	0%	25%	60%	10%	30%	45%	38%	18%
Park is too crowded	67%	33%	0%	36%	27%	36%	23%	45%	32%
Park is too far away	94%	0%	6%	63%	23%	14%	51%	34%	15%
Too little time available	55%	33%	12%	53%	22%	26%	37%	39%	24%
Park not big enough	58%	58%	21%	49%	23%	28%	31%	43%	26%
Not enough trees and nature	62%	31%	7%	60%	19%	21%	37%	39%	25%
Invisible areas	75%	0%	25%	40%	40%	20%	19%	41%	41%
Litter and vandalism	67%	23%	10%	66%	18%	16%	54%	23%	23%
Lack of parking	64%	23%	17%	41%	25%	34%	34%	33%	34%
Lack of security and	67%	25%	9%	65%	23%	11%	38%	39%	23%

safety									
Lack of maintenance of the park	65%	14%	11%	61%	24%	15%	38%	35%	27%
Lack of facilities in the park	63%	24%	13%	66%	22%	12%	51%	31%	18%
Pet problems	62%	27%	12%	51%	31%	17%	25%	37%	38%
Other reasons for not visiting the park	81%	13%	6%	71%	0%	29%	32%	36%	32%

Table 4.18 The reasons why adults do not visit a park as often as they want

Reasons for adults not visiting a park	**High-income**			**Middle-income**			**Low-income**		
	Low intensity (never/ infrequent use)	**Middle intensity (1-3 days a week)**	**High intensity (4-7 days a week)**	**Low intensity (never/ infrequent use)**	**Middle intensity (1-3 days a week)**	**High intensity (4-7 days a week)**	**Low intensity (never/ infrequent use)**	**Middle intensity (1-3 days a week)**	**High intensity (4-7 days a week)**
Visit other community parks or conservation/ biodiversity areas	78%	15%	7%	69%	17%	14%	31%	38%	31%
Conflict between park users	80%	10%	10%	63%	19%	19%	46%	35%	20%
Drunks, drug-users and gang problems	69%	29%	2%	77%	15%	5%	60%	29%	12%
Fear of racial attacks	85%	15%	0%	62%	23%	15%	38%	43%	19%
Fear of sexual attacks	79%	21%	0%	75%	14%	11%	52%	32%	16%
Homeless are around	79%	19%	2%	70%	16%	13%	41%	31%	29%
Disabled	50%	25%	25%	0%	25%	75%	28%	50%	22%
Not easily accessible	75%	0%	25%	40%	0%	60%	51%	31%	17%
Park is too crowded	100%	0%	0%	56%	28%	17%	35%	39%	27%
Park is too far away	94%	6%	0%	72%	13%	16%	61%	28%	10%
Too little time available	68%	26%	7%	68%	21%	12%	53%	27%	20%
Park not big enough	78%	17%	6%	59%	22%	20%	48%	27%	25%
Not enough trees and nature	92%	4%	4%	68%	21%	11%	51%	28%	21%
Invisible areas	75%	0%	25%	57%	0%	43%	25%	42%	33%
Litter and vandalism	75%	19%	5%	76%	15%	9%	68%	18%	14%
Lack of parking	77%	14%	9%	54%	25%	21%	45%	33%	22%
Lack of security and safety	81%	16%	3%	80%	12%	8%	57%	30%	13%
Lack of maintenance of the park	85%	10%	5%	75%	15%	10%	53%	32%	15%

Lack of facilities in the park	79%	14%	7%	81%	11%	8%	56%	26%	18%
Pet problems	78%	8%	13%	66%	14%	21%	33%	45%	22%
Other reasons for not visiting the park	100%	0%	0%	67%	0%	33%	33%	29%	38%

To conclude, the following remarks can be made of Chapter Four. A GIS analysis on *"park accessibility with capacity constrained"* (Figure 4.2) show that large parts of, especially low-income suburbs populations, do not have access to a park. However, when *"only park accessibility"* is considered (Figure 4.3), the population in all income groups have relatively good park access.
The results of the population of the City of Cape Town's access to a park (Table 4.3), confirm respondents' perceptions of the time they generally take to reach a park. Most respondents in the high and middle-income groups take 0-5 minutes to reach a park, with 6-10 minutes being the second frequent time high and middle-income respondents take to get to a park. Also similarly, to Figure 4.3, a large proportion of low-income respondents have to travel further than 15 minutes to reach a park.

COMMUNITY/NEIGHBOURHOOD PARK UTILIZATION

(FROM CHAPTER 5)

To summarize, Chapter Five focus on park utilization: the intensity of park usage, the time spent in a park and the activities respondents do in a park. Not only do children in all income groups visit a park more often than adults in all income groups in a week, they also stay in a park for a longer time than adults in all income groups. Of all the respondents and income groups, low-income children visit a park the most and stay in a park the longest. On the contrary, middle-income children and adults visit a park the least and spend the shortest amount of time in a park.

Children in all income groups participate more in active recreation, while adults in all income groups prefer passive activities in a park. The higher the income group, the more often children play on play equipment. The lower the income group, the more children play games or with toys in a park. The finding signifies that less play equipment is provided in lower income suburbs' parks. Higher income adults, similarly to international findings, prefer to accompany their children to a park, more than lower income adults do. Low-income adults do family/socializing activities in parks. More adults than children walk their dog in the high and middle-income groups; while walking the dog is the most frequent activity other residents do in a park.

5.1 Intensity of park utilization

Figures 5.1 and 5.2 indicate the intensity with which children and adults across all three income groups visit a park. Low intensity use include respondents who never visit a park, but also the respondents who visit a park very infrequently throughout the year. Middle intensity use take into account the respondents who visit a park 1-3 days a week, while high intensity park utilization comprise of respondents who visit a park 4-7 days a week.

High and low-income children visit a park more regularly than middle-income children do, see Figure 5.1. High and low-income children mostly prefer to visit a park for 1-3 days a week. When the scores for middle and high intensity park utilization are added together, low-income children use a park the most. It is astonishing that half of middle-income children never visit a park or only visit a park irregularly during the year. The results for the entire City of Cape Town indicate the percentage of children who never visit a park, or visit it only irregularly during the year, and the percentage of children who visit a park 1-3 days a week, are almost equal. Children across all three income groups, who visit a park 4-7 days a week, make up the lowest percentage of child park users.

In contrast to Figure 5.1, Figure 5.2 indicates that most adults across all three income groups visit a park much less than children do. The majority of middle-income adults never use a park, or only visit a park infrequently during the year, while half of low-income adults never visit a park, or only visit a park irregularly throughout the year. The finding may suggest that adults do not always accompany their children to a park. Nonetheless, high-income adults visit a park most often of all three income groups. Their visitation is mostly for 1-3 days a week. As levels of social prosperity increases, participation in park recreational facilities increases as well, as noted by Gedikli & Ozbilen (2004). The aforementioned statement explains high-income adults and children's higher park utilization. On the contrary, low-income adults who visit a park regularly during the week are similar to other research (Nighat et al. 2005, Pasaogullari & Doratli 2004). Similarly, to children's results in Figure 5.1, the lowest percentage of adults also visits a park 4-7 days a week in Figure 5.2.

Table 5.1 gives a detailed tabular breakdown on the number of days respondents across all three income groups go to park. Most children across all income groups visit a park more than one day in a week. The “intensity of park use” results in Figures 5.1 and 5.2 and Table 5.1 verify the international findings that young children visit parks the most (Burgess, Harrsion & Limb 1988; Dunnett, Swanwick & Woolley 2002; Hansen 2006; Kaczynski et al. 2009; Pincentl & Gearin 2005; Seeland, Dübendorfer & Hansmann 2009). In contrast to international literature’s findings of women and minority groups visiting a park at least once a week, (Dunnett, Swanwick & Woolley 2002; McCormack et al. 2006; Page, Nielsen & Goodgenough 1994; Sanesi & Chiarello 2006; Seeland, Dübendorfer & Hansmann 2009), middle and low-income adults mostly use a park more than one day in a week. The results of high-income respondents are however, comparable to the aforementioned literature’s findings that whites visit a park at least once a week, because high-income adults in the City of Cape Town mostly visit a park, one day a week, as seen from Table 5.1.

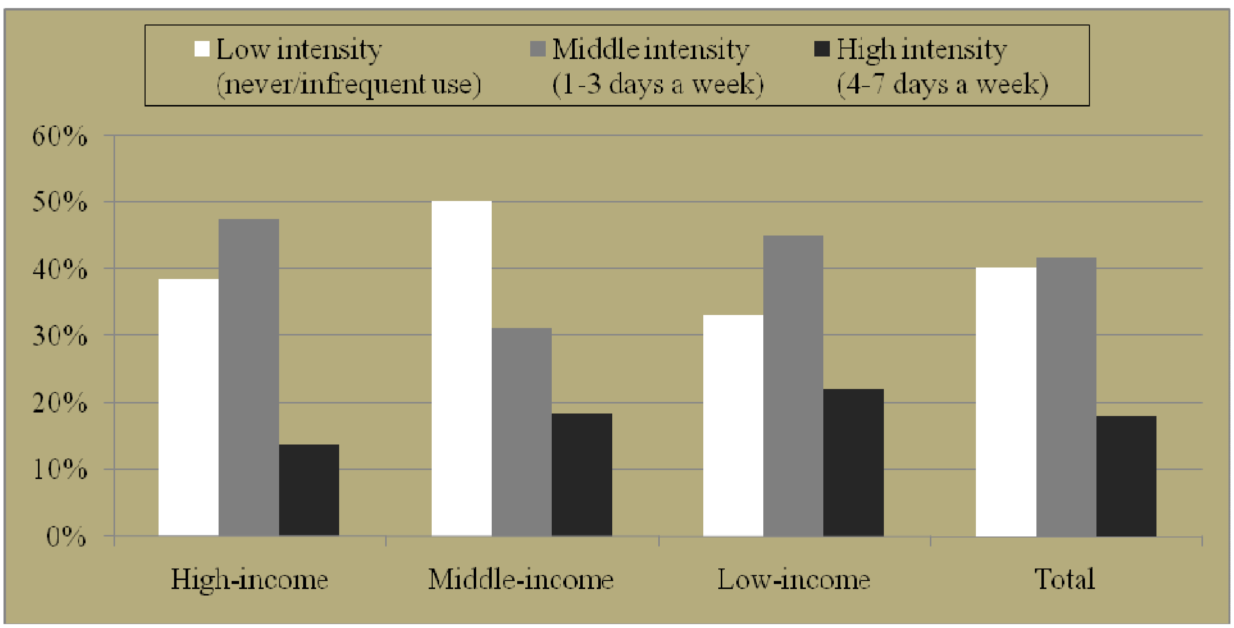


Figure 5.1 Children’s intensity of park utilization

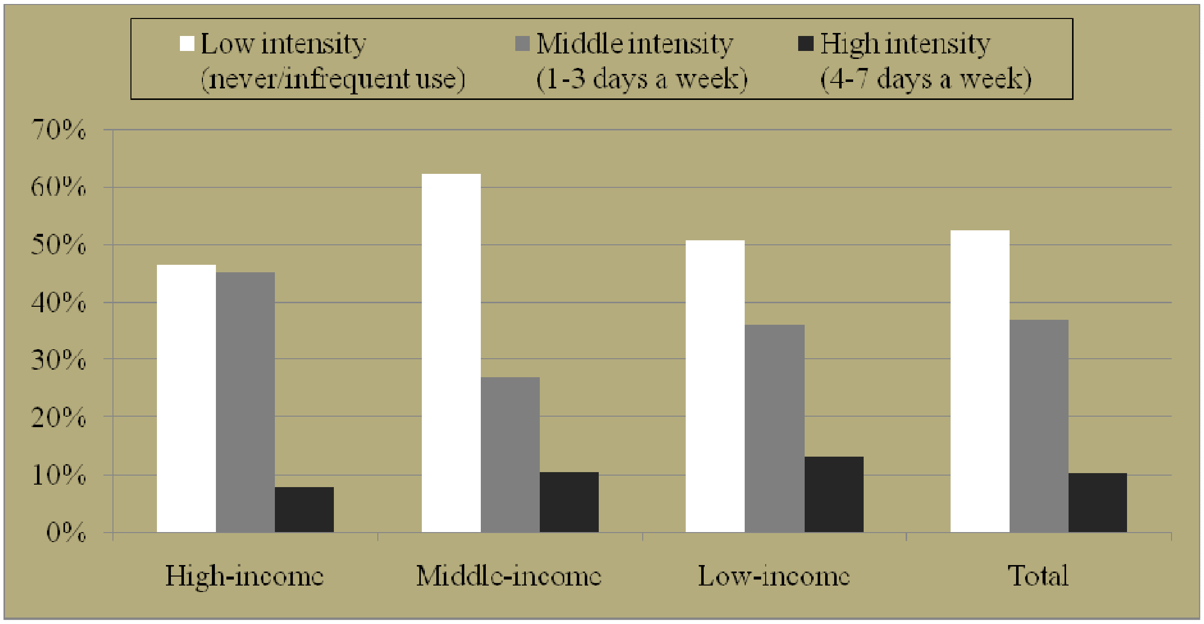


Figure 5.2 Adults' intensity of park utilization

Table 5.1 Number of days respondents spend in a park

Number of days respondents spend in a park	**High-income**		**Middle-income**		**Low-income**		**All**	
	Children	**Adults**	**Children**	**Adults**	**Children**	**Adults**	**Children**	**Adults**
1 Day	30%	30%	13%	12%	25%	18%	23%	21%
2 Days	10%	8%	10%	9%	11%	13%	10%	10%
3 Days	7%	8%	8%	6%	10%	5%	9%	7%
4 Days	4%	2%	4%	4%	5%	2%	4%	3%
5 Days	4%	1%	2%	2%	8%	4%	5%	2%
6 Days	2%	1%	2%	1%	2%	2%	2%	1%
7 Days	5%	3%	10%	4%	8%	5%	7%	4%
Never	39%	47%	50%	62%	33%	51%	40%	53%

To summarize, not having a private garden does not necessarily increase the number of days children and adults in the middle and low-income groups go to a park. The main reason for this is probably because they have less access to parks in their neighbourhoods, supporting international literature (Burgess, Harrison & Limb 1988; Omer & Or 2005; Zhang & Gobster 1998). However, similarly to research done by Gedikli & Ozbilen (2004) in a developed country, as levels of social prosperity increase, park usage increases as well, which is visible from high-income respondents spending more time in a park if they do not have a private garden.

Table 5.4 The frequency with which respondents who do not have a private garden visit a park

Intensity of park utilization	**Percentage of respondents who do not have a private garden**					
	High-income		**Middle-income**		**Low-income**	
	Children	**Adults**	**Children**	**Adults**	**Children**	**Adults**
Low intensity (never/infrequent use)	16%	17%	51%	50%	88%	89%
Middle intensity (1-3 days a week)	14%	17%	53%	52%	91%	89%
High-intensity (4-7 days a week)	33%	23%	55%	53%	89%	92%
Total	18%	17%	53%	51%	89%	89%

5.2 Time spent in a park

The time children and adults spend in a park, is indicated in Figures 5.3 and 5.4. Time spent in a park shows that low-income children visit a park the longest, while middle-income children visit a park for the shortest amount of time. On the contrary, high-income adults visit a park slightly longer than low-income adults, while middle-income adults again visit a park for the shortest time. The results of Figures 5.3 and 5.4 confirm research done by (Dunnett, Swanwick & Woolley 2002; McCormack et al. 2006; Nighat et al. 2005; Page, Nielsen & Goodenough 1994, Seeland & Nicole 2006) that most people spend between 15 minutes to more than one hour in a park. In Turkey however, people in Gedikli & Ozbilen’s (2004) research spend between one and two hours in a park. A possible explanation for high-income adults visiting a park slightly longer than other income groups’ adults is that they accompany their children to a park more often than the other income groups, as seen in Table 5.12, which follows in section 5.3. The aforementioned international literature concur that adults visit a park longer if they accompany their children to a park. Overall, children in all income groups stay in a park longer, while adults in all income groups visit a park for shorter times.

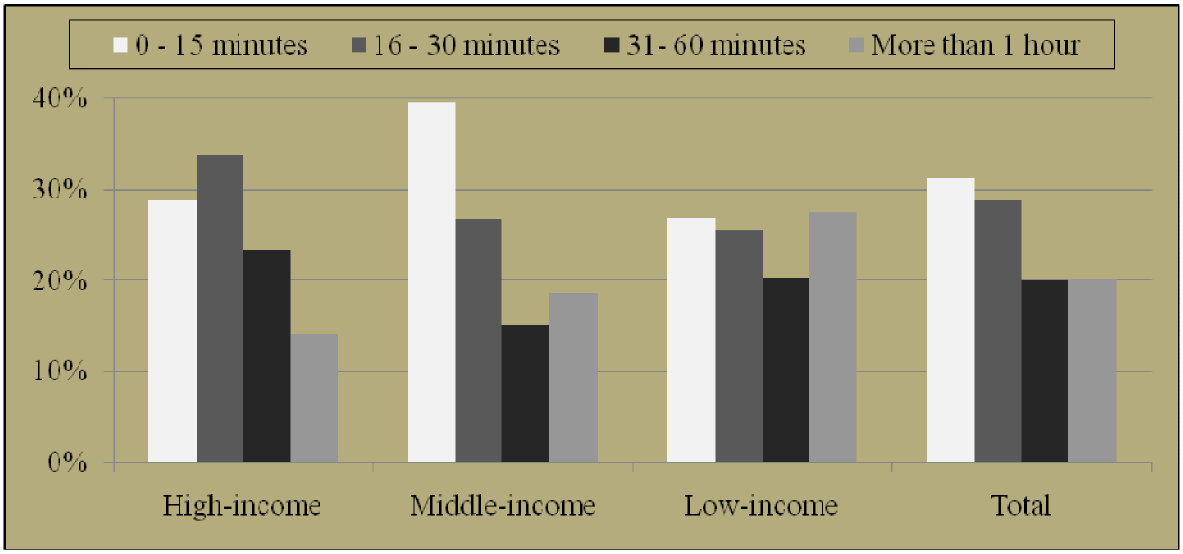


Figure 5.3 Time children spend in park

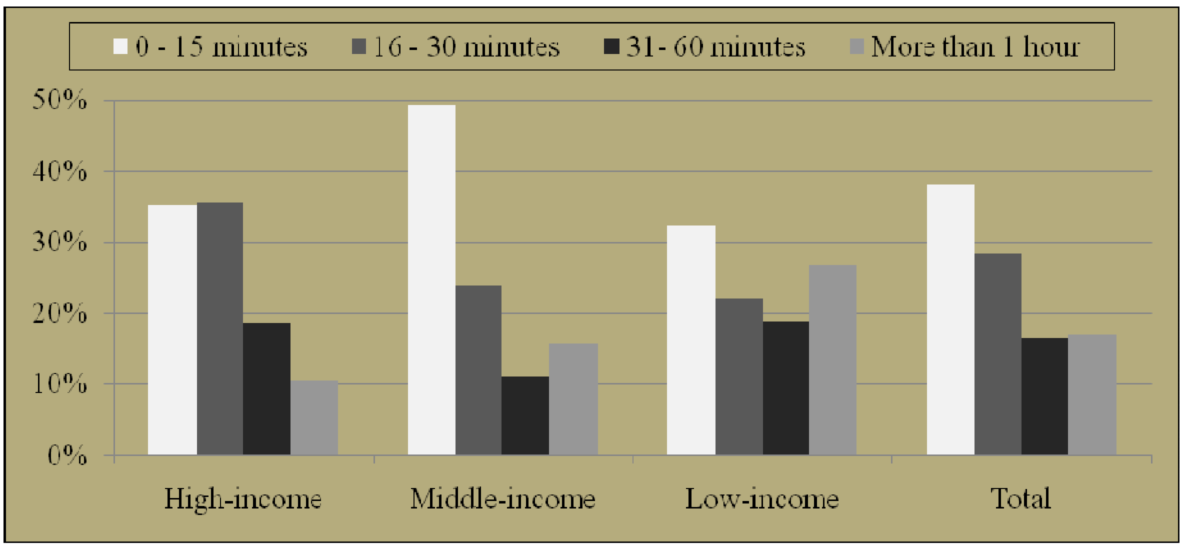


Figure 5.4 Time adults spend in park

High and middle-income children, without a private garden, mostly stay in a park between 31 minutes to more than one hour, while low-income children stay in a park for shorter times, see Table 5.9. A possible explanation could be that low-income respondents have more complaints about the overall look of parks in their neighbourhoods and the maintenance issues concerned with it, see Chapter Six. In contrast, high and low-income adults mostly spend 0-30 minutes in a park, whilst middle-income adults stay in a park for 31 minutes or more. Overall, children in all income groups, visit a park slightly longer than adults do. The results confirm that of Figures 5.3 and 5.4.

Car ownership does not significantly increase the time children and adults spend in a park, as Table 5.10 illustrates. High and middle-income children, whose family owns a car, stay in a park shorter. Only 31% of low-income children's families own a car and consequently when low-income children do go to a park, possibly with other modes of transport, they spend more time there. High and low-income adults stay in a park only slightly longer, if they own a car. No difference was found in the time middle-income adults spend in a park.

Table 5.9 The time respondents spend in a park when they do not have a private garden

Time respondents spend in a park	Percentage of respondents who do not have a private garden					
	High-income		Middle-income		Low-income	
	Children	Adults	Children	Adults	Children	Adults
0-30 minutes	17%	19%	54%	51%	92%	87%
31 minutes – more than one hour	23%	17%	55%	57%	85%	86%
Total	19%	18%	54%	53%	89%	86%

Table 5.10 The time respondents spend in a park when they own a car

Time respondents spend in a park	Percentage of respondents who own a car					
	High-income		Middle-income		Low-income	
	Children	Adults	Children	Adults	Children	Adults
0-30 minutes	97%	94%	65%	64%	29%	27%
31 minutes – more than one hour	88%	95%	62%	64%	33%	33%
Total	94%	95%	64%	63%	31%	30%

Table 5.11 indicates if distance to a park determines the time respondents spend in a park. High and low-income children spend 0-30 minutes in a park that is 0-5 minutes away from home. An equal percentage of middle-income children spend 0-30 minutes and more than a half hour in a park, if it is 0-5 minutes away. Children in the high-income group, who are more than six minutes from a park, visit it for longer. On the contrary, when a park is more than 11 minutes from a middle and low-income child's home, that child visits a park more than a half hour. Distance to a park does determine the time children in all income groups spend in a park, because if a park is further from the home, they spend more time there.

Adults in the high-income group have the same park usage patterns as children in the high-income group. The majority of middle-income adults stay in a park for a shorter time, regardless of the distance to a park. On the contrary to low-income children, low-income adults mostly spend more than a half hour in a park that is 0-5 minutes away. Parks that are 6-10 minutes away are visited for shorter periods by low-income adults. Adults' results follow the same trend as the results of the children: the further a park is from a home, the longer the park visit of adults in all income groups is. Results of Table 5.11 concur with international findings: the further a park is from, especially lower income groups, the longer they visit it (Gobster 2002; Ho et al. 2005; Pincetl & Gearin 2005; Tierney, Dahl & Chavez 2001; Zhang & Gobster 1998).

5.3 Typology of respondents' activities in a park

As was expected, children in all income groups participate in more active recreational activities, while adults do activities that are more passive, as is demonstrated by Table 5.12. The finding is similar to international literature, which states that as people age they engage in more passive activities (Byrne & Wolch 2009; Henderson et al. 2001; Payne, Mowen & Orsega-Smith 2002; Tucker, Gilliland & Irwin 2007; Zhang & Gobster 1998). Results for other residents, as indicated in Table 5.13, show that passive and active recreation are almost equal, with the passive recreational activities being only slightly more than the active recreation in the middle and low-income groups.

Half of high-income children play on play equipment, while most middle and low-income children play sports in a park, see Table 5.12. Walking, "escaping the city", accompanying other children to a park and playing games or with toys are other main activities that children in all income groups do in a park. A possible reason for playing games/with toys in the low-income group may be that limited play equipment is provided in low-income suburbs' parks. Developed and developing countries, together with South African literature, confirm that children play more in a park than adults (Byrne & Wolch 2009; City of Cape Town City Planner's Department 1997; CSIR 2000; Henderson et al. 2001; Let the children play 1997; Payne, Mowen & Orsega-Smith 2002; Tinsley HEA, Tinsley DJ & Croskeys 2002; Tucker, Gilliland & Irwin 2007). Accompanying children to a park could possibly be important to 39% of low-income children, because as international literature indicate blacks (who have a lower income than other racial groups in South Africa) have bigger family and friend groups and social interaction in the form of going to a park is more important to them (Byrne & Wolch 2009; Gobster 2002; Ho et al. 2005; Payne, Mowen & Orsega-Smith 2002). Activities ranking the lowest are more or less similar across all income groups. Children working, having a braai and dating are some activities children do not regularly do in a park. In addition, high-income children do not watch people in a park, while low-income children do not utilize a park to "escape the city".

Furthermore, Table 5.12 indicates the activities adults do in a park based on the three income groups. Activities high and middle-income adults do in a park are mostly similar. The only difference is the order in which they prefer to participate in these activities. These activities include accompanying children to a park and resting/relaxing in a park. International and South African literature also confirms that adults accompany their children to a park to ensure their safety (Burgess, Harrison & Limb 1988; City of Cape Town City Planner's Department 1997; Chiesura 2004; CSIR 2000; Dunnett, Swanwick & Woolley 2002; Kaczynski et al. 2009; Let the children play 1997; Tucker, Gilliland & Irwin 2007). Although no difference is made between income groups in international and South African literature, an interesting trend from the City of Cape Town's results is that the lower the income, the less adults accompany their children to a park – which is in contrast to the aforementioned results of the children. This trend is proven by one high-income respondent stating "children do not play in the park as they use to. It is sad, but it is too dangerous to leave them alone". On the contrary, middle-income respondents do not explicitly make comments about accompanying children to park, whereas two low-income respondents say "parents must accompany their children to a park at all times" and that "some adults are unable to visit a park because of distance problems". These two statements is an example that fewer low-income adults accompany their children to a park. The finding supports an earlier finding that more adults than children indicate they never visit a park, see Figures 5.1 and 5.2 of earlier. The finding is also similar to research done by Nembudani (1997) in Gugulethu and Walters (2001) in Bellville.

High-income adults also enjoy "escaping the city" in a park, while middle-income adults walk in a park. Low-income adults prefer different activities in a park. Low-income adults participate mostly in passive activities such as resting/relaxing, socializing, having a picnic and a braai. The finding is very similar to international literature where blacks indicate a strong emphasis on family/socializing activities in a park (Byrne & Wolch 2009; Gobster 2002; Henderson et al. 2001; Ho et al. 2005; Payne, Mowen & Orsega-Smith 2002; Zhang & Gobster 1998). Activities ranking the lowest are more or less similar across all income groups. These activities include working, rollerblading/skateboarding, playing games, playing on play equipment and other activities, which are not defined by middle and low-income respondents. High-income children and adults' other activities they do in a park is conducting neighbourhood watches, quad biking, playing golf, taking wedding photos and flying radio controlled helicopters.

Interestingly, "walking the dog", which is seen as one of the most important activities people do in a park internationally, (Alves et al. 2006; Dunnett, Swanwick & Woolley 2002; Giles-Corti et al. 2005; Gobster 2002; Hansen 2006; Iamtrakul 2005; Kang 2006; Swanwick, Dunnett & Woolley 2003; Zhang & Gobster 1998), does not rank so high with children in the high and middle-income groups. Nonetheless, more adults than children walk their dogs in these income groups. Low-income children and adults rarely walk their dogs in a park. Most respondents, in all income groups indicate however, that other residents walk their dogs as the most frequent activity they do in a park. Activities other residents' prefer to do in a park are very similar to adults' activities they engage in a park; see Table 5.13.

Table 5.12 Typology of children and adults' activities in a park[1]

Activities respondents do in a park	High-income		Middle-income		Low-income		All	
Active activities	**Children**	**Adults**	**Children**	**Adults**	**Children**	**Adults**	**Children**	**Adults**
Cycle	25%	14%	17%	7%	17%	6%	20%	9%
Exercise	31%	30%	21%	18%	21%	16%	24%	21%
Jog	23%	24%	20%	13%	22%	10%	22%	15%
Play frisbee/toys	30%	16%	31%	9%	28%	6%	29%	10%
Play games	21%	5%	29%	3%	35%	5%	29%	5%
Play on play equipment	50%	7%	40%	6%	23%	11%	36%	8%
Play sports	35%	18%	45%	18%	41%	12%	40%	16%
Rollerblade/skateboard	16%	3%	14%	2%	22%	4%	18%	3%
Walk	33%	38%	25%	27%	20%	18%	26%	27%
Walk the dog	30%	39%	17%	20%	9%	12%	18%	23%
Other activities	1%	2%	2%	3%	5%	5%	3%	3%
Passive activities	**Children**	**Adults**	**Children**	**Adults**	**Children**	**Adults**	**Children**	**Adults**
Accompany other children	33%	51%	32%	31%	39%	18%	35%	33%
Braai	5%	9%	8%	18%	10%	19%	8%	15%
Date	7%	10%	6%	10%	7%	16%	6%	12%
"Escape the city"	33%	40%	16%	24%	9%	12%	19%	25%
Have a picnics	25%	24%	17%	20%	13%	19%	18%	21%
Observe wildlife/nature	21%	25%	12%	14%	7%	8%	13%	15%
Rest/relax	32%	47%	24%	36%	17%	30%	24%	37%
Socialize	29%	27%	18%	21%	16%	22%	20%	23%
View landscape/nature	20%	29%	12%	16%	12%	18%	14%	21%
Watch people	9%	13%	11%	14%	14%	16%	11%	15%
Work	5%	5%	8%	9%	14%	15%	9%	10%

LEVELS OF SATISFACTION WITH COMMUNITY/NEIGHBOURHOOD PARKS *(FROM CHAPTER 6)*

To conclude, the results of Chapter Six show overall high-income respondents are more satisfied with park management and maintenance than middle and low-income respondents who indicate average park management and maintenance in their suburbs. Accessibility to a park creates the least problems for all income groups, whereas toilets are problematic. Despite all the aspects receiving reasons why respondents are not satisfied with park management and maintenance, recurrent concerns are observed. Persistent apprehensions include safety issues, especially with homeless, drunks, drug-users, gangs and thieves; maintenance and cleanliness concerns, in the form of

[1] Children and adults in Table 5.12 refer to children and adults in respondents' household.

continued litter and vandalism; lack of natural vegetation and the state of play equipment. Recurring anxiety extends into the facilities respondents in all income groups would most like to add into a park. Added safety, safer and more play equipment, park furniture and planted grass and trees are the most important facilities all income groups desire in a park. Most income groups' respondents also aspire to the same ideal park setting: clean, spacious, green and flat, with pretty gardens, nice scenery and shade, together with sporting facilities. To a lesser extent to the aforementioned facilities, safe, fenced parks with controlled free access are also important to especially low-income respondents, while creating sections are more crucial to high-income respondents. Although various comments/suggestions are made about park utilization amongst the various crosstabs, the most repetitive comments are to maintain and clean parks and to remove unwanted elements and characters from parks on a regular basis.

Chapter Six explains respondents' levels of satisfaction with parks. A park satisfaction index was calculated to determine respondents' perceptions of the quality of park facility management and maintenance in their suburb. Respondents' motivations for a low rating of park management and maintenance are also analysed. Chapter Six furthermore includes a nuisance index about the main issues that create problems for respondents in a park and the driving forces behind these concerns. To counteract respondents' dissatisfaction with some aspects in a park, respondents were asked to comment on how to better park utilization. park scenery and the intensity with which respondents visit a park and the time they spend there.

1 CONTENTMENT WITH COMMUNITY/NEIGHBOURHOOD PARKS

Table 6.1 indicates a park satisfaction index about park facility management and maintenance issues. The index indicates mean scores. Percentages closer to 100% indicate "excellent" park facility management and maintenance, closer to 60% shows "average" scores, while percentages closer to 0% indicate "very bad" park facility management and maintenance. In all three income groups accessibility/proximity to parks score the highest index value, whereas toilets are seemingly considered to be a maintenance issue, because the value receives the lowest index score in all three income groups.

High-income respondents rank most of the park facility management and maintenance scores as good, with only some dissatisfaction with safety and security, seats and tables and toilet facilities. Middle and low-income respondents rank most of the park facility management and maintenance scores as "average". The results indicate that the higher the income of respondents the more satisfied they are with park management and maintenance in their suburb, while middle and low-income respondents appear to be less satisfied with it.

Table 6.1 Park satisfaction index about park facility management and maintenance

Park satisfaction index about management/maintenance issues	**High-income Mean**	**Middle-income Mean**	**Low-income Mean**	**All**
Accessibility/Proximity to park	84%	69%	68%	75%
General cleanliness	68%	56%	62%	63%
Overall maintenance of the park	65%	53%	60%	61%
Parking facilities	63%	54%	56%	58%
Personal safety and security	58%	48%	53%	54%
Play equipment for children	62%	54%	59%	59%
Seats/benches/tables	50%	42%	56%	51%
Shaded areas	65%	51%	54%	58%
State of grass/trees/plants	63%	55%	58%	60%
Toilet facilities	33%	35%	48%	39%

Although **accessibility to a park** got the highest park satisfaction rating amongst all three income groups, some respondents across all three income groups still experience two problems with park accessibility. The main problem 88% of respondents in the City of Cape Town experience with park accessibility is the fact that some parks are too far to walk too. A low-income respondent says, "children do not visit a park, because it is far and it is the only one we know". Another low-income respondent even complains about crossing busy streets, which also adds to the inaccessibility of parks: "it is bad. I cannot even explain. Children from our side have to cross a very busy main road to get [to a park]".

Overall, 73% of respondents in the City of Cape Town indicate that **parks are filled with litter** and this creates a cleanliness concern in parks. Examples of litter, mentioned by high and middle-income respondents are glass, bins that are turned over, used condoms, dog faeces and the overall bad smell in parks. The cleanliness concern extends further into park **maintenance problems** which respondents across all income groups only describe by one recurrent theme – parks are not maintained well and on a regular basis. Respondents across all income groups want the "council to do continuous maintenance on parks by hiring cleaners". Low-income respondents indicate: "what was meant to be a park is not". Parks are "used as dumping grounds and it looks dirty and our children can get sick". Middle and low-income respondents note that upgrading and renewing parks would make the community happy and increase their admiration for parks. Furthermore, it would "encourage more social activities and [community] empowerment would occur". City of Cape Town newspapers also report that maintenance is a major park issue. City Parks receives many maintenance complaints, but the backlog is so far behind that it is difficult to attend to every complaint (Hansen 2009b; Hansen 2009c; Tygerburger 2009c; Tygerburger 2009e). Maintenance complaints are mostly in the form of parks that are filled with litter, the homeless staying in parks and the associated problems that accompany this phenomena (Hansen 2009c; Hansen 2009b; Tygerburger 2009c). One man and his gardener in Tygerburger (2009e) mowed and cleaned his community's 60x20 metre park, after the community made several complaints about the park that is not maintained anymore. Maintenance and issues with cleanliness act as a deterrent for people to use parks, as is also mentioned in the literature (Azuma et al. 2006; Cranz & Boland 2004; Hansen 2006; Jansen van Vuuren 2006; Jim & Chen 2006; Madge 1997; Pasaogullari & Doratli 2004; Spocter 2008; Wall 1992; Wilson & De Wet 1992; Wilson 1989; Yilmaz, Zengin & Yildiz 2007).

Complaints about **parking problems** are in the form of lack of parking facilities and not enough parking spaces. High-income respondents also complain that gravel parking space gets muddy in the winter, while the condition of tar surfaces is bad and the parking lines are not clearly painted. Respondents who complain about parking space are also possibly respondents who indicate that park accessibility is an issue. The reason for this presumption is that respondents, who indicate park accessibility is a problem, have to travel further to reach a park, most probably with a car.

Seven different motivations are given as to why **safety and security** are not satisfactory in a park. The main safety and security apprehensions are that respondents feel that a park is unsafe and that there are no security guards visible in a park. High and low-income respondents feel the most unsafe in a park. Respondents across all income groups also indicate that crime occurs in a park and that security guards are only occasionally observed in a park. The findings in Table 6.2 are similar to the findings in Table 4.14, which indicates that safety and security is a major concern in a park for all income groups. Furthermore, safety and security is also mentioned most frequently in the literature that act as a intrapersonal deterrent to park utilization. If people do not feel safe in a park, people will not visit it (Azuma et al. 2006; Burgess, Harrison & Limb 1988; Dunnett, Swanwick & Woolley 2002; Geoffrey et al. 2005; Hansen 2006; Ho et al. 2005; Henderson et al. 2001; Mitchell 1995; Madge 1997).

Most high and middle-income respondents indicate that **play equipment** are in a bad condition, or is not safe for children to play on. High-income respondents complain that broken play equipment is seldom fixed and that the existing play equipment needs to be cleaned regularly. On the contrary, most low-income respondents complain that parks in their neighbourhoods do not have any play equipment, and where play equipment is provided, it needs more variety. If parks are considered dull and boring and lack facilities, it does not invite creative play and social interactions to occur there (Burgess, Harrison & Limb 1988; Giles-Corti et al. 2005; Hansen 2006; Madge 1997; Rishbeth 2001). To summarize, high and middle-income respondents appear to have more and more variety in play equipment in their suburbs, while low-income suburbs lack the most basic play equipment.

The state of **seats/benches and tables** in parks receive the second most motivations, six, as to why it creates a dissatisfactory park environment for respondents. Most middle and low-income respondents complain that parks do not have enough seats and contain no tables where they can undertake recreational activities. Middle-income respondents indicate their seats should be comfortable to allow the elderly to also use a park. On the contrary, most high-income respondents indicate that their parks do not contain any seats, and where it does, the seats are broken and vandalised. The reason for this could be vagrants and vandals prefer to go to high-income suburbs' parks, because it is better equipped with play equipment, seats and tables. As a result, the park furniture is broken and vandalised in the process. However, low-income respondents, and to a lesser extent middle-income respondents, have less park furniture available where vagrants and vandals can go. Accordingly, vagrants and vandals will migrate more towards high-income suburbs. If park furniture, such as seats/benches, tables and play equipment, is not optimally maintained it adds to respondents safety concern and discomfort in a park. Ultimately, the result is that respondents visit a park less, likewise to international literature (Azuma et al. 2006; Cranz & Boland 2004; Hansen 2006; International Federation of Parks and Recreation Administration 2006; Madge 1997; Saldivar-Tanaka & Krasny 2004).

An astonishing 95% of low-income respondents and 76% of middle-income respondents do not have a tree to create shade in a park. Although more than half of high-income respondents also indicate they do not have any **shade in a park**, this income group have the most shade in a park of all three income groups. Even more astounding is that 98%, 89% and 70% of low, middle and high-income respondents, respectively, indicate that park surfaces consist of very little grass or just sand. A pleading low-income respondent summarizes the low-income group's concerns over a lack of grass and trees: "at least they must plant some trees and have some grass". Another low-income respondent also indicates that the ideal park "should just be planted with grass". Where park surfaces are planted with grass and some trees are around, the main concern amongst all income groups is that grass is persistently overgrown and filled with thorns and weeds, while trees are not felled on a regular basis and soil has bad drainage, which causes muddy ground. The complaints over lack of nature can be described by respondents' aesthetic and maintenance concerns in a park.

Respondents want parks to be physically attractive and well maintained, as stated by Pasaogullari & Doratli (2004).

As stated earlier, **toilet facilities** receive the lowest index score, which would indicate that it creates the most dissatisfaction in parks. Overall, 86% of respondents in the City of Cape Town indicate that parks in their neighbourhoods do not have any toilet facilities. Where toilets are provided, respondents complain that toilets are always broken and dirty, while high and middle-income respondents indicate that toilets are closed all the time. High and middle-income respondents also complain that they are too scared to use existing toilets and that homeless people sleep in toilets. They continue by saying that adding toilets would just lure more homeless people to parks who will stay in the toilets. Low-income respondents want to add the most new toilet facilities to parks of all the income groups.

Table 6.2 Motivations for low park satisfaction rating

Motivation for low park satisfaction rating	**High-income**	**Middle-income**	**Low-income**	**All**
Accessibility/Proximity to park				
Parks are too far to walk too	83%	95%	80%	88%
Parks are only near to drive too	17%	5%	20%	12%
Cleanliness				
There is litter	68%	81%	66%	73%
Parks are not cleaned regularly	20%	14%	18%	17%
Lack of personnel to clean	12%	6%	16%	11%
Maintenance				
Parks are not maintained well	17%	17%	7%	13%
Parking				
There are no parking facilities	69%	77%	87%	76%
Not enough parking space	31%	23%	13%	24%
Safety and security				
No security guards	40%	55%	44%	47%
Unsafe	44%	25%	44%	37%
Crime occurs	9%	10%	8%	9%
Occasional security guards are visible	5%	6%	3%	5%
Surfaces need to be appropriate	2%	0%	0%	1%
It is unsafe and crime occurs	0%	2%	0%	1%
There are no security guards and crime occurs	0%	2%	0%	1%
Play equipment				
Play equipment is in bad condition/not safe	43%	45%	27%	40%
Need more variety in play equipment	33%	33%	48%	36%
No play equipment	23%	21%	25%	23%
Play equipment is not safe and more variety is needed	1%	1%	0%	1%
Seats/benches/tables				

Not enough seats and no tables	31%	60%	52%	45%
Not enough seats	41%	33%	43%	39%
Seats are broken and vandalised	17%	3%	2%	9%
No tables	9%	4%	3%	6%
Seats are broken and there are no tables	1%	0%	0%	1%
Available seats are not enough and it is broken	1%	1%	0%	1%
Shaded areas				
No shaded areas	53%	76%	95%	72%
Limited shade only	47%	24%	5%	28%
State of grass/trees/plants				
Very little grass planted / just sand	70%	89%	98%	84%
Grass is overgrown / trees not felled	30%	12%	2%	16%
Motivation for low service/facility rating (continue)	**High-income (continue)**	**Middle-income (continue)**	**Low-income (continue)**	**All (continue)**
Toilet facilities				
No toilet facilities	85%	87%	85%	86%
Always broken and dirty toilets	9%	9%	11%	9%
The toilets are closed all the time	4%	3%	0%	3%
More toilets are needed	1%	1%	5%	2%

More in-depth explanations were required from respondents to determine the actual causes of these two nuisance aspects. Table 6.3 indicates these issues in a nuisance index that was calculated, indicating mean scores. Percentages closer to a 100% indicate that there is always a nuisance, 50% seldom and percentages closer to 0% never. In terms of nuisance in a park, middle-income respondents experience the most nuisance in a park – in the form of vandalism and litter. The majority of respondents, in all income groups, seldom experience nuisance in a park, but when nuisance is experienced; it is mostly in the form of vandalism, litter and the homeless, drug-users and drunks that are always around.

Table 6.3 Nuisance index of a park

Nuisances	**High-income Mean**	**Middle-income Mean**	**Low-income Mean**	**All**
Vandalism and litter as a nuisance	56%	66%	51%	59%
Homeless, drunks, drug-users as a nuisance	53%	64%	52%	58%
Dogs as a nuisance	40%	51%	48%	47%
Youngsters as a nuisance	27%	53%	50%	43%

The motivations respondents give when a particular nuisance is always a problem in a park, is shown in Table 6.4. Respondents across all income groups experience problems with all four nuisance factors in the nuisance index in Table 6.3. However, the extent to which a particular motivation leads to a nuisance differs slightly between income groups. Antisocial problems and behaviour of the homeless, drunks and drug-users cause the majority of respondents in all income groups to feel uncomfortable in a park. The uncomfortable feeling the homeless create for high-income respondents is that they do not have any respect for a park environment. The homeless' equipment (bedding, clothes and litter) is scattered all over in parks, while they lie around drunk in parks. High and middle-income respondents furthermore, indicate the homeless harass children by begging, shouting and swearing at them and then chasing them away. Respondents also add that teenagers use parks to drink there.

Overall, 89% of respondents indicate vandalism and litter make them feel unsafe when visiting a park. Respondents in all income groups also say that bins are rarely emptied and it adds to the litter in parks. Another problem only 9% of respondents experience in a park is people breaking play equipment (Burgess, Harrison & Limb 1988; Hansen 2006; Nielsen & Goodenough 1994). From open-ended questionnaire responses, it appears that litter, vandalism, and homeless/drunks/drug-users that are always around create the most nuisance in parks in all three income groups.

Overall, 67% of respondents in the City of Cape Town say dogs not on leashes create the most trouble when visiting a park, with middle-income respondents experiencing the most problems with it. On the contrary, most high-income respondents simply indicate that dogs are an inconvenience in a park, while low-income respondents mostly complain that dogs bark all the time in a park. The problems extend even further for high and middle-income respondents who indicate that some vagrants also have dogs that create a nuisance in parks. Most of respondents' worries about dogs are declared by three quotes from low and high-income respondents. The low-income respondent says, "dogs do not always listen to their people". A high-income respondent indicates that "dogs run loose, which then drives others away", while another respondent advice dog owners to "pick up their dog faeces". However, one high-income dog lover feels strongly about allowing dogs to be in parks: "if children can run around screaming and have plastic bicycles that make a dreadful noise, dogs should be allowed to run free as well". These responses proof international literature (Dunnett, Swanwick & Woolley 2002; Hansen 2006; Rishbeth 2001).

In contrast to international literature where the elderly mostly experience conflicting interests with children in parks (Furuseth & Altman 1991; Henderson et al. 2001; Payne, Mowen & Orsega-Smith

2002; Tinsley HEA, Tinsley DJ & Croskeys 2002), results of the City of Cape Town give responses of children and adults of various ages who feel that youngsters are problematic in a park. The majority of respondents in the City of Cape Town indicate that youngsters are a nuisance in parks, with low-income respondents experiencing the most problems with youngsters in parks. Interestingly, it would appear that low-income respondents experience fewer problems with youngsters using drugs in parks, because high and middle-income scores are much higher. However, when looking at the open-ended questionnaire responses it is clear that the entry of "youngsters being problematic in parks" in Table 6.4 also include youngsters using drugs in the low-income group. A middle-income respondent complains "most parks are situated next to your house and unemployed youngsters are hanging there engaging in drugs". A concerned low-income respondent says, "[a park] is not a place where your children can play, because gangsters smoke dagga and 'tik' there". Further problems high and middle-income youngsters cause in a park are listening to loud music, driving quad bikes and kissing each other publicly in parks.

Table 6.4 Motivations for nuisance created in a park

Motivation for nuisance created in parks	**High-income**	**Middle-income**	**Low-income**	**All**
Dogs as a nuisance				
Dogs not on leashes creates problems	57%	85%	61%	67%
Dogs are a problem	35%	8%	21%	20%
Dogs bark all the time	4%	4%	18%	11%
Dogs are a problem and they bark all the time	4%	0%	0%	1%
Dogs are a problem especially when they are not on leashes	0%	4%	0%	1%
Homeless/Drunks/Drug-users as a nuisance				
Homeless/drunks are always around	86%	53%	51%	63%
Homeless/drunks/drug-users are always around	4%	33%	38%	25%
People use parks for drug-use	4%	9%	4%	6%
Homeless/drunks/drug-users and teenagers who drink there are always in parks	0%	4%	4%	3%
Teenagers drink there	4%	0%	2%	2%
Homeless/drunks are always around and teenagers drink there	2%	2%	0%	1%
Vandalism and litter as a nuisance				
Vandalism and litter makes people feel unsafe in parks	92%	89%	85%	89%
People break play equipment	5%	9%	15%	9%
Vandalism and litter is not a big problem	3%	0%	0%	1%
People break play equipment and they don't feel safe in parks	0%	2%	0%	1%
Youngsters as a nuisance				
Youngsters are problematic in parks	50%	36%	85%	65%
Youngsters use drugs in parks	50%	59%	15%	33%

Youngsters are problematic and they use drugs	0%	5%	0%	2%

6.1 Facilities to add into a park

The facilities respondents would like to add in their park is represented in Table 6.5. Security guards and safety cameras and safer and more play equipment are mentioned most frequently in all three income groups. **Security guards and safety cameras** might have a high score, because of respondents' complaints about social and maintenance problems that occur in parks on a regular basis. Respondents might mention safer and more **play equipment**, because current equipment is not safe, or they need more variety, or there are no or very limited play equipment available in their parks, as seen in Table 6.2 of earlier. Although respondents mention the same facilities, their specifications differ greatly. Low-income respondents, who have the least equipment in their parks, ask for the most basic equipment, such as seesaws, swings and sliding boards. No high-income respondent asks for the most basic equipment, but rather luxury/modern play equipment, such as jungle gyms, rocking horses, more educational play equipment with more colours, sandpits for children and putt-putt courses in a park. Adding play equipment extends into adding more park furniture for high-income respondents, such as tables with umbrellas, benches with a shelter over it to use it in the winter and summer and more equipment/furniture for adults. Facilities that are the least important to add includes drinking water, rubbish bins, sufficient lighting and parking facilities.

Table 6.5 Facilities to be added to a park

Facilities to be added to park	**High-income**	**Middle-income**	**Low-income**	**All**
Security guards and safety cameras	31%	29%	28%	29%
Safer and more play equipment	24%	32%	21%	25%
More park furniture	19%	15%	11%	15%
Grass and trees planted	12%	11%	14%	13%
Restrooms with cleaning staff every day	15%	13%	7%	11%
Secure / Safe parking facilities	3%	2%	3%	3%
Sufficient lighting to use parks in day and at night	3%	2%	4%	3%
Rubbish bins	5%	3%	2%	3%
Drinking water	2%	3%	1%	2%

6.2 Creating an ideal park atmosphere

Most respondents across all income groups indicate … that they want their ideal park to be clean, spacious, green and flat with pretty gardens/nice scenery and shade, see Table 6.6. Middle-income respondents indicate they **want sports playing facilities to be integrated into a park**. The high scores for **clean, spacious, green and flat parks** could also be an indication that children want to play more sports, as such facilities are required for sports to be played. The specific sport facilities that respondents in all income groups mention are cycling/jogging tracks, skateboarding/rollerblading facilities, tennis, cricket, rugby, soccer, netball and boating facilities. The finding also corresponds with many children in all income groups playing sports in a park; see Table 5.12 of earlier. Tuck shops nearby, adding walkways that are paved and adding wildlife and water receive the lowest scores for an ideal park.

Table 6.6 What does respondents' ideal park look like

What does an ideal park look like	**High-income**	**Middle-income**	**Low-income**	**All**
Clean, spacious, green and flat	23%	12%	14%	16%
Pretty gardens / nice scenery / shade	19%	7%	14%	14%
Add sports playing facilities	10%	14%	8%	11%
A safe, fenced park with controlled free access	4%	7%	10%	7%
Create sections in the park	10%	7%	2%	6%
Add wildlife and river/dam/pond/lake/swimming pool	6%	3%	1%	3%
Add walkways that are paved	4%	0.3%	0%	1%
Tuck shops nearby a park	1%	0%	1%	1%

Tables 6.8 and 6.9 indicate whether the intensity with which respondents visit a park can influence what respondents assume their ideal park should look like. Most respondents in all income groups want a park to be safe and fenced with controlled free access; when they visit a park a few times a year. Furthermore, correspondingly to research findings of the International Federation of Parks and Recreation Administration (2006) and Mitchell (1995), a park should be divided into sections. Sections in a park could be an indication that respondents want to participate in different activities in a park, without having to interfere with other park users' space. Parks must be able to facilitate multiple uses (Azuma et al. 2006; Burgess, Harrison & Limb 1988; Dunnett, Swanwick & Woolley 2002; Hansen 2006; Mowen, Payne & Scott 2005; Pincetl & Gearin 2005). One such an activity that would necessitate sections is playing sports, which also requires clean, spacious, green and flat surfaces.

Walkways should also be added to high-income parks to allow easy movement, especially for adults, but it could also cater for the disabled and elderly and bicycle riders (Azuma et al. 2006; Dunnett, Swanwick & Woolley 2002; Henderson et al. 2001; Mowen, Payne & Scott 2005). Overall, 100% of middle-income respondents only want a walkway in a park if they visit it very infrequently during the year. The same is the case with tuck shops in the high-income group. The finding indicates that overall walkways and tuck shops near a park is not such a necessity for middle and high-income respondents, respectively. Facilities, which are less important for low-income respondents, are adding wildlife and a form of water.

Respondents in the middle and low-income groups who visit a park 1-3 days a week want their ideal park to look similar to those respondents who visit a park very infrequently during a year. The only exception is that they want a park to have pretty gardens, nice scenery and shade. High-income respondents who visit a park 1-3 days a week wish for wildlife and a form of water to be added to a park. Walkways are also important to high-income children. Overall, 67% of middle-income adults only want a tuck shop to be nearby a park when they visit it between 1–3 days a week.

Clean, spacious, green and flat parks with a nice scenery summarizes what most income groups' children and adults desire in an ideal park, when they visit it 4-7 days a week. Adults, in all income groups, also view sport facilities as important when they regularly visit a park during a week. Respondents in the low-income group do not see walkways or tuck shops as important park entities, as it got zero response in any category.

6.3 Comments and suggestions about park utilization

Table 6.12 Comments/suggestions about park utilization

Comments/Suggestions	High-income	Middle-income	Low-income	All
Maintenance must be done regularly	18%	16%	15%	16%
Clean the park area daily	9%	7%	17%	11%
Check the area daily for homeless/drunks/ drug-users/thieves and remove them	9%	8%	12%	10%
Community educations on park maintenance	3%	2%	7%	4%
Want larger area for more communal use	2%	2%	6%	3%
Multipurpose use of a park	2%	1%	4%	2%
Grass to be planted at equipment	1%	2%	0.2%	1%

The main comments and suggestions made by children and adults who visit a park for varying days are described in Tables 6.13 and 6.14. Interestingly, high-income children who never visit a park, or almost never visit a park during a year, and high-income children who use a park 4–7 days a week, have almost similar suggestions about park utilization, see Table 6.13. In contrast to Table 6.12, they propose that communities need to be educated on park maintenance and that grass needs to be planted at play equipment. Community education could take the form of environmental education which consist of guided tours through parks (Azuma et al. 2006; Cranz & Boland 2004; Henderson et al. 2001; Morris 2003). In addition, low intensity park users complain that homeless, drunks, drug-users and thieves need to be removed from a park and a multipurpose park setting must be created. Removing unwanted elements from a park will create a safer park atmosphere (Gobster 2002; Geoffrey et al. 2005; Henderson et al. 2001; Hernandez-Bonilla 2008; Madge 1997; Mitchell 1995). These two suggestions might contribute to high-income children only visiting a park infrequently throughout the year. In contrast, middle intensity child park users in the high-income group indicate larger park areas that are regularly maintained and cleaned are crucial to encourage more park usage. The finding is similar to the results of Table 6.12.

Comments and suggestions of high-income adults in Table 6.14 are similar to the comments and suggestions made by high-income children in Table 6.13. Interestingly, high-income adults complain the most about homeless, drunks, drug-users and thieves. Many high-income adults who visit a park with varying intensity suggest, similarly to other research, that a park should have multiple uses (Azuma et al. 2006; Burgess, Harrison & Limb 1988; Dunnett, Swanwick & Woolley 2002; Hansen 2006; International Federation of Parks and Recreation Administration 2006; Sanesi & Chiarello 2006). No adults see planting grass at play equipment as so important.

To summarize, children and adults in all income groups who visit a park with varying intensity, have similar **suggestions to increase park utilization**. These suggestions are creating a larger park area, which allow a park to be used for multiple purposes. Play equipment areas must have grass planted at the play equipment to ensure that children do not hurt themselves near/on it.

Regular maintenance and removal of unwanted elements such as the homeless, drunks, drug-users, gangs and thieves from parks are crucial to encourage more usage. A middle-income respondent states; “we want to improve the community, because the children must play and be safe. The government must look at these objects and attend to it”. Low-income respondents have harsh words for government: “whatever government is doing for people must be monitored and secured regularly”. “I think the government needs to start from scratch, because everything that has been asked [in] this questionnaire, we do not have. We need resources!” states another respondent. Perhaps the harshest words come from a Gugulethu respondent: “act appropriately, or face adversity. Look around ‘white’ areas [and] you will know what is missing in black disenfranchised communities. More parks should be built in townships and equip it with the needed equipment for a park”.

Lastly, respondents also indicate that community education on park utilization in general will ensure more community pride in parks and ultimately encourage more respondents to visit a park more often. Therefore, respondents feel that the community can also play a role in bettering park environments. An example where respondents contribute to bettering their park environment is respondents in Kuilsriver cleaning Drostdy Park themselves. One high-income respondent says people should learn to respect others' freedom to come and enjoy a free time [in a park]". A middle-income respondent indicates "parks can help children identify and learn in their own areas", while a low-income respondent feels that "the community must be proud of their parks and look after it and keep it clean – parks help to improve the community and help [children] to stay off the streets".

APPENDIX C: ENGLISH QUESTIONNAIRE

Research Background:
This questionnaire forms part of research being conducted by the Council for Scientific and Industrial Research (CSIR) for the City of Cape Town. The research will help determine residents' characteristics, preferences and perceptions about community/**neighbourhood parks** in their communities/neighbourhoods. This questionnaire will help to inform effective planning, design, management and maintenance of community/neighbourhood parks in the City of Cape Town, by the City Parks Department. Complete anonymity and confidentiality is guaranteed. Please complete this questionnaire as accurately and completely as possible and send it back to your child's teacher/principal. Please feel free to contact the researcher if more information is required. Lodene Willemse, at (021) 888 2426 (during office hours); or e-mail lwillemse@csir.co.za.

Please note: This research is about community/neighbourhood parks utilization. Community/Neighbourhood parks are defined as "developable land with recreation facilities, which serve the needs of the local community or neighbourhood and are usually accessed on foot. It includes informal recreational facilities of small scale for children such as tot-lots and playgrounds, seating areas, open grass lawns and gardens" (City Parks Development Policy 2005).

Instructions: Please use an X to indicate your answer where options are given or fill in the appropriate answers in the space provided.

1. Make your marks only within the boundaries of the boxes, e.g. ☒
2. Use a dark pencil or black pen.
3. Please do not fold this paper.

The questionnaire is printed on both sides of the papers.

A: GENERAL INFORMATION	
A1. What is the name of your suburb/area of residence:	
A2. How long have you stayed in this suburb/area of residence?	☐☐ years
A3. Do you have a private garden?	Yes ☐ No ☐
A4. Does someone own a car in the household?	Yes ☐ No ☐
A5. What is the number of household occupants?	☐☐
A6. What is your home language?	Afrikaans ☐ English ☐ African language ☐ Other ☐ Specify: …………………………….

A7. Where do children and adults of your household usually spend their **outdoor** recreational time? (More than one option is possible).

Place	Children	Adults		Children	Adults
At a community centre	☐	☐	In your community/neighbourhood park	☐	☐
At school	☐	☐	Open pieces of land surrounding your house	☐	☐
At sports grounds	☐	☐	Other community parks or conservation areas located in other neighbourhoods/suburbs	☐	☐
At your home	☐	☐			
In the streets surrounding your house	☐	☐			

A8. Since the previous local government elections, how would you say the delivery of the following services has changed in the area where you live?

Service	Improved	Stayed the same	Worsened	Uncertain/ Do not know
Clinics and health	☐	☐	☐	☐
Housing	☐	☐	☐	☐
Parks and recreation	☐	☐	☐	☐
Roads and sidewalks	☐	☐	☐	☐
Safety and security	☐	☐	☐	☐
Street lights	☐	☐	☐	☐

A9. Which **TWO** of the following kinds of services would you like the City Council to improve in your neighbourhood and which **TWO** are least important?

Service	Tick two services to improve	Tick two services least important to improve
Clinics and health	☐	☐
Housing	☐	☐
Parks and recreation	☐	☐
Roads and sidewalks	☐	☐
Safety and security	☐	☐
Street lights	☐	☐

B: PATTERNS OF BIODIVERSITY AND CONSERVATION AREAS USE

B1 Are **biodiversity/conservation areas** situated within reasonable driving distance from your house?

Yes ☐ No ☐

PS: Biodiversity/Conservation areas are defined as: "developable land set aside as proclaimed nature reserves, protected natural environments, core flora sites, other sites with primary biodiversity value and bird sanctuaries" (City Parks Development Policy 2005).

B2. How many days, **in a year**, do children and adults in your household visit biodiversity/conservation areas?

Children ☐☐ days per year **Adults** ☐☐ days per year

B3. If you answered yes in question B1, in other words your home is closely situated to biodiversity/conservation areas, are more community/neighbourhood parks needed in your neighbourhood?

Yes ☐

No ☐

Please explain: ....

....

B4. How often do you or any member of your household visit any part of the Table Mountain National Park in a year?

Daily	Weekly	Monthly	Every two months	Never
☐	☐	☐	☐	☐

If never, please give the main reasons why not:. ....

....

C: PATTERNS OF COMMUNITY/NEIGHBOURHOOD PARK USE

C1. How far is the nearest community/neighbourhood park from your house, **in distance or time**, in other words how long does it take children and adults in your household to walk there?

0 – 5 minutes ☐ 6 – 10 minutes ☐ 11 – 15 minutes☐ More than 15 minutes ☐

OR

0 - 50 meters☐ 51 – 100 meters ☐ 101 – 200 meters☐

201 – 300 meters ☐ 301 – 400 meters☐ More than 400 meters ☐

C2: How many days **in a week**, do children and adults, in your household, visit the community/neighbourhood park?

(If you answer "never", please answer only question C2(1). If you did not answer "never" then complete the whole questionnaire, except question C2(1)).

	1 Day	2 Days	3 Days	4 Days	5 Days	6 Days	7 Days	Never
Children	☐	☐	☐	☐	☐	☐	☐	☐
Adults	☐	☐	☐	☐	☐	☐	☐	☐

C2(1). Why do children and adults in your household not use your community/neighbourhood parks?
(Only respondents who answered never in question C2 must answer this question)

Reasons for non-use: Mark with a X. (More than one option is possible).

Because we visit other neighbourhood parks or district parks or conservation areas	☐	The park is not big enough to do activities in that are preferred by you and your family	☐
Conflict between park users	☐	There is not enough trees and nature around	☐
Drunks, drug-users & gang problems occur in the community/neighbourhood park	☐	Too many high grown trees/plants creating disclosed/invisible areas	☐
Fear of racial attacks in the community/neighbourhood park	☐	Litter and vandalism	☐
Fear of sexual attacks in the community/neighbourhood park	☐	Lack of parking	☐
Homeless and "strange people" also occupy the community/neighbourhood park	☐	Lack of security and safety	☐
I am disabled	☐	Lack of maintenance of the park	☐
It is not easy accessible	☐	Lack of facilities in the park	☐
It is too crowded (the community/neighbourhood park is too crowded)	☐	Pet problems	☐
It is too far away	☐	Other	☐
Too little time available	☐	(Specify)	

C3: On average, how much time do children and adults in your household spend at the community/neighbourhood park, **per visit**?

	0 – 15 minutes	16 – 30 minutes	31 – 60 minutes	More than 1 hour
Children	☐	☐	☐	☐
Adults	☐	☐	☐	☐

C4: How do children and adults in your household usually get to the community/neighbourhood park?

	Walk	Run/ Jog	Bicycle	Private motor	Motor-bike	Taxi	Bus	Train	Other (specify)
Children	☐	☐	☐	☐	☐	☐	☐	☐	☐ ………………
Adults	☐	☐	☐	☐	☐	☐	☐	☐	☐ ………………

D: ACTIVITIES DONE IN COMMUNITY/NEIGHBOURHOOD PARKS

D1 In order to ensure that community parks provide residents with adequate facilities, which will suit their needs, it is important to know activities that residents, engage in community/neighbourhood parks.
(Mark with an X. More than one option is possible).

Activities people do in the community/neighbourhood parks	**Children***	**Adults***	**Other residents***		**Children**	**Adults**	**Other residents***
Accompanying children to playground	☐	☐	☐	Taking in the fresh air / Escape from the city	☐	☐	☐
Braai/Barbecue	☐	☐	☐	Sitting/Relaxing/Rest	☐	☐	☐
Dating/Showing affection	☐	☐	☐	Sports (examples: soccer, cricket, rugby, tennis, golf)	☐	☐	☐
Cycle	☐	☐	☐	Run/Jog	☐	☐	☐
Exercising	☐	☐	☐	Talking/Socializing	☐	☐	☐
Picnic	☐	☐	☐	Watch people	☐	☐	☐
Observing wildlife and nature/plants	☐	☐	☐	Viewing the landscape/environment	☐	☐	☐
Play Frisbee or with other toys	☐	☐	☐	Walk	☐	☐	☐
Play on play equipment provided	☐	☐	☐	Walk the dog	☐	☐	☐
Play/Play games (such as hide and seek)	☐	☐	☐	Working/Studying	☐	☐	☐
Rollerblades/Skateboards	☐	☐	☐	Other	☐	☐	☐

Other: (*Specify*)..

***Children**: Children in your household* ***Adults**: Adults in your household*
***Other residents**: i.o.w. when you visit the community parks , for what purpose do other residents use it* [redacted]

E: Management/maintenance of community/neighbourhood parks' facilities

E1. Please rate the quality of the services, amenities and facilities provided in the community/neighbourhood parks that children and adults in your household visit in your neighbourhood. (Mark with a X. If your answer is average, poor or very bad, **or** always, please specify the reasons for the answer in the space provided).

Services / Amenities / Facilities provided in community/neighbourhood parks that you and members of your household use	**Rating <u>(Only one rating per item)</u>**					**Motivate your answer if it is <u>average, poor or very bad</u>**
	Excellent	**Good**	**Average**	**Poor**	**Very bad**	
Accessibility/Proximity to your community/neighbourhood park	☐	☐	☐	☐	☐	
General cleanliness	☐	☐	☐	☐	☐	
Overall maintenance of the parks	☐	☐	☐	☐	☐	
Parking facilities	☐	☐	☐	☐	☐	
Personal safety and security	☐	☐	☐	☐	☐	
Play equipment for children	☐	☐	☐	☐	☐	
Seats/benches/tables	☐	☐	☐	☐	☐	

Shaded areas	☐	☐	☐	☐	☐	
State of the grass/trees/plants	☐	☐	☐	☐	☐	
Toilet facilities	☐	☐	☐	☐	☐	

Nuisance in the park	**Rating (Only one rating per item)**			**Motivate your answer if you choose always (for example when you say that dogs are always a nuisance, explain why you say so)**
	Always	**Seldom**	**Never**	
Dogs as a nuisance	☐	☐	☐	
Presence of homeless/drug-users/drunks	☐	☐	☐	
Signs of vandalism and litter as a nuisance	☐	☐	☐	
Youngsters as a nuisance	☐	☐	☐	

E2. What facilities/amenities would children and adults in your household like to add to community/neighbourhood parks in your neighbourhood in order to ensure better use? (*Specify facilities*):
....

Reasons: ....

E3. What does your households' ideal community/neighbourhood park look like? (*Please explain*)
....
....

E4. Any further comments or suggestions about community/neighbourhood park usage in your community/neighbourhood:
....
....

THANK YOU VERY MUCH FOR YOUR PATICIPATION!

CITY OF CAPE TOWN | ISIXEKO SASEKAPA | STAD KAAPSTAD

THIS CITY WORKS FOR YOU

Evaluation of community social facilities and recreational space in City of Cape Town: current and future provision for 2016 and optimal location of new facilities

Section 6:

Sports Facilities

6.1 Sportsfields

6.2 Sports Stadia

6.3 Swimming Pools

6.4 Indoor Sports Centres

May 2010

CSIR

our future through science

6 Sports Facilities

6.1 Introduction

The accessibility mapping of sports facilities in Cape Town is part of a larger accessibility audit and facility planning exercise relating to a range of community social services undertaken by CSIR for the City of Cape Town in 2009/10.

The project as a whole seeks to identify those areas where the supply and demand of facilities are not balanced based on acceptable service provision standards, both for the current population distribution, as well as in terms of a future scenario for the City of Cape Town's predicted population growth and distribution in 2016. Flowing from this, recommendations of where intervention in respect to facility provision is required can be made. The aim is thus to audit whether residents currently have access to facilities within reasonable reach and if these facilities will be able to accommodate future growth of the City's population.

The analyses were essentially based on a schedule of standards for the provision and clustering of social facilities, public institutions and public recreational spaces which the CSIR compiled for the City of Cape Town in 2007; as well as datasets consisting of population, road network, and facility data. Where applicable the relevant line departments have adjusted the standards used with respect to capacity and travel time accessibility and the standards document for the City will be updated accordingly.

To ensure fine grained resolution of the modelling results the City of Cape Town area was sub-divided into a detailed grid delineating hexagonal land pieces of 40ha each. The population data was proportionately assigned to this hexagonal grid based on the underlying GIS land use layer. The population data variables incorporated the total population numbers as well as other socio-economic variables which are fundamental to establishing people's access to transport and or demand for particular services. More detail on this process is provided in Section 1 (Introduction & Methodology). All other data is then related to this grid.

A step-wise process was followed for most of the facility types analysed, although some facilities required a more tailored approach. The basic process in most cases comprised the following steps:

Step 1: Audit of current service coverage. Using the agreed standards a **catchment area analyses** was undertaken with respect to the current facility locations and capacities to determine which areas are poorly served or over-provided for, i.e. determining the status quo.

Step 2: Planning for new facilities – The identification of new or expanded facility locations was undertaken using **proximity counting or optimisation analyses** – The software identified the currently unserved population and taking this into consideration then determined the highest concentrations of unserved demand. Depending on the typical facility size, areas of intervention were identified. Optimal sites for a set number of new facilities are identified to prioritise the intervention areas/ site locations for new facilities, if any are required. Closure, expansion or upgrading of existing facilities could also be tested.

More detail on the methodology followed, the analyses procedures and interpreting the outputs (such as the maps) can be found in Section 1 (Introduction & Methodology).

6.1.1 Discussion with respect to standards used

The standard for land provision for sports facilities is 0.56 ha/ 1 000 population. In general this land provision should be sufficient to develop the necessary sportsfields and swimming pools and smaller stadia. Larger stadia and indoor halls should be derived from a further 0.3-0.4ha/ 1 000 provision which is accumulated to provide larger facilities for the city. The pools, stadia and indoor sports centres were analysed separately to determine the sufficiency of these specific facilities, even if the land quotient was analysed globally with respect to sportsfields.

The standards used are close to what has been previously suggested for utilisation in South and is based on the CPA guidelines (1989) and adapted in 2007 by CSIR for the City of Cape Town. The standards are described below (see Tables 6.1 and 6.2).

Table 6.1: Sports & Recreation Overall Allocations			
General provision	0.56ha per 1 000 people (+ additional 0.3/0.4ha per 1 000 in metropolitan areas for higher order facilities)		
***Possible hierarchy of provision** - in certain contexts preferably to accumulate & provide higher order facilities to greater population*	*Scale & level of provision*	*Proportional allocation of total provision/ 1 000*	*Threshold*
	• Neighbourhood	0.23ha	3 000
	• Community/ Sub-district	0.21ha	15 000
	• District/ Sub-metro	0.12ha	60 000
(source: CPA 1989 &CSIR 2007)	• Metro/ regional	0.3/0.4ha	120 000

(Source: CPA 1989 & CSIR 2007)

Using this standard the following facilities can potentially be developed.

Table 6.2: Possible number of outdoor sports facilities or equivalents*that can be provided for 60 000 people at 0.56ha per 1 000 people at different levels of provision

Sports facility types	*Ha/ one facility*	Number for Neighbourhood	Number for Community/ Sub-district	Number for District/ Sub-metro	Total number
Soccer practice fields	*0.55*	20	4	0	24
Soccer fields with 500-spectator pavilion	*1.5*	0	4	4	8
Stadium (soccer field, athletics track & pavilion for 3 000)	*3.0*	0	0	1	1
Tennis courts	*0.065*	10	8	2	20
Combi-court	*0.065*	20	16	0	36
1 cricket oval/ 1 baseball/ 2 softball fields	*1.6*	0	2	1	3
Netball fields	*0.065*	10	0	2	12
Swimming pools (12.5 x 25m)	*0.18*	0	0	1	1

(Source: CPA 1989 & adapted by CSIR 2007 & 2010)

The CPA (1989) which recommended 0.54ha/ 1 000 population derived its standards from Wilson and Hattingh (1988) and its calculation of total sportsfields provision is close to the standard calculated by the CSIR specifically for the City of Cape Town. The CSIR (2007) recommends a total of 33.8ha of uncovered facilities for 60 000 persons, which translates to 0.56ha per 1 000 persons and is sufficient to provide the number and type of facilities as outlined in the table above. The major difference between the two ratios was an increase in the allowance of land to be able to accommodate a cricket oval (1.6ha) instead of 2 softball pitches which require 1.44ha as each would be about 0.72ha in land area. The “1 000 people” ratio is representative of the total population across all age-groups and not just the sports-playing population or a specific age group.

The varied nature of the demand, use and preferences for sportfields in different sectors of the community (age, income, etc) makes it problematic to undertake analyses of each sports type separately. The approach was thus to analyse the global sufficiency of sportsfields (based on an area ratio per person) as a first step in the audit process. In planning new facilities where shortages are identified in specific spatial areas, it was intended to match the shortfall to the sport playing profile of the local area. To this end data on sports participation patterns was investigated.

6.1.2 Sports-playing profile for Cape Town

A data collection process was launched through the Facility Management Committees (FMCs) of the City of Cape Town in an effort to obtain area specific information. It proved problematic to procure precise data on the sports-playing population owing to the unavailability of such data and/or the reluctance of certain sports clubs to provide the information. Staff shortages at the Area Manager level also hindered this process. Unfortunately, the areas with the greatest need (Sports Districts D (Tygerberg) and F (Mitchell’s Plain/ Khayelitsha)) are the areas from which very little data has been forthcoming. Appendix 6.6 contains a list of those FMC’s that have supplied code-specific information about usage patterns at sportsfields in the City.

Since the FMC data was not complete previously conducted research into sports participation patterns in South Africa was consulted. National research commissioned by the Umsobomvu Youth Fund indicates that 14.1% of people aged 14 – 30 years were actively involved in sport (Morrow, Panday and Richter, 2005). The Department of Sport and Recreation (2005) survey provided for higher national sports participation rates (see Table 6.3). The average participation rates across demographic variables of age, race, gender and living standards measure appears to be 25% of the total population. However, the participation rates of those under the age of 16 years were not included in the sample. The survey further indicated that walking is the main mode of travel to a sports facility (used by

60.4% of respondents) followed by the use of vehicular transport (35.7% of respondents). Transport to sports facilities displayed racial variances with the majority of Africans (71.1%) and Coloureds (74.5%) walking, whilst Whites (74.3%) and Indian/ Asian (66.4%) utilised private transport.

Table 6.3: Sports participation patterns in South Africa	
DEMOGRAPHIC	**PARTICIPATION**
Age group	**Participation rate**
16 – 20	51.7%
21 – 25	34.4%
26 – 60	18.8%
60+	5.7%
Average	25.6%
Race	**Participation rate**
African	25.0%
Coloured	15.2%
Asian/ Indian	24.4%
White	36.6%
Average	25.4%
Gender	**Participation rate**
Male	42.6%
Female	11.2%
Average	25.6%
Living Standard Measure	**Participation rate**
Low	18.0%
Medium	23.6%
High	34.1%
Average	24.0%

The survey also indicated that nationally 81% of urban respondents are within 5km of a sportsfield.

Definition of a sportsfield:

Formally provided and maintained municipal playing surfaces for the majority of mainstream sports (including cricket, rugby, soccer, netball, tennis, bowls, etc.).

6.1.3 Analyses criteria

The criteria used for the analyses of sportsfields is summarised in Table 6.4.

Table 6.4: Analyses criteria for sportsfields	
Facilities analysed	All operational municipal sportsfields (171 in total).
Demand	Entire City with current (2007) and 2016 projected population figures assigned to a hexagon grid.
Supply	Capacity for facilities is based on standards for the City of Cape Town: 0.56 ha/1 000 people.
Travel mode and access time	Transport via existing road network. Facilities must be accessed within a 15 minute travel time by vehicle in off-peak conditions.
Analyses undertaken	• Travel time analyses to establish travel time for the whole City's population to nearest sportsfield. • Catchment area analyses, based on capacity and maximum travel time of 15 minutes. • Optimisation analyses to determine top rated intervention areas.

The distance analysis undertaken for the City of Cape Town indicates that currently 85% of the population are within 2.5km of a sportsfield whilst 99% of the population are within 5km of a sportsfield (see Table 6.5 and Figure 6.1). This is better than the national data reported on previously.

Table 6.5: Distance analyses for sportsfields in the City of Cape Town

DISTANCE CATEGORY	POPULATION SERVED			
	Current (2007)		Projected (2016)	
0 - 1km	1 022 318	*30.71%*	1 148 063	*29.90%*
0 - 2.5km	2 818 810	*84.68%*	3 141 042	*81.80%*
0 - 5km	3 281 219	*98.57%*	3 758 915	*97.89%*
More than 5km	47 549	*1.43%*	81 179	*2.11%*

The travel distance map (Figure 6.1), generated for the entire population of the City of Cape Town provides an indication of the distance people must travel to reach their closest sportsfield. This analysis did not take the capacity (size) of the specific sportsfield into consideration. The map indicates that the most densely populated areas of Cape Town (within the urban edge) are mostly within 2.5km of a sportsfield.

Thus, it would appear that the challenge with respect to sports facility provision in the City of Cape Town is not one of distribution. If there is a problem with provision it is thus likely to be one of capacity shortage in some areas. The analysis that follows serves to highlight the capacity challenges within specific spatial areas with respect to the provision of municipal sportsfields.

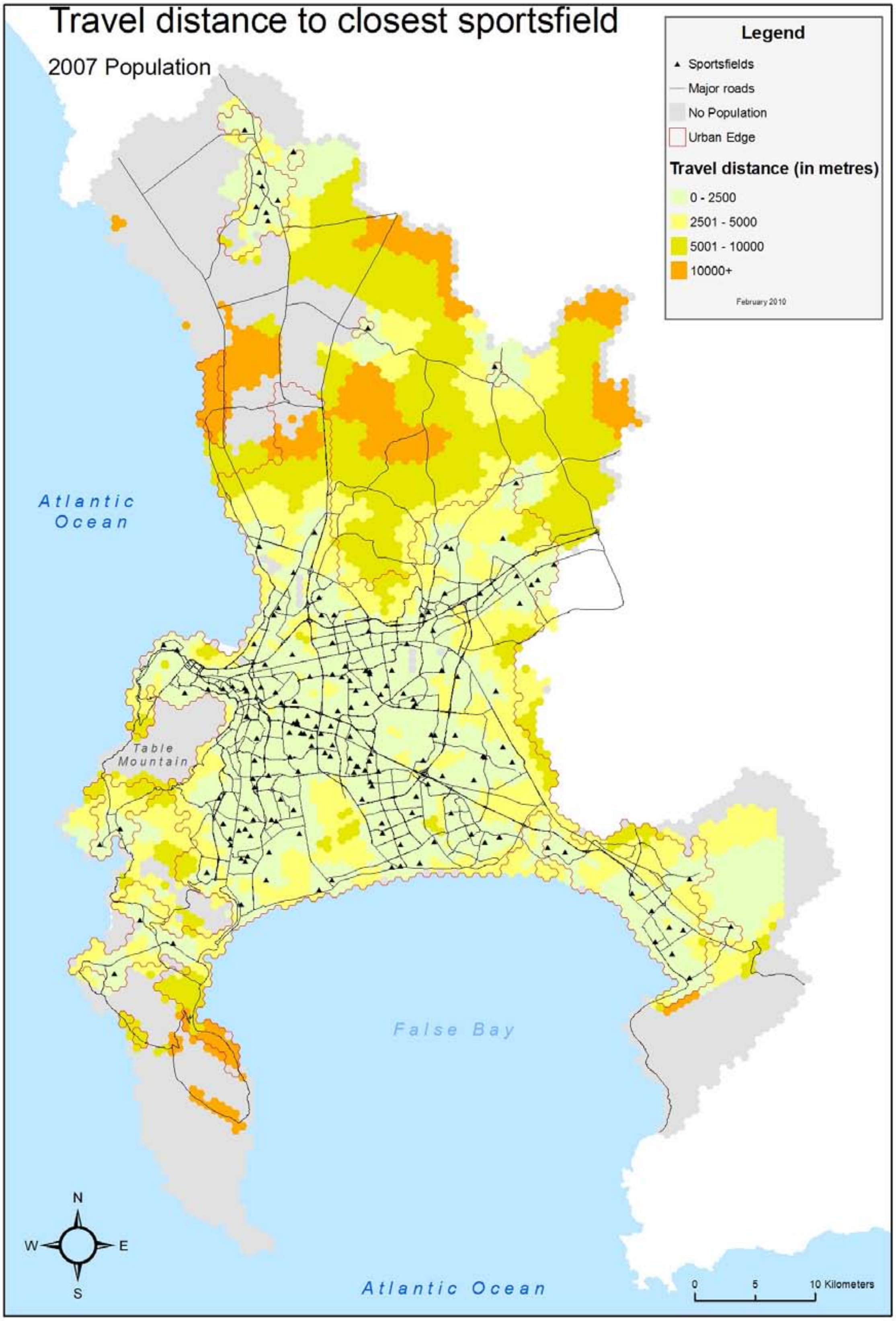


Figure 6.1: Travel distance to closest sportsfield

6.1.4 Methodology to determine levels of sportsfields provision

The analyses criteria used are as outlined in Table 6.1. The location of the 171 sportsfields/ sportsgrounds was provided to CSIR by the City in a GIS database and this was verified using aerial photography. To achieve a measure of comparison and quantity the size of each facility was calculated in hectares. Furthermore, it was established through feedback received from area managers that, as a rule of thumb, there was on average a ratio of 69% surface playing area and 31% other use areas at facilities, i.e. parking, footpaths, offices and storage and the like. The size of each sportsfield playing area was calculated as 69% of the size of the sports complex and the capacity of each facility was calculated based only on the total playing area. Since standards do make some provision for parking and footpaths – this approach may be too rigid and a second analyses will be undertaken in future using the full area available.

6.1.5 Discussion of results for sportsfields provision

Figure 6.2 shows those areas that are currently served in terms of the provision standards as well as the concentration of the unserved demand. The results derived from the catchment area analyses used for the audit of service capacity are shown in Table 6.6. The number of people served and not served by current sportsfields for areas inside and outside the urban edge (as specified by the City of Cape Town) is given.

Table 6.6: Current sportsfields provision for the City of Cape Town

Areas	Total Population	Served		Unserved	
		Total	Percentage	Total	Percentage
Urban	3 314 706	1 513 700	45.66%	1 801 006	54.33%
Non-urban	14 062	1 349	9.59%	12 713	90.41%
Total	3 328 768	1 515 409	45.51%	1 813 719	54.49%

The analyses show that only 45.5% of the entire population of the City of Cape Town can reach a sportsfield with capacity within 15 minutes travel during off-peak conditions. Conversely, this translates to over half of the population not being provided for using the aforementioned parameters. Although, most of the approximately 14 000 persons located outside the urban edge are not served by a sportsfield they make up less than half a percentage of the total city population.

NOTE: This analyses includes the entire city population, but only considers access to municipally provided fields. School, university and fully private facilities are excluded. To evaluate the impact of school provision a further data collection exercise was undertaken and the schools field were added to the data base. The impact of school provision is discussed later in this section.

The percentage of unserved population, however, varies substantially between the planning districts. However, the spatial result is more important in the global context and the unserved areas as shown in Figure 6.2 take precedent over the district breakdown.

Table 6.7: Current sportsfields capacity (area) provision for the City of Cape Town per planning district

	District A (Table Bay)	District B (Blaauwberg)	District C (Northern)	District D (Tygerberg)	District E (Helderberg)	District F (Mitchell's Plain/ Khayelitsha)	District G (Cape Flats)	District H (South Peninsula)
No. of facilities	15	14	15	31	11	24	37	24
Total size (Ha)◆	49.485	111.7722	117.7464	142.1772	65.1131	154.0457	158.278	78.2471
Capacity▪	88 368	199 593	210 261	253 888	116 273	275 082	282 639	139 727
Total population	183 586	174 130	282 832	637 983	181 957	1 014 253	538 530	315 496
Served∗	82 375	143 708	207 467	264 071	116 280	301 653	253 664	146 181
	44.9%	82.5%	73.4%	41.4%	63.9%	29.7%	47.1%	46.3%
Unserved	101 211	30 422	75 365	373 912	65 677	712 600	284 866	169 315
	55.1%	17.5%	26.6%	58.6%	36.1%	70.3%	52.9%	53.7%
Hectares required for unserved	56.68 ha	17.04 ha	42.2 ha	209.39 ha	36.78 ha	399 ha	159.52 ha	94.82 ha

◆Playing area only.

▪Number of people based on 0.56ha per 1 000 population.

∗All persons within 15 minute travel time

Figure 6.2 shows geographically the concentration of the unserved population (as indicated in Table 6.7).

As indicated in Table 6.7, the districts of Blaauwberg, Northern and Helderberg have the highest provision rates – all have sportsfield provision rates of more than 60%. Conversely, the other planning districts have less than 50% of their population being served. Mitchell's Plain/ Khayelitsha District only have 29.7% of its total population being served, the lowest in Cape Town. Figures 6.3 to 6.10 provide a spatial/ visual indication of the sportsfields capacity provision within each of the City of Cape Town's planning districts and a listing of capacity of each facility in the analyses is provided in Appendix 6.1.

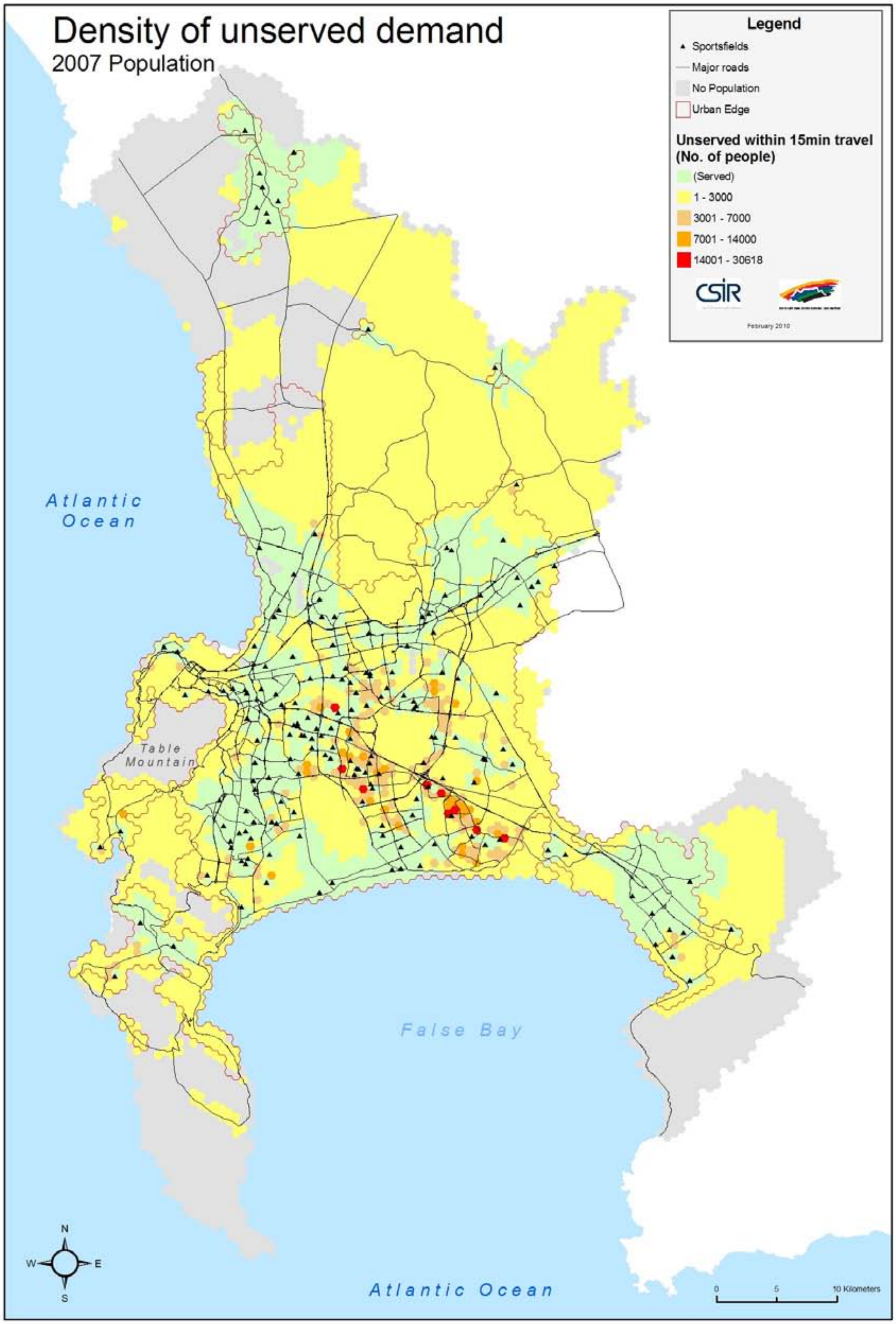


Figure 6.2: Current served and concentration of unserved demand based on 15 minutes travel time (2007 population)

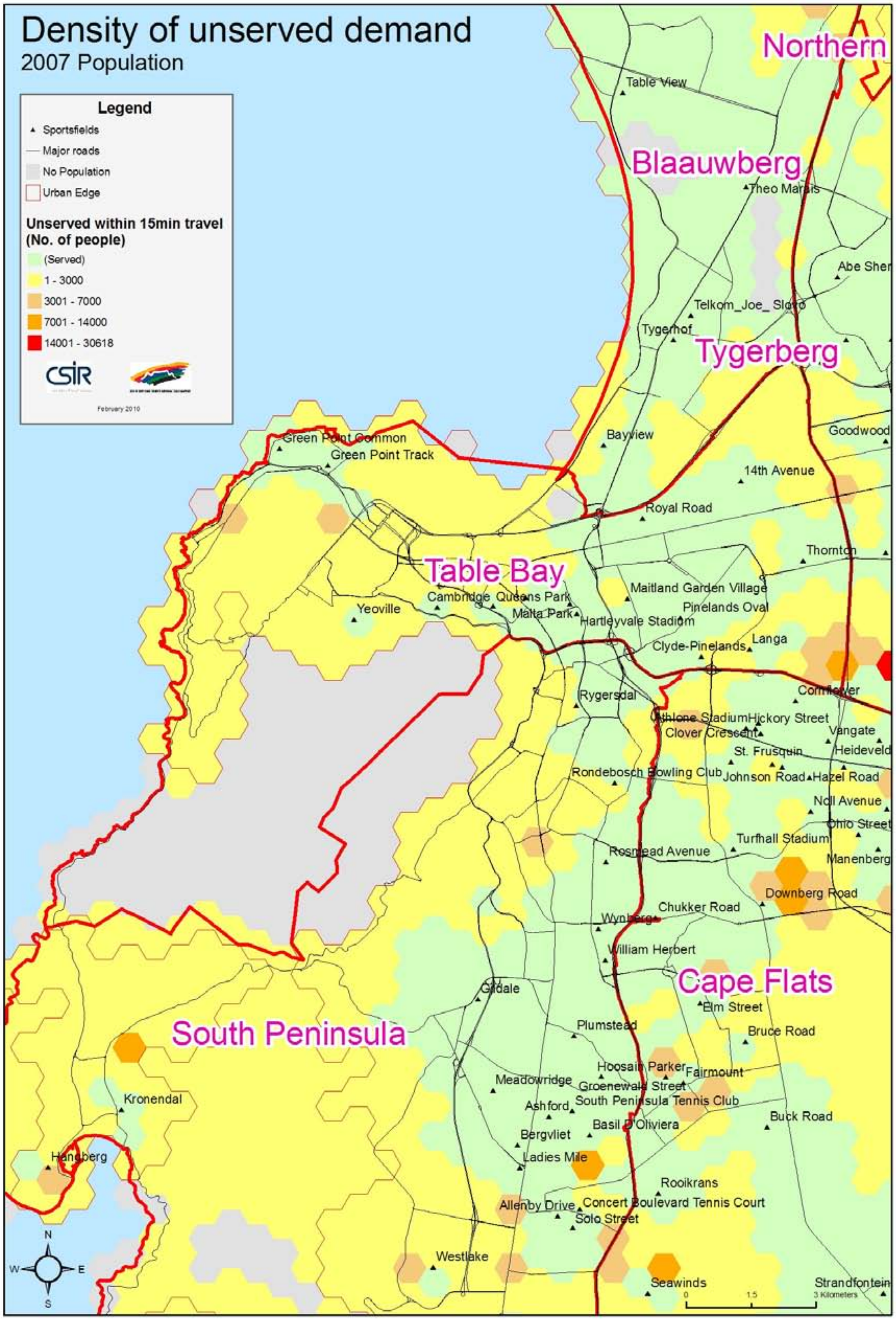


Figure 6.3: District A – Unserved demand

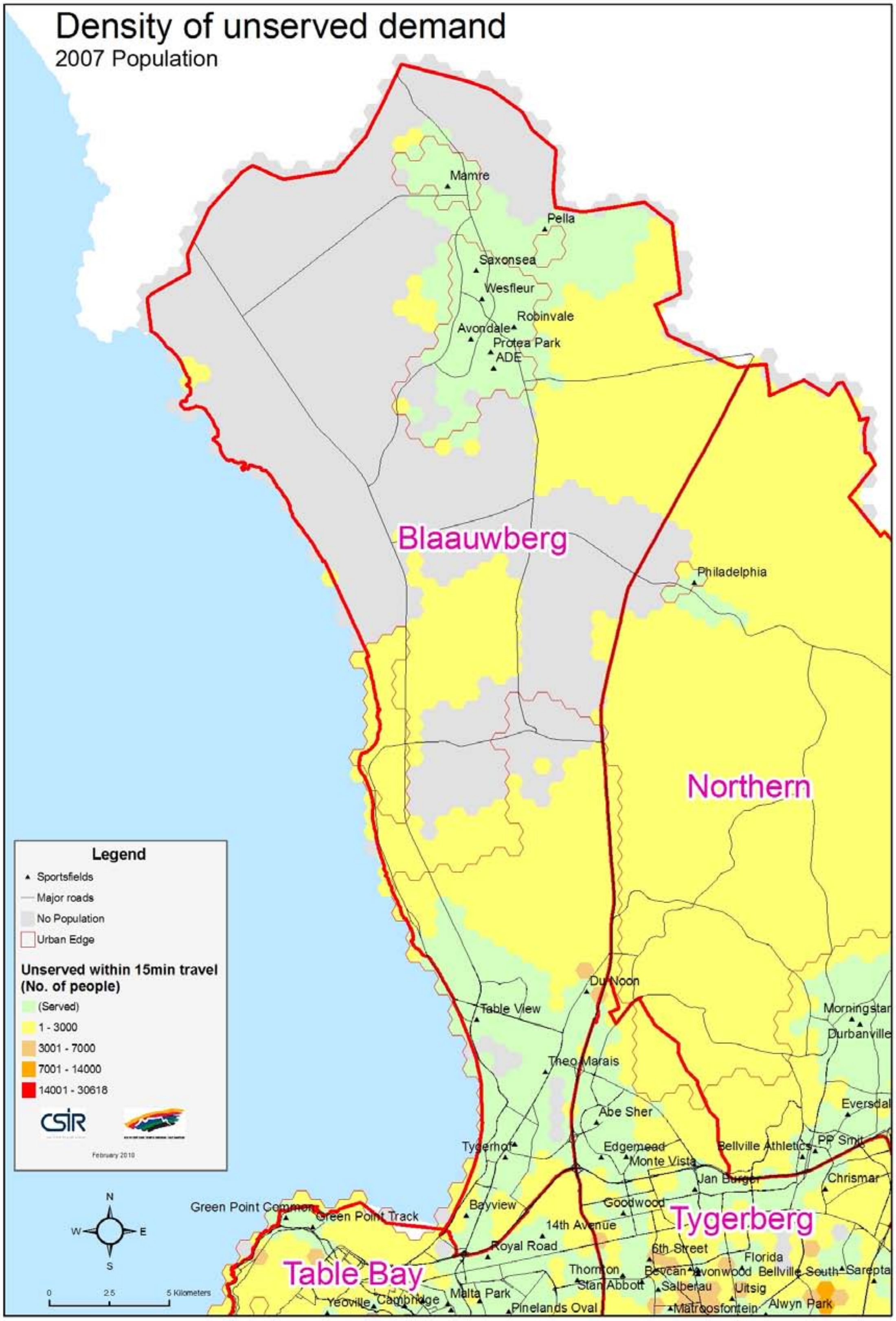


Figure 6.4: District B – Unserved demand

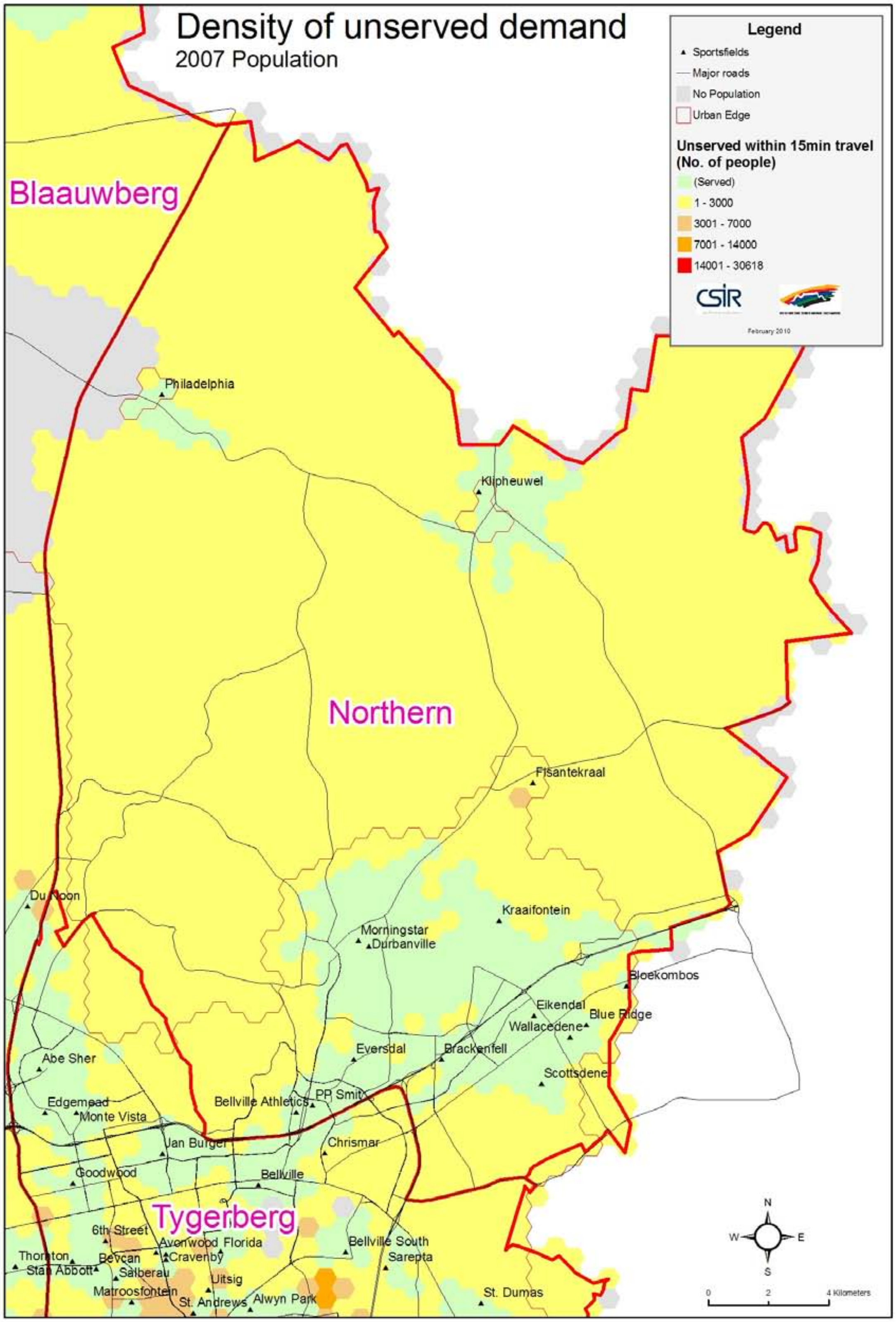


Figure 6.5: District C – Unserved demand

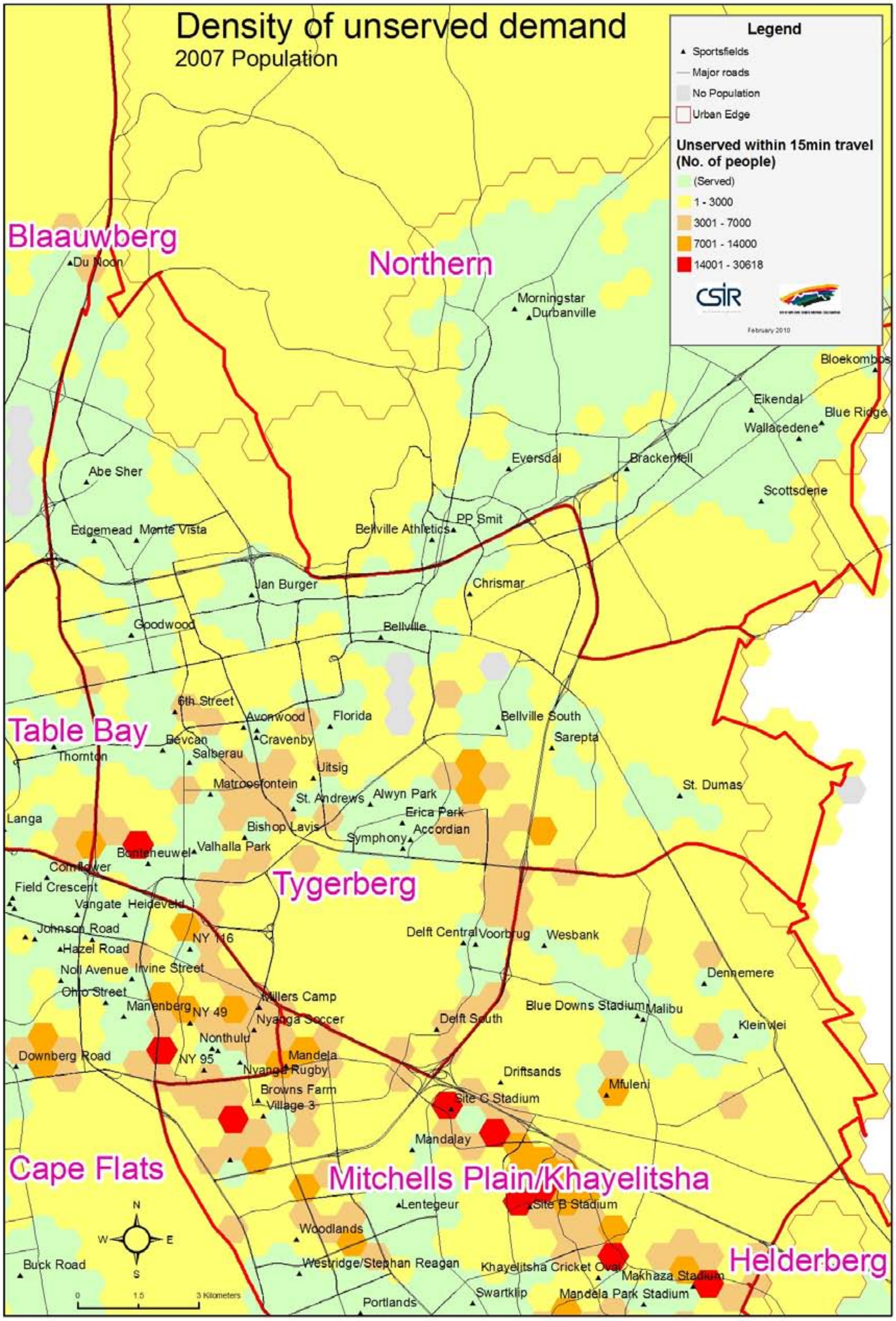


Figure 6.6: District D – Unserved demand

Figure 6.7: District E – Unserved demand

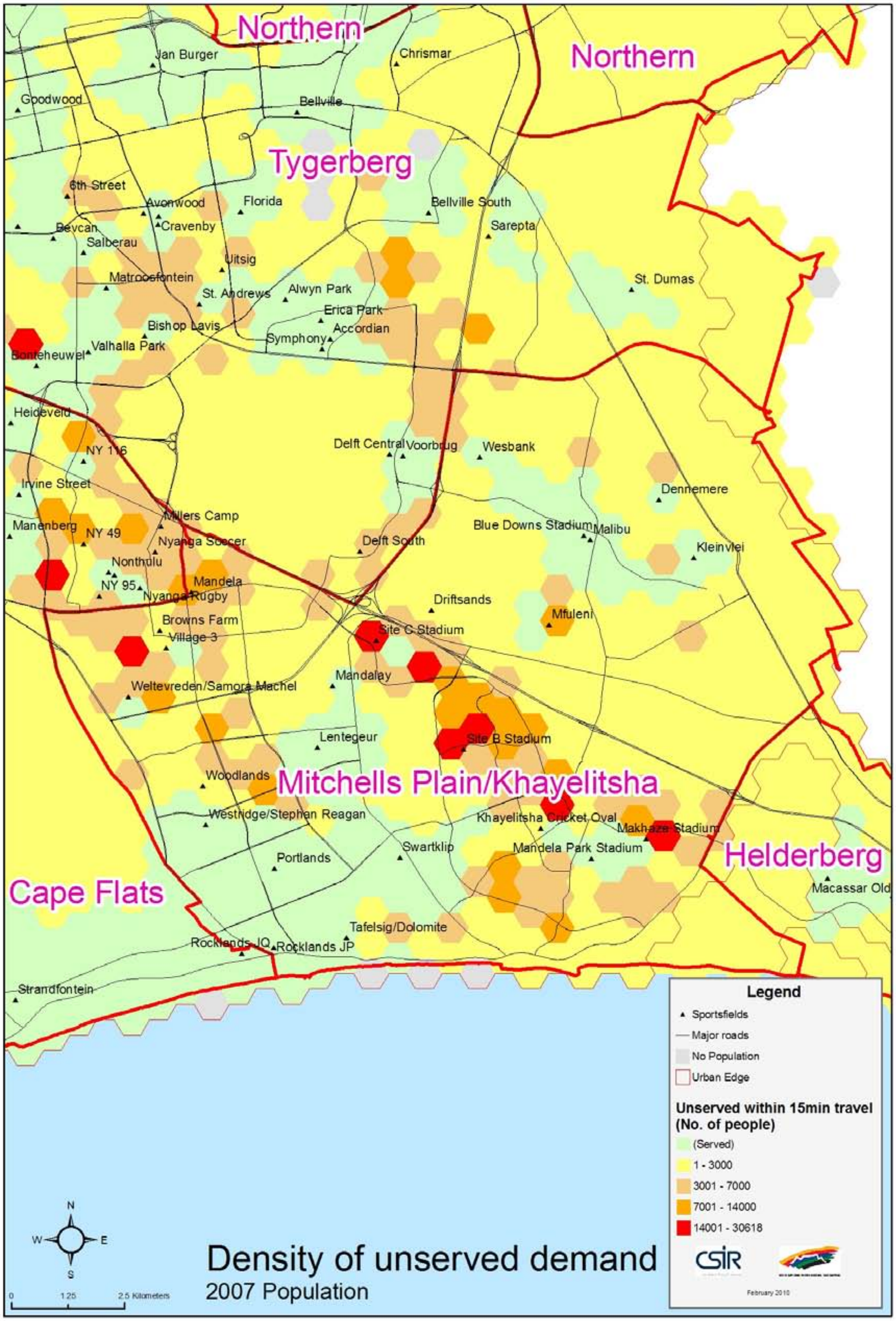


Figure 6.8: District F – Unserved demand

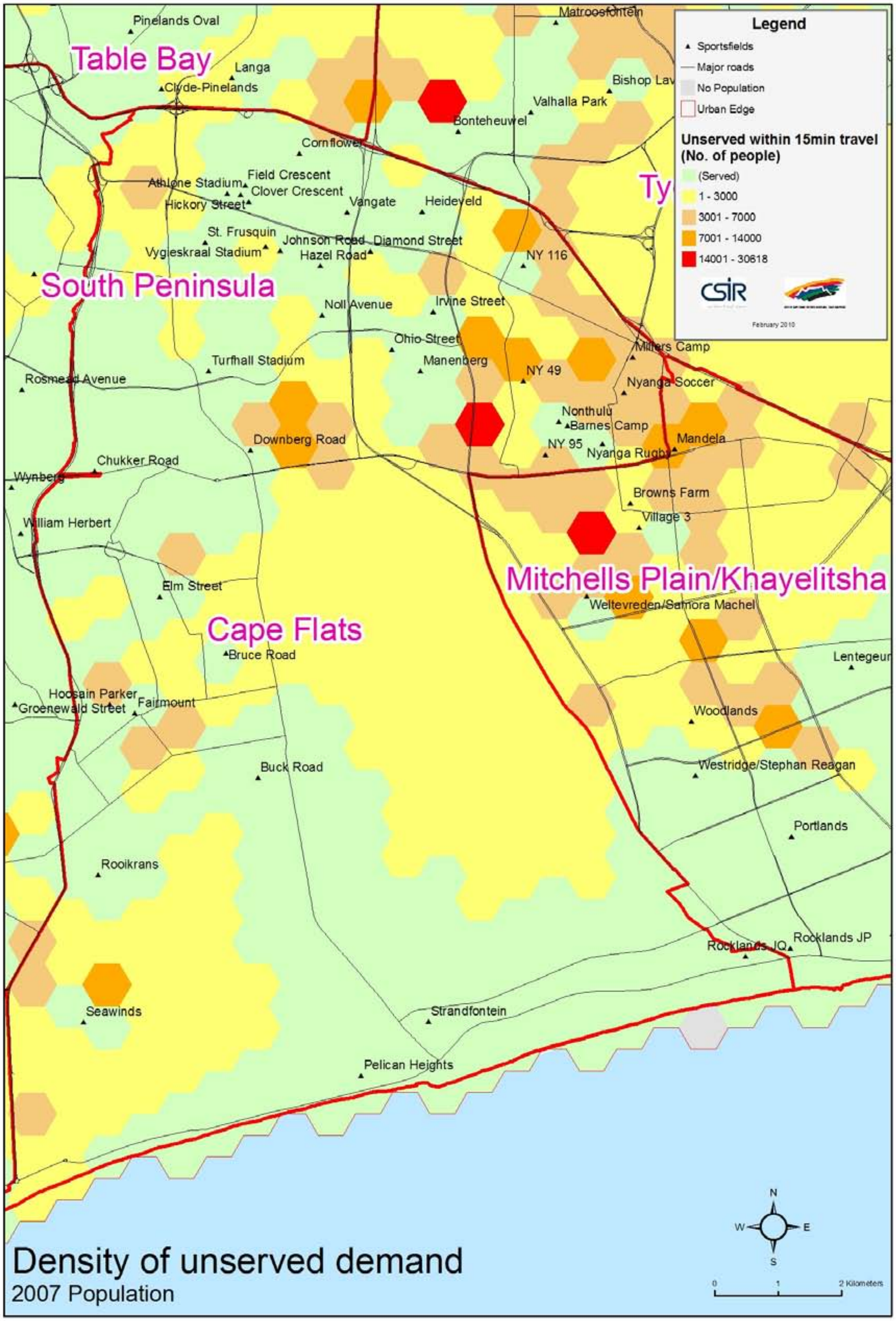


Figure 6.9: District G – Unserved demand

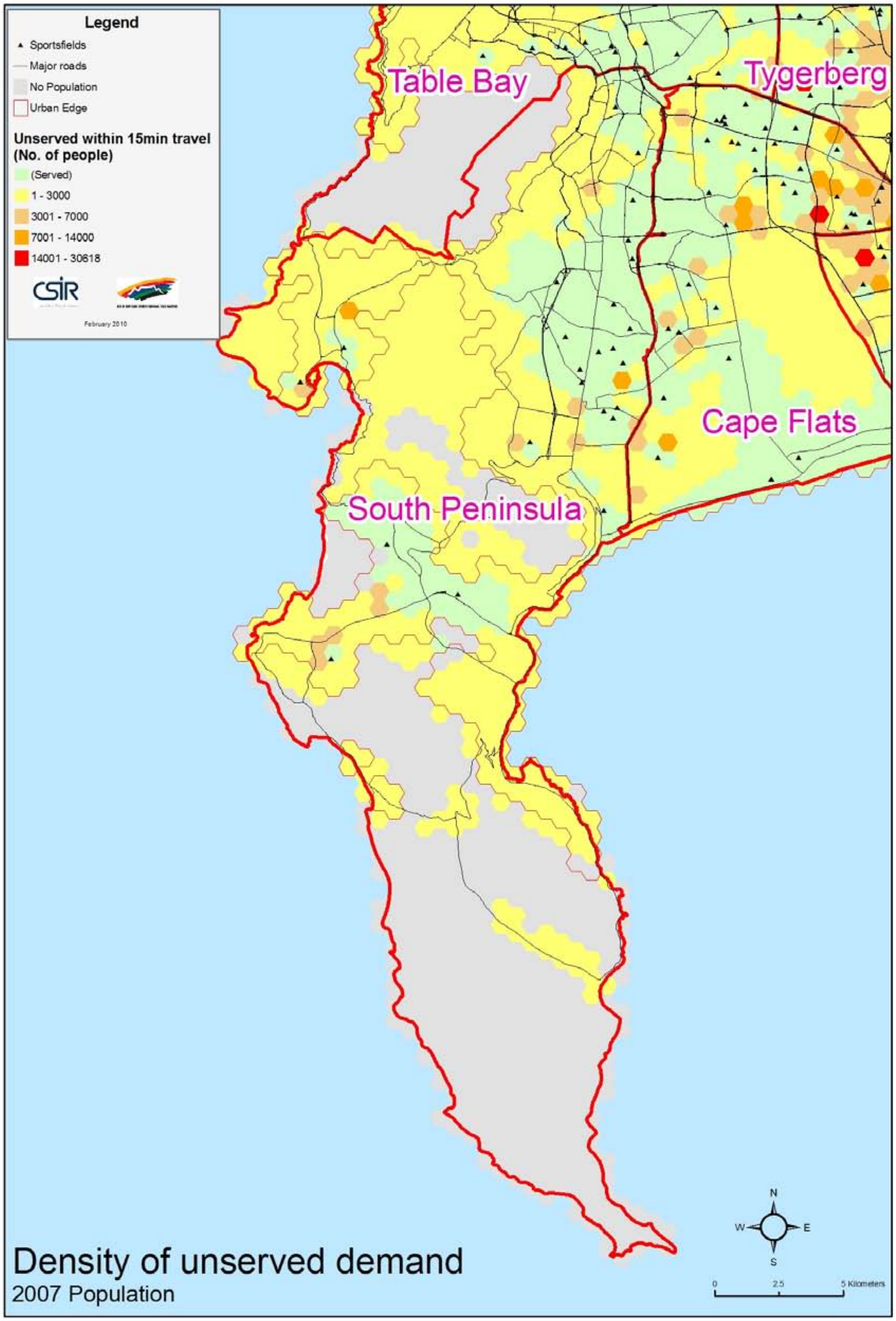


Figure 6.10: District H – Unserved demand

When the same analysis is undertaken based on the projected 2016 population there is a decrease in the already low provision from 45% to 39% of the total population who can reach a sportsfield within 15 minutes travel time in off-peak conditions. Table 6.8 shows the served population and those not served by current sportsfields for areas inside and outside the urban edge. Overall, 60% of people are not provided for using the specified standards. Although 94.95% of the approximately 16 535 persons located outside the urban edge would not be served by a sportsfield this demand cannot be considered as significant as it makes up only 0.4% of the City's population which is distributed over an extensive area making it difficult to provide for.

Table 6.8: Sportsfields provision for the City of Cape Town - 2016

Areas	Total Population	Served		Unserved	
		Total	Percentage	Total	Percentage
Urban	3 823 574	1 528 814	39.98%	2 294 760	60.02%
Non-urban	16 535	835	5.05%	15 700	94.95%
Total	3 840 109	1 529 649	39.83%	2 310 460	60.17%

The percentage of unserved population again varies widely between the planning districts. As indicated in Table 6.9, Blaauwberg would be best off with a sportsfield provision rate of 70% of the population being served. The other planning districts would have 51% or less of their residents being served. Mitchell's Plain/ Khayelitsha District would again be the district worst off, with only 27.1% of its total population being served while the Northern District and the Helderberg District would experience the highest increases in their unserved populations (of 20%) if no new facilities were provided there. Blaauwberg District would experience a 12.1% increase in its unserved population while the rest of the districts would have very small increases of less than 5%.

Table 6.9: Sportsfields provision for the City of Cape Town (per planning district) - 2016								
	District A (Table Bay)	District B (Blaauwberg)	District C (Northern)	District D (Tygerberg)	District E (Helderberg)	District F (Mitchell's Plain/ Khayelitsha)	District G (Cape Flats)	District H (South Peninsula)
No. of facilities	15	14	15	31	11	24	37	24
Total size (Ha)	49.485	111.7722	117.7464	142.1772	65.1131	154.0457	158.278	78.2471
Capacity	88 368	199 593	210 261	253 888	116 273	275 082	282 639	139 727
Total population	189 642	231 868	402 106	706 376	276 308	1 114 354	573 056	346 399
Served	81 590	163 254	206 693	260 487	116 305	302 209	252 218	147 161
	43%	70.4%	51.4%	36.9%	42.1%	27.1%	44%	42.5%
Unserved	108 052	68 614	195 413	445 889	160 003	812 145	320 838	199 238
	57%	29.6%	48.6%	63.1%	57.9%	72.9%	56%	57.5%
% change from 2007 unserved population	↑1.9%	↑12.1%	↑22%	↑4.5%	↑21.8%	↑2.6%	↑3.1%	↑3.8%
Hectares required for unserved	60.51 ha	38.42 ha	109.43ha	249.7 ha	89.6 ha	454.8 ha	179.67 ha	111.57 ha

◆Playing area only.

▪Number of people based on 0.56ha per 1 000 population.

∗All persons within 15 minute travel time.

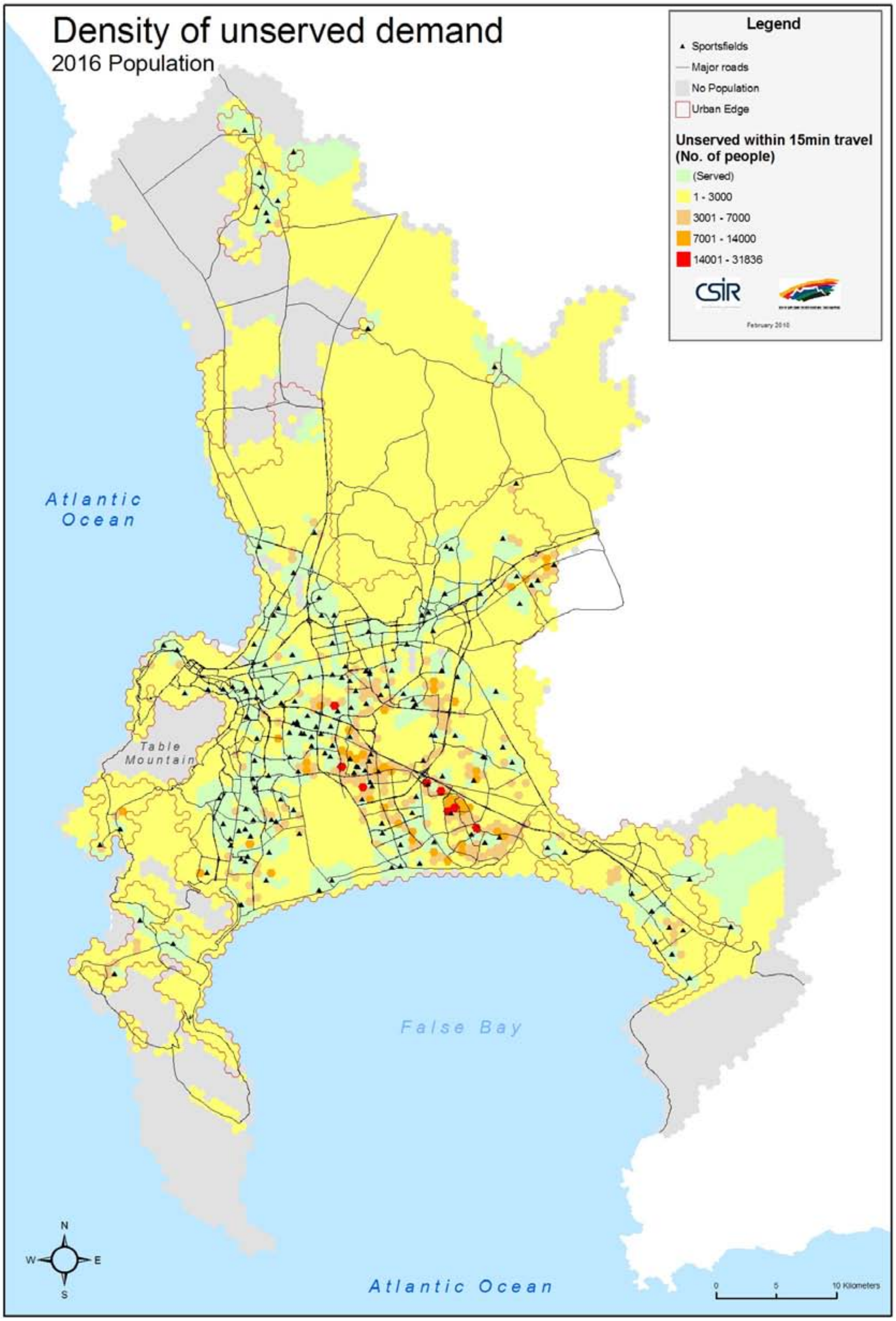


Figure 6.11: Projected scenario 2016-population served and concentration of unserved demand based on 15 minutes travel time

6.1.6 Implication of not considering school fields as part of the sportsfields provision

It may appear that the provision of municipal sportsfields in the City of Cape Town is inadequate with only 46% (2007 population) and 40% (2016 population) being able to reach a field with apparent spare capacity within a 15 minute off-peak vehicle travel time. However, one must be mindful of the fact that it is only municipal sportsfields that have been analysed and sportsfields at tertiary, secondary and primary education institutions in the City have not been included. The use of the sportsfields facilities of educational institutions can be considered as part of a community's resource base and part of the provision of sportsfields. For this reason data was obtained from the Provincial Department of Education with regard to sports facilities at schools. This database was not verified and may not be complete; however it still provides improved information with regard to the availability of global playing space within a community.

It is also noted that many schools have – for a variety of reasons – abandoned their fields and the implications of using these areas need to be further explored as discussed later in this section.

A list of schools that currently have sportsfields were procured from the Department of Education. As indicated in Table 6.10, there are seven different sporting codes that are represented at schools that have facilities. The average size of each of the different playing fields per code was used to calculate the additional sportsfield area per geographic area provided by the school fields. This additional area was then added to the existing data base of sportfield hectares.

Table 6.10: Schools with sportsfields

Code	No. of schools	No. of fields/ pitches/ courts
Soccer	395	570
Rugby	395	570
Netball	444	882
Tennis	95	337
Cricket	65	120
Hockey	52	101
Athletics	11	14

An analysis was undertaken to determine the impact of school sportsfield provision on the overall sportsfield available based on both the 2007 and 2016 population figures. The result indicated that the inclusion of school sportsfields has a significant impact on the number of people who can reach a sportsfield with capacity (Figure 6.12). Specifically the served population increases significantly from 45.66% without school sportsfields to 77% served with school sportsfields. Thus only 23% are unserved rather than 54% as in the previous scenario.

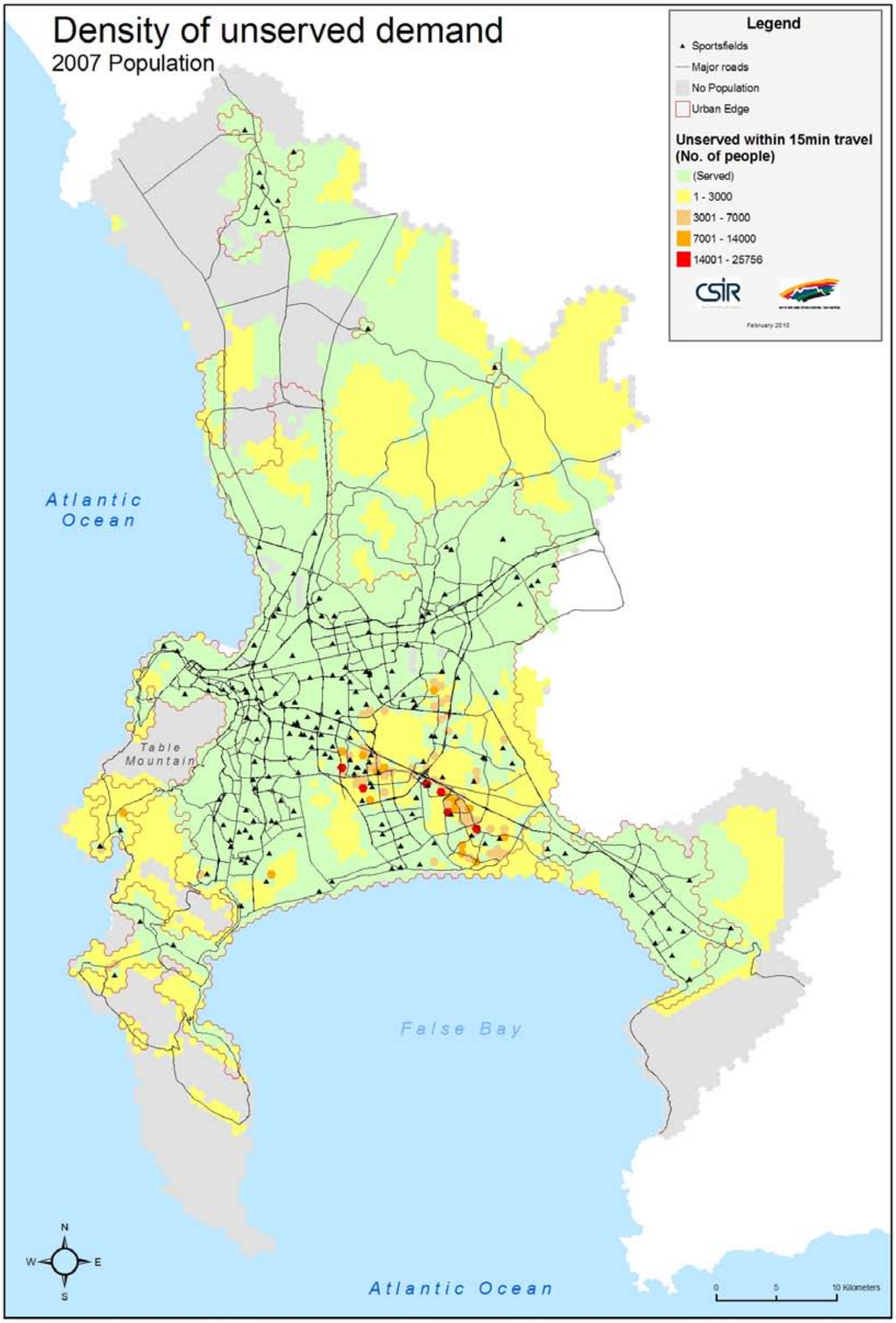


Figure 6.12: Density of unserved demand based on 15 minutes travel time – 2007 population (school sportsfields included) [Capacity Constrained]

Figure 6.12 indicates that the geographic distribution of the unserved population after the inclusion of the school sportsfields has the same spatial pattern to that found in the City without schools, although the intensity is somewhat decreased. The inclusion of sportsfields at schools in the analyses would decrease the number of people that are currently unserved both inside and outside of the urban edge (see Table 6.11 – to be read in conjunction with Table 6.6); however, the most underprovided areas remain overwhelmingly in the Metro South East.

Table 6.11: Sportsfield provision for the City of Cape Town (including school sportsfields)

Areas	Total Population	Served		Unserved	
		Total	Percentage	Total	Percentage
Urban	3 314 706	2 551 437	77%	763 269	23%
Non-urban	14 062	4 929	35%	9 133	65%
Total	3 328 768	2 556 366	76.8%	772 402	23.2%

A breakdown of provision within the various planning districts similarly reflects an increase in provision with the impact of the inclusion of school sportsfields clearly seen (Table 6.12). In the absence of FMC information, it is unwise to recommend exactly what code of sport should be provided within each area to eradicate the shortfall. However, it is believed that Area Managers – who have an intimate knowledge of their areas' needs and sport profile, would be in a suitable position to decide how to allocate playing space for the various codes.

Table 6.12: Impact of including school sportsfields in the provision sportsfields for the City of Cape Town by planning districts

District No.	Name	% served (schools excluded)	% served (schools included)	% change in provision
A	Table Bay	45.1%	97.1%	+52%
B	Blaauwberg	82.1%	98%	+15.9%
C	Northern	70.5%	99.4%	+28.9%
D	Tygerberg	39.2%	82.3%	+43.1%
E	Helderberg	61%	96.7%	+35.7%
F	Mitchell's Plain/ Khayelitsha	29%	52.2%	+23.2%
G	Cape Flats	46.8%	79.2%	+32.4%
H	South Peninsula	47.1%	83.2%	+36.1%

6.1.7 Calculation of the backlog in sportsfields provision

The unserved population currently numbers 1 813 719 (Tables 6.6 and 6.7) if school facilities are excluded. The number of hectares required per district to provide for the current (2007) unserved population was calculated and presented in Table 6.7. However, when the available school sportsfields are factored in the calculation of the provision of sportsfields, then the city-wide number of unserved persons declines by 57% to 772 402 people. This will decline further if the parking and associated land presently being provided within sportsgrounds is included (for these analyses only the playing areas of sportsfields were included not the gross area).

The amount of land required to meet the needs of the currently unserved population (excluding schoolfields) varies, with Tygerberg, Mitchell's Plain/ Khayelitsha, Cape Flats and South Peninsula requiring in excess of 100 hectares and in some cases double this per district to meet the needs of its residents. The total amount of land required in the city as a whole in order to meet the current backlog is 1 015.43 hectares. The backlog will grow to 1 293.7 hectares by 2016 (Table 6.9). All the districts will require additional land to meet the needs of the 2016 population with six of the eight districts requiring more than 90 hectares in addition to what is currently available.

Thus, with this high level of backlog and as sportsfields space-intensive land use, mechanisms should be explored that allow for a maximal use benefit of land that can be synergised with optimal locations in order to serve the greatest numbers of those unserved.

6.1.8 Priority areas identified for intervention

The ten best optimal locations for situating new sportfields to eradicate the backlog are illustrated in Figure 6.13. These ten locations would have the greatest impact in addressing the backlog and are general recommendations of where to site the sportsfields. The exact locations of sportsfields within areas of high demand must be planned for by the City of Cape Town with due consideration of land availability and other determining factors.

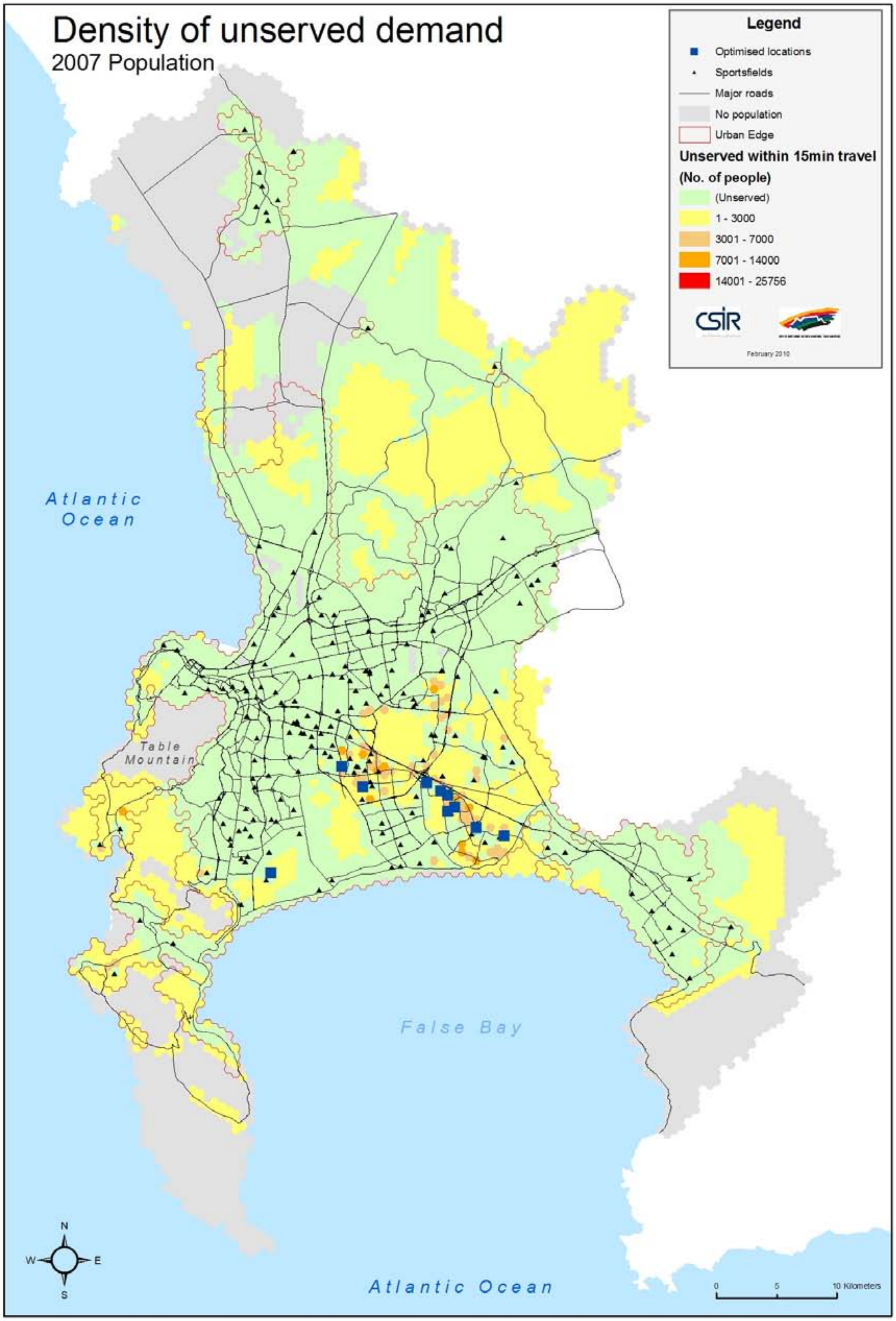


Figure 6.13: Optimised locations for new sportsfields

6.1.9 Potential available land resource based for sportsfield development

Many schools in the City have land that has been previously used for sport. However due to various reasons, be it the removal of physical education from the curriculum or the prohibitive cost maintaining sportsfields, many of these sportsfields at schools are not longer being used. The school on the left in Figure 6.14 below illustrates how school sportsfields have become disused and become part of the general public space. The perimeter fence of the school has been moved closer to the school buildings making the land beyond the new fence open to general public consumption. The school shown on the right indicates the potential availability of land for sportsfields within the existing school grounds.

Figure 6.14: Schools along Modderdam Road in Valhalla Park

Similarly, the development and use of school sportsfields in Khayelitsha Site B would relieve the pressure on Site B Stadium (Figure 6.15). Furthermore, the proximity of school sportsfields to existing municipal sports facilities would create an area of concentration for sporting activities.

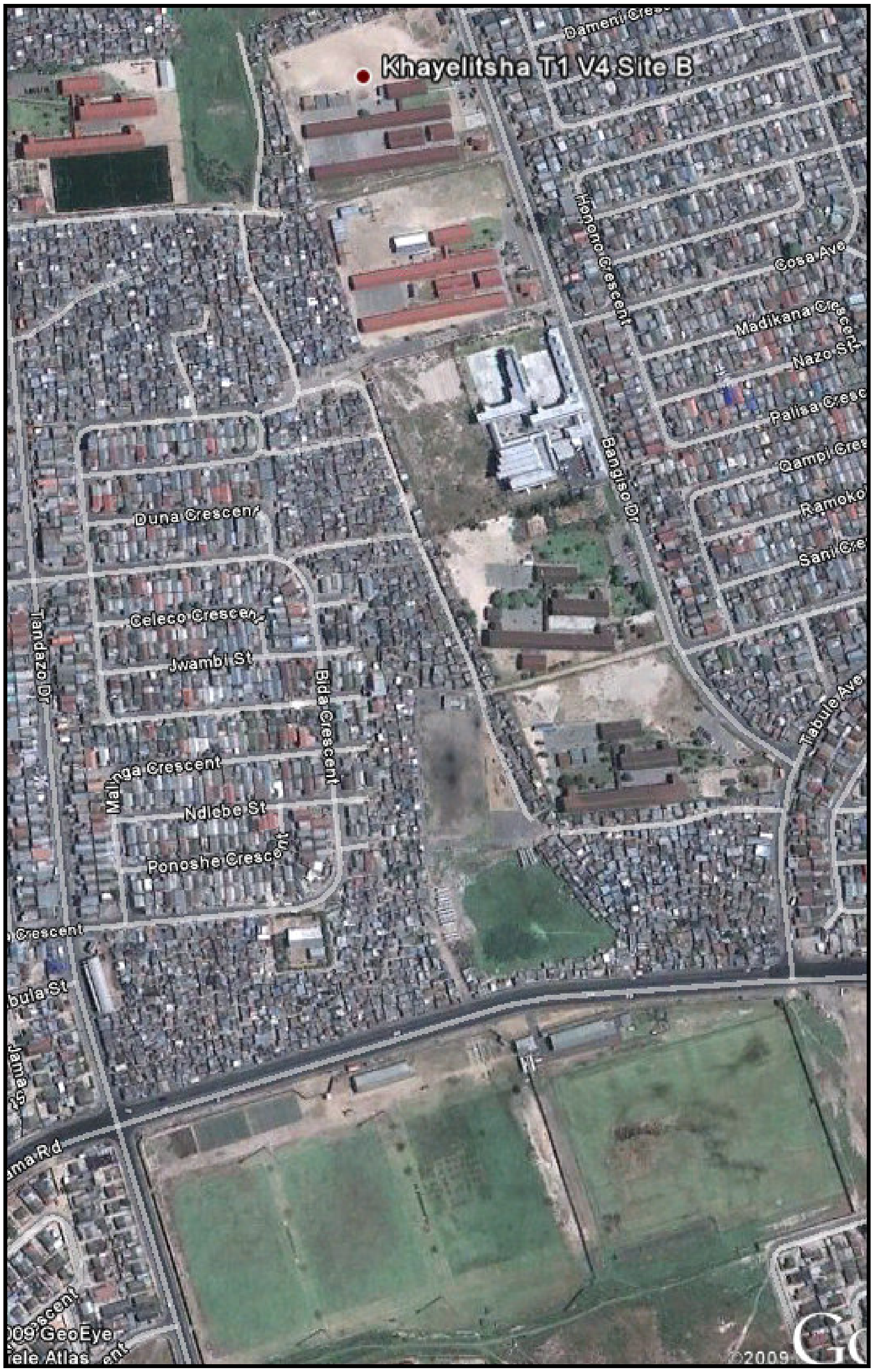


Figure 6.15: Schools in Khayelitsha (Site B)

The scenarios that are presented in Figures 6.14 and 6.15 indicate the potential for the development of sportsfields at or adjacent to schools on land belonging to the Department of Public Works (for Education facilities) in order to address and alleviate the shortfall of sportsfields within the City. An initiative to utilise land at schools for sportsfields would, however, entail close co-operation between the Western Cape Education Department

(WCED) and the City of Cape Town in order to overcome institutional and logistical impediments. Early indications are that the WCED seem to be in favour of such a partnership. (Telephonic conversation with Mr. Jerome Gordon (WCED: Deputy Director: Infrastructure, Transport, Equipment and LTSM Planning), 021 467 2566, jegordon@wced.gov.za). Not all schools would have land that would be available for communal sportsfields, but the identification of schools with such potential would aid in planning and provision in areas with the greatest demand for sportsfield space.

As more schools allow the communal utilisation of sportsfields, so the provision of sportsfields to the population will increase. A partnership between the City and schools with regard to sportsfield use could also pave the way for greater community involvement and community ownership of schools and be incorporated into the WCED Safer Schools Programme. A qualitative study run through schools would give insight into the needs of the school population for sportsfields and could further assist in identifying accessible schools with sporting facilities.

In addition to the utilisation of sportsfields at primary and secondary educational institutions the possibility of combining sportfields with community and district parks, could be investigated. Were this to occur, the important aspect is to create different zones of usage within the space – for active and passive users – in order to minimise conflict between the two user groups.

6.1.10 Sportsfields potential spare capacity (2016)

As can be seen from Figure 6.16 there is only a very small area of potentially spare sportfield facility space in the City of Cape Town and this is in the Atlantis area [2016]. This facility type is in net deficit even when the school sportsfields are added to the supply figures. Table 6.13 provides a summary of the supply and demand of this facility type.

Table 6.13: Potential spare capacity per planning district for sportsfields

	District A (Table Bay)	District B (Blaauwberg)	District C (Northern)	District D (Tygerberg)	District E (Helderberg)	District F (Mitchell's Plain/ Khayelitsha)	District G (Cape Flats)	District H (South Peninsula)
No. of facilities	15	14	15	31	11	24	37	24
Total size (Ha)◆	49.485	111.7722	117.7464	142.1772	65.1131	154.0457	158.278	78.2471
Capacity▪	88 368	199 593	210 261	253 888	116 273	275 082	282 639	139 727
Total population	189 642	231 868	402 106	706 376	276 308	1 114 354	573 056	346 399
Served∗	81 590	163 254	206 693	260 487	116 305	302 209	252 218	147 161
	43.0%	70.4%	51.4%	36.9%	42.1%	27.1%	44.0%	42.5%
Unserved	108 052	68 614	195 413	445 889	160 003	812 145	320 838	199 238
	57.0%	29.6%	48.6%	63.1%	57.9%	72.9%	56.0%	57.5%
Potential Spare capacity	0	3.62ha	0	0	0	0	0	0
Comments	Net shortfall	Net shortfall with very limited poorly located sportsfields	Net shortfall	Net shortfall	Net shortfall	Net shortfall	Net shortfall	Net shortfall

◆Playing area only.

▪Number of people based on 0.56ha per 1 000 population.

∗All persons within 15 minute travel time.

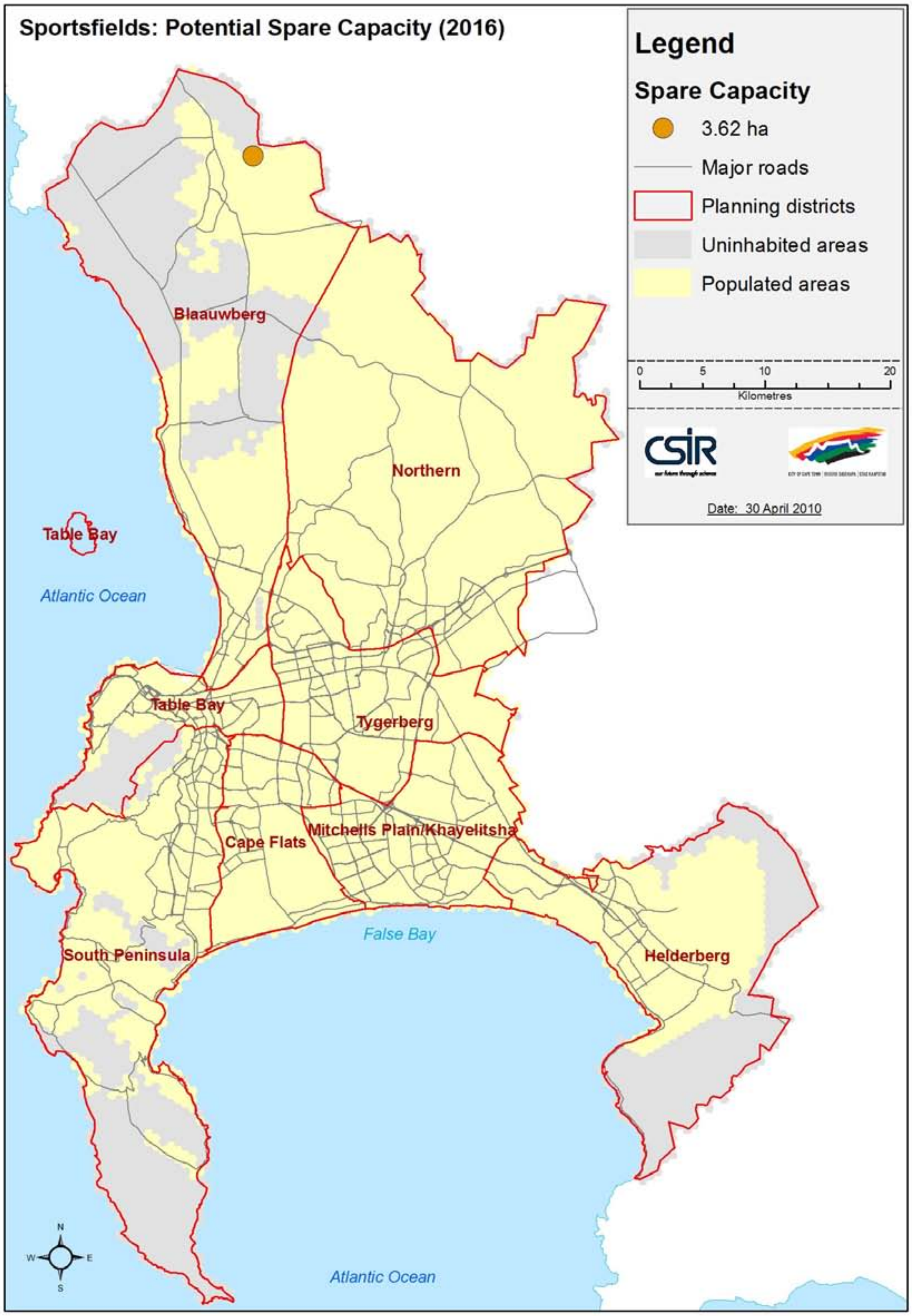


Figure 6.16: Potential spare capacity for sportsfields (2016)

6.2 Sports Stadia

A separate audit of the sufficiency of sports stadia was undertaken with respect to their capacity and location with respect to the City's population.

6.2.1 Analyses criteria

The criteria for the analyses of sports stadia is summarised in Table 6.14 below.

Table 6.14: Analyses criteria for stadia	
Facilities analysed	All operational municipal sports stadia (6 in total) – excluding privately owned and managed stadia.
Demand	Entire City with current (2007) and 2016 projected population figures assigned to a hexagon grid.
Supply	300 000 people per stadium
Travel mode and access time	Transport via existing road network. Facilities must be accessed within a 15 minutes travel time by vehicle in off-peak conditions.
Analyses undertaken	• Unconstrained capacity and travel time analyses to establish travel time for the whole City's population to nearest stadium. • Capacity constrained catchment area analyses, based on capacity and a maximum travel time of 15 minutes. • Optimisation for five new facilities.

Appendix 6.3 contains a list of the sports stadia, their capacities and allocated demand. At the time of the analyses Cape Town (Green Point) Stadium was under reconstruction and thus was not included.

6.2.2 Discussion of results for sports stadia

The distance analysis indicates that 8% of the 2007 population are within 3km of a stadium, whilst 58% of the population are within 9km of a stadium (Table 6.15).

Table 6.15: Travel Distance analyses for sports stadia in the City of Cape Town

DISTANCE CATEGORY	POPULATION SERVED			
	2007		2016	
0 - 3km	266 382	*8.00%*	300 999	*7.84%*
0 - 6km	887 347	*26.66%*	968 259	*25.21%*
0 - 9km	1 935 952	*58.16%*	2 098 287	*54.64%*
More than 9km	1 392 816	*41.84%*	1 741 807	*45.36%*

Figure 6.17 represent the travel time in minutes to the closest stadium irrespective of capacity. Large areas and some especially in Atlantis and the Helderberg have access travel times of more than 45 minutes are beyond the 15 minute travel time standard.

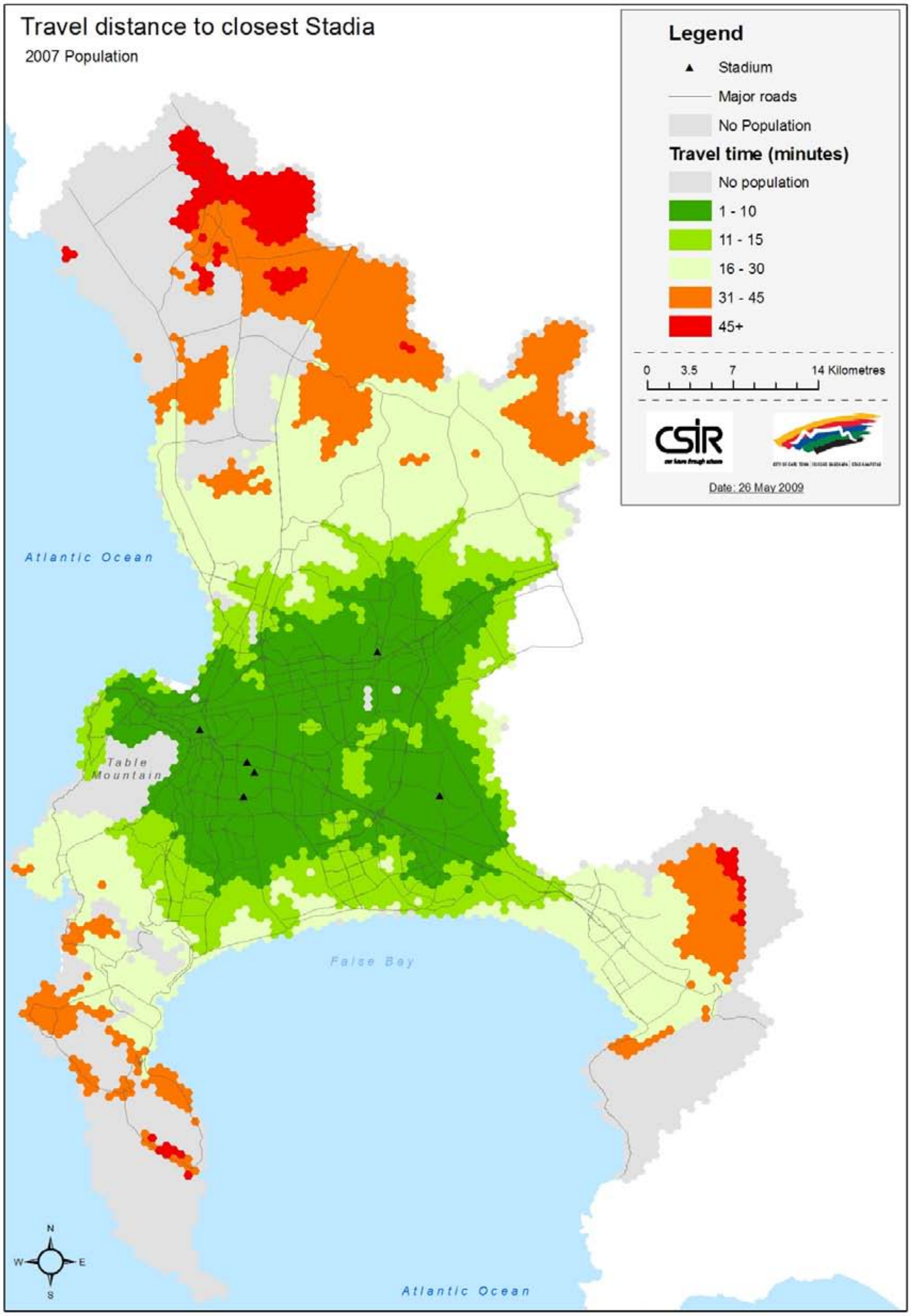


Figure 6.17: Travel time to closest stadium

The catchment area analyses results are shown in Figure 6.18. Those areas that are served in terms of the provision standards as well as the concentration of the unserved demand are indicated. The map (Figure 6.18) shows the largest area of shortfall to be in Mitchell's Plain/ Khayelitsha with the latter having the greatest demand. Other areas of shortfall are mainly Brackenfell/ Wallacedene, Atlantis, Elsies River and Lavender Hill/ Grassy Park areas. The results derived from the catchment area analyses and shown in Tables 6.16 and 6.17 which give total population figures currently served and not served by current stadia for areas inside and outside the urban edge and per district.

Table 6.16: Current stadia provision for the City of Cape Town

Areas	Total population	Unserved population	% of population unserved
Urban	3 314 706	1 514 702	45.70%
Non-urban	14 062	13 714	97.53%
Total	3 328 768	1 528 416	45.92%

Only 54% of the current population of the City of Cape Town can reach a stadium with capacity within 15 minutes vehicular travel during off-peak conditions. Almost all the 14 000 persons located outside the urban edge are not served by a stadium but make-up less than 0.5% of the City's population. The spatial results more clearly indicate where facility provision does not meet the standards provision and actual figures are given mainly for reporting purposes.

A district breakdown of the current service capacity (Table 6.17) indicates that all districts, except Districts A (Table Bay), D (Tygerberg) and G (Cape Flats) have an unserved population of more than 25%. District E (Helderberg) has 99.99% of its population classified as unserved. However, when one measures District E's (Helderberg) unserved population in terms of the total city population, then it forms only 5.5% of the total unserved population. District F (Mitchell's Plain/ Khayelitsha) unserved population forms 19% of the total city population backlog and is the area with the largest proportion of unserved population. Figure 6.18 shows spatially the concentration of the unserved population and visually reinforces these results.

Table 6.17: Current unserved population per planning district (sports stadia)					
District	**Name**	**Current (2007) population**	**Unserved population**	**% Unserved per district**	**% Unserved to total population**
A	Table Bay	183 586	416	0.23%	0.01%
B	Blaauwberg	174 130	135 862	78.02%	4.08%
C	Northern	282 832	163 902	57.95%	4.92%
D	Tygerberg	637 983	158 704	24.88%	4.77%
E	Helderberg	181 957	181 930	99.99%	5.47%
F	Mitchell's Plain/ Khayelitsha	1 014 253	645 957	63.69%	19.41%
G	Cape Flats	538 530	70 344	13.06%	2.11%
H	South Peninsula	315 496	171 301	54.30%	5.15%

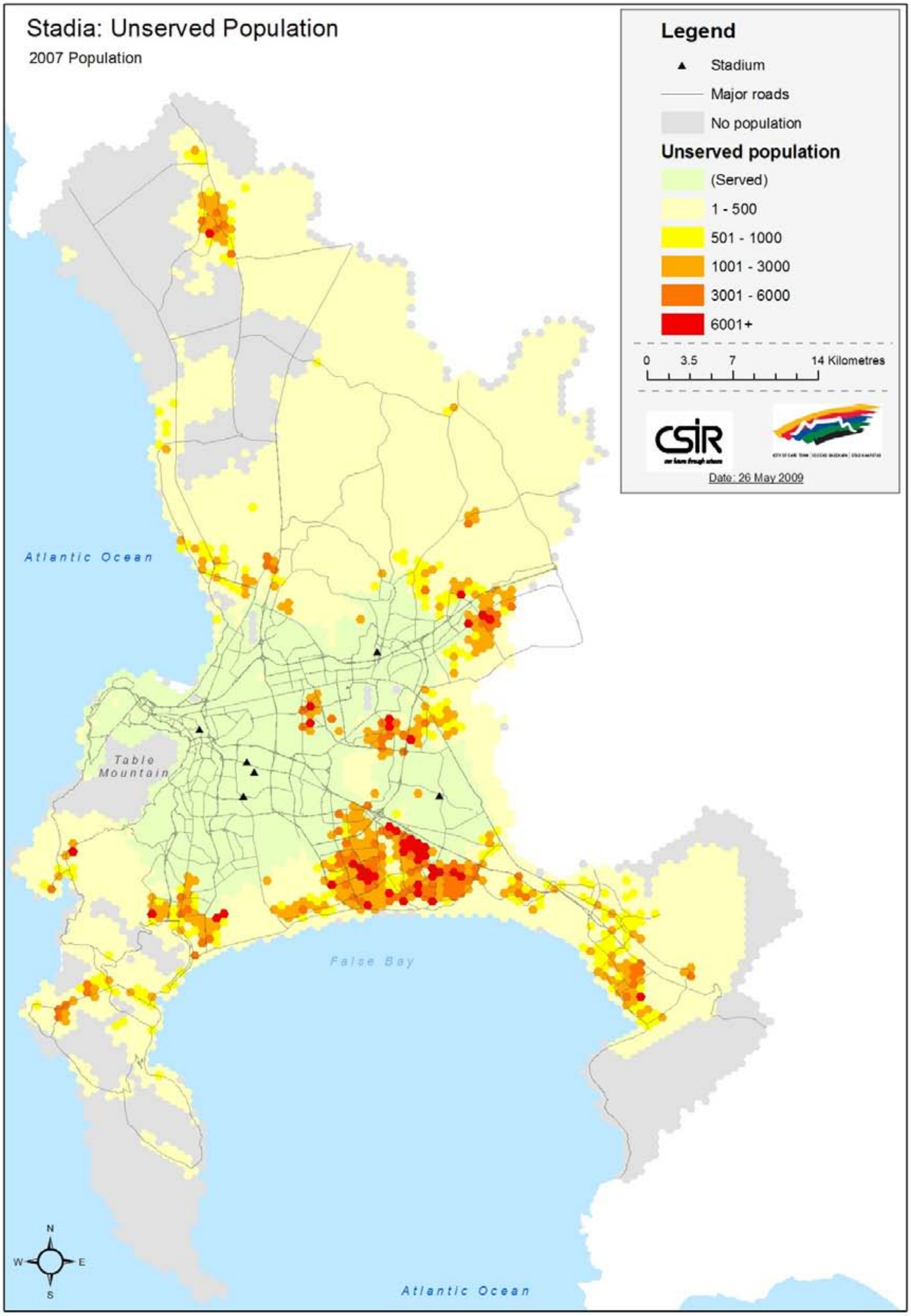


Figure 6.18: Current population served and concentration of unserved demand for sports stadia based on 15 minutes travel time

An analysis based on the 2016 population reflects an increase in the unserved (Table 6.18) – by 2016 approximately 53% of the City's population will be unserved, an increase of over 7%.

Table 6.18: Projected 2016 stadia provision for the City of Cape Town			
Areas	**Total population**	**Unserved population**	**% of population unserved**
Urban	3 823 574	2 023 582	52.92%
Non-urban	16 535	16 527	99.95%
Total	3 840 109	2 040 109	53.13%

The District breakdown Table 6.19 for 2016 indicates that in all districts, the unserved population increases somewhat. However, District F (Mitchell's Plain/ Khayelitsha) unserved population remains high at 19% of the total City unserved population. Helderberg, Tygerberg and Northern also have significant unserved populations then. Figure 6.19 shows spatially the concentration of this unserved population. The areas of unserved demand remain similar to those currently – there is simply an increase in backlog / intensity of demand as a result of growth in these areas.

Table 6.19: Projected 2016 unserved population per planning district (sports stadia)					
District	**Name**	**2016 population**	**Unserved population**	**% Unserved per district**	**% Unserved to total population**
A	Table Bay	189 642	471	0.25%	0.01%
B	Blaauwberg	231 868	192 339	82.95%	5.01%
C	Northern	402 106	285 961	71.12%	7.45%
D	Tygerberg	706 376	238 961	33.83%	6.22%
E	Helderberg	276 308	276 308	100.00%	7.20%
F	Mitchell's Plain/ Khayelitsha	1 114 354	753 408	67.61%	19.62%
G	Cape Flats	573 056	88 146	15.38%	2.30%
H	South Peninsula	346 399	204 515	59.04%	5.33%

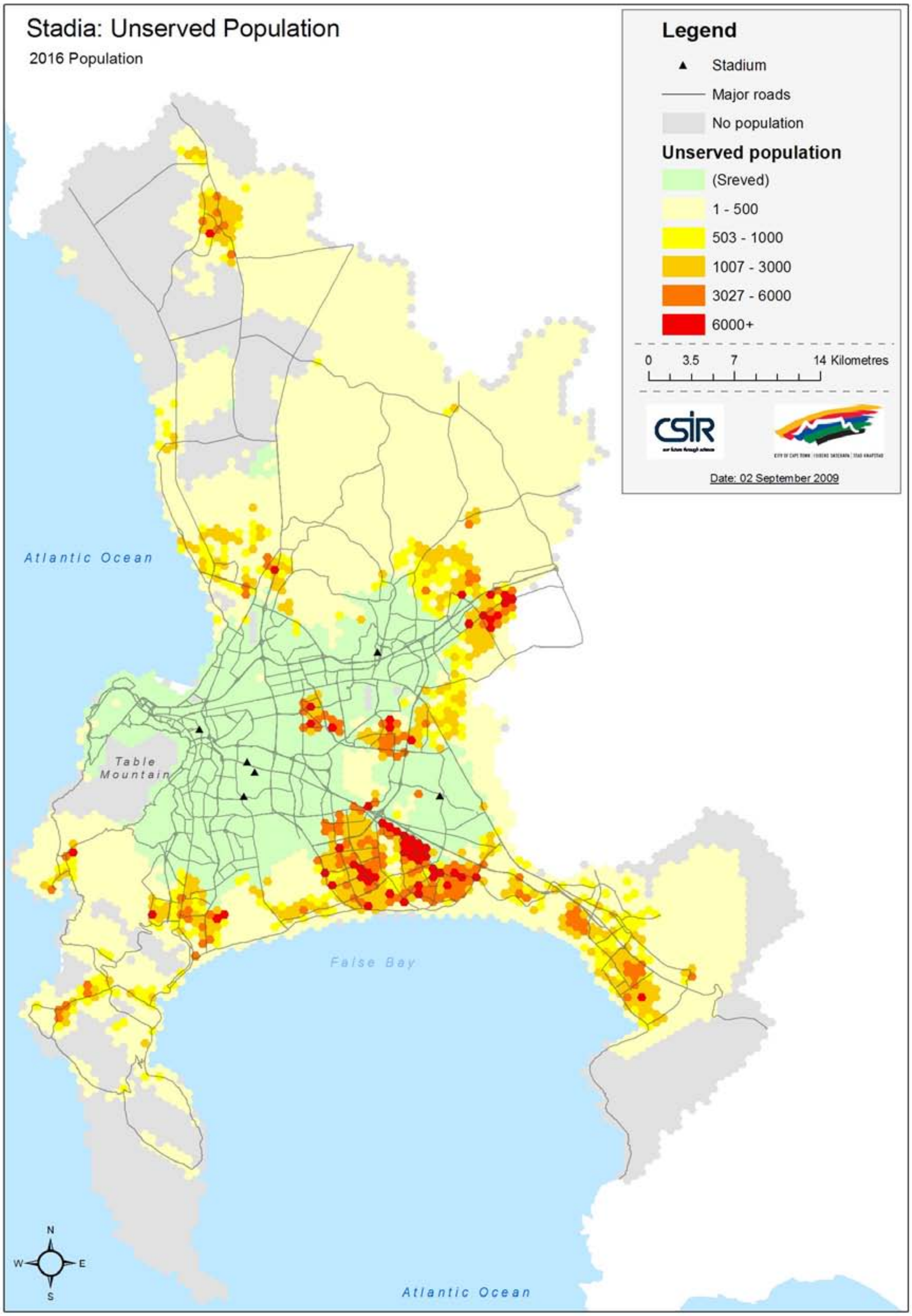


Figure 6.19: Projected 2016 population served and concentration of unserved demand for stadia based on 15 minutes travel time

6.2.3 Priority areas of intervention for sports stadia

An optimisation for five new facilities to meet the backlog was done. The capacity of five facilities approximates the total backlog in facilities for the City and technically should reduce much of the total stadia backlog. The five most optimal locations for situating new stadia are illustrated in Figure 6.20. These five locations would have the greatest impact in addressing the backlog and are general recommendations of where to locate the stadia. The exact locations of stadia within areas of high demand must be planned for by the City of Cape Town with due consideration of land use, suitability and other determining factors.

6.2.4 Potential spare capacity for sports stadia (2016)

Based on the stadia data there is **no** potential spare capacity projected for 2016.

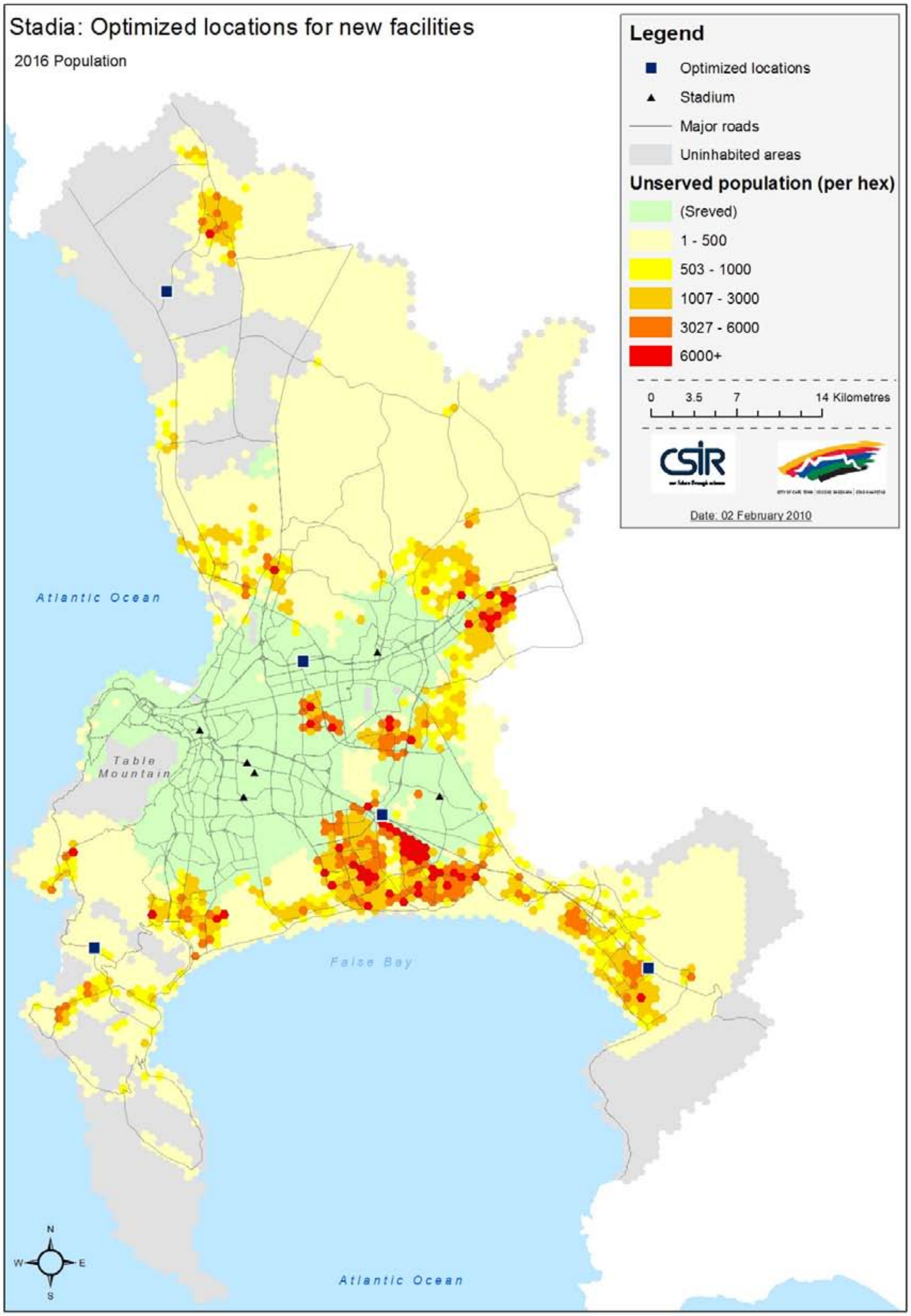


Figure 6.20: Optimised locations for new sports stadia

6.3 Swimming pools

Despite space for swimming pools forming part of the overall space requirement for sportsfields the sufficiency of pools was tested separately to determine access to this specialised facility with a high demand threshold.

6.3.1 Analyses criteria

The criteria for the analyses of swimming pools is summarised in Table 6.20.

Table 6.20: Analyses criteria for swimming pools	
Facilities analysed	All operational swimming pools 25 metres or larger (35 in total). Suitable for galas, etc (tidal pools excluded)
Demand	Entire City with current (2007) and 2016 population figures.
Supply	Capacity for facilities is based on standards for the City of Cape Town: 60 000 people per facility.
Travel mode and access time	Transport via existing road network. Facilities must be accessed within a 20 minutes travel time by vehicle in off-peak conditions.
Analyses undertaken	• Unconstrained travel time analyses to establish travel time for the whole City's population to nearest swimming pool. • Capacity constrained catchment area analyses, based on capacity and a maximum travel time of 20 minutes. • Optimisation to establish 10 new intervention areas / facilities.

Appendix 6.4 contains a list of the swimming pools, their capacities and allocated demand.

6.3.2 Discussion of results for swimming pools

The distance analysis indicates that 76% of the 2007 population are within 5km of a swimming pool. This will drop to 72% by 2016 if no new facilities are developed (Table 6.21 and Figure 6.21). Approximately 44% of the City's residents live within 2.5km of a swimming pool.

Table 6.21: Distance analyses for swimming pools in the City of Cape Town

DISTANCE CATEGORY	POPULATION SERVED			
	2007		2016	
0 - 1km	283 592	8.52%	304 933	7.94%
0 - 2.5km	1 472 538	44.24%	1 571 670	40.93%
0 - 5km	2 520 836	75.73%	2 768 298	72.09%
More than 5km	807 932	24.27%	1 071 796	27.91%

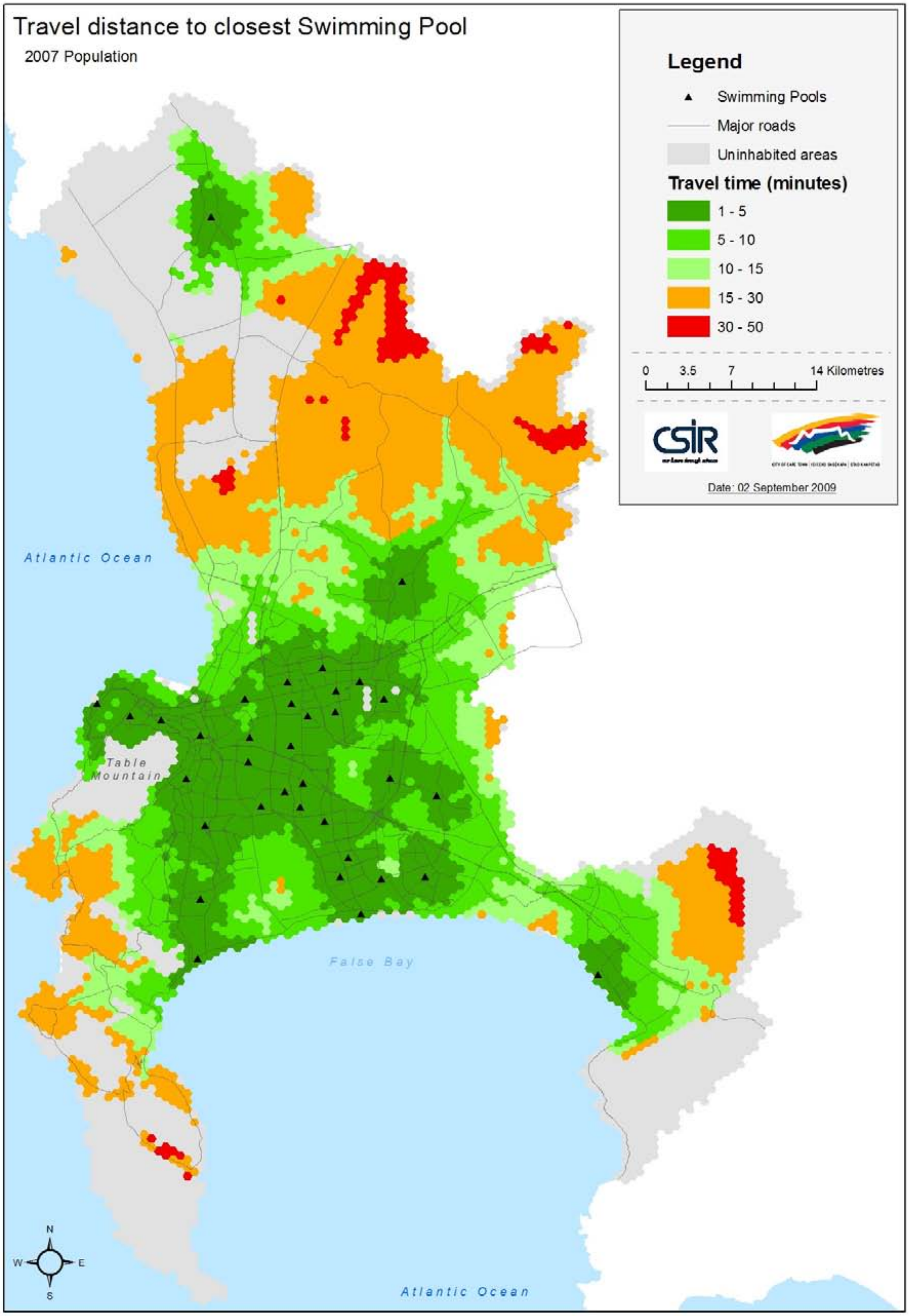


Figure 6.21: Travel time to closest swimming pool

The travel time analysis shows that most of the residential areas are within a 15 minute reach of a pool. To evaluate the spatial distribution of demand against the actual supply of pools a catchment area analyses was undertaken of pools where the analyses did not only look at travel time but took the capacity threshold of 60 000 residents per swimming pool into consideration.

Based on this analysis Figure 6.22 shows those areas that are served in terms of the provision standards as well as the concentration of the unserved demand. Total population served and not served by current swimming pools for areas inside and outside the urban edge are shown in Table 6.22. The tables are important for reporting purposes but the visual interpretation of the maps remain paramount in planning for new facilities.

Table 6.22: Current swimming pool provision for the City of Cape Town

Areas	Current (2007) Total population	Unserved population	% of population unserved
Urban	3 314 706	1 247 224	37.63%
Non-urban	14 062	13 551	96.37%
Total	3 328 768	1 260 775	37.88%

The analysis indicates that 63% of the current population of the City of Cape Town can reach a swimming pool with capacity within 20 minutes vehicular travel during off-peak conditions. Conversely, this translates to 37% of the current population that are not provided for using the aforementioned parameters. Although, 96.4% of the approximately 14 000 persons located outside the urban edge are not served by a swimming pool they make-up less than 0.5% of the City's total population.

For reporting purposes the results were broken down further by Planning District. Table 6.23 indicates that all districts, except District A (Table Bay) have unserved populations of between 13% and 67%. Districts C (Northern), E (Helderberg) and F (Mitchell's Plain/ Khayelitsha) have more than 50% of their population as unserved. The largest percentage of total unserved is found in District F (Mitchell's Plan/ Khayelitsha) which corresponds to the key area of concentrated unserved demand shown in Figure 6.22.

Table 6.23: Current unserved population per planning district for swimming pools					
District	**Name**	**Current (2007) population**	**Unserved population**	**% Unserved per district**	**% Unserved to total population**
A	Table Bay	183 586	3	0.00%	0.00%
B	Blaauwberg	174 130	63,925	36.71%	1.92%
C	Northern	282 832	181,392	64.13%	5.45%
D	Tygerberg	637 983	113,276	17.76%	3.40%
E	Helderberg	181 957	121,927	67.01%	3.66%
F	Mitchell's Plain/ Khayelitsha	1 014 253	598,066	58.97%	17.97%
G	Cape Flats	538 530	74,249	13.79%	2.23%
H	South Peninsula	315 496	107,937	34.21%	3.24%

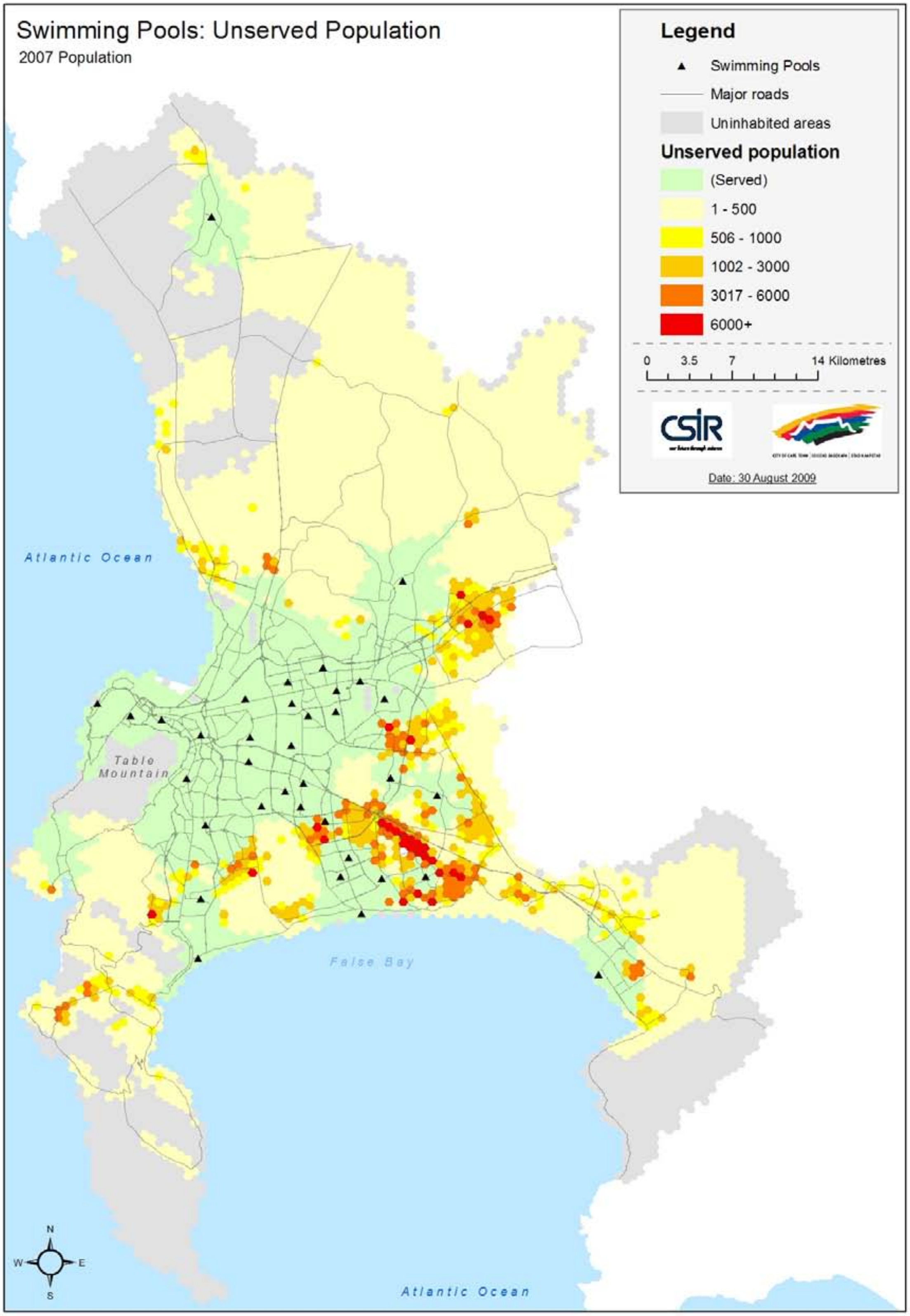


Figure 6.22: Current served and concentration of unserved demand for swimming pools based on 20 minutes travel time

The analyses based on the 2016 projected population reflects an increase in the unserved population of the urban and non-urban population (Table 6.24). By 2016 there will be a 7.7% increase in the unserved population.

Table 6.24: Swimming pool provision for the City of Cape Town			
Areas	**Total population**	**Unserved population**	**% of population unserved**
Urban	3 823 574	1 736 557	45.42%
Non-urban	16 535	16 450	99.49%
Total	3 840 109	1 753 007	45.65%

As shown in Table 6.25 the increase will largely occur in the unserved population of Northern, Helderberg, Mitchell's Plain/ Khayelitsha and the Cape Flats. Figure 6.23 shows spatially the concentration of the unserved population. When compared to Figure 6.22 the areas of shortfall remain the same although the number of unserved in these areas has increased.

Table 6.25: Unserved population per planning district for swimming pools					
District	**Name**	**2016 population**	**Unserved population**	**% Unserved per district**	**% Unserved to total population**
A	Table Bay	189 642	3	0.00%	0.00%
B	Blaauwberg	231 868	114 882	49.55%	2.99%
C	Northern	402 106	304 577	75.75%	7.93%
D	Tygerberg	706 376	156 272	22.12%	4.07%
E	Helderberg	276 308	216 308	78.29%	5.63%
F	Mitchell's Plain/ Khayelitsha	1 114 354	700 972	62.90%	18.25%
G	Cape Flats	573 056	127 580	22.26%	3.32%
H	South Peninsula	346 399	132 413	38.23%	3.45%

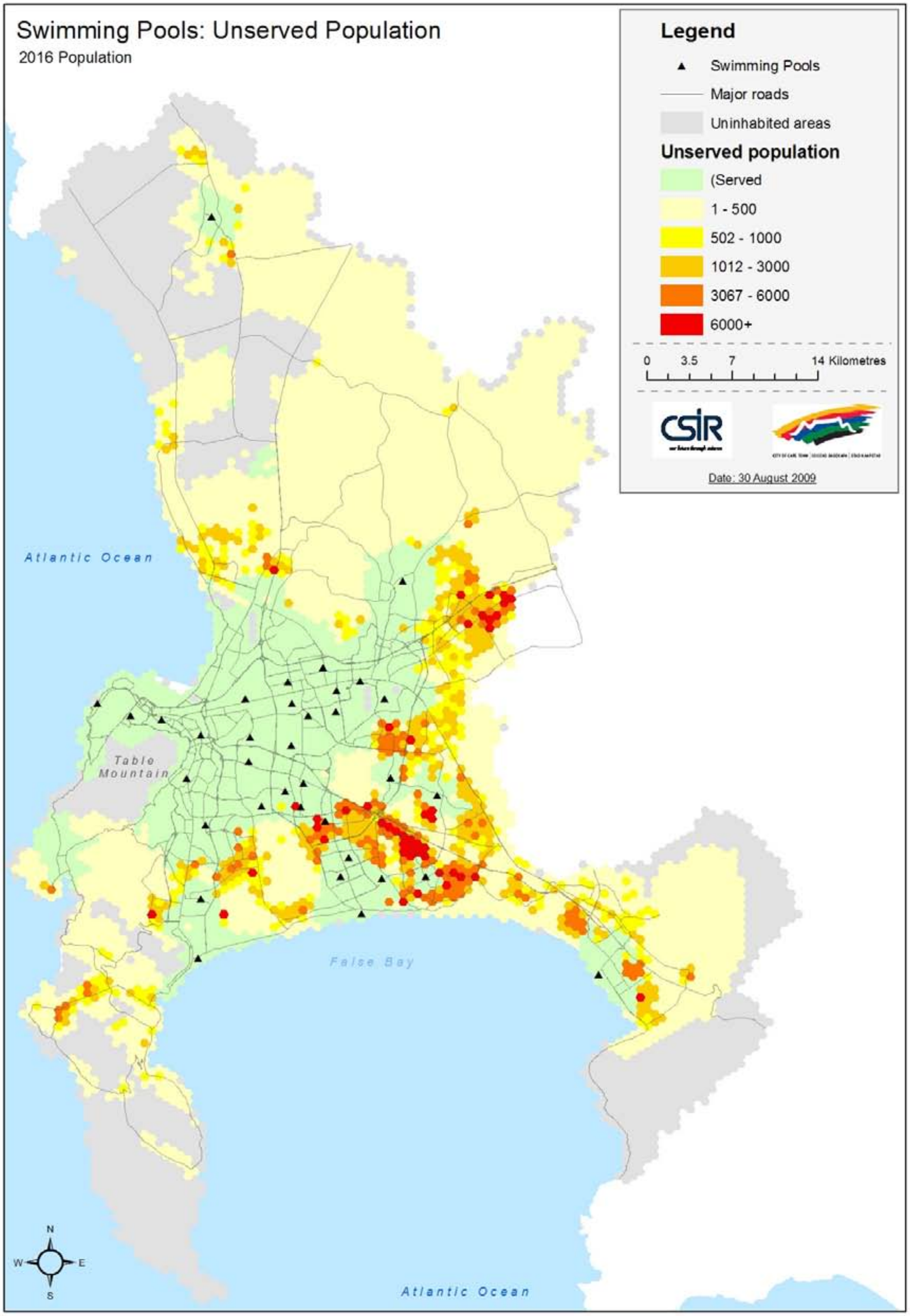


Figure 6.23: Projected 2016 population served and concentration of unserved demand for swimming pools based on 20 minutes travel time

6.3.3 Priority areas of intervention for swimming pools

In total, the backlog for swimming pools is the equivalent of 20 pools but the likelihood of so many pools being affordable is small. It was decided instead to seek optimal locations for half of the backlog (10 pools equivalent). Figure 6.24 illustrates the best 10 optimal locations for situating new swimming pools based on the 2016 population. These locations would have the greatest impact in addressing the backlog and are general recommendations of where to locate the swimming pools. The exact locations of swimming pools within areas of high demand must be planned for by the City of Cape Town with due consideration of the suitability and availability of land, preferred sporting codes of areas and transport networks.

6.3.4 Potential spare capacity for swimming pools (2016)

As can be seen from Table 6.26 and Figure 6.25 there is an insignificant level of oversupply at a single pool in Sea Point and no issues of redundancy have been identified for the City as a whole.

Table 6.26: Potential spare capacity per planning district for swimming pools

District	Name	2016 population	Unserved population	Potential Spare Capacity	Comments
A	Table Bay	189 642	3	12 898	Minor oversupply but pool provides for city wide demand
B	Blaauwberg	231 868	114 882	0	Major shortfalls
C	Northern	402 106	304 577	0	
D	Tygerberg	706 376	156 272	0	
E	Helderberg	276 308	216 308	0	
F	Mitchell's Plain/ Khayelitsha	1 114 354	700 972	0	
G	Cape Flats	573 056	127 580	0	
H	South Peninsula	346 399	132 413	0	
Total	City of Cape Town	3 840 109	1 753 007	12 898	Net undersupply. School pools and beach pools need to be considered as part of supply

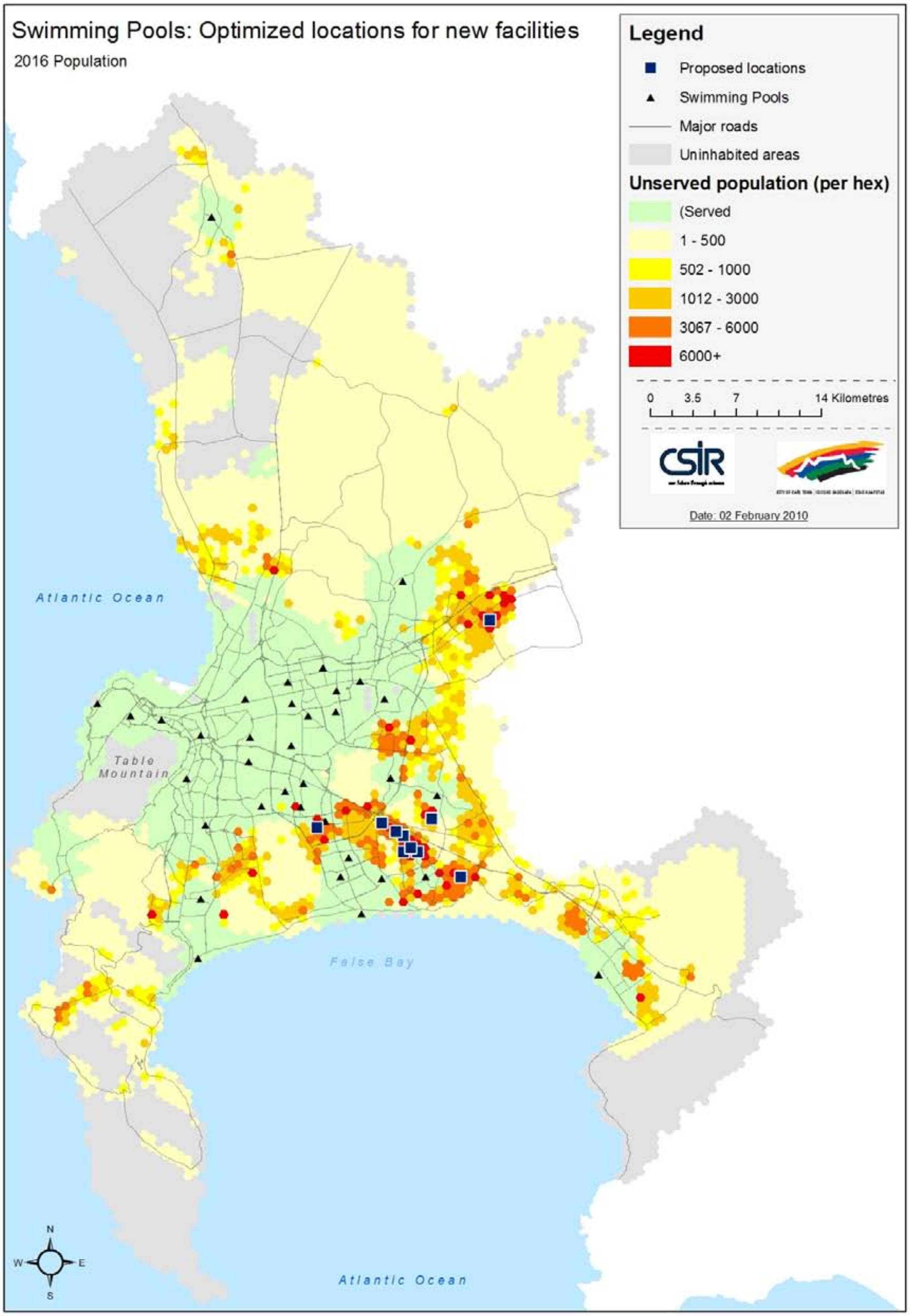


Figure 6.24: Optimised locations for new swimming pools

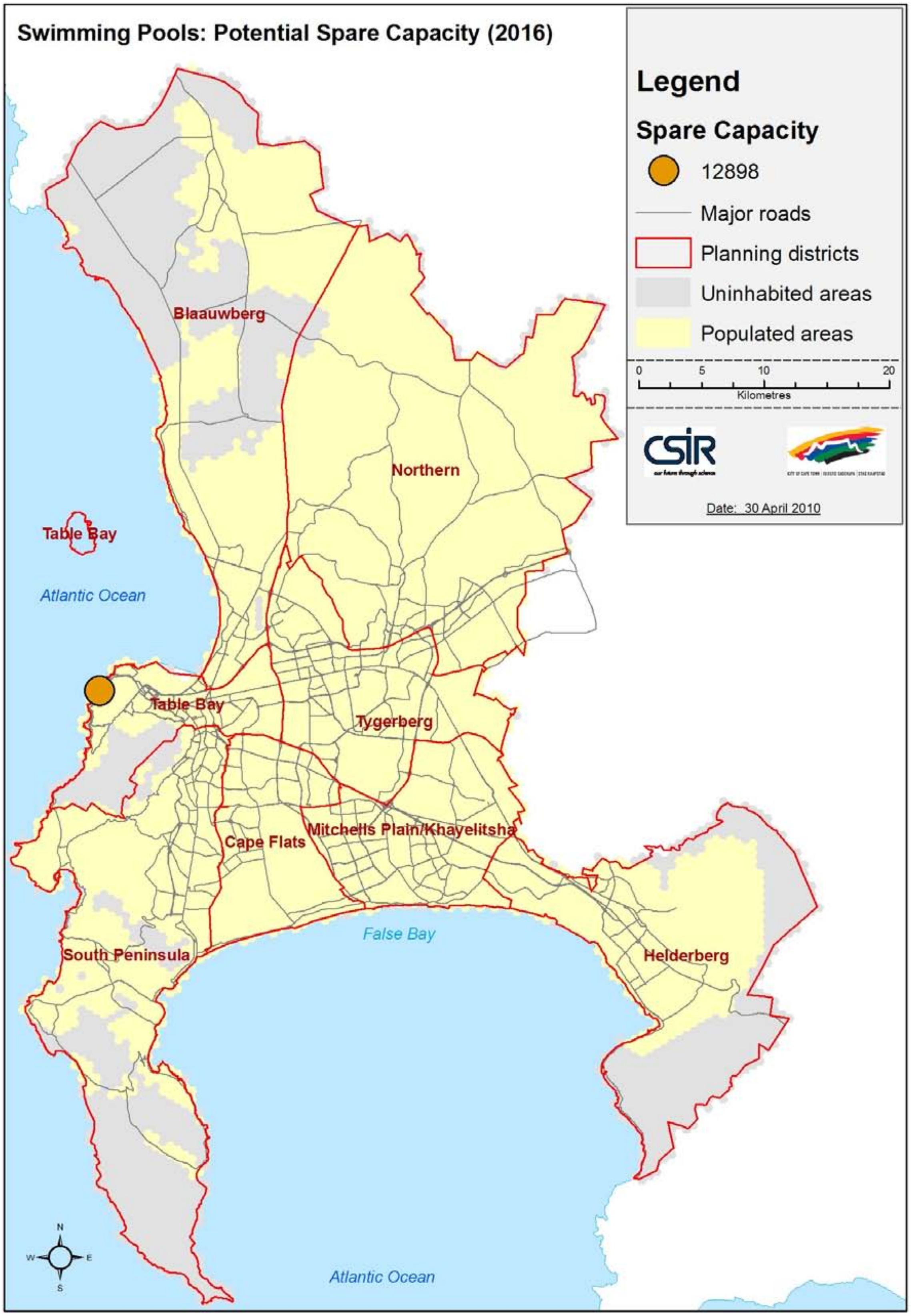


Figure 6.25: Potential spare capacity for swimming pools (2016)

6.4 Indoor Sports Centres

Separate analyses was undertaken to test the sufficiency and distribution of indoor sports centres with respect to demand – even though the land provision for these forms part of the sportsfields provision (0.3ha/ 1 000).

6.4.1 Analyses criteria

The criteria for the analyses of indoor sports centres is summarised in Table 6.27.

Table 6.27: Analyses criteria for indoor sports centres	
Facilities analysed	All operational indoor sports centres (15 in total).
Demand	Entire City with current (2007) and 2016 (projected) population.
Supply	300 000 people per facility.
Travel mode and access time	Transport via existing road network. Facilities must be accessed within a 30 minutes travel time by vehicle in off-peak conditions.
Analyses undertaken	• Unconstrained travel time analyses to establish travel time for the whole City's population to nearest indoor sports centre. • Capacity constrained catchment area analyses, based on capacity and a maximum travel time of 30 minutes. • Optimisation analyses to locate two new facilities.

Appendix 6.5 contains a list of the indoor sports centres, their capacities and allocated demand.

6.4.2 Discussion of Results for indoor sports centres

A distance analysis indicates that only 54% of the current (2007) population are within 5km of an indoor sports centre and 25% are within 2.5km. Accessibility will decrease further in 2016 if no new facilities are built (Table 6.28 and Figure 6.26).

Table 6.28: Distance analyses for indoor sports centres in the City of Cape Town

DISTANCE CATEGORY	POPULATION SERVED			
	Current (2007)		2016	
0 - 1km	120 964	3.63%	129 605	3.38%
0 - 2.5km	861 173	25.87%	918 780	23.93%
0 - 5km	1 800 405	54.09%	1 981 746	51.61%
More than 5km	1 528 363	45.91%	1 858 348	48.39%

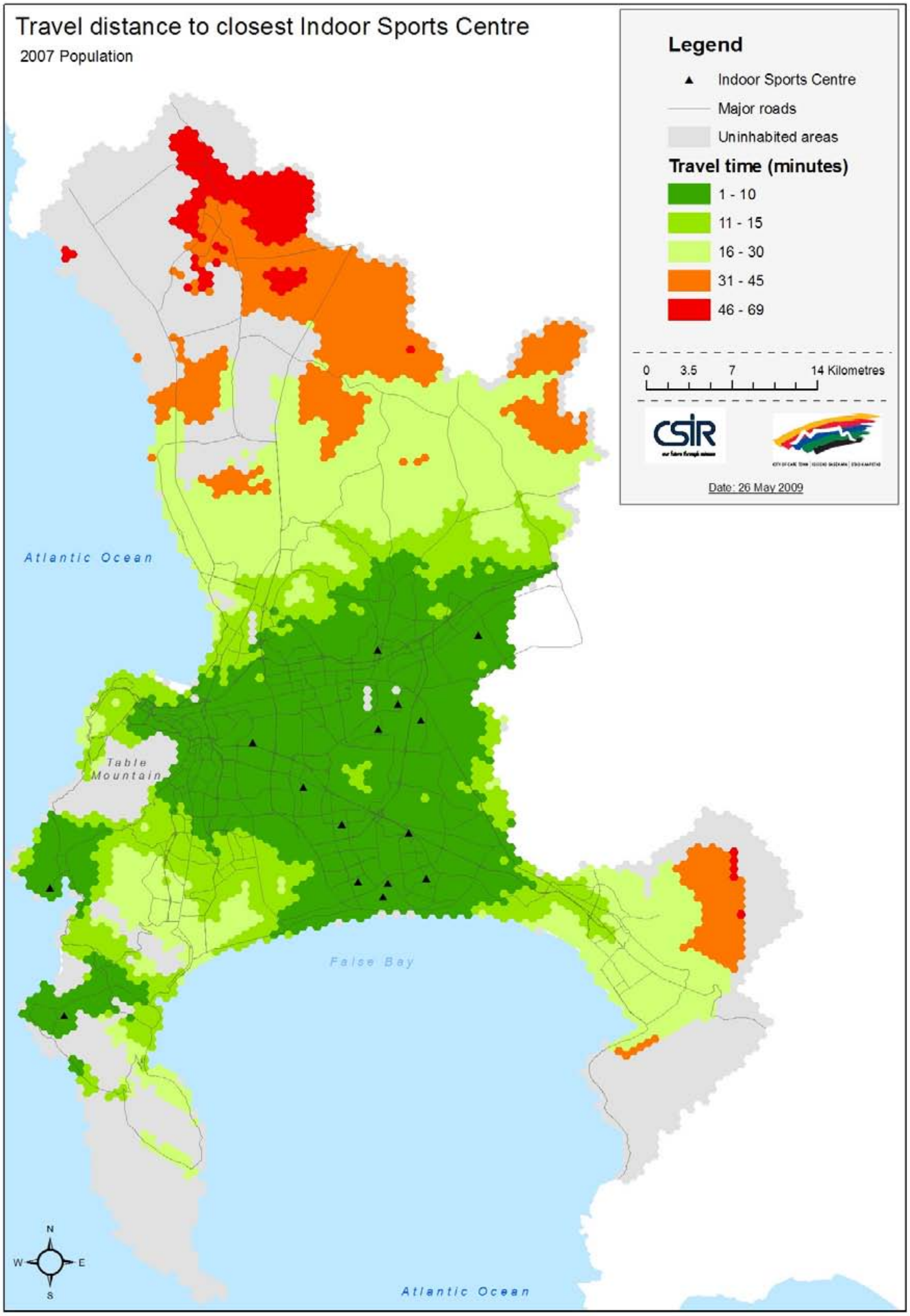


Figure 6.26: Travel time to closest indoor sports centre (current population)

When the travel access is mapped in terms of the access time as reflected in the standards most of the densely populated areas are within a 30 minute drive of an indoor sports centre. Figure 6.27 shows the result of the service audit based on catchment area analyses. Those areas that are served in terms of the provision standards as well as the density of the unserved demand are indicated. Most areas are well served baring a small area in Atlantis – other unserved demand is distributed thinly throughout the City.

Almost 98% of the entire population of the City of Cape Town can reach an indoor sports centre with capacity within 30 minutes vehicular travel during off-peak conditions (Table 6.29). Only 2% of the total population are not provided for based on the provision standards. Although 26.5% of the approximately 14 000 persons located outside the urban edge are not served by an indoor sports centre, in terms of the total population of the City this is less than 0.2%.

Table 6.29: Current indoor sports centre provision for the City of Cape Town

Areas	Total population	Unserved population	% of population unserved
Urban	3 314 706	80 349	2.42%
Non-urban	14 062	3 727	26.50%
Total	3 328 768	84 076	2.53%

A district breakdown (Table 6.30) shows the only backlog to be in Blaauwberg but in real terms no full-size facility is required. The unserved population of Blaauwberg, of some 80 600 people, is 2.4% of the City's total population. The unserved population in Blaauwberg points to the need for a small indoor sports centre in that region, specifically the Atlantis area.

Table 6.30: Current unserved population per planning district for indoor sports centres					
District	**Name**	**Current (2007) population**	**Unserved population**	**% Unserved per district**	**% Unserved to total population**
A	Table Bay	183 586	0	0.00%	0.00%
B	Blaauwberg	174 130	80 627	46.30%	2.42%
C	Northern	282 832	1 742	0.62%	0.05%
D	Tygerberg	637 983	0	0.00%	0.00%
E	Helderberg	181 957	1 706	0.94%	0.05%
F	Mitchell's Plain/ Khayelitsha	1 014 253	0	0.00%	0.00%
G	Cape Flats	538 530	0	0.00%	0.00%
H	South Peninsula	315 496	1	0.00%	0.00%

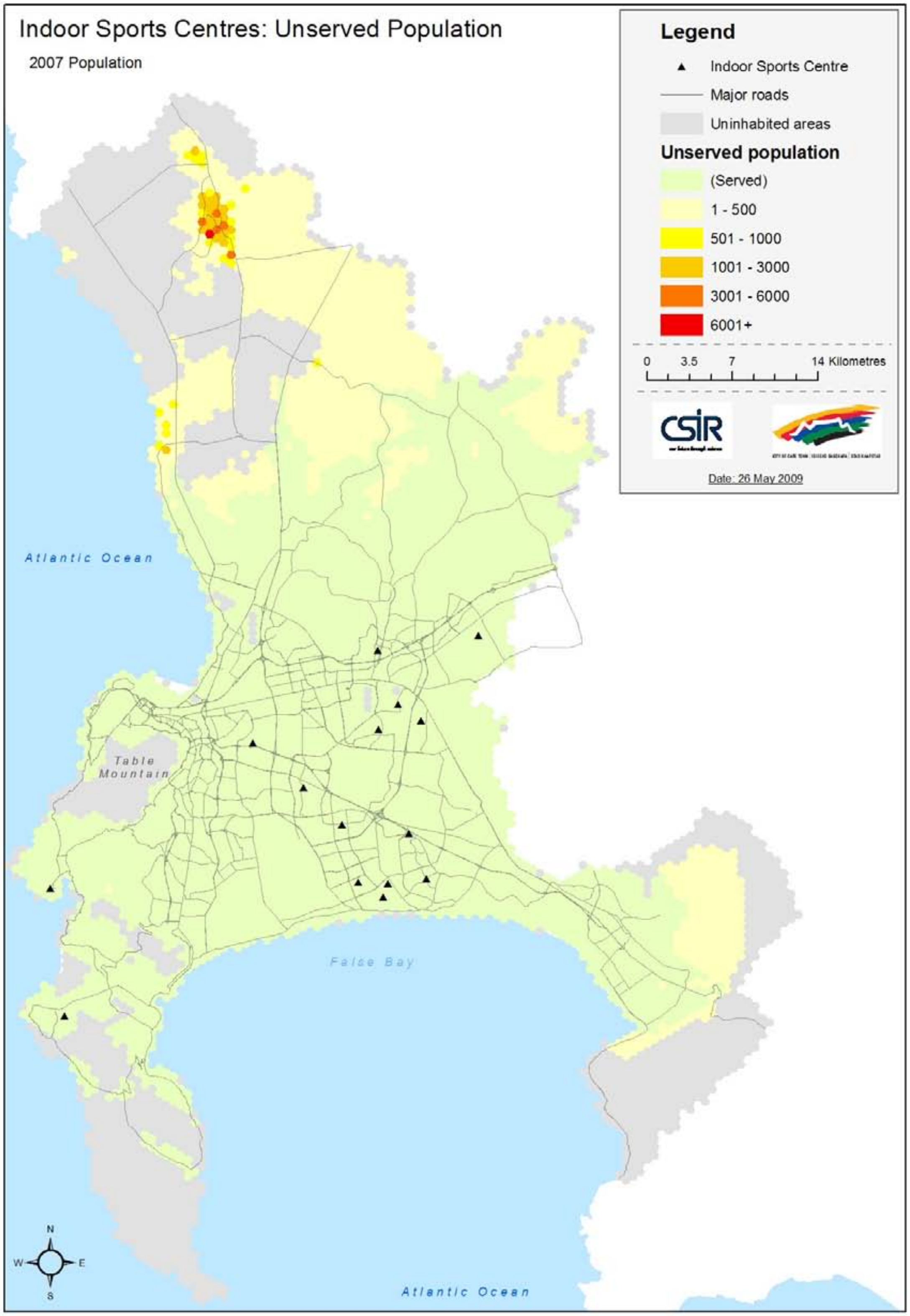


Figure 6.27: Current served and concentration of unserved demand for indoor sports centres based on 30 minutes travel time

The analyses based on the 2016 projected population reflects a small increase in the unserved population of 2.5% currently to 2.7% in 2016 (Table 6.31).

Table 6.31: Projected 2016 indoor sports centre provision for the City of Cape Town

Areas	Total population	Unserved population	% of population unserved
Urban	3 823 574	99 345	2.60%
Non-urban	16 535	3 715	22.47%
Total	3 840 109	103 060	2.68%

Table 6.32 indicates that there is an increase in the number of unserved people in 2016, even if there is a percentage decrease as some of the population growth takes place in areas with currently underutilised capacity.

Table 6.32: Projected 2016 unserved population per planning district for indoor sports centres

District	Name	2016 population	Unserved population	% Unserved per district	% Unserved to total population
A	Table Bay	189 642	0	0.00%	0.00%
B	Blaauwberg	231 868	98 751	42.59%	2.57%
C	Northern	402 106	1 828	0.45%	0.05%
D	Tygerberg	706 376	0	0.00%	0.00%
E	Helderberg	276 308	2 480	0.90%	0.06%
F	Mitchell's Plain/ Khayelitsha	1 114 354	0	0.00%	0.00%
G	Cape Flats	573 056	0	0.00%	0.00%
H	South Peninsula	346 399	1	0.00%	0.00%

Figure 6.28 shows spatially the concentration of the unserved population for 2016, with the increase mainly occurring in the Atlantis area.

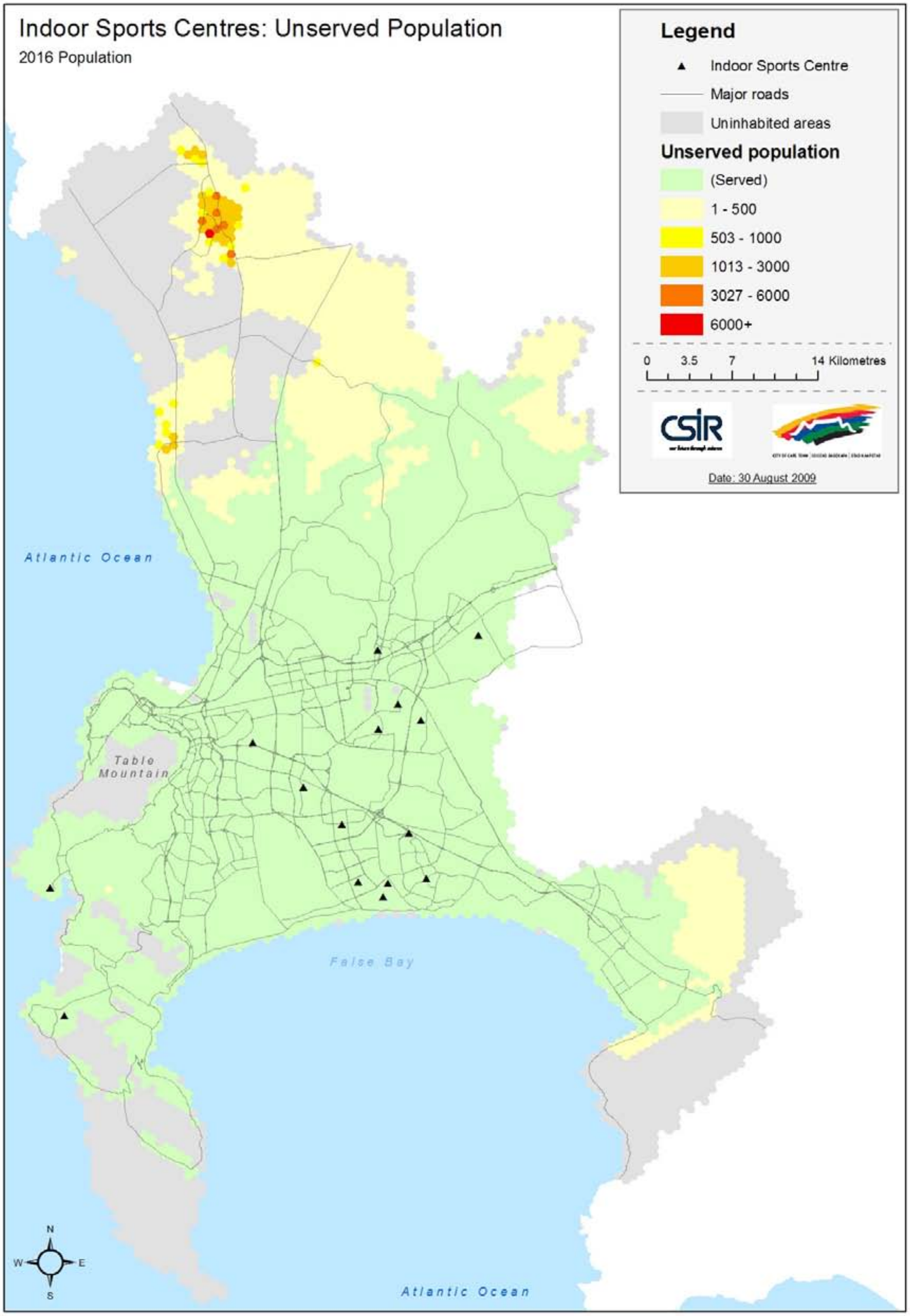


Figure 6.28: Projected 2016 population served and concentration of unserved demand for indoor sports centres based on 30 minutes travel time

6.4.3 Priority areas of intervention

The City is well served in terms of indoor sports centres. The amount of people one indoor centre can serve is about 300,000. The total backlog in 2016 is only about 100 000 (refer to Tables 6.31 and 6.32) which does not warrant a new/ extra facility. The highest need is concentrated in the Atlantis area to the far north of the City. Atlantis is some distance from the urban areas of the City and thus people do not have easy access to indoor sports centres situated elsewhere in Cape Town. A possible solution would be to provide a small sized facility (in terms of seating capacity), by converting/ equipping an appropriate community centre in Atlantis to function as an indoor sports centre as well.

6.4.4 Potential spare capacity for indoor sports centre (2016)

Table 6.33 on the next page is a summary of those residents who cannot reach a indoor sports centre based on the standard used for analysis, as well as an indication of the potentially spare capacity which falls within a specific planning district (Table 6.33). The amount of potential spare capacity per facility is shown in Figure 6.29. As can be seen from Table 6.33 there is a net overprovision in Tygerberg, Mitchells Plain and South Peninsula, while other areas show a good match between supply and demand. The greatest shortfall would occur in the Blaauwberg area. Some potential spare capacity is poorly located with respect to the residential population as it is on the periphery of South Peninsula. However, before the capacity at these and other facilities can be considered as redundant, a detail analysis of the usage figures of each facility is required.

Although there is a net oversupply of indoor halls, a small facility (of half capacity) could be warranted in the Blaauwberg District (Atlantis area).

Table 6.33: Potential spare capacity per planning district for indoor sports centres (2016)					
District	**Name**	**2016 population**	**Unserved Population**	**Potential Spare capacity**	**Comments**
A	Table Bay	189 642	0	0	Demand and supply in balance
B	Blaauwberg	231 868	98 751	0	Net shortfall but could use facilities in Tygerberg
C	Northern	402 106	1 828	17 161	Mainly in balance
D	Tygerberg	706 376	0	257 796	Apparent net oversupply -but could provide more regional role
E	Helderberg	276 308	2 480	0	Mainly in balance
F	Mitchell's Plain/ Khayelitsha	1 114 354	0	166 660	Oversupply but usage to be checked
G	Cape Flats	573 056	0	0	In balance
H	South Peninsula	346 399	1	321 334	Net oversupply and location makes it difficult to serve other regions
TOTAL	City of Cape Town	3 840 109	103 060	762 951	Net oversupply based on standards

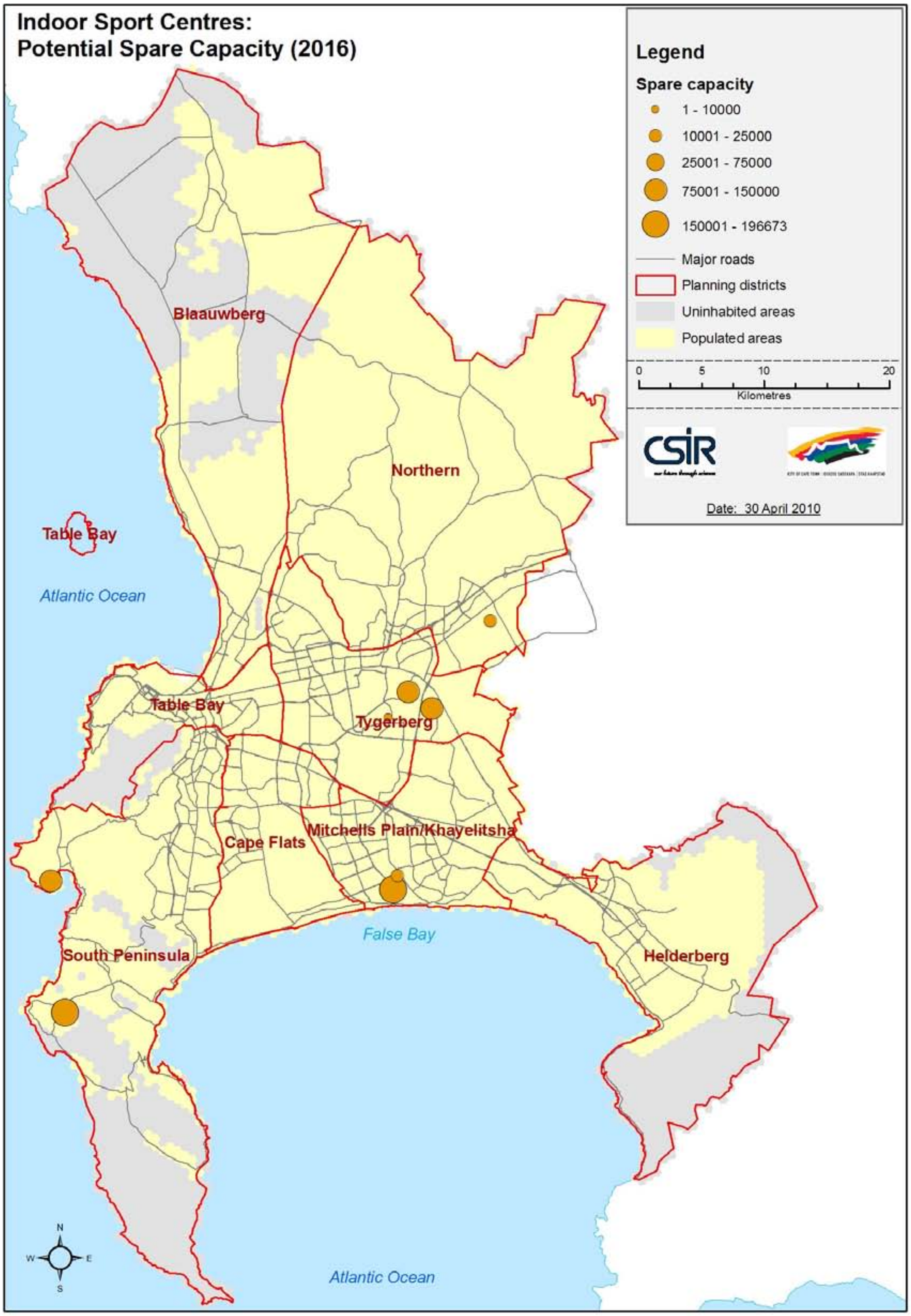


Figure 6.29: Potential spare capacity for indoor sports centres (2016)

6.5 References

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APPENDIX 6.1: Capacity of and demand for each sports facility

FACILITY NAME	CAPACITY	ALLOCATED DEMAND 2007		ALLOCATED DEMAND 2016	
		Demand	*Spare capacity*	Demand	*Spare capacity*
Pella	67 408	16 623	*75.34%*	31 225	*53.68%*
Shelley Street	66	65	*1.42%*	65	*1.42%*
Kraaifontein	84 981	84 981	*0.00%*	84 981	*0.00%*
Swartklip	63 793	63 793	*0.00%*	63 793	*0.00%*
Rocklands JQ	36 743	36 743	*0.00%*	36 743	*0.00%*
Lentegeur	32 044	32 044	*0.00%*	32 044	*0.00%*
Radloff Park	30 216	30 216	*0.00%*	30 216	*0.00%*
Strandfontein	30 046	30 046	*0.00%*	30 046	*0.00%*
Theo Marais	27 019	27 019	*0.00%*	27 019	*0.00%*
Valhalla Park	26 274	26 274	*0.00%*	26 274	*0.00%*
Chukker Road	26 181	26 181	*0.00%*	26 181	*0.00%*
Durbanville	25 579	25 579	*0.00%*	25 579	*0.00%*
Table View	24 643	24 643	*0.00%*	24 643	*0.00%*
Charles Morkel	21 651	21 651	*0.00%*	21 651	*0.00%*
Jan Burger	20 719	20 719	*0.00%*	20 719	*0.00%*
Helderzicht	20 559	20 559	*0.00%*	20 559	*0.00%*
Westridge/Stephan Reagan	20 171	20 171	*0.00%*	20 171	*0.00%*
Portlands	19 516	19 516	*0.00%*	19 516	*0.00%*
Rooikrans	17 596	17 596	*0.00%*	17 596	*0.00%*
Mandela Park Stadium	16 915	16 915	*0.00%*	16 915	*0.00%*
William Herbert	16 251	16 251	*0.00%*	16 251	*0.00%*
Bellville	15 935	15 935	*0.00%*	15 935	*0.00%*
Gildale	15 844	15 844	*0.00%*	15 844	*0.00%*
Wesfleur	15 763	15 763	*0.00%*	15 763	*0.00%*
Scottsdene	15 751	15 751	*0.00%*	15 751	*0.00%*
Royal Road	15 688	15 688	*0.00%*	15 688	*0.00%*
Kleinvlei	15 586	15 586	*0.00%*	15 586	*0.00%*
Goodwood	15 035	15 035	*0.00%*	15 035	*0.00%*
Eversdal	14 321	14 321	*0.00%*	14 321	*0.00%*
Turfhall Stadium	14 225	14 225	*0.00%*	14 225	*0.00%*
14th Avenue	14 154	14 154	*0.00%*	14 154	*0.00%*
Fish Hoek	14 079	14 079	*0.00%*	14 079	*0.00%*
Langa	13 391	13 391	*0.00%*	13 391	*0.00%*

FACILITY NAME	CAPACITY	ALLOCATED DEMAND 2007		ALLOCATED DEMAND 2016	
		Demand	*Spare capacity*	Demand	*Spare capacity*
Bellville South	13 090	13 090	*0.00%*	13 090	*0.00%*
Blue Ridge	13 009	13 009	*0.00%*	13 009	*0.00%*
PP Smit	12 711	12 711	*0.00%*	12 711	*0.00%*
Bonteheuwel	12 144	12 144	*0.00%*	12 144	*0.00%*
Manenberg	12 122	12 122	*0.00%*	12 122	*0.00%*
Tygerhof	11 931	11 931	*0.00%*	11 931	*0.00%*
Gustrow	11 767	11 767	*0.00%*	11 767	*0.00%*
Abe Sher	11 559	11 559	*0.00%*	11 559	*0.00%*
Seawinds	11 522	11 522	*0.00%*	11 522	*0.00%*
Bishop Lavis	11 314	11 314	*0.00%*	11 314	*0.00%*
Edgemead	10 915	10 915	*0.00%*	10 915	*0.00%*
Tafelsig/Dolomite	10 869	10 869	*0.00%*	10 869	*0.00%*
Florida	10 690	10 690	*0.00%*	10 690	*0.00%*
Avonwood	10 594	10 594	*0.00%*	10 594	*0.00%*
Rocklands JP	10 249	10 249	*0.00%*	10 249	*0.00%*
Sarepta	9 997	9 997	*0.00%*	9 997	*0.00%*
Meadowridge	9 537	9 537	*0.00%*	9 537	*0.00%*
Mamre	8 805	8 805	*0.00%*	8 805	*0.00%*
Delft Central	8 748	8 748	*0.00%*	8 748	*0.00%*
Blue Downs Stadium	8 708	8 708	*0.00%*	8 708	*0.00%*
Site B Stadium	8 696	8 696	*0.00%*	8 696	*0.00%*
Makhaza Stadium	8 682	8 682	*0.00%*	8 682	*0.00%*
Morningstar	8 663	8 663	*0.00%*	8 663	*0.00%*
Khayelitsha Cricket Oval	8 440	8 440	*0.00%*	8 440	*0.00%*
Site C Stadium	8 434	8 434	*0.00%*	8 434	*0.00%*
Clover Crescent	8 312	8 312	*0.00%*	8 312	*0.00%*
Heideveld	8 221	8 221	*0.00%*	8 221	*0.00%*
Brackenfell	8 085	8 085	*0.00%*	8 085	*0.00%*
Nyanga Soccer	7 979	7 979	*0.00%*	7 979	*0.00%*
Solo Street	7 944	7 944	*0.00%*	7 944	*0.00%*
Erica Park	7 929	7 929	*0.00%*	7 929	*0.00%*
Pelican Heights	7 838	7 838	*0.00%*	7 838	*0.00%*
Thornton	7 823	7 823	*0.00%*	7 823	*0.00%*
Hazel Road	7 612	7 612	*0.00%*	7 612	*0.00%*
Eikendal	7 456	7 456	*0.00%*	7 456	*0.00%*

FACILITY NAME	CAPACITY	ALLOCATED DEMAND 2007		ALLOCATED DEMAND 2016	
		Demand	*Spare capacity*	Demand	*Spare capacity*
Rygersdal	7 434	7 434	*0.00%*	7 434	*0.00%*
Wallacedene	7 341	7 341	*0.00%*	7 341	*0.00%*
Clyde-Pinelands	7 331	7 331	*0.00%*	7 331	*0.00%*
Robinvale	7 328	7 328	*0.00%*	7 328	*0.00%*
Salberau	7 286	7 286	*0.00%*	7 286	*0.00%*
Johnson Road	7 282	7 282	*0.00%*	7 282	*0.00%*
Wesbank	7 211	7 211	*0.00%*	7 211	*0.00%*
Groenewald Street	7 142	7 142	*0.00%*	7 142	*0.00%*
Macassar New	7 136	7 136	*0.00%*	7 136	*0.00%*
Wynberg	7 103	7 103	*0.00%*	7 103	*0.00%*
Mfuleni	7 085	7 085	*0.00%*	7 085	*0.00%*
Malta Park	7 025	7 025	*0.00%*	7 025	*0.00%*
Hoosain Parker	7 008	7 008	*0.00%*	7 008	*0.00%*
Zandvlei	6 968	6 968	*0.00%*	6 968	*0.00%*
Macassar Old	6 466	6 466	*0.00%*	6 466	*0.00%*
Bayview	6 443	6 443	*0.00%*	6 443	*0.00%*
Symphony	6 413	6 413	*0.00%*	6 413	*0.00%*
Allenby Drive	6 248	6 248	*0.00%*	6 248	*0.00%*
NY 49	6 220	6 220	*0.00%*	6 220	*0.00%*
St. Dumas	6 161	6 161	*0.00%*	6 161	*0.00%*
Pinelands Oval	6 141	6 141	*0.00%*	6 141	*0.00%*
Monte Vista	5 896	5 896	*0.00%*	5 896	*0.00%*
Protea Park	5 859	5 859	*0.00%*	5 859	*0.00%*
Rosmead Avenue	5 796	5 796	*0.00%*	5 796	*0.00%*
Saxonsea	5 723	5 723	*0.00%*	5 723	*0.00%*
Elm Street	5 419	5 419	*0.00%*	5 419	*0.00%*
Downberg Road	5 402	5 402	*0.00%*	5 402	*0.00%*
ADE	5 373	5 373	*0.00%*	5 373	*0.00%*
Irvine Street	5 313	5 313	*0.00%*	5 313	*0.00%*
Basil D'Oliviera	5 248	5 248	*0.00%*	5 248	*0.00%*
Malibu	5 092	5 092	*0.00%*	5 092	*0.00%*
Du Noon	5 079	5 079	*0.00%*	5 079	*0.00%*
Voorbrug	5 049	5 049	*0.00%*	5 049	*0.00%*
Vangate	5 017	5 017	*0.00%*	5 017	*0.00%*
Alwyn Park	4 802	4 802	*0.00%*	4 802	*0.00%*

FACILITY NAME	CAPACITY	ALLOCATED DEMAND 2007		ALLOCATED DEMAND 2016	
		Demand	*Spare capacity*	Demand	*Spare capacity*
Barnes Camp	4 746	4 746	*0.00%*	4 746	*0.00%*
Westlake	4 707	4 707	*0.00%*	4 707	*0.00%*
Plumstead	4 662	4 662	*0.00%*	4 662	*0.00%*
Gordons Bay	4 659	4 659	*0.00%*	4 659	*0.00%*
Vygieskraal Stadium	4 592	4 592	*0.00%*	4 592	*0.00%*
Uitsig	4 547	4 547	*0.00%*	4 547	*0.00%*
Stan Abbott	4 539	4 539	*0.00%*	4 539	*0.00%*
Nyanga Rugby	4 533	4 533	*0.00%*	4 533	*0.00%*
Accordian	4 505	4 505	*0.00%*	4 505	*0.00%*
Diamond Street	4 462	4 462	*0.00%*	4 462	*0.00%*
Village 3	4 461	4 461	*0.00%*	4 461	*0.00%*
Bloekombos	4 452	4 452	*0.00%*	4 452	*0.00%*
Cornflower	4 352	4 352	*0.00%*	4 352	*0.00%*
Noordhoek	4 314	4 314	*0.00%*	4 314	*0.00%*
Avondale	4 152	4 152	*0.00%*	4 152	*0.00%*
Delft South	4 146	4 146	*0.00%*	4 146	*0.00%*
Athlone Stadium	4 075	4 075	*0.00%*	4 075	*0.00%*
Telkom_Joe_ Slovo	4 066	4 066	*0.00%*	4 066	*0.00%*
Lwandle	4 020	4 020	*0.00%*	4 020	*0.00%*
Ocean View	3 972	3 972	*0.00%*	3 972	*0.00%*
Green Point Common	3 915	3 915	*0.00%*	3 915	*0.00%*
Dennemere	3 863	3 863	*0.00%*	3 863	*0.00%*
Rusthoff	3 765	3 765	*0.00%*	3 765	*0.00%*
Sir Lowry's Pass	3 730	3 730	*0.00%*	3 730	*0.00%*
Noll Avenue	3 689	3 689	*0.00%*	3 689	*0.00%*
Sleepy Hollow	3 536	3 536	*0.00%*	3 536	*0.00%*
Green Point Track	3 489	3 489	*0.00%*	3 489	*0.00%*
Bellville Athletics	3 407	3 407	*0.00%*	3 407	*0.00%*
St. Frusquin	3 403	3 403	*0.00%*	3 403	*0.00%*
Cambridge	3 365	3 365	*0.00%*	3 365	*0.00%*
Browns Farm	3 323	3 323	*0.00%*	3 323	*0.00%*
Bevcan	3 258	3 258	*0.00%*	3 258	*0.00%*
Mandela	3 178	3 178	*0.00%*	3 178	*0.00%*
Bergvliet	3 049	3 049	*0.00%*	3 049	*0.00%*
Ohio Street	2 929	2 929	*0.00%*	2 929	*0.00%*

FACILITY NAME	CAPACITY	ALLOCATED DEMAND 2007		ALLOCATED DEMAND 2016	
		Demand	*Spare capacity*	Demand	*Spare capacity*
Buck Road	2 912	2 912	*0.00%*	2 912	*0.00%*
Mandalay	2 881	2 881	*0.00%*	2 881	*0.00%*
6th Street	2 661	2 661	*0.00%*	2 661	*0.00%*
Ladies Mile	2 658	2 658	*0.00%*	2 658	*0.00%*
NY 116	2 646	2 646	*0.00%*	2 646	*0.00%*
Woodlands	2 584	2 584	*0.00%*	2 584	*0.00%*
Bruce Road	2 506	2 506	*0.00%*	2 506	*0.00%*
Matroosfontein	2 480	2 480	*0.00%*	2 480	*0.00%*
Hartleyvale Stadium	2 421	2 421	*0.00%*	2 421	*0.00%*
Ashford	2 313	2 313	*0.00%*	2 313	*0.00%*
Nomzamo	2 305	2 305	*0.00%*	2 305	*0.00%*
Millers Camp	2 188	2 188	*0.00%*	2 188	*0.00%*
Klipheuwel	2 113	2 113	*0.00%*	2 113	*0.00%*
St. Andrews	2 033	2 033	*0.00%*	2 033	*0.00%*
Fairmount	2 011	2 011	*0.00%*	2 011	*0.00%*
Kronendal	1 857	1 857	*0.00%*	1 857	*0.00%*
NY 95	1 791	1 791	*0.00%*	1 791	*0.00%*
Nonthulu	1 747	1 747	*0.00%*	1 747	*0.00%*
Weltevreden/Samora Machel	1 702	1 702	*0.00%*	1 702	*0.00%*
Driftsands	1 598	1 598	*0.00%*	1 598	*0.00%*
Queens Park	1 429	1 429	*0.00%*	1 429	*0.00%*
Fisantekraal	1 399	1 399	*0.00%*	1 399	*0.00%*
Maitland Garden Village	1 135	1 135	*0.00%*	1 135	*0.00%*
Cravenby	1 127	1 127	*0.00%*	1 127	*0.00%*
Hangberg	1 026	1 026	*0.00%*	1 026	*0.00%*
Yeoville	995	995	*0.00%*	995	*0.00%*
Philadelphia	992	992	*0.00%*	992	*0.00%*
Rondebosch Bowling Club	944	944	*0.00%*	944	*0.00%*
Chrismar	505	505	*0.00%*	505	*0.00%*
South Peninsula Tennis Club	465	465	*0.00%*	465	*0.00%*
Concert Boulevard Tennis Court	169	169	*0.00%*	169	*0.00%*
TOTAL	1 565 832	1 515 046	*3.24%*	1 529 649	*2.31%*

APPENDIX 6.2: Extract from Cape Provincial Administration Guideline

An extract from a Cape Provincial Administration (CPA) (1989) guideline recommends the following sportsfield provision (as indicated in Table A):

- local area level facilities – 0.68 ha per 3 000 people (0.226 ha per 1 000 persons);
- residential area level facilities – 3.16 ha per 15 000 people (0.2106 ha per 1 000 people); and,
- community level facilities – 6.15 ha per 60 000 people (0.103 ha per 1 000 people).

Table A: Standards from CPA (1989) document

Type of facility	Example of facility distribution	ha per code	Total ha	ha per 1 000 persons
Local (3 000 persons)	1 soccer field	0.55 ha	0.68 ha	0.226 ha
	1 tennis court	0.065 ha		
	1 combi-court	0.065 ha		
Residential area (15 000 persons)	1 Soccer field (with 500-spectator pavilion)	1.5 ha	3.16 ha	0.2106 ha
	1 Soccer practice field	0.55 ha		
	2 Tennis courts	0.13 ha		
	4 Combi-courts	0.26 ha		
	1 Softball field	0.72 ha		
Community (60 000 persons)	1 Stadium (with athletics track and 3 000 spectator pavilion)	3 ha	6.18 ha	0.103 ha
	4 Soccer practice fields	2.2 ha		
	2 Tennis courts	0.13 ha		
	2 Netball courts	0.13 ha		
	1 Softball field	0.72 ha		
TOTAL				0.54 ha

APPENDIX 6.3: Capacity of and demand for each sports stadium

FACILITY NAME	CAPACITY	DEMAND 2007	DEMAND 2017
Athlone Stadium	300 000	300 000	300 000
Turfhall Stadium	300 000	300 000	300 000
Vygieskraal Stadium	300 000	300 000	300 000
Bellville Athletics	300 000	300 000	300 000
Blue Downs Stadium	300 000	300 000	300 000
Hartleyvale Stadium	300 000	300 000	300 000
	1 800 000	1 800 000	1 800 000

APPENDIX 6.4: Capacity of and demand for each swimming pool

FACILITY NAME	CAPACITY	DEMAND 2007		DEMAND 2016	
		Demand	***Spare cap***	**Demand**	***Spare cap***
Sea Point Swimming Pool	60 000	27 633	*53.95%*	47 102	*21.50%*
Eastridge Pool	60 000	60 000	*0.00%*	60 000	*0.00%*
Lentegeur Pool	60 000	60 000	*0.00%*	60 000	*0.00%*
Westridge Pool	60 000	60 000	*0.00%*	60 000	*0.00%*
Khayelitsha Pool	60 000	60 000	*0.00%*	60 000	*0.00%*
Bontehuewel Pool	60 000	60 000	*0.00%*	60 000	*0.00%*
Delft Pool	60 000	60 000	*0.00%*	60 000	*0.00%*
Athlone Pool	60 000	60 000	*0.00%*	60 000	*0.00%*
Hanover Park Pool	60 000	60 000	*0.00%*	60 000	*0.00%*
Manenberg Pool	60 000	60 000	*0.00%*	60 000	*0.00%*
Browns Farm Pool	60 000	60 000	*0.00%*	60 000	*0.00%*
Enthonjeni Pool	60 000	60 000	*0.00%*	60 000	*0.00%*
Vulindlela Pool	60 000	60 000	*0.00%*	60 000	*0.00%*
Elsies River Pool	60 000	60 000	*0.00%*	60 000	*0.00%*
Goodwood Pool	60 000	60 000	*0.00%*	60 000	*0.00%*
Parow North Pool	60 000	60 000	*0.00%*	60 000	*0.00%*
Parow Valley Pool	60 000	60 000	*0.00%*	60 000	*0.00%*
Ravensmead Pool	60 000	60 000	*0.00%*	60 000	*0.00%*
Ruyterwacht Pool	60 000	60 000	*0.00%*	60 000	*0.00%*
Bellville Pool	60 000	60 000	*0.00%*	60 000	*0.00%*
Bellville South Pool	60 000	60 000	*0.00%*	60 000	*0.00%*
Morningstar Pool	60 000	60 000	*0.00%*	60 000	*0.00%*
Atlantis Swimming Pool	60 000	60 000	*0.00%*	60 000	*0.00%*
Strand Pool	60 000	60 000	*0.00%*	60 000	*0.00%*

FACILITY NAME	CAPACITY	DEMAND 2007		DEMAND 2016	
		Demand	Spare cap	Demand	Spare cap
Blue Downs Pool	60 000	60 000	0.00%	60 000	0.00%
Mnandi Pool	60 000	60 000	0.00%	60 000	0.00%
Long Street Swimming Pool	60 000	60 000	0.00%	60 000	0.00%
Trafalgar Park Pool	60 000	60 000	0.00%	60 000	0.00%
Kensington Pool	60 000	60 000	0.00%	60 000	0.00%
Langa Pool	60 000	60 000	0.00%	60 000	0.00%
Observatory Pool	60 000	60 000	0.00%	60 000	0.00%
Newlands Pool	60 000	60 000	0.00%	60 000	0.00%
Retreat Pool	60 000	60 000	0.00%	60 000	0.00%
Wynberg Pool	60 000	60 000	0.00%	60 000	0.00%
Muizenberg Pool	60 000	60 000	0.00%	60 000	0.00%
	2 100 000	2 067 633	1.54%	2 087 102	0.61%

APPENDIX 6.5: Capacity of and demand for each indoor sports centre

FACILITY NAME	CAPACITY	DEMAND 2007		DEMAND 2016	
		Demand	Spare cap	Demand	Spare cap
Mitchell's Plain Youth Centre	300 000	78 215	73.93%	143 858	52.05%
Ocean View Sport & Rec Centre	300 000	85 695	71.43%	103 327	65.56%
Sarepta Human Resource Centre	300 000	98 805	67.07%	150 848	49.72%
Proteaville Recreation Centre	300 000	130 650	56.45%	197 102	34.30%
Hout Bay Sport & Rec Centre	300 000	154 825	48.39%	175 339	41.55%
Scottsdene Sport & Rec Centre	300 000	176 162	41.28%	282 839	5.72%
Swartklip Indoor Centre	300 000	182 523	39.16%	289 482	3.51%
Belhar Indoor	300 000	237 590	20.80%	294 254	1.92%
Bellville Velodrome	300 000	300 000	0.00%	300 000	0.00%
Gugulethu Indoor	300 000	300 000	0.00%	300 000	0.00%
Langa Indoor	300 000	300 000	0.00%	300 000	0.00%
OR Tambo Indoor Centre	300 000	300 000	0.00%	300 000	0.00%
Philippi East Indoor	300 000	300 000	0.00%	300 000	0.00%
Portlands Indoor Hall	300 000	300 000	0.00%	300 000	0.00%
Thusong	300 000	300 000	0.00%	300 000	0.00%
	4 500 000	3 244 465	27.90%	3 737 049	16.95%

APPENDIX 6.6: FMC data request response list

District Area	District manager	Area manager	Category	Name
11	F Prins	J Esau	Sportsground	Abe Sher
11	F Prins	J Esau	Sportsground	Edgemead
11	F Prins	J Esau	Sportsground	Protea Park
11	F Prins	J Esau	Sportsground	Robinvale
11	F Prins	J Esau	Sportsground	Telkom/Joe Slovo
11	F Prins	J Esau	Sportsground	Tygerhof
12	F Prins	G Sampson	Sportsground	Queens Park
12	F Prins	G Sampson	Sportsground	Shelley Street
21	W Bedford	T Mitchell	Sportsground	Allenby Drive
21	W Bedford	T Mitchell	Sportsground	Elm Street
21	W Bedford	T Mitchell	Sportsground	Zandvlei
22	W Bedford	B Kemp	Sportsground	Ashford
22	W Bedford	B Kemp	Sportsground	Basil D'Oliviera
22	W Bedford	B Kemp	Sportsground	Bergvliet
22	W Bedford	B Kemp	Sportsground	Gildale
22	W Bedford	B Kemp	Sportsground	Groenewald Street
22	W Bedford	B Kemp	Sportsground	Hangberg
22	W Bedford	B Kemp	Sportsground	Kronendal
22	W Bedford	B Kemp	Sportsground	Ladies Mile
22	W Bedford	B Kemp	Sportsground	Meadowridge
22	W Bedford	B Kemp	Sportsground	Rosmead Avenue
22	W Bedford	B Kemp	Sportsground	Rygersdal
22	W Bedford	B Kemp	Sportsground	William Herbert
22	W Bedford	B Kemp	Sportsground	Wynberg
23	W Bedford	M King	Sportsground	Fish Hoek
23	W Bedford	M King	Sportsground	Noordhoek
32	T Sokanyile	F Salie	Sportsground	Woodlands
33	T Sokanyile	F Salie	Sportsground	Lentegeur

District Area	District manager	Area manager	Category	Name
33	T Sokanyile	F Salie	Sportsground	Mandalay
42	J Fourie	B Brooks	Sportsground	Clover Crescent
42	J Fourie	B Brooks	Sportsground	Cornflower
42	J Fourie	B Brooks	Sportsground	Field Crescent
42	J Fourie	B Brooks	Stadium	Turfhall Stadium
52	A Dykes	S Lawrence	Sportsground	Bellville
52	A Dykes	S Lawrence	Stadium	Bellville Athletics
52	A Dykes	S Lawrence	Indoor Sports Centre	Bellville Velodrome
52	A Dykes	S Lawrence	Sportsground	Cravenby
61	B da Silva	J Kloppers	Sportsground	Gustrow
61	B da Silva	J Kloppers	Sportsground	Rusthoff
62	B da Silva	F Anthony	Sportsground	Helderzicht
63	B da Silva	T Booysen	Sportsground	Dennemere
63	B da Silva	T Booysen	Sportsground	Driftsands
63	B da Silva	T Booysen	Sportsground	Kleinvlei

Evaluation of community social facilities and recreational space in City of Cape Town: current and future provision for 2016 and optimal location of new facilities

Section 7:

Integrated Plan and Recommendations

May 2010

7. INTEGRATED PLAN AND RECOMMENDATIONS

7.1 Background to the integrated plan for new facility investment

This section deals with the consolidated recommendations for the all the facilities that form part of the study, and mainly focuses on the intervention areas where the most pressing backlogs occur, in most cases the top 10 most optimal sites. Thus this section highlights those areas where the density of need is highest. Planners who need to deal with the total backlog should refer to specific facility sections and scrutinise the relevant maps of unserved need (ie areas where the residents' level of service does not meet or exceed the recommended access provision standards). They should also carefully examine the number of unserved per hexagon and use the key to compare this to the threshold values of the relevant facilities.

In cases of both under- and oversupply, it is noted that the results are outputs of a model based on 'rational choice', ie the software is based on the assumption that people will always 'act rationally' and go to their closest facility. However, this may not always be true in a real world for a range of reasons**. We therefore strongly caution that,** before facilities are closed, sold or new facilities are built, **the actual current usage rates of facilities and demand in the area closest to the facility in question be confirmed**. The model indicates where facilities should be located based on rational choice, and clearly identifies areas of imbalance that require further investigation.

Refer to: Summary Guidelines and Standards for the Planning of City of Cape Town Social Facilities and Recreational Spaces Document reference number: CSIR/BE/PSS/ER/2010/0017/B for recommended levels of service provision with respect to key facility standards both for analysis to determine backlogs and for provision of new development areas.

It is noted that a **key assumption** with respect to the analysis of current facility provision was that only operational and/or developed sites and facilities were included as current supply. Zoned but unutilised sites were excluded from the analysis.

Irrespective of what the backlog/needs maps indicate, it is incumbent on Council to determine how the capital budget should be allocated with respect to:

- the backlog as indicated by the analysis results, both total and optimised; and
- the provisioning of new growth areas with respect to the development of social facilities and parks.

It is further noted that the search for land to develop the required facilities will be less onerous in some areas than in others. In some areas it may simply be a matter of securing capital budget funds, while in others land may simply not be available. In the latter instance alternative strategies need to be followed to deal with the backlog. These include:

- accepting the poor level of access to services and rather investing in other areas of backlog (unserved) or concentrating on ensuring that well-serviced new development areas are built
- reducing space standards and/or developing multi-level facilities
- seeking opportunities for sharing and clustering
- redeveloping facilities that are not well used and surplus to requirements
- consulting with communities regarding priorities and space availability; and
- accepting longer access travel distances and thus locating new facilities close to the area of need but somewhat beyond an acceptable travel distance (current standard).

It must be stressed that, although considerable potential advantages for land saving can be achieved by clustering, sharing and building multi-layered facilities, the success of this approach will depend on good design as well as good management.

7.2 Recommendations for implementation / optimised locations for new facility investment

The preceding sections dealt with a series of analyses aimed at achieving the first three study objectives, namely:

- to map the current level of access for the identified publicly provided facilities;
- to identify all backlogs/underprovision in public-facility provision for these facilities – even in some so-called advantaged areas. This is referred to as the **unserved** population and is indicative of groups of residents that, in terms of desktop analysis, do not have access to the relevant service based on the minimum access levels as indicated in the standards and guidelines; and,
- based on the above theoretical backlog, ie. the unserved/subnormative demand up to 2016 – to identify the top 10 locations for public investment to reduce the backlog for that particular facility. Where the demand was less than the threshold for 10 new facilities, a lesser number of sites were identified to meet most of the demand. The integrated map is thus a subset of needs and indicates, from a planning and capital budgeting perspective, where backlogs are the greatest. It must be stated that if budget is not available to build all facilities, prioritisation of these sites can be dealt with through a negotiation/political process or the top 'x' sites can be identified by the model. In cases where the threshold per facility is less than 30 000 a little shift in the overall siting is to be expected, but if only one of the five stadia are to be built, the

high threshold and longer travel time may result in a more central location being identified.

> **NOTE:** The integrated plan is thus a summary of the top 10 facilities of each type and indicates where these facilities could be located in order to have the most impact (serving the maximum number of unserved persons) while achieving the shortest average travel time.
>
> If, however, the planners of district plans and the housing department would like to test alternative provision scenarios, a two-day hands-on workshop in Stellenbosch – during which the alternative supply scenarios will be tested – can be arranged for this purpose. To ensure the maximum usefulness of this process, the availability of a GIS layer indicating all vacant developable land should be provided to the CSIR team prior to the workshop.

7.2.1 Integrated plan

The integrated plan is spatially summarised on a map, Figure 7.1. A more detailed view per planning district of facility needs is also provided. Please note that the clustering of facility needs in Figure 7.1 is not according to the planning districts, but rather the natural clustering of facilities identified though the optimisation analysis and thus the generalised location for the establishment of new facilities to eradicate the worst backlogs. It is of relevance that, irrespective of the predicted 15% growth (including infill) from 2007 to 2016, the key backlogs remain in the already developed and poorly provided areas.

Referring to Figure 7.1, the areas of greatest shortfall are in and around the following suburbs (backlog of number of facilities shown in brackets):
C – Khayelitsha (33)
F – Gugulethu (16)
H – Wallacedene/Bloekombos (7)
D – Helderberg Basin (5)
A – Blue Downs/Eersterivier (5)
G – Langa (4)
B – Helderberg West of R44 (3)
E – Retreat (3)

Note of clarification: The 2016 scenario excludes large proposed new projects such as Fisantekraal, which had not yet been approved at the time of finalising this report.

Figure 7.1: Clusters of facilities needed to address the priority backlog (Top 10 locations)

- The maps (Figures 7.1–7.9) clearly indicate where facility development can be coordinated and where investment in new social facilities would address the pent-up need for three or more types of facilities.
- Coordinated provision of facilities, as shown on the maps, can contribute significantly to multi-purpose development and clustering can be located in conjunction with public transport, if desirable.

The integrated plan does not provide an exhaustive set of investment recommendations for all the sectors, nor are specific investment sites identified. For more detail on fully meeting facility standards, please refer to the sector-specific backlogs. **The integrated plan should rather be seen as an indicative, strategic plan containing a combination of relatively firm and conditional recommendations.** For example, in some instances firm plans, ie detailed site locations, can only be made once vacant-developable land is identified, more detailed investigations have been made, or inter-sectoral coordination and co-investment agreements have been obtained.

The consolidated plan of highest priority needs was drawn up based on each of the sector-specific need assessments discussed in the preceding sections.

In many cases the identified areas of need are some distance from transport hubs and main development corridors, although in most cases the model will pull the optimal locations to points of high accessibility along main road routes. To support the City in the process of densification within demarcated corridors, in some instances sites closer to the high-density corridors (as opposed to accessible routes) will need to be sought. Furthermore, if investment is going to be limited to transport interchanges and areas of high interchange potential, this will need to be considered in the process of detailed site identification.

The eight maps that follow (Figures 7.2–7.9) show the optimal locations for new facilities that happen to fall in each planning district. It is important to keep in mind that these facilities will not only provide a service to the population of that specific planning district, but also to people from neighbouring areas who will access these facilities because that may be their closest facility (the principle of ‘rational choice’).

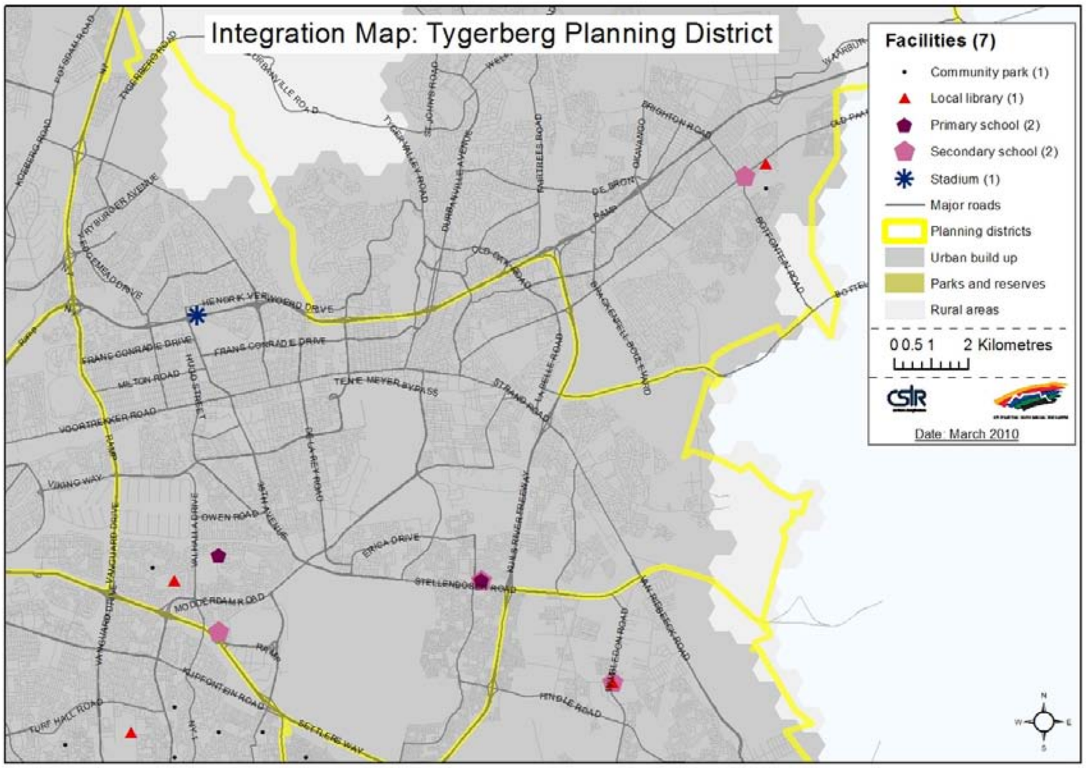


Figure 7.2: Locations of optimal facility requirements in the Tygerberg District

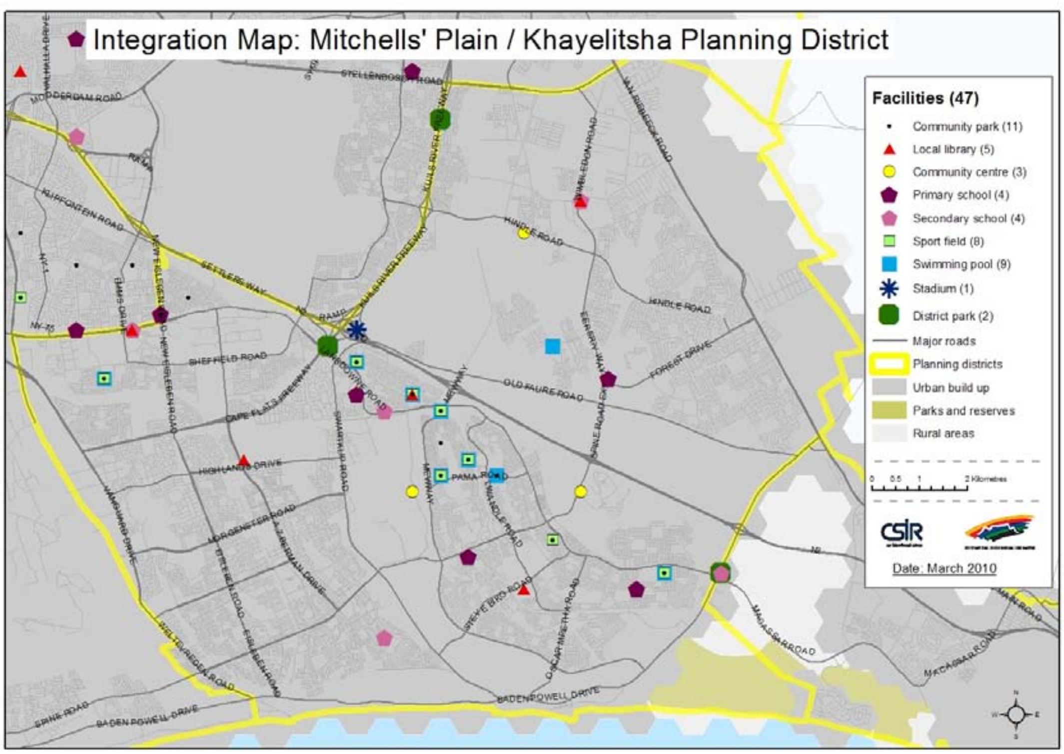


Figure 7.3: Locations of optimal facility requirements in Mitchells Plain / Khayelitsha

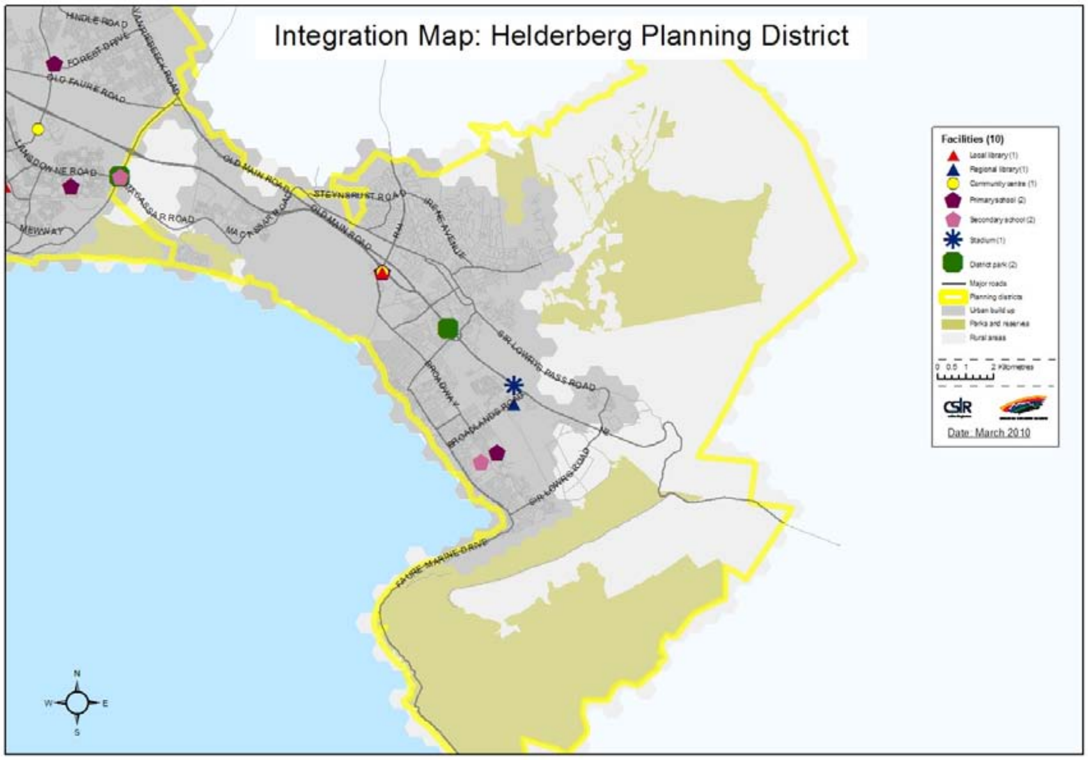


Figure 7.4: Locations of optimal facility requirements in the Helderberg District

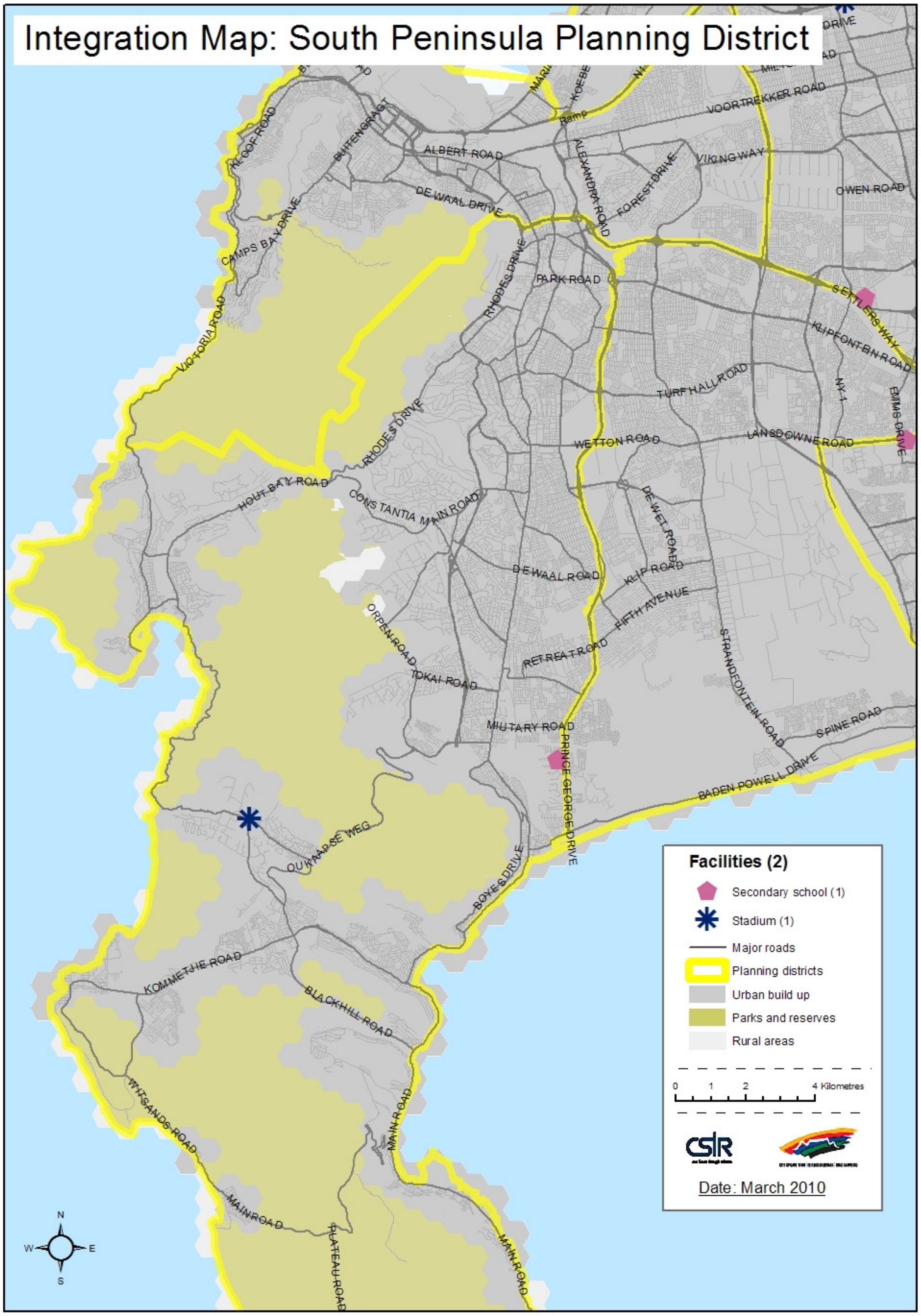


Figure 7.5: Locations of optimal facility requirements in South Peninsula District

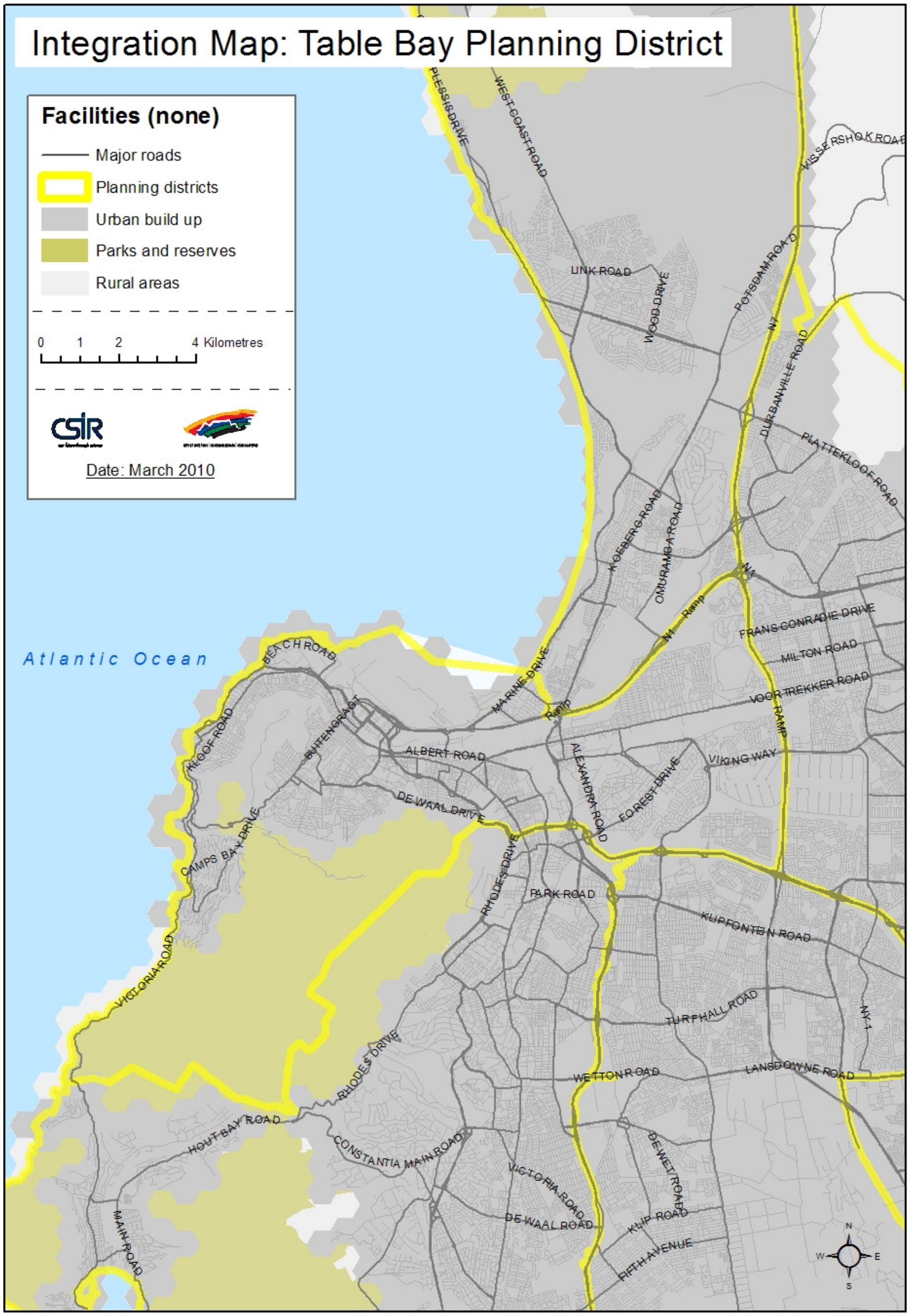


Figure 7.6: Locations of optimal facility requirements in the Table Bay District

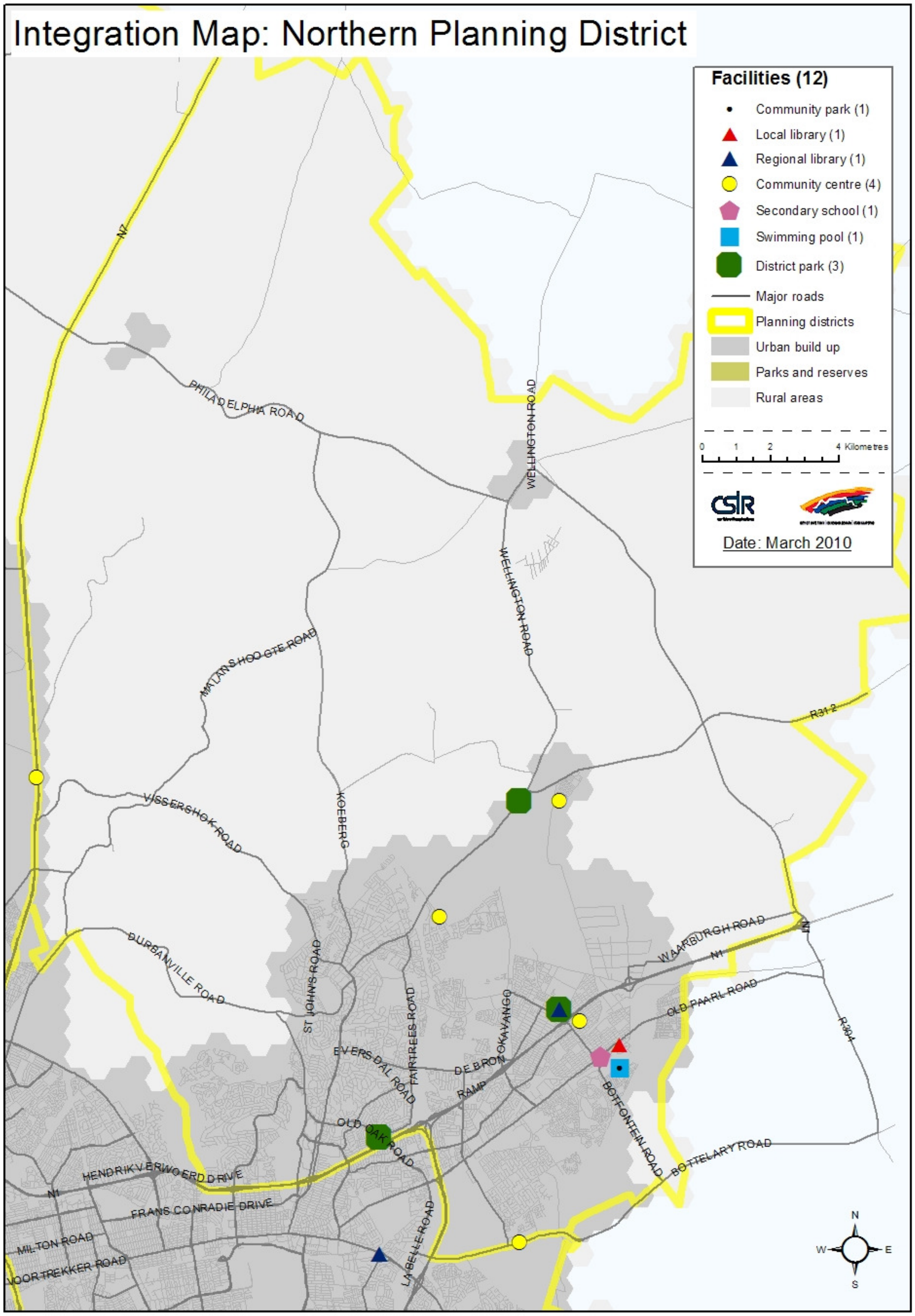


Figure 7.7: Locations of optimal facility requirements in the Northern Planning District

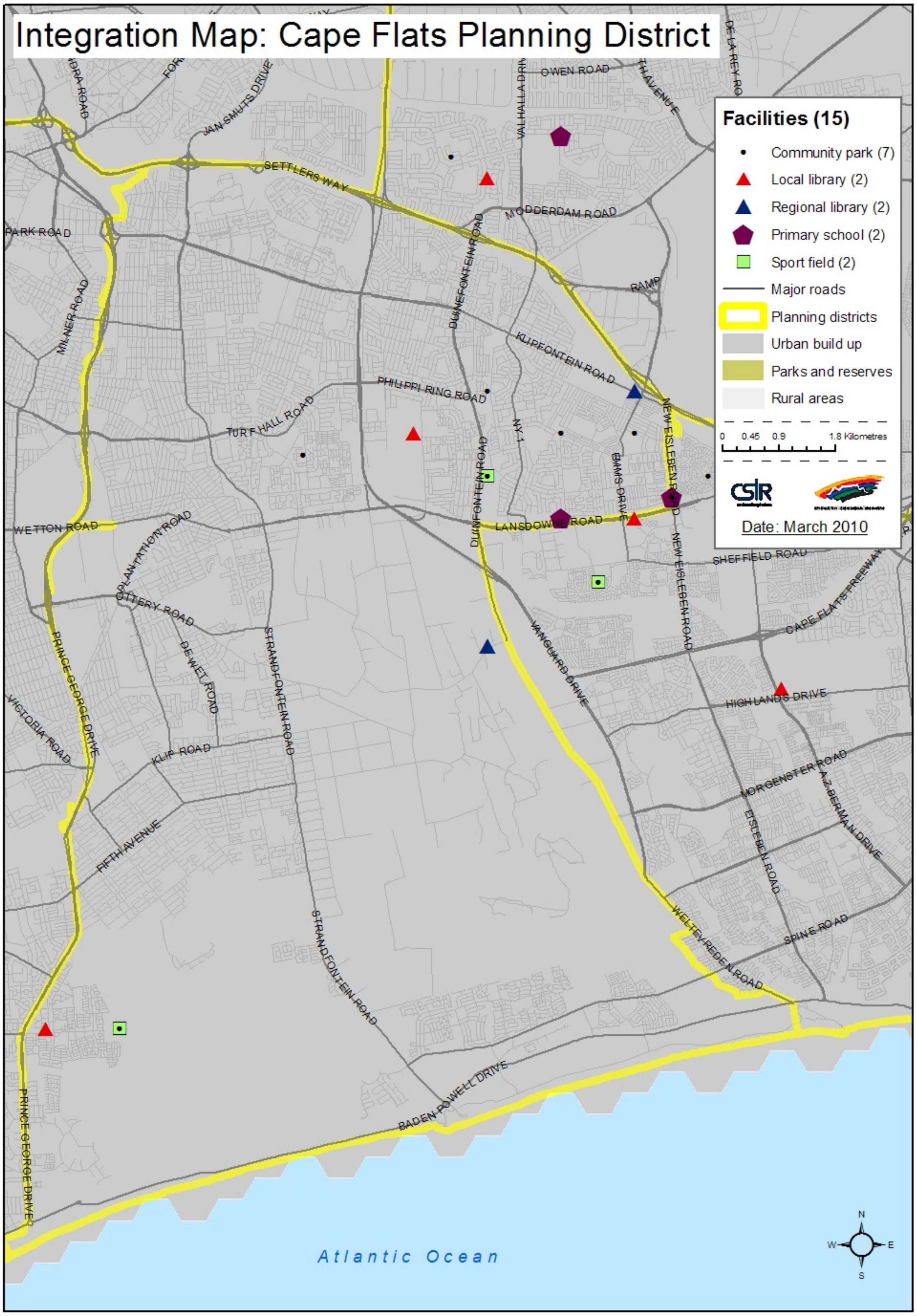


Figure 7.8: Locations of optimal facility requirements in the Cape Flats District

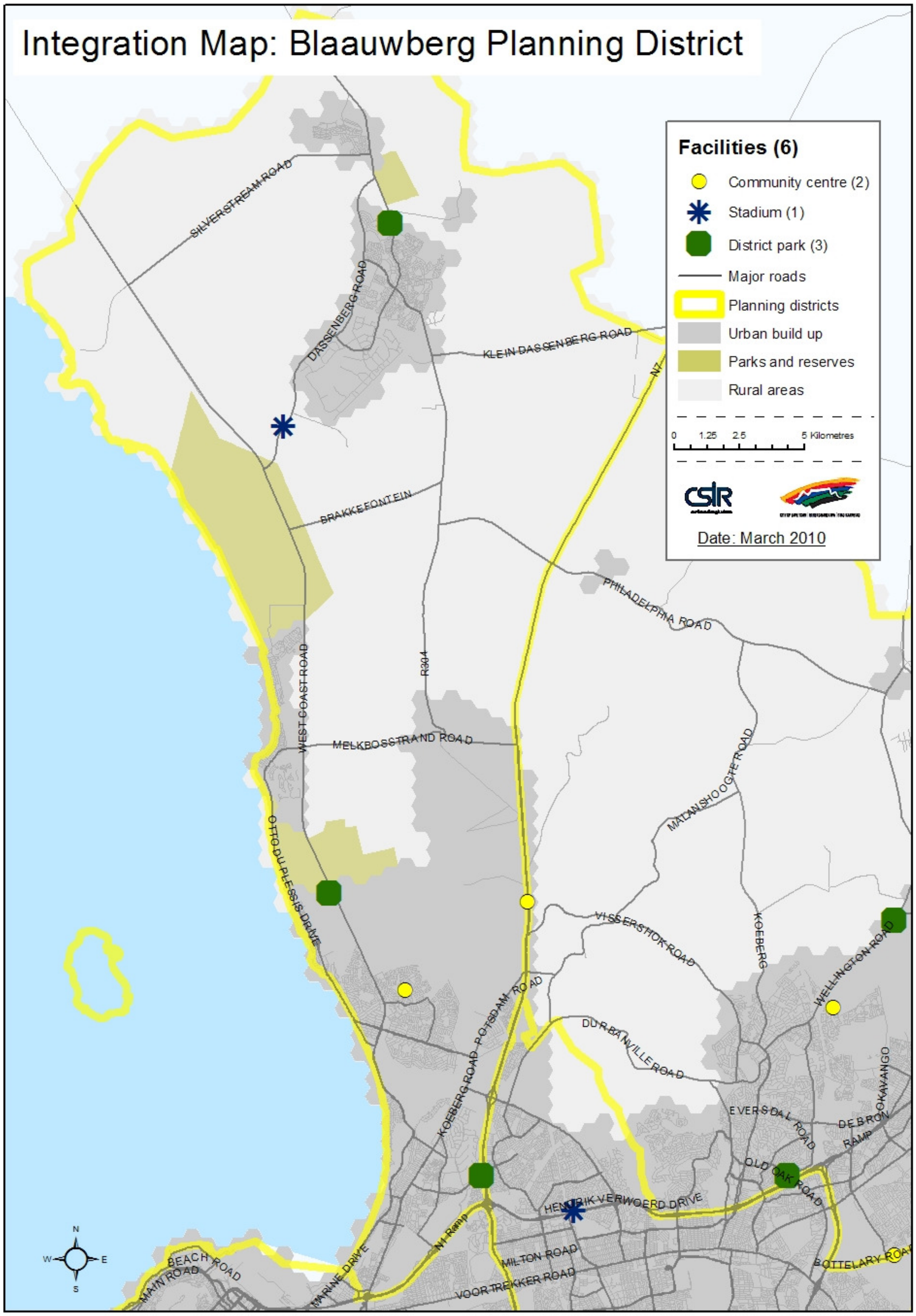


Figure 7.6: Locations of optimal facility requirements in the Blaauwberg District

7.3 Potential areas of surplus

During the current analysis it was also possible to potentially identify areas that have spare capacity compared to local demand and where, in theory, the local areas can accommodate more local residents without overburdening the capacity of the local social facility. In reality, much of the spare capacity – especially with regard to education – has been absorbed by people travelling longer to reach better-quality facilities. Many people from poorer areas are managing to pay school fees at good schools, but cannot afford to live within the so-called zoned area. It may therefore be questionable to some to tamper with the current education supply situation. On the other hand, when it comes to library provision, any change in the local demand may have little or no long-term impact.

Table 7.1 is a consolidation of all potentially surplus capacity within each planning region. However, spare capacity does not necessarily mean that a facility is underutilised; it can often mean that the facility is located beyond the acceptable access distance from where people live. As a result, it was therefore technically not allocated during the analysis. Thus all identified 'spare' capacity needs to be assessed with respect to areas of need. These facilities are often being utilised, although travel distances to do so will be in excess of the recommended maximum distances.

To reiterate: the condition, usage figures and nature of services offered at all existing facilities in the identified areas of surplus – as shown in the sector-specific chapters – should be fully investigated before changes are made to the supply, or before additional demand is located within the catchment area in terms of a densification strategy. The table below shows the potential spare capacity resulting from poor location and/or application of a strict travel time access standard.

Table 7.1: Potentially spare capacity (expressed in terms of number of people)

P D	Name	Libraries	Primary schools	Secondary schools	Community centres	Indoor sport centres	Sports-fields	Swimming pools	Community parks	District parks
A	Table Bay	59 933	3 994	3 185	21 021	-	-	12 898	33 618	-
B	Blaauwberg	173 922	147	63	1 235	-	36 182	-	94 153	-
C	Northern	54 811	536	-		17 161	-	-	661 148	-
D	Tygerberg	81 543	-	636		257 796	-	-	681 113	-
E	Helderberg	24 839	-	-		-	-	-	91 693	-
F	Mitchells Plain / Khayelitsha	56 380	648	-		166 660	-	-	91 203	-
G	Cape Flats	-	276	300	23 306	-	-	-	73 527	-
H	South Peninsula	280 776	2 092	5 262	23 579	321 334	-	-	133 412	72 953
	City of Cape Town	732 205	7 694	9 446	69 141	762 951	36 182	12 898	1 859 868	72 953

7.4 Recommendations with regard to follow-up actions by Spatial Planning

Sector-specific recommendations with regard to service coverage, total unserved demand and new facility locations and capacity were dealt with for each facility type in the preceding sections 2–6. Only recommendations with regard to more generalised further study is covered here.

The optimisation maps in the previous sections of this chapter (and in the sector reports) show the optimal location for new facilities. This analysis was based on the hexagon layer, using the centroids of all the hexagons as a potential location for the new facility. The result is that these identified localities may actually not be near to vacant-developable land. Suitable land will have to be found in the vicinity of these optimised locations.

The reason for using the hexagon centroids as proxy locations for new facility development was because currently the GIS layer of vacant land is not sufficiently detailed to be used as the target layer for the optimised facility locations. The land requirement parameters for each facility type also need to be specified in detail to ensure compatibility with available land. For example, slope requirements, minimum site size and zoning will need to be specified.

It is proposed that a layer of vacant- developable land be made available, which includes attributes such as current zoning and use, the size (gross and net developable area), development restrictions and ownership. If such a layer is available, it will firstly enable city planners to manually identify sites suitable for development. Alternatively, CSIR would be able to rerun the model and undertake a more fine-grained allocation of the sites for the top 10 optimised locations. The analysis will then be able to show the exact parcel of land on which a facility can be developed. In this way the backlog can be addressed optimally within the context of the real availability of land. If the analysis is rerun, it will also give the line departments a chance to re-evaluate the 5–10-year budgets in the light of the total backlog and the available budgets, and for the optimisation to be tailored to budget availability.

7.5 Recommendations with regard to further scenario testing

During the feedback sessions the need was identified to test the impact of the access to facilities with respect to the standards for two alternative scenarios. These were the 2021 scenario that also includes some of the bigger development projects not yet approved, as well as a densification scenario. It is proposed that such a test should incorporate the recommendations made above regarding the inclusion of the detailed vacant land layer for site determination. There should also be more specific interaction with the sectors and those responsible for the capital budgeting process to enable the development of robust supply scenarios that would ensure affordable facility development strategy as part of the optimisation process.

CITY OF CAPE TOWN | ISIXEKO SASEKAPA | STAD KAAPSTAD

THIS CITY WORKS FOR YOU

Evaluation of community social facilities and recreational space in City of Cape Town: current and future provision for 2016 and optimal location of new facilities

Addendum A:

Space Planner

A-1 CSIR Space Planner Notes

A-2 Space Planner Brochure

A-3 Space Planner outputs: Social Facility Demand for planning districts in the City of Cape Town

May 2010

CSIR

our future through science

CSIR SPACE PLANNER

The CSIR has released a calculator – called the SPACE PLANNER – to determine the number of social facilities required for a pre-defined population and the basic associated land requirements for these. The SPACE PLANNER includes custom sets of standards compiled for different settlement contexts which will be expanded over a period of time. These can be used as is or edited to suit the application context. Entirely new sets of standards may also be created by the user.

What is the SPACE PLANNER?

The SPACE PLANNER is a free, web-based tool developed by the CSIR for calculating the social facility demand and associated land use requirements for a given development. It takes into consideration factors such as land availability, housing densities and family sizes. It can be used to calculate requirements for new developments or used post-development to determine the variance of the de facto supply to the facility supply standards. It should be used only as an indication of possible land requirements which must still be supported by other specific planning activities.

To make use of this free tool, logon to http://spaceplanner.csir.co.za and create your own login name and password.

Purpose:

The SPACE PLANNER is intended to be used to calculate:

1. A social facility demand for a city, suburb or designated development area. This is calculated in terms of population numbers, density and land area for those facilities that are included in a named and designated standards table entered / selected by you.
2. The land required to house a set number of people at a given density, and the associated land requirement for social facilities.
3. The number of people / dwellings (and their associated social needs) that can be accommodated in a predetermined land area, given assumptions regarding family size and development density.
4. The developer contribution with respect to the land area equivalent of social facilities - if policies regarding this are in place.

Further research and model changes to the SPACE PLANNER are needed before a rough estimate of the land required for commercial and employment purposes can be calculated.

Calculation types

There are three basic calculation approaches that can be used.

TYPE 1: For a residential-only area with a given land area, density and family size – to calculate what additional land will be necessary to create a fully serviced settlement. This refers only to land for social facilities and excludes land for commercial and employment generation.

TYPE 2: In the case of land being available that must accommodate both housing and the associated facilities – to calculate the area needed for housing and that for social facilities. The impact of a range of densities and facility standards on the social facility land requirement can be tested.

TYPE 3: For a predetermined target population – to calculate the land requirement for both housing and social facilities.

The results are highly dependent on the social facility standards applied. The onus rests with the user to verify with the relevant local authority that the standards with respect to population thresholds, capacity and land use requirements are valid and up to date.

To promote ongoing research into the most used or appropriate standards, the CSIR will be able to view the standards you use, but these will not be published or linked to individual projects. This will contribute to the national research effort with respect to standardisation of social facility provision. It is the researchers' hypothesis that differentiation across different development contexts is required for certain facility types, while for others 'one size may fit all'.

This SPACE PLANNER is not a spatial tool in that it does not evaluate the location of facilities in relation to the location and density of, or travel distance to, the target population. To evaluate the relationship between facility location, size, target market and travel distance a more sophisticated approach is required. For more details on this follow the link below or contact cgreen@csir.co.za or gmans@csir.co.za:

www.csir.co.za/Built_environment/Planning_support_systems/docs/poster55_lowres.pdf

CSIR SPACE PLANNER

Using the SPACE PLANNER:

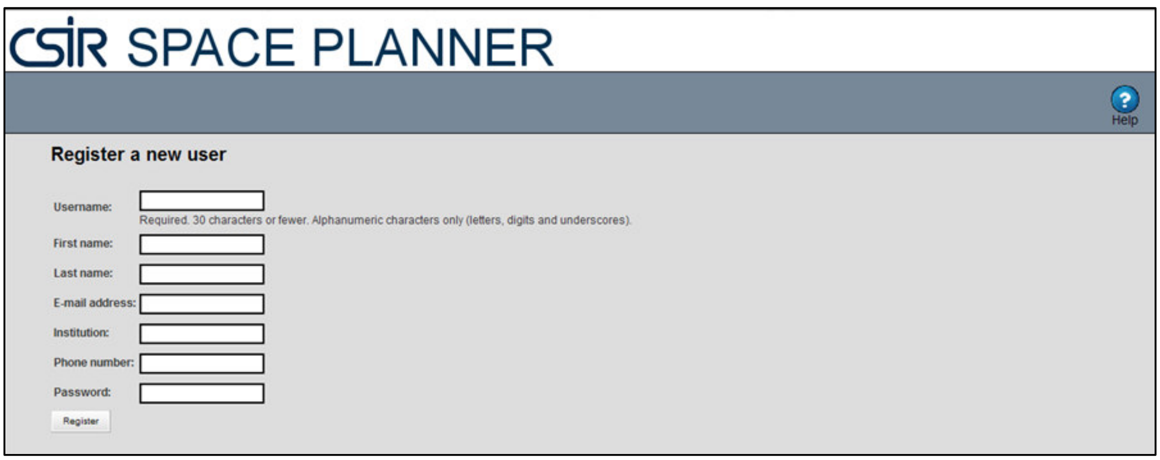
Please note all values used in the screen captures are dummy values and should under no circumstances be used as input in anyway without verification.

STEP 1: Getting Started

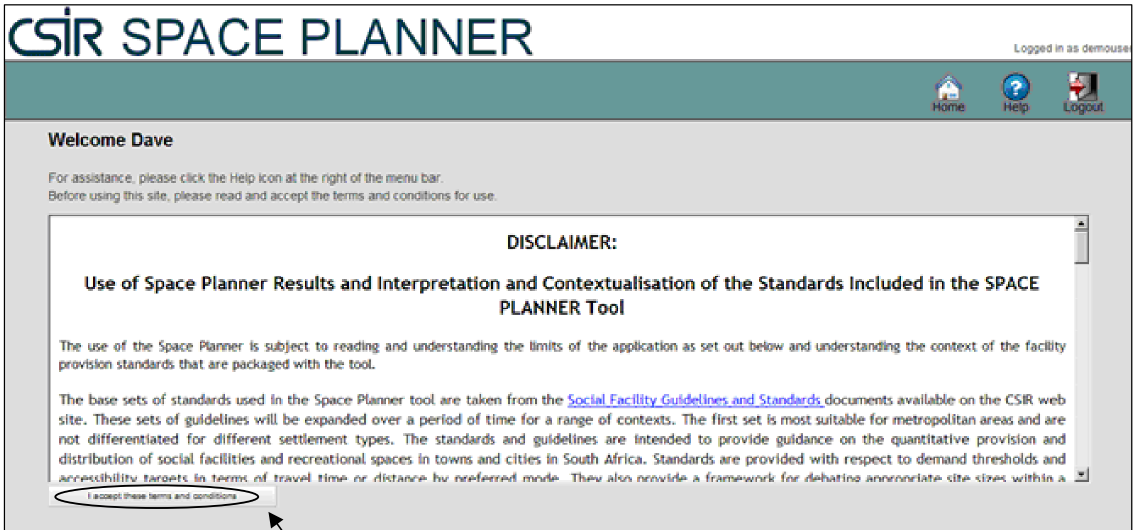
For new users

As a first time user you need to register.

- Open web page address as provided http://spaceplanner.csir.co.za.
- To register, click on the **Create a new account** button and complete all the registration details as required (See below). Click **Register.** You will be sent an e-mail confirming your registration.



►Enter your login and password to open Welcome page (the home page). The welcome screen and disclaimer page will appear.



- To proceed you will need to accept the “terms and conditions” on the disclaimer screen as shown above. This will only happen once. Please read the disclaimer carefully and click box to accept.

Existing users

►Open web page address as provided
►Enter your login and password to open Welcome page (the home page).
The first time you enter the updated version of the SPACE PLANNER you will be asked to read and accept the terms of use. (See Disclaimer screen above)

Please note the **Help** and **Home** tabs on right of page. The **Home** tab is useful to navigate between pages. (Clicking on the **Help** tab will open this document which you can print out).

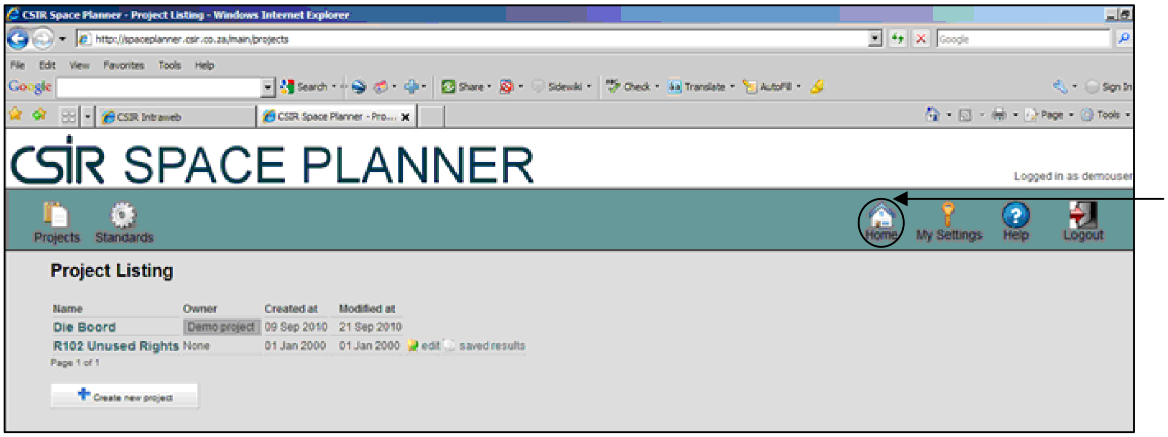
To use the calculator, either select the **Project** tab or the **Standards** tab:

> [We suggest you familiarise yourself with the demo project and base standards. You can view existing Demo projects and base standard sets. To make use of the tool you must create you own project file.]

►**Project** tab opens the project listing screen. You can edit or view existing projects or create new projects
OR
►Select **standards** tab to view or edit standards or create a new set. We suggest you first create your standards before creating a project unless you are happy to use the base set(s). To create a new set of standards the user can start from scratch or use a base set (an existing set) as a starting point and adapt this. You may add more facility types, re-order the list or change values and then save the standards set with a new name. See **STEP 4** to proceed with creating a custom set of standards and more details on editing standards.

If the name of a project or standard is the same as another the programme will report an error. Please then revise and resave. A project refers to a set of values / data entered for a particular query or calculation of land requirements.

Project Listing



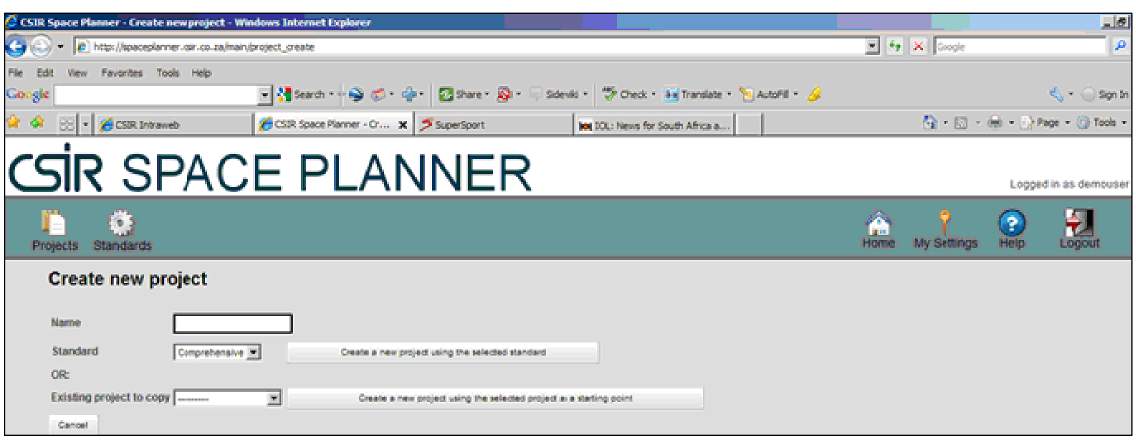
On the screen you will see a list of some existing projects created as examples or any that you have already created. You will only be able to see Demo projects and your own projects. You may only view, edit and delete your own projects. Should you wish to share the project with others please advise the administrator and it can then be marked as a Demo project. Alternatively, create a separate login for a team and share a single password.

►Select a current project to view, edit or create a new project.

STEP 2: Creating a new project

►Once you have opened the project screen, type in the **Name** of your project. Select a **Standard** to use from the pull down list. If you have already created a new standard, this will be on the pull down list for you to select.

Create new project



The user can either:

►**Create a new project using selected standards**

OR

►**Create new project using selected project as starting point,** if you want to rework an existing project or use it as a starting point.

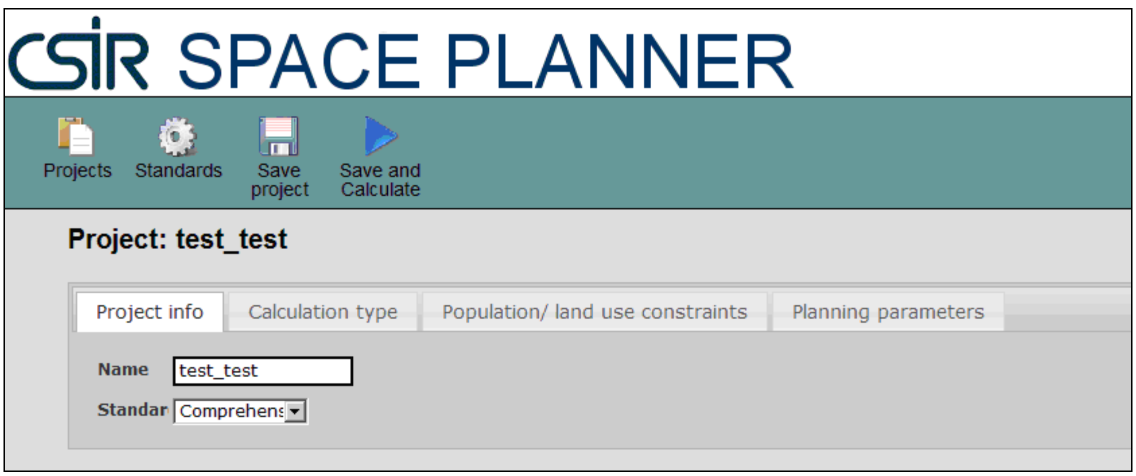
Selecting either option will save a new project – either as a blank form or with all the existing information from the project you selected as the starting point. You will be registered as the new owner of the project. Only 'Owners' and the Administrator can see the project. You can edit or delete your own projects at any time. The Administrator does have rights to remove empty or unused projects.

STEP 3: Populating the project input tables

You now need to populate the project input tables. The project opens on the **Project info** tab.

Project info tab

The name you have given the project will appear at the top of the page and in the **Name** box:



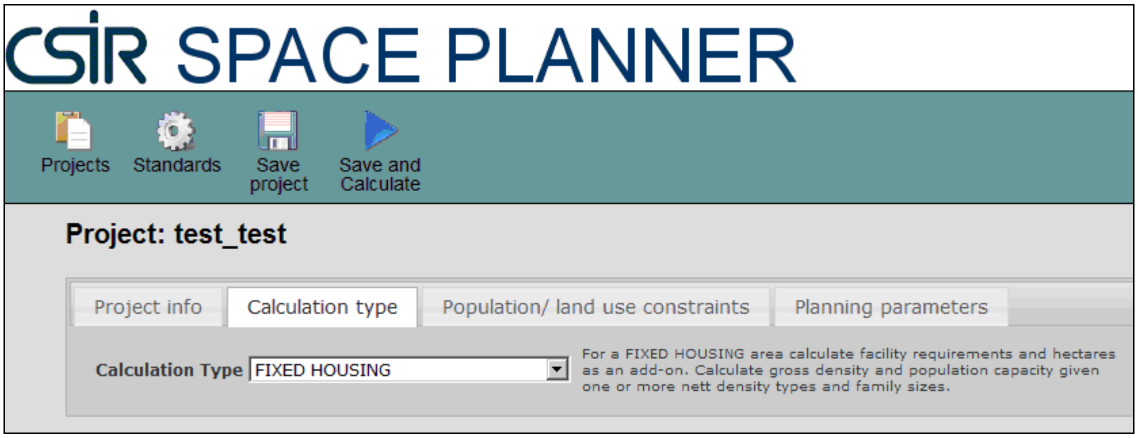
►On this tab, select the **Standard** you want to test / apply.

(Before you can calculate the facility requirements for a specific project you need to have selected and verified a set of standards from the available selection or created a new set - either from scratch or from a base set. Select the **Standards** tab to do this. Then follow the steps described under **STEP 4** in the document).

For different analysis queries on the same project you may use different standards and save separate results. But each query can only use one set of standards for the entire development.

Now select the **Calculation type** tab.

Calculation type tab



►Select the **Calculation Type** from the three basic calculation approaches available on the drop down menu. Ensure the correct calculation type for your purpose has been selected from the following types:

CALCULATION TYPES

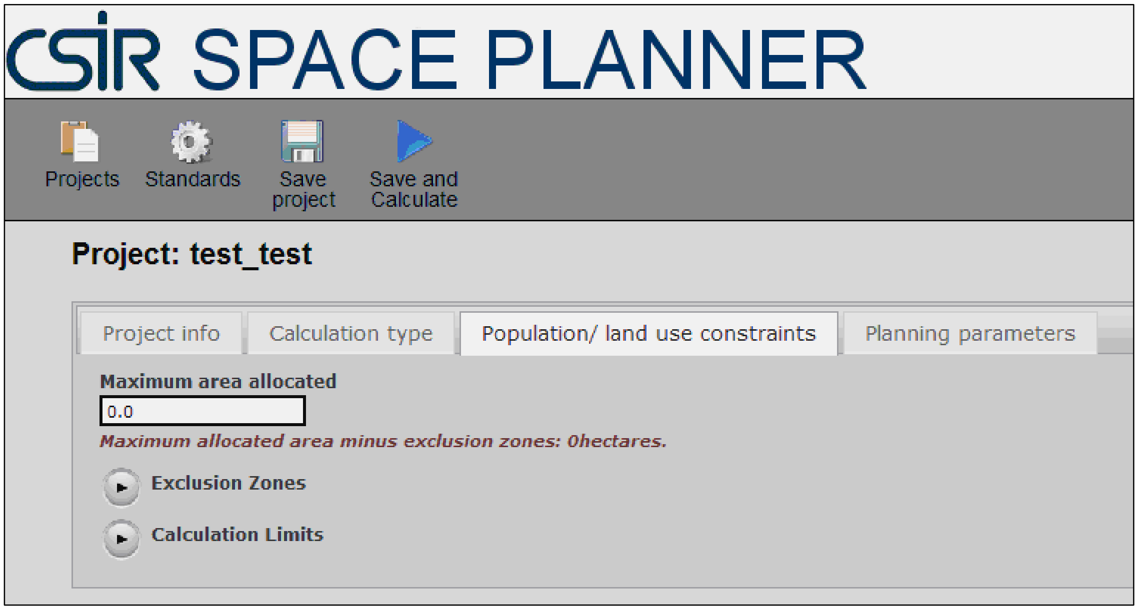
TYPE 1: For a residential only area with a given land area, density and family size - calculate what additional land will be necessary to create a fully serviced settlement. This refers only to land for social facilities and excludes land for commercial and employment generation land uses.

TYPE 2: In the case of land being available that must accommodate both housing and the associated facilities one can calculate the area needed for housing and that for social facilities. In addition one can test the impact of a range of densities on the social facility land requirements and vice versa.

TYPE 3: For a predetermined target population calculate the land requirement for both housing and social facilities. If you have limited space available do not use this option - use either Type 1 or 2.

Once this is done, complete the rest of the data input fields as required by selecting the remaining tabs (**population/ land use constraints tab** and the **planning parameter tab**) in any order.

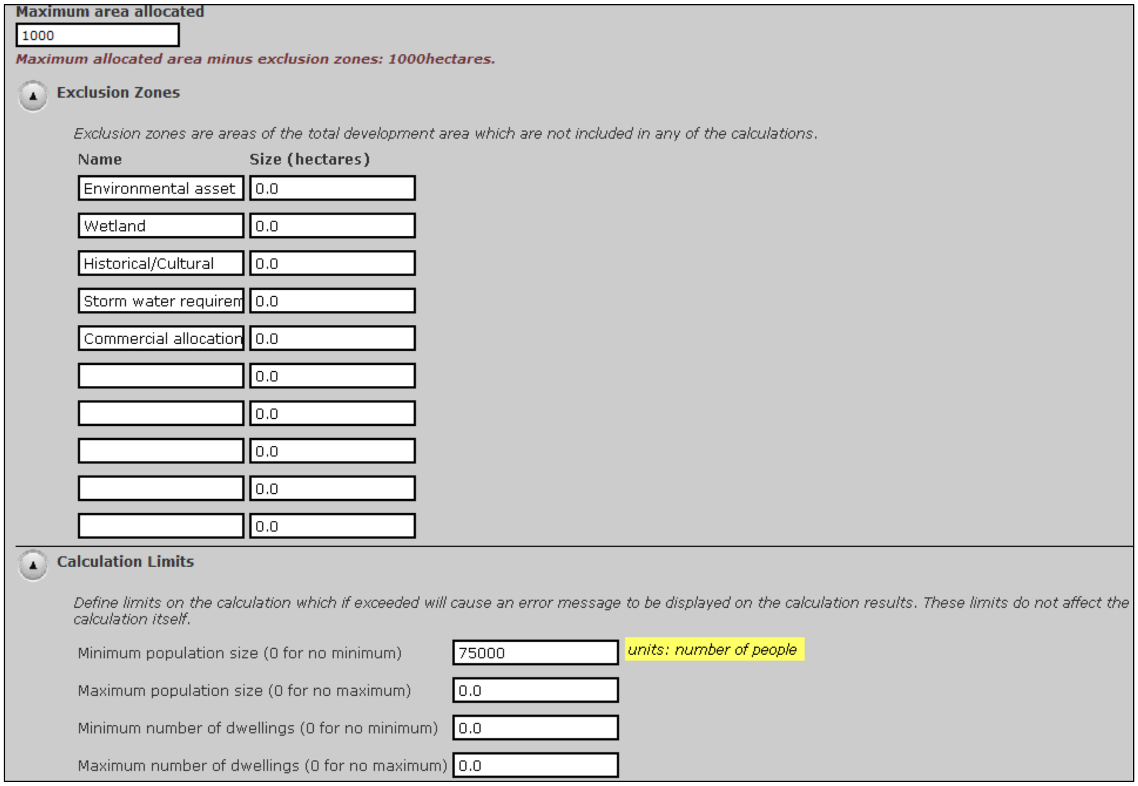
Population/ land use constraints



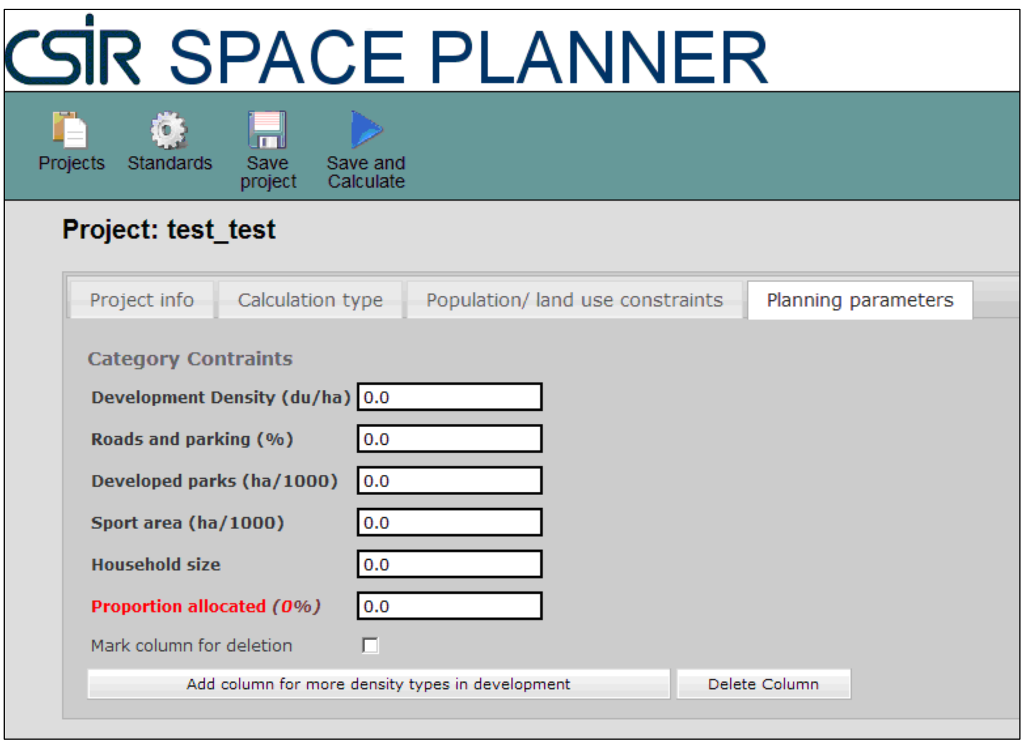
Enter the value for the land area available for development and populate the **Exclusion Zones** and the **Calculation Limits** tabs, if applicable.

- **Exclusion zones** are any areas already developed or allocated for developed or unsuitable for development. Some standard categories are provided but you may edit / delete / add to these.
- **Calculation limits** are used to specify either the maximum or minimum number of people to be accommodated or the maximum and minimum dwelling units to provide in the development.

It is not necessary to specify either calculation limits or exclusion zones. These values can be zeros but may not be left blank.

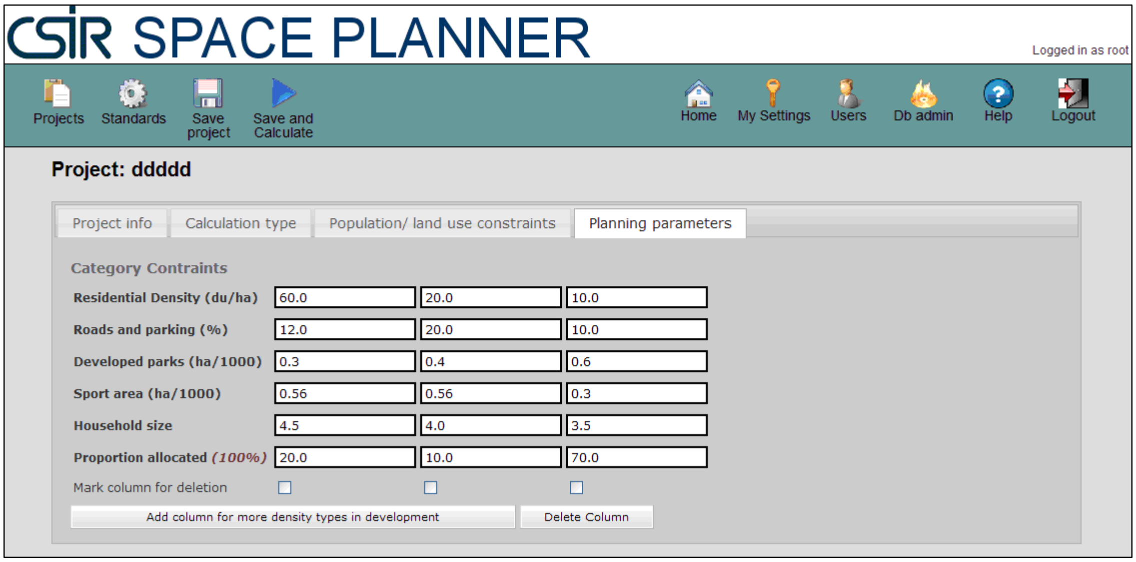


Planning parameters



►Open the **planning parameters** tab and enter the required details about the density of the development, percentage of land area to be given up to roads and parking (circulation), household size and proportion of development allocated to each type: (See below for more information on this). Sport and parks are optional input values as they are covered by the standards.

►Within a single run of the calculator you can use only one set of standards but you may divide the development area into different density types proportionally (i.e. different percentages of high, medium, low density). Use the **Add column** button to add residential areas of different density within the same development (an example of using three different residential densities is shown below).



Each density type can have varying values for family size, and road and circulation percentage. You may also enter different values for allocation of park space and sports space for different densities (optional). If you chose to use this option you will be warned if the amount indicated here for the park and sports allocation conflicts with the standards applied.

Note that the social facility standards for sport and parks rather than the above input values are used for the main calculation to calculate required social facility space and available land for housing.

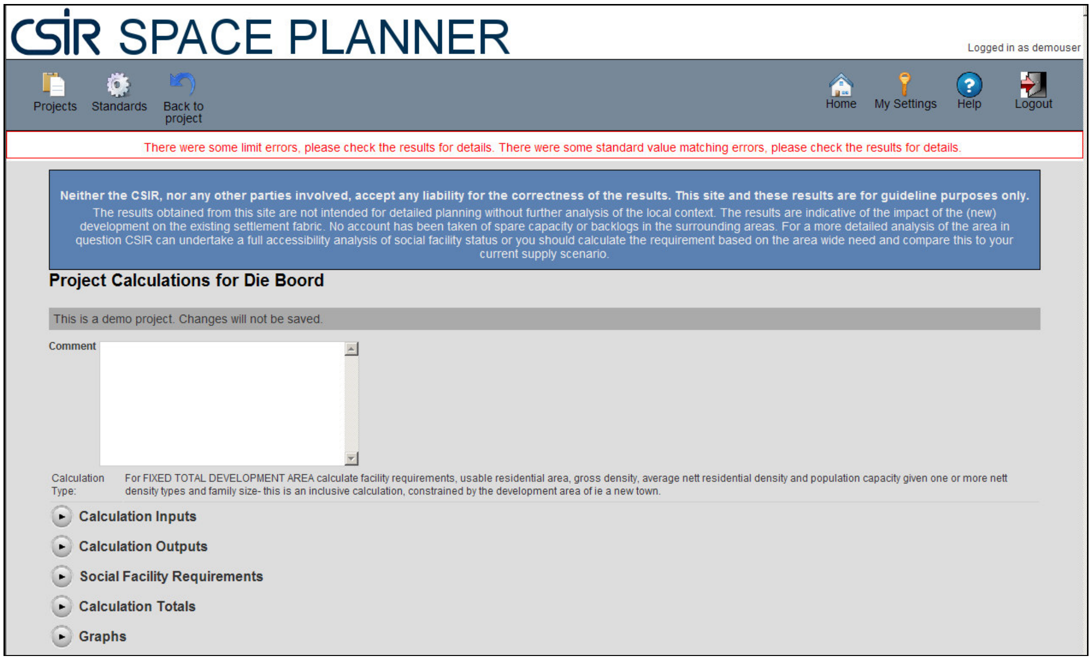
►Once you have populated the four project tabs click on **Save Project.** Then click on **Save and Calculate** to generate the calculated output (see next page for an example).

►When you have viewed the results by clicking on the results headings you can add a comment. Click on **Save calculation** (left top of screen) to save the project and the result. At this stage a button to export your result to Excel will appear. You may now **export** the results to Excel should you wish to do so. (The graph of the calculation results is not exported.) The file is in CSV format. Remember to remove brackets from the file name when saving in Excel.

To revise the project or change any variables select **Back to project**. Repeat and save as many results for the project as you wish or run variations without saving.

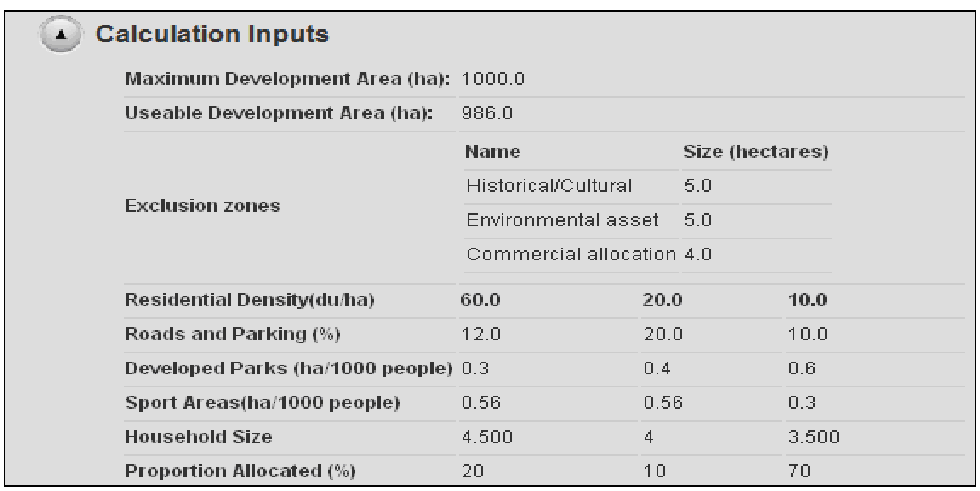
►The saved results can be viewed only by you (and the administrator) and will be saved for your future reference unless you choose to delete them.

Example of saved summary output page of project



Example of Calculation results screens

1. Calculation Inputs



Maximum Development Area (ha):	1000.0		
Useable Development Area (ha):	986.0		
Exclusion zones	Name	Size (hectares)	
	Historical/Cultural	5.0	
	Environmental asset	5.0	
	Commercial allocation	4.0	
Residential Density(du/ha)	60.0	20.0	10.0
Roads and Parking (%)	12.0	20.0	10.0
Developed Parks (ha/1000 people)	0.3	0.4	0.6
Sport Areas(ha/1000 people)	0.56	0.56	0.3
Household Size	4.500	4	3.500
Proportion Allocated (%)	20	10	70

2. Calculation Outputs

► Calculation Inputs

▲ Calculation Outputs

Net Residential Development Area (ha)	150.388	75.194	526.357
Development Area (ha)	197.200	98.600	690.200
Effective/gross development density (du/ha)	9.151	1.525	5.338
Number of dwellings	9023.3	1503.9	5263.6
Number of People	40604.674	6015.507	18422.491
Required Roads and Parking (ha)	23.664	19.720	69.020
Required Developed Parks (ha)	12.181	2.406	11.053
Required Sport Areas(ha)	22.739	3.369	5.527

► Social Facility Requirements

► Calculation Totals

► Graphs

3. Social Facility Requirements

► Calculation Inputs

► Calculation Outputs

▲ Social Facility Requirements

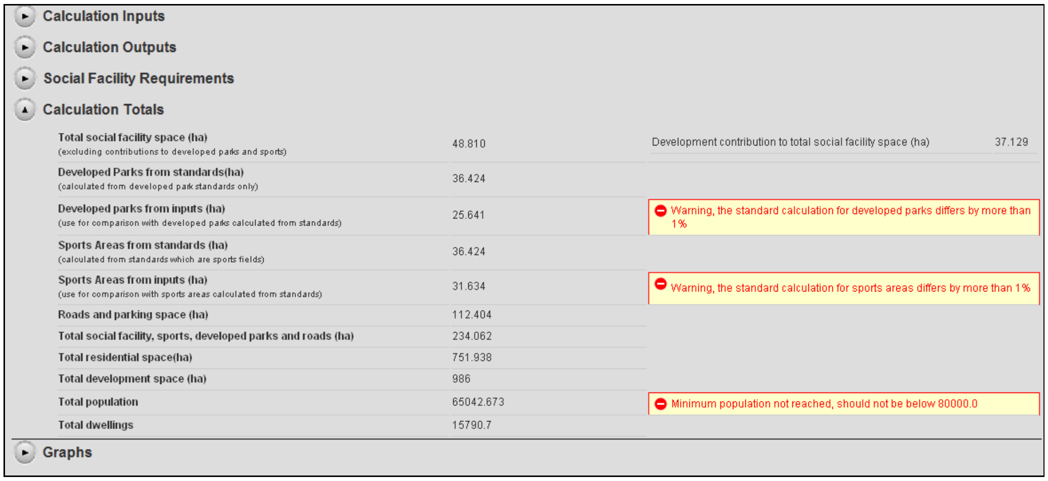
Used standard ***test5***

Name	Population/facility	Hectares/facilty	Facilities required	Hectares required (ha)	Development contribution	Subset of other facility types
Police Station	60000	0.5	1.084	0.542	yes	no
Sisakala - First Stop - urban	100000	0.01	0.650	0.007	no	no
Swimming Pool	60000	0.0001	1.084	0.000	no	Subset of sports fields
Sports Stadia	200000	3.0	0.325	0.976	no	Subset of sports fields
Indoor Sports Halls	500000	0.5	0.130	0.065	no	Subset of sports fields
Low income Creche/early Childhood development centre	2400	0.02	27.101	0.542	no	no
International sports complex	1500000	3.0	0.043	0.130	no	no
Major public venue	1000000	2.0	0.065	0.130	no	no
Childrens Home	60000	1.0	1.084	1.084	no	no
Community Health Centre&ARV	60000	1.5	1.084	1.626	no	no
Local Library	20000	0.05	3.252	0.163	yes	no
Primary Health Clinic	30000	0.3	2.168	0.650	no	no
High income Creche/early Childhood Centre	3000	0.05	21.681	1.084	no	no
Sports Fields	1000	0.56	65.043	36.424	yes	Sports fields
Post Office	10000	0.02	6.504	0.130	no	no
Secondary School	12500	4.8	5.203	24.976	no	no
Primary School	5500	1.5	11.826	17.739	no	no
Sisakala - One Stop	500000	0.05	0.130	0.007	no	no
Parks	1000	0.56	65.043	36.424	no	Developed parks
Total				121.658		

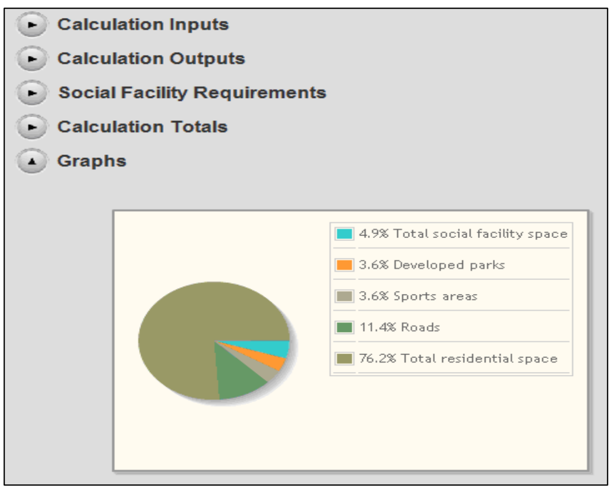
► Calculation Totals

► Graphs

4. Calculation Totals



5.Graphs



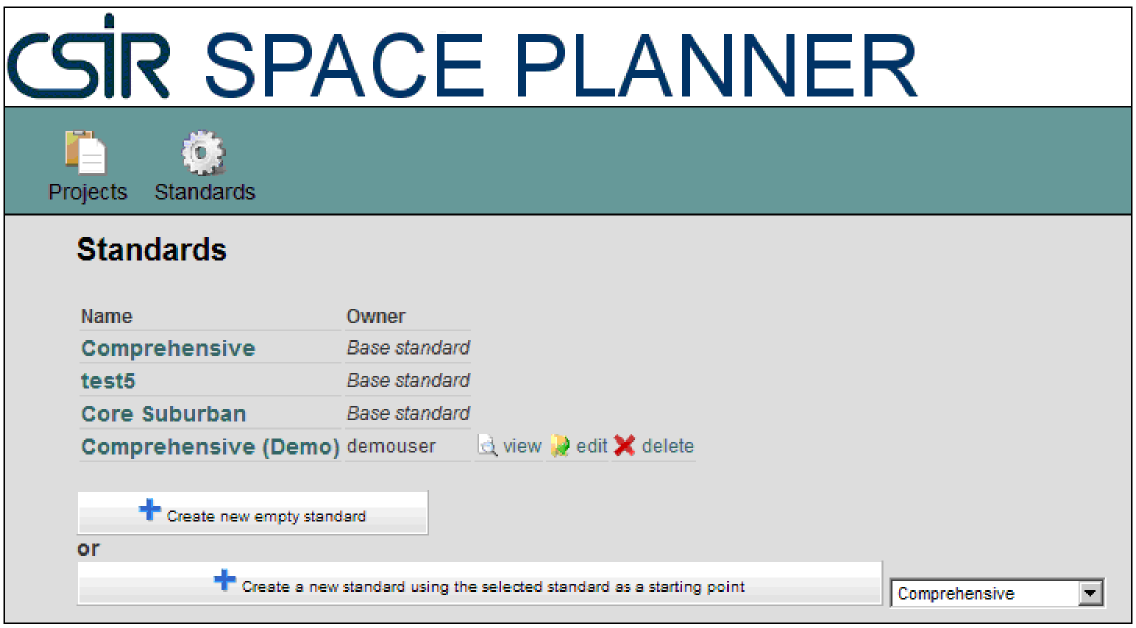
STEP 4: Selecting / editing or creating a set of standards to use for the evaluation

The SPACE PLANNER can calculate the land requirement based on any set of agreed standards. Alternatively you can test the impact of changing standards and land requirements.

►On the homepage screen select "**Standards"** button

The screen below will appear.

Standards screen



The list contains sets of base standards and any others you may have created. You are the owner of the standards you have created (your login name will appear in the 'Owner' column) and only you will have permission rights to delete or edit standards 'owned' by you. If you want others to use the same standards set, please request the administrator to mark that standard as a base set by sending an e-mail to: cgreen@csir.co.za.

You can select to use any of the base standards or your own standards from the available list. Alternatively create new standards from scratch or derive a new standard using the most suitable base (to save on data entry time). This will be added to the list.

IF YOU CHOOSE TO USE THE BASE TABLES OF STANDARDS WITHOUT CHANGES PLEASE NOTE: These are derived from a compendium of existing standards in the literature. The standards, although the most commonly used, are not exhaustively tested.

They are guidelines and cannot be currently enforced. The CSIR does not take any responsibility for any of the outcomes or results of using this calculator and detailed planning and consultation with the relevant stakeholders is still required.

On the Standards screen (as shown above) select either

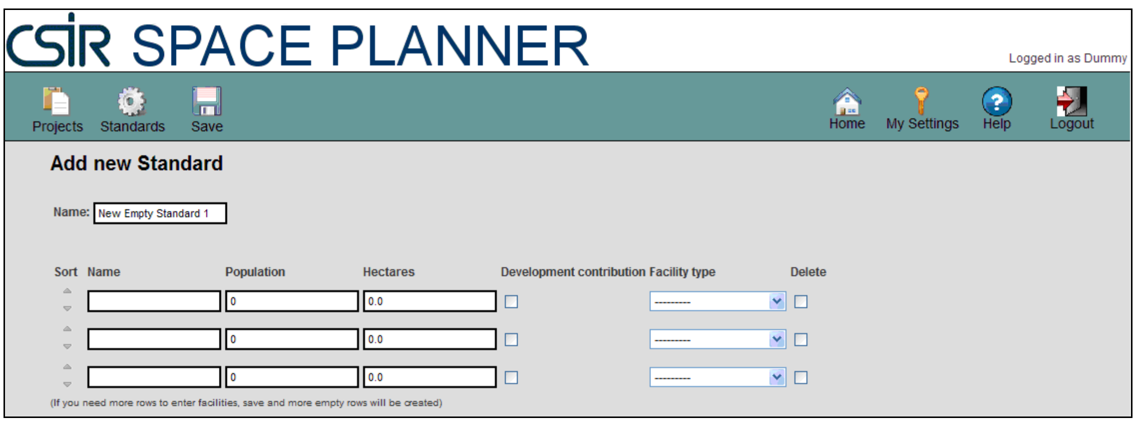
+Create new empty standard. Click on box to use

OR

+Create a new standard using the selected standard as a starting point. First, select which existing / base standard to use from the drop down list on the right, then click the button **Create a new standard using the selected standard as a starting point.**

When using a base set of standards - select an appropriate set from the pull down list, and view each variable to confirm that the standards are suitable for the context before application. If only a few variables need to change use this list as the base set to create a new standard owned by you.

<u>Add new Standard</u>



Selecting **Create new empty standard** will open the page above. Give the standards set a name and fill in the first three rows with facility information. To add additional rows press **Save** – a new row will appear – and continue until you have enough rows. If you want to change the order of facilities, use the sort arrows on the left to move items up and down by clicking on a line and then dragging it. When complete press **Save.**

There is one additional field that must be completed, namely Facility type.

To direct how land requirement is calculated the user must select one of four types of facility from a pull down list. The default is Regular facility.

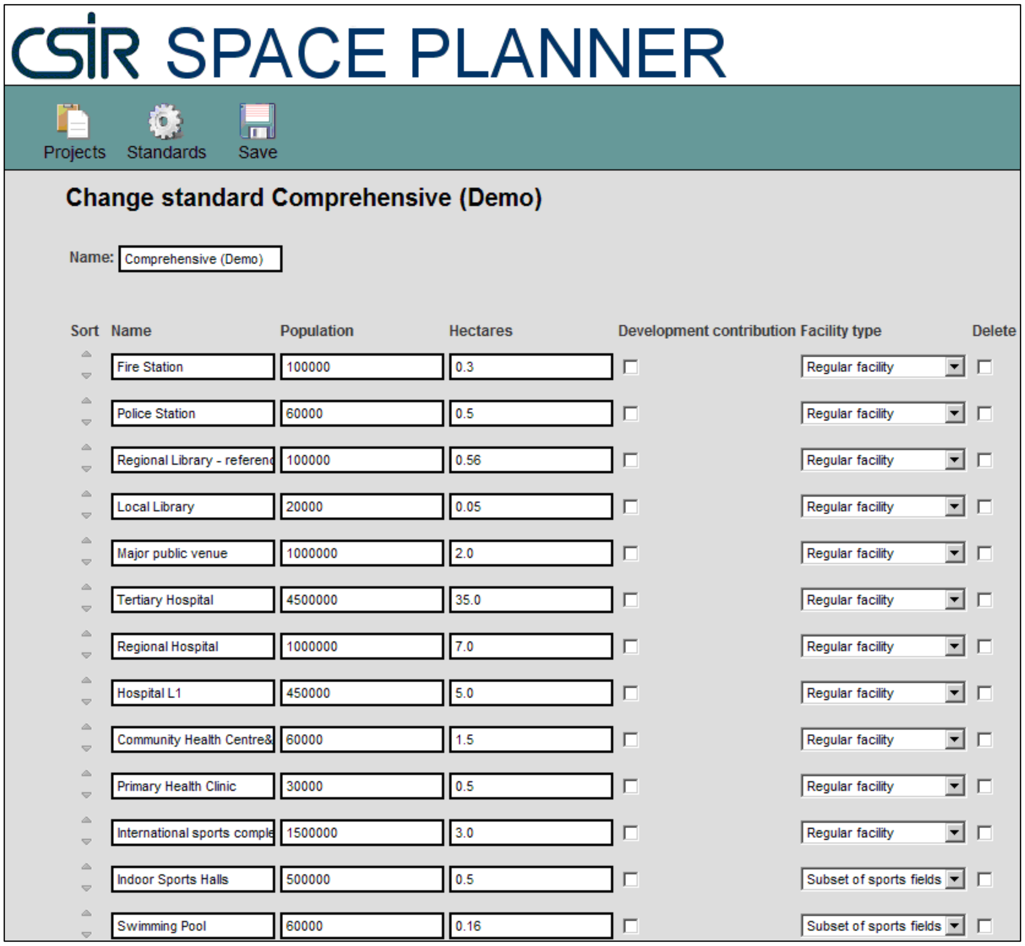
- Regular facility means land requirement is not calculated on a ha/1000 basis and is not part of another facility type. It is independent.
- Developed parks means this is the minimum of land that is required to provide parks. This is not part of any general open space, MOSS or other environmental asset.
- Subset of sports fields means no separate calculation is done for land for this facility. Land requirement must come from the **sports field** allocation. The calculated land allocation and number of facilities thus provides guidance when it comes to implementation.
- Sports fields means this is the basic minimum amount of land that must be provided for the development of all sports facilities with the exception of regional facilities / major international / national sports complexes.

A tick box is provided under the column title **Delete** to delete any facilities not appropriate to the context.

Development contribution

Should a policy be in place for developers to contribute to the provision of social facilities, use the tick box provided to indicate for which facilities they are expected to make a contribution. A sub-total for land for these facilities will be calculated and the result shown on the **Calculation totals** screen. (STEP 3 - Results screen 4)

Change standards screen



If you select to use an existing base standards set to edit, a screen like the one above will appear.

►Rename the file, make any necessary changes and save. You will now be the designated owner of the standard.

►Edit the input rows: **Name** (of facility type), **Population** threshold for a single facility; and **Hectares** (the approximate size of the site required to build each facility). Do not use spaces when entering threshold values, ie. 100000 not 100 000.

►The user must indicate the **Facility type**. See detail above under **Add new standard.**

►If the local authority has a policy which requires that a developer must contribute land or its equivalent for specific facilities, tick the **Development contribution** box for the relevant facility.

►Use arrows to left of screen to re-order facilities or group if required.

►Saving will create additional empty rows at the bottom of the page for other facilities.

►Should you wish to delete a facility select the **Delete** box for that row.

►Once done, **Save.** Then proceed with the analysis by selecting the **Projects** tab – STEP 3 (refer to notes on this step).

Notes on some of the standards included in base standards sets

Please refer to the following document for more detail: *Summary Guidelines and Standards for the Planning of Social Facilities and Recreational spaces for Metropolitan Areas.* See link on SPACE PLANNER Home page.

The values are a mixture of standards, *de facto* and current thinking but all need to be verified and agreed within the municipal authority. The land space values (ha) in the standards are based on current practice and do not take into consideration savings that can be achieved though multi-storey multi-facility social complexes. Should you have examples of these you may create a set of standards to incorporate this new thinking.

Facility	Threshold	(ha)	Comment
Education			
Low income Crèche/ Early Childhood Development Centre	2 400	0.02	Low income areas tend to have more, smaller less formal crèche facilities. No specific land allocation is required but is policy dependent. Generally only one crèche type should be selected.
High Income Crèche/ Early Childhood Development Centre	3 000	0.05	High income areas tend to have less demand, but have more formal crèche facilities. No specific land allocation is required but is policy dependent. Generally only one crèche type should be selected.
Primary School	5 500	2.8	Based on school size of 750 and 14% of residents attending Primary School. Minimum site size, including sports fields of 0.9 ha.
Secondary School	12 500	4.8	Based on school size of 1 000 and 8% of residents being of Secondary School age. Local drop out rates of up to 35% need to be considered in some areas. Minimum site size includes sports fields of 0.9 ha. Reduce size and threshold for smaller towns.
Tertiary Training not University	100 000	1.0	Informed opinion. No available verifiable information – demand expected to grow in future. Only for towns of 50 000 plus – adjust for local demand.
University	1 000 000	8.0	Provincial. Regional role. Informed opinion. No available verifiable information. Generally not a requirement.
Recreation			
Park Space	1 000	0.5	0.4–0.5 ha per 1 000 population is considered a reasonable interim working standard figure. Currently supply (where it is provided) ranges from 0.3 ha to over 1 ha per 1 000 people of maintained park space depending on location. Further research is required to establish acceptable context appropriate standards.

Facility	Threshold	(ha)	Comment
Sports Fields	1 000	0.56	0.56 ha per 1 000 population is considered reasonable to accommodate a range of sports codes. Some of this land must also be used to build stadia, swimming pools and indoor halls for local use (excludes regional type facilities).
Swimming Pool	60 000	0.16	Average – no land requirement, but takes up 0.16 of above sports fields allocation.
Indoor Sports Halls	250 000–500 000	0.5	Local circumstances and policy dependent.
Sports Stadia	200 000	3.0	Could range from 200 000 - 400 000.
Public Services			
Fire Station	100 000	0.3	Threshold guideline only. Locations of fire stations are dictated by risk and access time. At average speeds of 35km on road, a single Station can serve a housing area of 6 000 hectares. A threshold figure of 100 000 is an average for Metros but in some instances a Station may only serve 30 000 people. A commonly used threshold is 60 000. Site size: suburban station 0.3 ha, Regional HQ 1.2ha.
Police Station	60 000	0.5	Workable current average but some would want it to be 30 000 to have better visibility, etc. but this is not currently sustainable.
Community Hall/ Centre	30 000	0.3	Published standards and on-the-ground verification seems largely to be in balance. Site size variation 0.2-0.5ha. Threshold can be reduced to 15 000 in peri-urban/ rural areas.
Primary Health Clinic	30 000	0.5	Baseline figure for planning. Health profile, facility spacing and housing density are determinants.
Community Health Centre & ARV	60 000	1.5	Baseline figure for planning; health profile, facility spacing and housing density are determinants.
Hospital L1	450 000	5.0	There are no specified site requirements in terms of area, however there are detailed space requirements at a facility level. Based on the latter the possible site sizes were determined. If all 3 types required, L1 hospital demand may be less.
Regional Hospital	1 000 000	7.0	
Tertiary Hospital	4 500 000	35.0	
Municipal Office	100 000	0.3	One per planning sub-region or 1 per settlement or small town. Adjust threshold to local circumstance.
Civic Centre/ City hall	100 000	1.0	Guideline only. Adjust threshold to local circumstance.
Social			
Old Age Home	50 000	2.0	No data available. Adjust to context.
Children’s Home	60 000	1.0	Trend is to smaller homes & foster care. Demand will dictate land requirement.
Religious Centre	3 000	0.1	Guideline if applied. (Optional)

Facility	Threshold	(ha)	Comment
Post Office	10 000	0.02	Workable figure. Separate land requirement or rental options – shop space 0.01. Thus can exclude land requirement.
<u>Sisakala Centres</u> **ONLY select one (of 4) type depending on total population** First Stop – rural First Stop – urban One Stop Thusong	 30 000 100 000 500 000 500 000	 0.006 0.01 0.05 0.16	Range of service in each centre dependent on local needs and existing provision. Once main demand is established a hierarchy can be planned.
<u>Home Affairs</u> **ONLY select one (of 4) type depending on total population** Regional office District office Permanent Service point Thusong Centre	 140 000 80 000 20 000 20 000	 0.5 0.2 0.05 0.05	Plan facility hierarchy based on local demand – within total requirement. 200 000 large - 140 000 average 80 000 - 140 000 (Small office 40 000 - 80 000) Up to 40 000 Up to 40 000
Cemetery	50 000	8.0	2 000 graves per hectare, based on $5m^2$ per grave. This land requirement only for a 30 year period. If at least 30% of dead are cremated.
Local Library	20 000	0.05	Could range from 20 000 - 70 000 depending on spacing density and usage. Site size up to 0.3ha for larger facilities.
Regional Library-reference	100 000	0.56	Depends on distribution policy. Ratio of approximately 1:4 with local libraries. Only in larger centres is a separate facility provided.
Major Venue			
Major public venue	1 000 000	2.0	Such as arts complex, convention centre. Business plan dependent. (Optional)
International sports complex	1 500 000	3.0	Estimate – business plan dependent. (Optional)

Focus on
CSIR SPACE PLANNER

CSIR SPACE PLANNER software

The CSIR has released a basic calculator to determine the number of social facilities required for a pre-defined population and the basic associated land requirements for these. The tool, includes custom sets of standards compiled for different settlement contexts which will be expanded over a period of time.

What is the SPACE PLANNER?

The CSIR has developed the Space Planner, a free, web-based tool for calculating the social facility demand and associated land use requirements for a given development. It takes into consideration factors such as land availability, housing densities and family sizes. It can be used to calculate requirements for new developments or used post development to determine the variance of the de facto supply to the facility supply standards. It should be used only as an indication of possible land requirements to be supported by other specific planning activities.

To make use of this free tool logon on to http://spaceplanner.csir.co.za and create your own login name and password.

Purpose

The Space Planner tool is intended to be used to calculate:

1. A social facility demand for a city, suburb or designated development area. This is calculated in terms of population numbers, density and land area for those facilities that are included in a named and designated standards table entered/selected.
2. The land required to house a set number of people at a given density and the associated land requirement for social facilities.
3. The number of people/dwellings (and their associated social needs) that can be accommodated in a predetermined land area, given assumptions regarding family size and development density.
4. The developer contribution with respect to the land area equivalent of social facilities - if policies regarding this are in place.

Further data and model changes to the Space Planner are needed before a rough estimate of the land required for commercial and employment purposes can be calculated.

Calculation types

There are three basic calculation approaches that can be used.

TYPE 1: For a residential-only area with a given land area, density and family size - calculate what additional land will be necessary to create a fully serviced settlement. This refers only to land for social facilities and excludes land for commercial and employment generation.

TYPE 2: In the case of land being available that must accommodate both housing and associated facilities, one can calculate the area needed for housing and that for social facilities. You may test the impact of a range of densities and facility standards on the social facility land requirement.

TYPE 3: For a predetermined target population calculate the land requirement for both housing and social facilities.

The results are highly dependent on the social facility standards applied. The onus rests with the user to verify with the relevant local authority that the standards with respect to population thresholds, capacity and land use requirement are valid and up to date.

To promote the ongoing research on the most used or appropriate standards, the CSIR will be able to view the standards you use, but these will not be published or linked to individual projects. This will contribute to the national research effort regarding standardisation of social facility provision. It is the researchers' hypothesis that differentiation across different development contexts is required for certain facility types while for others 'one size may fit all'.

This tool is not a spatial tool in that it does not evaluate the location of these facilities in relation to the density of, or travel distance to, their target population. To evaluate the relationship between facility location, size, target market and travel distance, a more sophisticated approach is required. For more details on this follow the link www.csir.co.za/Built_environment/Planning_support_systems/docs/poster55_lowres.pdf

Contact details
CSIR Built Environment
Cheri Green and Gerbrand Mans
Email: cgreen@csir.co.za and gmans@csir.co.za
Stellenbosch – Tel: +27 21 888 2508
www.csir.co.za

our future through science

Space Planner outputs: Social Facility Demand for planning districts in the City of Cape Town

Standard Facility Requirements based on Space Planner calculator			City of Cape Town			
Maximum Development Area (ha)			247,269.51			
Population - 2007			**3,328,767.00**			
Number of People			3,340,443.00			
Local Facility Type	Population / facility	Hectares / facilty	No of Facilities required	Current Facilities or equivalent	No of Hectares required	No of Hectares Current
Cemetery	50,000	8.00			534.47	
Tertiary Training not Univ	100,000	1.00	23.00		33.40	
Community Health Centre&ARV	60,000	1.50	48.00		83.51	
Old age Home	50,000	2.00	60.00		133.62	
Municipal Office	100,000	0.30	35.00		10.02	
Religious Centre	3,000	0.10	903.00		111.35	
Local Library	40,000	0.05	277.00	87.00	4.18	
Primary Health Clinic	30,000	0.50	102.00		55.67	
Community Centre	30,000	0.30	108.00		33.40	
High income Creche/early Childhood Centre	3,000	0.05	918.00		55.67	
Sports Fields	1,000	0.56			1,870.65	855.90
Post Office	10,000	0.02	267.00		6.68	
Secondary School	12,500	4.80	275.00	204.31	1,282.73	
Fire Station	100,000	0.30	74.00		10.02	
Police Station	60,000	0.50	48.00		27.84	
Park Space	1,000	0.50			1,670.22	1,504.06
Primary School	5,500	2.80	488.00	504.00	1,700.59	
Civic Centre / City hall	100,000	1.00	139.00		33.40	
Home Affairs - regional office	140,000	0.50	23.00		11.93	
Childrens Home	60,000	1.00	46.00		55.67	
Hospital L1	450,000	5.00	13.00		37.12	
Swimming Pool	60,000	0.16	43.00	35.00	8.91	
Regional Library - reference	100,000	0.56	33.00	17.00	18.71	
Indoor Sports Halls	300,000	0.50	5.00	15.00	5.57	
Sports Stadia	300,000	3.00	7.00		33.40	
Thusong	500,000	0.16	5.00		1.07	
Metro / Regional Facility Type						
University	1,000,000	8.00	3.00		26.63	
Major public venue	1,000,000	2.00	3.00		6.66	
International sports complex	1,500,000	3.00	2.00		6.66	
Tertiary Hospital	4,500,000	35.00	6.00		25.98	
Regional Hospital	1,000,000	7.00	3.00		23.30	

Assumptions: *Primary school equivalent is based on the total number of learners divided by 770 (*)*
Secondary school equivalent is based on the total number of learners divided by 1000 (*)
Local Library equivalent is based on the total current capacity divided by 40000 (*)
Regional Library equivalent is based on the total current capacity divided by 100000 (*)

(*) Average size in Space Planner calculator

Space Planner outputs: Social Facility Demand for planning districts in the City of Cape Town

Standard Facility Requirements based on Space Planner calculator			Table Bay (District A)				Blaauwberg (District B)				Mitchells Plain / Khayelitsha (District F)				Cape Flats (District G)		
Maximum Development Area (ha)			11,268.23				55,028				15,986.30				13,207.90		
Population - 2007			**183,586.00**				**174,130**				**1,014,253.00**				**538,530.00**		
Number of People			183,676.00				173,691				1,019,244.00				540,168.00		
Local Facility Type	Population / facility	Hectares / facilty	No of Facilities required	Current Facilities or equivalent	No of Hectares required	No of Hectares Current	No of Facilities required	Current Facilities or equivalent	No of Hectares required	No of Hectares Current	No of Facilities required	Current Facilities or equivalent	No of Hectares required	No of Hectares Current	No of Facilities required	Current Facilities or equivalent	No of Hectares required
Cemetery	50,000	8.00			29.39				27.79				163.08				86.43
Tertiary Training not Univ	100,000	1.00	1.00		1.84		1.00		1.74		10.00		10.19		5.00		5.40
Community Health Centre&ARV	60,000	1.50	3.00		4.59		2.00		4.34		16.00		25.48		9.00		13.50
Old age Home	50,000	2.00	3.00		7.35		3.00		6.95		20.00		40.77		10.00		21.61
Municipal Office	100,000	0.30	1.00		0.55		1.00		0.52		10.00		3.06		5.00		1.62
Religious Centre	3,000	0.10	61.00		6.12		57.00		5.79		339.00		33.97		180.00		18.01
Local Library	40,000	0.05	4.00	8.37	0.23		4.00	4.80	0.22		25.00	12.27	1.27		13.00	7.20	0.68
Primary Health Clinic	30,000	0.50	6.00		3.06		5.00		2.89		33.00		16.99		18.00		9.00
Community Centre	30,000	0.30	6.00		1.84		5.00		1.74		33.00		10.19		18.00		5.40
High income Creche/early Childhood Centre	3,000	0.05	61.00		3.06		57.00		2.89		339.00		16.99		180.00		9.00
Sports Fields	1,000	0.56			102.86	48.13			97.27	111.77			570.78	149.17			302.49
Post Office	10,000	0.02	18.00		0.37		17.00		0.35		101.00		2.04		54.00		1.08
Secondary School	12,500	4.80	14.00	15.43	70.53		13.00	9.23	66.70		81.00	60.78	391.39		43.00	30.31	207.42
Fire Station	100,000	0.30	1.00		0.55		1.00		0.52		10.00		3.06		5.00		1.62
Police Station	60,000	0.50	3.00		1.53		2.00		1.45		16.00		8.49		9.00		4.50
Park Space	1,000	0.50			91.84	84.63			86.85	64.57			509.62	173.83			270.08
Primary School	5,500	2.80	33.00	27.00	93.51		31.00	24.00	88.42		185.00	151.00	518.89		98.00	86.00	274.99
Civic Centre / City hall	100,000	1.00	1.00		1.84		1.00		1.74		10.00		10.19		5.00		5.40
Home Affairs - regional office	140,000	0.50	1.00		0.66		1.00		0.62		7.00		3.64		3.00		1.93
Childrens Home	60,000	1.00	3.00		3.06		2.00		2.89		16.00		16.99		9.00		9.00
Hospital L1	450,000	5.00	-		2.04		-		1.93		2.00		11.32		1.00		6.00
Swimming Pool	60,000	0.16	3.00	6.00	0.49		2.00	1.00	0.46		16.00	7.00	2.72		9.00	5.00	1.44
Regional Library - reference	100,000	0.56	1.00	0.71	1.03		1.00	1.00	0.97		10.00	0.71	5.71		5.00	1.00	3.02
Indoor Sports Halls	300,000	0.50	-	1.00	0.31		-		0.29		3.00	6.00	1.70		1.00	1.00	0.90
Sports Stadia	300,000	3.00	-		1.84	1.36	-		1.74		3.00		10.19	4.88	1.00		5.40
Thusong	500,000	0.16	-		0.06		-		0.06		2.00		0.33		1.00		0.17

Space Planner outputs: Social Facility Demand for planning districts in the City of Cape Town

Standard Facility Requirements based on Space Planner calculator			Northern (District C)				Tygerberg (District D)				Helderberg (District E)				South Peninsula (District H)			
Maximum Development Area (ha)			59,805.00				18,688.00				33,191.71				40,093.91			
Population - 2007			**282,832.00**				**637,983.00**				**181,957.00**				**315,496.00**			
Number of People			283,858.00				639,269.00				181,842.00				318,695.00			
Local Facility Type	Population / facility	Hectares / facilty	No of Facilities required	Current Facilities or equivalent	No of Hectares required	No of Hectares Current	No of Facilities required	Current Facilities or equivalent	No of Hectares required	No of Hectares Current	No of Facilities required	Current Facilities or equivalent	No of Hectares required	No of Hectares Current	No of Facilities required	Current Facilities or equivalent	No of Hectares required	No of Hectares Current
Cemetery	50,000	8.00			45.42				102.28				29.09				50.99	
Tertiary Training not Univ	100,000	1.00	2.00		2.84		6.00		6.39		1.00		1.82		3.00		3.19	
Community Health Centre&ARV	60,000	1.50	4.00		7.10		10.00		15.98		3.00		4.55		5.00		7.97	
Old age Home	50,000	2.00	5.00		11.35		12.00		25.57		3.00		7.27		6.00		12.75	
Municipal Office	100,000	0.30	2.00		0.85		6.00		1.92		1.00		0.55		3.00		0.96	
Religious Centre	3,000	0.10	94.00		9.46		213.00		21.31		60.00		6.06		106.00		10.62	
Local Library	40,000	0.05	7.00	3.00	0.35		15.00	15.00	0.80		4.00	4.45	0.23		7.00	6.00	0.40	
Primary Health Clinic	30,000	0.50	9.00		4.73		21.00		10.65		6.00		3.03		10.00		5.31	
Community Centre	30,000	0.30	9.00		2.84		21.00		6.39		6.00		1.82		10.00		3.19	
High income Creche/early Childhood Centre	3,000	0.05	94.00		4.73		213.00		10.65		60.00		3.03		106.00		5.31	
Sports Fields	1,000	0.56			158.96	115.84			357.99	142.18			101.83	65.11			178.47	78.25
Post Office	10,000	0.02	28.00		0.57		63.00		1.28		18.00		0.36		31.00		0.64	
Secondary School	12,500	4.80	22.00	13.13	109.00		51.00	40.96	245.48		14.00	11.17	69.83		25.00	23.30	122.38	
Fire Station	100,000	0.30	2.00		0.85		6.00		1.92		1.00		0.55		3.00		0.96	
Police Station	60,000	0.50	4.00		2.37		10.00		5.33		3.00		1.52		5.00		2.66	
Park Space	1,000	0.50			141.93	375.22			319.63	462.49			90.92	67.67			159.35	155.44
Primary School	5,500	2.80	51.00	39.00	144.51		116.00	106.00	325.45		33.00	26.00	92.57		57.00	45.00	162.24	
Civic Centre / City hall	100,000	1.00	2.00		2.84		6.00		6.39		1.00		1.82		3.00		3.19	
Home Affairs - regional office	140,000	0.50	2.00		1.01		4.00		2.28		1.00		0.65		2.00		1.14	
Childrens Home	60,000	1.00	4.00		4.73		10.00		10.65		3.00		3.03		5.00		5.31	
Hospital L1	450,000	5.00	-		3.15		1.00		7.10		-		2.02		-		3.54	
Swimming Pool	60,000	0.16	4.00	1.00	0.76		10.00	10.00	1.70		3.00	1.00	0.48		5.00	4.00	0.85	
Regional Library - reference	100,000	0.56	2.00	1.42	1.59		6.00	1.71	3.58		1.00	0.71	1.02		3.00	2.70	1.78	
Indoor Sports Halls	300,000	0.50	-	2.00	0.47		2.00	3.00	1.07		-		0.30		1.00	2.00	0.53	
Sports Stadia	300,000	3.00	-		2.84	1.91	2.00		6.39		-		1.82		1.00		3.19	
Thusong	500,000	0.16	-		0.09		1.00		0.20		-		0.06		-		0.10	