URBAN OPEN SPACE: A CASE STUDY OF MSUNDUZI MUNICIPALITY, SOUTH AFRICA

by

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Abstract

Increasingly, it is understood that in order to realize healthy cities the urban environment must include viable and accessible open space. In order for urban planning and development agencies to ensure the presence of open space within cities, it is necessary to understand what constitutes ‘quality’ open space and the impediments to its creation. The focus of this thesis is to further understand the issues surrounding planning and management of open space in the Msunduzi Municipality in the province of KwaZulu-Natal, South Africa. A case study of the Camps Drift Waterfront Project, a local open space area that is currently being developed, is investigated through both key informant interviews with relevant stakeholders and through a comprehensive survey of written information. The thesis reveals a further understanding of how open space is planned locally, the issues surrounding creating quality and accessible open space and the key areas for further research. Finally, this thesis highlights how the case study of Msunduzi can broaden the debates and concepts in open space theory and planning.
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List of Abbreviations

ANC African National Congress
BESG Built Environment Support Group
CBD Central Business District
CEAD Centre for Environment, Agriculture and Development
DAEA Department of Agriculture and Environmental Affairs
DMC Duzi Marathon Committee
DWAF Department of Water Affairs and Forestry
ECA Environment Conservation Act
EIA Environmental Impact Assessment
GEAR Growth, Employment and Redistribution Program
IDRC International Development Research Centre
IUCN International Union for the Conservation of Nature and Natural Resources
KZN KwaZulu-Natal
KZNW KwaZulu-Natal Wildlife
LA21 Local Agenda 21
LDP Local Development Plan
LIDP Local Integrated Development Plan
LUMP Land Use Management Plan
NEMA National Environment Management Act
NGO Non-governmental organization
PMB Pietermaritzburg (Msunduzi)
RSA Republic of South Africa
SACN South Africa Cities Network
SDF Spatial Development Framework
SFP Spatial Framework Plan
SLOAP Spaces Left Over After Planning
UKZN University of KwaZulu-Natal
UN United Nations
UW Umgeni Water
UNDP United Nations Development Program
WPDLG White Paper on Developmental Local Government
Chapter 1: Introduction

1.1 Overview of Research

Preserving and maintaining open spaces in urban environments is considered a crucial aspect of fulfilling environmental quality goals and attaining a ‘liveable’ city\(^1\) (Schopfer, 2004; Clark, 2006). Increasingly, it is understood that healthy cities must include, among many other aspects, viable and accessible open space and urban nature. Open space can also influence aesthetic values, and the broader perception of the whole city (Duhem, 2005). Therefore, urban planning and design should take into account the importance of preserving and maintaining these spaces. Nevertheless, many cities do not have adequate percentages of open spaces (Jim, 2004) and South African cities are no exception. However, environmental situations in South African cities require a different emphasis analytically than do situations in wealthier countries. There are many reasons for this, including the historical colonial and apartheid legacies and the current socio-economic conditions in these cities. Urban planners and development agencies must also understand what constitutes ‘quality’ open space and how it can be achieved.

This thesis considers a case study of local environmental open space planning and usage in the Msunduzi Municipality in the province of KwaZulu-Natal, South Africa. The research is based on both key informant interviews with relevant stakeholders, a comprehensive survey of written information and a study of the relevant scholarly

\(^1\) A ‘liveable’ city is defined by the United Kingdom’s Urban Task Force as one that is environmentally, economically and socially sustainable and contributes to a high quality of life (Urban Task Force, 2002).
literature. The field work research was conducted from June-August 2007 in the municipality of Msunduzi, South Africa (see Figure 1).

1.2 Overview of the Larger Project

This research contributes to the broader ‘Urban Ecosystems and Human Health in South Africa’ which is a project to address housing, health and environmental challenges in the Msunduzi Municipality, KwaZulu-Natal. This is a joint initiative with the Centre for Environment, Agriculture and Development (CEAD) at the University of KwaZulu-Natal (UKZN), Pietermaritzburg campus, and Queen’s University, Kingston, Canada and funded by the International Development Research Centre (IDRC) of Canada\(^2\). The project also involves collaboration with the Msunduzi Municipality and the Pietermaritzburg Chamber of Business. The project’s focus is to assist the municipality in meeting the challenges of maintaining and improving housing and health for the poor, as well as to examine municipal governance in terms of its ability to meet both economic and environmental and social needs. This research will contribute to the larger project by focusing on the services and functions that quality open space renders as well as the current state of open space policy in the municipality.

\(^2\) For more information, please see the Eco-health website at: http://www.queensu.ca/sarc/ecohealth/
1.3 Research Purpose, Approach and Objectives

There are currently numerous development projects underway within Msunduzi Municipality that involve open space, but little research into the results of these projects has been done. Therefore, there is a need for investigation into the use and management of open spaces within the municipality.

A case study approach is used for this research because it offers the ability to connect the micro-level experience of an open space development with a macro-level understanding of open space planning and policies within the municipality. The case study approach can also be used to test theoretical concepts from the broader scholarly literature, in this instance in terms of urban open space theory. The Camps Drift...
Waterfront Development case was selected because of the currency of the development and the controversy surrounding it. The data collection consists primarily of two features. The first is an in-depth review of written sources, including published journal articles and books, NGO and government reports, newspaper articles and unpublished reports, documents and theses. The second involves the use of key informant interviews with a range of stakeholders from six key groups: the municipality, the provincial government, local NGOs, recreational clubs, the media and relevant business groups. A total of twelve interviews were conducted from June-August 2007 in Msunduzi.

The thesis is broadly structured around the following research objectives and questions:

A. To understand the open space planning context in Msunduzi.
   - Quality open space indicators, standards and criteria
   - The legacy of spatial segregation
   - The dominant approach to viewing open space

B. To understand the extent to which the Camps Drift case study is a reflection of current open space planning.
   - The Camps Drift case study
   - Issues surrounding the Camps Drift development
   - The case study and open space planning in Msunduzi

C. To understand how this research relates and contributes to the broader open space literature, debates and concepts.
   - Discrepancy between policy and practice
   - Neglect of the socio-spatial dimension
   - Importance of history and context to planning policy
   - Dominance of economic and development approaches
This research will hopefully provide a contribution for municipal planners to evaluate development projects with consideration of open space and hence improve the quality of life of urban residents. There are plans to disseminate these findings to the municipality through an article in the local paper and a publication, as well as making the thesis and results available to local municipal employees and relevant stakeholders.

1.4 Thesis Organization

The thesis is divided into six chapters, including this introduction. The second chapter is a review of relevant literature on the subject of open space, which includes urban space, approaches to viewing and valuing open space, the historical construction of open space and open space planning models and services. The third chapter reviews the methodology of the research. Chapter Four offers contextual background information and a more thorough introduction to the Msunduzi Municipality and to the Msunduzi River. It also briefly presents the environmental policies and laws that are most relevant to the case study of Camps Drift and to this research. The findings are presented in Chapter Five, along with a discussion regarding these results. This section focuses on the main themes that emerge from analysis of the interview results and the in-depth documentary review within the framework of the four research objectives. Finally, Chapter Six presents recommendations and areas for further research as well as some general conclusions. Through this analysis, it is recommended that a systematic categorization of all open space in the city, such as a Metropolitan Open Space System (MOSS), be initiated as soon as possible in order to ensure open space considerations are a part of all
development plans within Msunduzi. It is also recommended that detailed standards and quality open space indicators be developed locally to ensure that such an open space system be effective and accessible for all community members. Based on this research, it is clear that open space is important to the municipality and to local community members and that an effective system of open space management can and should be implemented.

1.5 Site Description

The municipality of Msunduzi\(^3\) (formerly Pietermaritzburg) is located in the province of KwaZulu-Natal, South Africa, approximately 75 kilometers from the urban centre of Durban (see Figures 1 and 2). The municipality incorporates the city of Pietermaritzburg as well as Msunduzi, Ashburton, rural Vulindlela, Claridge and Bishopstowe. The Msunduzi Municipality has experienced significant boundary changes over the past eight years when it was created after the 2000 elections. It is approximately 650 km\(^2\), has a population of over 616 000 people and consists of thirty-eight wards (Statistics South Africa, 2007). The case study area of Camps Drift is located in wards 27 and 36, along the Msunduzi River (see Figure 4 p.58).

The Msunduzi River flows through a highly urbanized valley of the province as well as through the city of Pietermaritzburg and the entire municipality. It then joins the Mgeni River which flows through Durban and into the Indian Ocean. The water quality of the Duzi is considered quite poor and there are concerns about flash-flooding and high

\(^3\) Spelling of both ‘Msunduzi’ vs ‘Msundusi’ and ‘Mgeni’ vs ‘Umgeni’ is used according to the current municipal plan to adopt traditional Zulu spelling, except in those instances where organizations or reports use an alternate spelling.
e-coli counts. The Camps Drift case study involves an elaborate recreational and shopping facility along the canalized section of the waterfront. Plans for this development were initially approved in 2004 but the project has not yet moved forward due to a variety of issues, including concerns about water quality, equality of accessibility to the waterfront and other environmental issues.

**Figure 2: Map of Pietermaritzburg and Durban**

![Map of Pietermaritzburg and Durban](source: Msunduzi Municipality, 2008)

The specific context of Msunduzi affects the planning of open spaces and the way that it is perceived within the municipality. Further contextual aspects are discussed in Chapter Four. First, however, the following chapter will review and discuss the literature that is relevant to open space planning and perceptions, particularly within a South African context.
Chapter 2: Literature Review

2.1 Introduction
Many academic fields are relevant to understanding the concept of open space, including economics, urban planning, geography, history, landscape architecture, political science and sociology (Bengston, 2004). Because of the range of disciplines that correspond to the topic, it is necessary to limit the focus and the scope of this literature review. Therefore, this review examines the following: urban open space systems and theory, the historical construction of open space, approaches to and models of open space planning and management and the services that open space offers, including its importance socially, environmentally and economically. There is also an attempt to explore the theoretical underpinnings of urban space and space theory. This review incorporates books, journal articles, government reports and conference proceedings that relate to these objectives.4

2.2 Theoretical Basis—Urban Space
While this research can be situated within broader theoretical conceptions of space and spatial organization, it is helpful to locate it more precisely within the narrower concept of urban space. Drawing on the theoretical basis of urban space will help to ground, within broader spatial theory, the concept of urban open space that this paper explores.

4 Examples of search terms used include those related to space (open, urban, green, public, social), as well as natural areas, sustainability and urban planning.
The concept of urban space is much debated, but an interpretation which is particularly relevant to this research is that set out by Spinks (2001) in her research on urban spatiality and fear of crime. She discusses how modern interpretations of urban space are increasingly influenced by historical, social and political-economy disciplines. This is in contrast to the more traditional interpretation of urban space as being primarily geographical. An example of this geographical approach is Zevi’s traditional definition of urban space, which is that it is all space that is ‘left over’ and not enclosed. In essence, it is ‘voids’ that have been limited and defined by structures such as walls and buildings (Zevi, 1957 as described in Madanipour, 1996). An even more simplistic definition of urban space is that it is, “all types of space between buildings in towns and other localities” (Krier, 1979). As Spinks points out, these traditional definitions of urban space are currently being contested and new definitions are emerging. Within her research, Spinks argues that urban space should be dual-categorized as both physical, in terms of the built environment, and also symbolic, in terms of perceptions and fears (Spinks, 2001). In recognizing this dual categorization, Spinks brings to light the interplay between its physical presence and the deeper psychological underpinnings of this type of space.

In addition, Spinks emphasizes that urban spaces can be personal, private, public or mixed, and thus cannot be seen as isolated geographically, but rather as changeable according to individual circumstances. Similarly, the final report of the United

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5 For examples, see Park et al. 1925; Smith, 1984; Hillier, 2001.
Kingdom’s Urban Taskforce, ‘Towards an Urban Renaissance,’ states that achieving urban integration requires a shift in thinking of urban space as an isolated unit to thinking of it as a vital part of every urban landscape (Urban Taskforce, 2002). This shift in how urban space is conceived and thought about is particularly relevant to urban open space, because only when open space is incorporated as an essential part of a successful city environment can it effectively provide its numerous open space services. Open spaces in Msunduzi continue to be considered in isolation and the reasons for this are explored in more detail in Chapter Five.

The view of urban space espoused by Spinks and the Urban Taskforce in many ways echoes that of Martin and March’s “Urban Space and Structures” work. In this, the authors claim that the spatial structure of a city is a complex pattern of continually changing interactions which both determine this spatial structure and are determined by it (Martin and March, 1972). The concept of socio-spatial is used in order to understand the connection between space and social relations. The exploration of the ‘socio-spatial’ debate can be traced to the human ecology interpretation espoused by the Chicago School’s principal practitioners Park, Wirth and Burgess. Although it is accepted that space and social relations are tied, the extent to which this is the case is uncertain. The Chicago School’s human ecology theory explains human behaviour through understanding the laws of ecology, and thus comes to a theory of spatial determinism. This ‘Darwinist’ determinism theory states that space is competed over by social groups.

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6 Please see section 2.8 “Open Space Services” for examples.
in order to ensure that they have the most beneficial spatial positions (Gottdiener, 1994). For example, one group of people could compete with another over arable land, with the stronger or more powerful group gaining the most valuable and advantageous space. Eventually, only the fittest social groups will survive these series of competitions. The determinism theory does not, however, recognize the vital role that cultural values play in determining socio-space constructions,7 and thus the Chicago School has been criticized in the past. In spite of this, the Chicago School established a foundational theory from which further exploration of urban space has evolved and the socio-spatial debate has remained prevalent in urban space theory.

Conceptions of socio-spatial can be further understood through Hillier’s conception of the ‘urban grid’. He defines this as the pattern of public space that links the buildings of a city, and points to recent papers investigating the living city that have found a strong function for urban grids (Hillier, 2001). For example, if a map of a city were to be created using only an urban grid, all that would be visible would be the public space, and in that way this urban grid map would show the patterns and linkages of public space throughout the city. This pattern of public space can be used as a way to evaluate how liveable and sustainable a city is, and can thus also be used to determine how to add more public space in order to improve the quality of the urban area. This type of mapping of urban space will be considered in more detail throughout this paper, with

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7 For examples, see Davie, 1937; Harris and Ullman, 1945 and Form, 1954.
particular reference to mapping of urban open space systems. Exploring the various underpinnings of urban space theory allows me to more fully understand the concept of urban space that, for example, Spinks illuminates, whereby urban space is both physical and symbolic.

Although the focus here is urban space, it is also important to touch upon the concept of place, if only briefly, in order to illustrate the connections and the differences between them. Urban open areas have both aspects of space and place attached to them. Madanipour (1996) describes this difference existing because, “whereas space is seen as an open, abstract expanse, place is the part of space that is occupied by a person or a thing and is endowed with meaning and value” (Madanipour, 1996: 23). Similarly, the place theorist Doreen Massey argues that place can be understood as open and porous if we accept the concept of space-time. In this way, the particular identity of a place is a combination of continually changing social relations, and will therefore always be “unfixed, contested and multiple” (Massey, 1994: 5 and Massey, 1999). Tied to this is sense of place theory, which although it is similar to place and place attachment, it is not an identical concept. Sense of place theory encompasses the emotional bonds that a person forms with a particular place, including the values, symbols and meanings that are felt and understood but that are difficult to identify and quantify (Williams and Steward, 1998). Williams and Steward (1998) describe sense of place as being endlessly and actively constructed and reconstructed by individuals. This is particularly relevant to

8 Please see section “Metropolitan Open Space Systems”.

12
urban open space perceptions and understandings. The way that particular spaces and places are constructed and valued determines their very existence.

This thesis uses Spinks' interpretation of urban space as a theoretical foundation from which to explore the concept of urban open space. The thesis critically engages with Spinks' own interpretation of the types of space that exist. As previously mentioned, she believes that although there is personal, private and public space, these spaces can be isolated or mixed. In terms of open space theory, many researchers see public space and open space as inherently tied, but there is also a clear division between the two concepts. Although much open space is public space, not all public space is open space and vice versa. This tension of open space as public space will be further explored within this review, and also has direct relevance to the case study investigated in Chapter Five, particularly in terms of equality of accessibility to the space.

2.3 Open Space:

2.3.1 Space Definitions

There are a multiplicity of terms for and definitions of open space and open space systems, which correlate to the way that they are valued and viewed. The most common of these terms include green space, open space or open areas and public space. Because open space systems incorporate aspects of all of these terms, it is important to understand what each means. However, although each of these terms will be briefly discussed, the

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9 For examples, see Thompson, 2002 and 'Urban Task Force' 2002.
focus will be on exploring definitions of open space relevant to this thesis in order to create a description which can guide the case study explored in this report.

The term green space is defined very broadly by the European Commission as simply a “network of ‘green’ elements, [that is] a physical infrastructure playing a role in water management, in the urban micro-climate and in biodiversity” (Atwell et al., 2005: 16). This definition views green space in its simplest form, recognizing its environmentally beneficial role, but not addressing the other services that green space offers, such as the social, economic, and psychological or health services. A basic definition of public space is that it is open to and shared by all people and is often provided by and cared for by government institutions (Madanipour, 1996). Carr et al. (1992) go further and define public space as the “common ground where people carry out the functional and ritual activities that bind a community.” This definition takes community and social relations into consideration and ties together the literal aspect of space that is accessible to the public, and the symbolic values and services of space that connects the public. Although public space is frequently defined in relation to the variety of its services, many definitions are too narrow. For example, the Scottish Executive Social Research Report defines it as an area that is open to all citizens and can include public parks and gardens, streets, town squares and other accessible areas (Scottish Executive, 2005; Wooley and Rose, 2003). Dewar and Uytenbogaardt, in Khan (1994), describe public spaces as, “the essential social infrastructure of successful urban environments…they are the places where most social experiences are played out and they
act, operatively, as extensions to the private dwelling unit” (Khan, 1994: 72). A key aspect in all of these definitions is the issue of access; according to these authors, public space should be accessible to all community members.

Similarly, many descriptions of open space are also narrow and do not capture all possible components. For instance, a general definition of open space can be found in Maruani and Amit-Cohen, where it is defined as being dominated by a ‘natural’10 environment that is composed of abiotic and biotic elements. In contrast to the built environment, open space generally has a low level of intervention that has not changed its ‘naturalness’ and that continues to allow functioning of the ecosystem (Maruani and Amit-Cohen, 2007). This is a very broad description that can be applied to all types of open space, whether urban or rural. However, there are key distinctions between the broad interpretation of ‘open space’ and the narrower ‘urban open space.’ For example, Bengston et al. (2004) use the term ‘open space’ to refer to all natural resource lands, including farmland and timberland, wildlife habitat and wetlands as well as scenic sites, wilderness areas, historic and cultural resources and recreation areas (Bengston et al., 2004). In contrast to this, the Johannesburg Metropolitan Open Space System Report (JMOSS)11 defines natural open spaces as being those undisturbed natural and undeveloped areas that remain within the urban centre. However, it further divides the concept into categories, incorporating all undeveloped land within and beyond the urban

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10 The connotations surrounding the term ‘natural’ are highly debated—for an account of some of these debates, please see Coates, 1998, Nash, 1989 and Schmidt, 2008.
11 Further explanation of metropolitan open space systems is found within the ‘MOSS’ section.
edge, belonging to any of the following six categories: ecological, social, institutional, heritage, agricultural and prospective, also known as degraded, land (JMOSS, 2002: 6). This definition also makes it clear that there are different categories of open space, and that these can be independent or mixed types.

The Durban Metropolitan Open Space System Report (DMOSS) goes one step further than the JMOSS and acknowledges the distinction between urban and rural by identifying two different types of open spaces—that of *urban open spaces* and that of *natural open spaces*. Urban open spaces are those that are legally designated and human created places and areas within the urban centre that are developed for community use, including as parks, sports fields, town squares etc. (Durban Metropolitan, 2004). This is in contract to natural open spaces, which are those that are in their most natural state, and usually include wilderness areas and national parks.

‘Towards an Urban Renaissance,’ the final report of the United Kingdom's Urban Taskforce, places urban open space within the broader definition of ‘public space.’ Its definition of public space—including streets, squares, parks and less defined ‘common areas’—states that it should be conceived of as an outdoor room within a neighbourhood, which community members are free to use as places for sport and play as well as civic and political activities and walking and enjoying the outdoors. Most importantly, the urban taskforce states that public spaces are more likely to be effective when they create a direct connection between the space itself and the community that lives and works nearby (Urban Taskforce, 2002).
For the purpose of this study, the following definition incorporates aspects of these various designations and characterizations and states that urban open space\textsuperscript{12} is:

*A natural\textsuperscript{13} landscape area that can be either publicly or privately owned, and that is for all intents and purposes undeveloped or predominantly undeveloped within the urban edge. It should provide open space services\textsuperscript{14} and can include traditionally defined ‘green’ areas as well as less-traditionally defined ‘prospective’ areas.*

The variety of definitions of open space correlates to the way that it is valued and viewed.

### 2.4 Approaches to Viewing and Valuing Open Space

This literature review identifies four main approaches to viewing open space, each with its own interpretation of the variety of functions that open space provides. They are the economic approach, the development approach, the ethical or moral approach and the utilitarian approach, and are summarized below. Because each approach affects the way that open space is valued, each approach has very different planning, management and usages for open space. Of the four approaches described here, the economic approach is the most dominant in the literature, and therefore will be explored in the most depth. It is the approach often taken by planners and political leaders, as economic values and views seem to be more straightforward and clear-cut to understand and implement. However, as

\textsuperscript{12} From this point onwards, the term ‘open space’ will refer to ‘urban open space’.
\textsuperscript{13} The term ‘natural’ here refers to one that includes plant life and serves some ecosystem functions.
\textsuperscript{14} Please see section 2.8 ‘Open Space Services’ for details.
will be shown throughout this discussion of the various approaches, it is the economic approach which is most problematic.

2.4.1 Economic Approach

This approach views open space in terms of the economic benefits it can provide to society, and values it accordingly. These economic benefits are determined through both indirect and direct valuation methods which will be discussed in more detail in the subsequent paragraphs. Because open space is usually considered a ‘nonmarket’ environmental resource, which affects the valuation methods that are used in ascertaining its benefits.

Methods for valuing non-marketed environmental resources rapidly developed throughout the 1970s, and presently the estimation of environmental resource values is an important consideration in public investment, management, and in regulatory decision-making (Smith, 1993). In this way, Stirling (1993) points out that the economic valuation of environmental services is done in order to produce a neutral ‘yardstick’ that policymakers can use in creating policy. Once this yardstick is created, the economic benefits of developing open spaces, for example, can be measured against the economic values of the environmental services that these spaces offer. However, Fausold and Lilieholm (1999) highlight that, in contrast to the relative straightforwardness of the economic costs and benefits of development, values of natural areas are more often complex and difficult to measure. Because of the difficulty in assessing the values of the variety of services that natural areas offer, including ecosystem, social, cultural and
economic functions, these services are often not incorporated into economic valuation methods at all.

One way to counteract this tendency is to consider the different concepts of economic value in relation to open space and the various methods for quantifying these values. Widely agreed upon economic or monetary benefits of open space include market and enhancement values, production values and natural systems values. These values can impact local communities and economies in terms of fiscal impacts on municipal budgets, impacts from employment and tax revenues, as well as impacts from expenditures on activities while using open spaces (Fausold and Lilieholm, 1999; Luttik, 2000).

However, it is essential to also consider the indirect economic values in addition to these direct monetary values. These indirect values include the various amenities, social and psychological services that urban open spaces provide. For example, studies have shown that proximity to open space can lead to decreased blood pressure and less use of painkillers, as well as lower stress levels and anti-depressants (Atwell et al., 2005). Many authors\textsuperscript{15} argue that these indirect economic benefits should be accurately accounted for in policy making and integrated into evaluations of projects and developments. One way of doing this is to include within urban planning and management public valuation methods that assess users’ satisfactions and needs. This is critical as there could be substantial public health care costs in the future if the indirect

\textsuperscript{15} For examples, see Chiesura, 2004 and Stirling, 1993.
benefits of the psychological and health services that access to open space provides are removed (Chiesura, 2004; Thompson, 2002).

As environmental resources become increasingly scarce, the demand for accurate ways to measure their values will increase accordingly (Smith, 1993). Because many environmental resources provide services that are becoming less readily available, they are valued more highly as important economic assets. As urban open space decreases, its value will increase, as will efforts to conserve and preserve it (Fausold and Lilieholm, 1999: 307) Nevertheless, as mentioned previously, because the complexity of environmental phenomena cannot be accurately quantified and because stakeholders possess such a variety of perspectives, the implementation of economic valuation may actually remove important aspects of environmental decision-making from the public. This would mean that these decisions could then be made solely by a small group of business leaders (Stirling, 1993).

The nature of the economic approach means that it usually concentrates on those open space values that are of interest to the most vocal people, and of those, only values that can be expressed in monetary terms. It is this aspect of the economic approach which is most problematic because it means that there is inequality in what is valued and in who can use these spaces.

2.4.2 Development Approach

The development approach essentially views open spaces as options for future development. This approach is linked to the economic approach, in that it is the monetary
benefits of development that are valued, and it is an approach most often taken by developers and public entrepreneurs (Maruani and Amit-Cohen, 2007). Open space can be highly valued by developers, but it is usually for a very different reason than, for instance, ecologists value it. To developers, preserving open areas is done in order to increase the real estate value of the adjacent land by enhancing the aesthetic appeal of the surrounding landscape (Babbit, 2005). Although preservation of open areas may be advocated in a development approach in order to increase real estate value, it is more often the case that the economic benefits of developing open areas outweigh these considerations. However, development is typically irreversible and can depreciate in value over time. In contrast, permanently preserved open space is a non-depreciating asset with increasing benefits over time (Kritilla and Fisher, 1975 in Fausold and Lilieholm, 1999). Unfortunately, the development approach does not take this longer-term view. Fausold and Lilieholm illustrate this very clearly when they state, “in urban or urbanizing regions, where highest and best use is typically development, the open space value of land must be separated from its development value” (Fausold and Lilieholm, 1999: 308). Although there has been some limited success in environmental pricing, there is an inherent difficulty in attempting to price environmental services such as biodiversity or habitat protection, and thus what is quantifiable, such as development, will almost always win-out (Schmidt, 2008).
2.4.3 Ethical/Moral Approach

This approach views nature as having value independently of any utility to people (Fausold and Lilieholm, 1999). It is an approach that views the non-human life forms, such as animals, plants and other ecosystem components, as having rights to exist that should be respected regardless of the services they provide to people (Maruani and Amit-Cohen, 2007; Meadows, 1999; Schmidt, 2008). Nash (1989), in his work on the rights of nature and the history of environmental ethics, describes how the concept of ‘rights’ has evolved through time to now include animals, plants, the environment and more. He illustrates that it has been the case throughout history that whenever the concept of rights was extended, it was initially considered fairly radical, but with time these extensions of rights became widely accepted. It is thus argued that although the rights of nature are currently contested, in the future they will become normalized and accepted (Fausold and Lilieholm, 1999). Nash (1989) also states that advances in ecology have aided us in our appreciation of the intrinsic value of nature and natural areas. Likewise, Bengston (1994) discusses how social scientists have been observing a fundamental shift in environmental values within the past several decades. An early example of this shift can be found in Aldo Leopold’s (1949) work that expresses a bio-centric view through his ‘land ethic’, in which he states that there is no separation between people and their environments, but rather that they are merely a part of it. Under this view, no individual component, including people, are as important as the entire ecosystem.

With the ethical approach, by definition, natural values are invaluable, and therefore many authors argue that it would be morally wrong to attempt to place a
monetary value on them (Fausold and Lilieholm 1999). An additional aspect of the ethical approach is the view that contact with nature may have spiritual or metaphysical dimensions (Thompson, 2002). This raises important challenges to other views, such as the economic or development approaches, because these things are unquantifiable and intangible and therefore cannot fit with these quantitative based approaches. This more ‘ecocentric’ view of the environment urges a primary and deep respect for nature and ecosystems (Schmidt, 2008). Although the ethical/moral approach is not often used exclusively in urban planning and management, components of this approach are accepted by many and it has relevance to the ways in which we approach open space planning.

2.4.4 Utilitarian Approach

The utilitarian approach is one that values open space exclusively according to the benefits and services that it can provide to society (Schmidt, 2008). It views open spaces as service providers, and emphasizes the need to conserve a basic level of open space in order to continue the provision of these benefits and services (Maruani and Amit-Cohen, 2007). One of the most obvious of these values is natural systems value. Because open spaces support ecosystem functions with numerous direct and indirect benefits, such as micro-climate regulation and flood protection, this should serve as a justification for their preservation. However, although it is very difficult to assign a value to open space benefits and services, it can be argued that because humans cannot survive without them, the total value of ecosystem and open space benefits is infinite (Fausold and Lilieholm,
This approach to viewing open space is not likely to lead to comprehensive protection and maintenance of these spaces, simply because many open space values are not fully understood, and are not exclusively human benefits. The dilemma lies in this approach’s tendency to preserve only those spaces that can be readily identified as having human utility, which means that spaces with other types of value and functions are disregarded. For example, if the only open space functions that is valued are recreation or health functions, then all open space will be recreation and sport oriented, and other essential services, such as ecosystem and ecological functions, would be lost.

2.5 Historical Construction of Open Space

Although the concept of the urban park can be traced as far back in history as Mesopotamia, Egypt, Greece or Rome, this review explores only the modern creation of parks within the context of western culture in the past two centuries. Although the histories of urban open space creation are different depending on the country studied—for example, English, French and other European cities versus North American cities—some generalizations can be made in order to understand the modern creation of urban open spaces. It is also important to consider the British influences on the creation of parks in Pietermaritzburg and Msunduzi Municipality, as it is these influences which endure within the city centre of Pietermaritzburg.

Planning of open spaces is a relatively young field. Historically, a city’s growth was limited by the need for a surrounding of agricultural land, and thus open spaces were fairly close to the city centres and it was unnecessary to explicitly plan them into urban
centres. By the late 18th century in England and Western Europe, and particularly following the industrial revolution, there was an accelerated migration from rural areas to urban settlements, and the size of cities became much larger as their populations grew and the amount of land they occupied expanded. Inner-city residents became less likely to have access to open spaces, and conditions became crowded as poverty increased and disease spread (Aalen, 1992 in Maruani and Amit-Cohen, 2007; Schmidt, 2008). It was at this point that the idea of the public park emerged, particularly in England, Germany and France. The theory was that these spaces would be “breathing places for the metropolis”16 while also being interconnected so as to be accessible to all citizens. The green networks and parks that were created by Jean-Charles Alphand in Paris epitomize this ideal (Atwell et al., 2005).

In order to combat social stress and as a solution to the problems of lack of recreational areas and public amenities, public parks were established throughout the 18th and 19th centuries (Schmidt, 2008; Maruani and Amit-Cohen, 2007). The recognition of the importance of open spaces to the health of urban populations did much to fuel the creation of public parks systems. For example, because it was incorrectly believed that a leading cause of the first English cholera epidemic in 1832 was impurities in the air caused by high densities and urban decay, it was believed that public parks would purify the air and help to eliminate disease (Schuyler, 1986). In fact, the first use of the term ‘open space’ can be traced to the Select Committee on Public Walks, who first used the

16 Loudon, as described in Schuyler, 1986: 60.
term in 1833 in response to the recent cholera outbreak. The Committee informed the British Parliament through its report that recreational areas within the city centre were essential for urban residents and that a law should be enacted requiring towns to create public walks or parks (Turner, 1992; Schuyler, 1986). Throughout the subsequent decades, another function for urban open spaces was found—that of providing positive ‘social influences’ and ‘moral improvements’ by bringing people from all classes of society together for recreation and community activities (Schuyler, 1986: 65). The social reform movement is considered to have started the concept of modern urban planning as we now know it (Wilkinson, 1988). Although this moral impetus for parks creation has largely faded, public open spaces still provide essential social services by bringing together neighbours and helping to build communities.

During the 18\textsuperscript{th} and 19\textsuperscript{th} centuries, public parks and open spaces were often created ad hoc through donation of royal grounds and estates. In fact, many of today’s largest and most famous public parks and open spaces are due to the large estates of the past. The original purpose of these areas was as an escape from city life for the wealthy nobility and aristocrats. A modern example of this is Hyde Park, which is currently within the city centre of London. This area was originally a royal hunting park outside of city limits, but was made into a highly utilized public park during the 19\textsuperscript{th} century (Wilkinson, 1988). The origin of many other public parks and open areas were common grounds around English cities, which became formal parks throughout the 19\textsuperscript{th} century (Wilkinson, 1988). In addition to the social reform movement inherent in early park
creation, the public park was also created as a meeting place for people of all different backgrounds. In this way, parks were seen as fostering a ‘social freedom’ or democracy, whereby, “all classes assemble under the shade of the same trees” (Downing, 1851 as quoted in Schuyler, 1986). In this way, the park was seen as a way to foster democracy and to create a more unified nation (Thompson, 2002; Schuyler, 1986).

However, acknowledgement of the value of open space had not yet translated into comprehensive planning for open space within cities. It was only as urbanization continued to increase throughout the late 19th and into the 20th century that the necessity of conserving open areas within the urban centre was recognized, and planning for open spaces became an integral part of land-use planning (Maruani and Amit-Cohen, 2007). In Britain, Ebenezer Howard’s garden city model emerged, and quickly spread to other countries in Europe (Thompson, 2002; Hall and Ward, 1998). Currently, the garden city model is considered a cornerstone of open space planning and of urban planning more broadly. Shape related models such as green fingers and greenways originated from the garden city model (Maruani and Amit-Cohen, 2007).

North American open space planning took a different route, because American cities did not have large aristocratic estates or formal common grounds surrounding city centres. This created a certain sense of urgency, as many early American cities had, in effect, absolutely no public parks or open spaces. With extremely rapid growth in these urban centres, it became vital that urban planning incorporate open space and thus early American cities had very deliberately designed open space systems. The planner
Frederick Law Olmsted and his design of New York’s Central Park in the 1850s is an early example of this type of urban open space planning in the United States (Schuyler, 1986).

Throughout this period the conception of nature shifted. Coates (1998), in his description of historical western attitudes towards nature, describes a shift from a romantic and aesthetic view to a functional attitude related to recreation, health and psychology. It was not until after the Second World War that the notion of an all-embracing urban green space truly emerged (Clark et al., 2006). This had much to do with rising concerns about the environmental and social costs of the rapid urban growth of the 1960s and 1970s, and it was during this time that the modern environmental movement emerged (Bengston, 2004; Schmidt, 2008). More recently, and particularly within the past thirty years, an ecological view has emerged that focuses on the importance of biodiversity and ecosystem health (Atwell et al., 2005). There continue to be contesting views regarding nature, open space and public space, and a recurring feature of urban public debate revolves around the creation, redevelopment and conflicting uses of green space within cities (Clark et al., 2006).

This historical creation of open spaces and parks affects the current management of these spaces. As such, a historical understanding of urban open space origins and design concepts are integral to current open space planning and design and may help urban planners and municipalities to create more functional and effective open spaces. It is important to ensure, however, that a focus on the history of specific spaces does not
affect the utility of these spaces currently. Duffield and Walker (1983) have found that planners often discount the importance of managing open spaces according to local community requirements and preferences, because they often view the spaces as historic legacies that should be maintained as is. It is hoped that the historical basis of open space planning helps to ground current open space planning and assist planners to move in new and dynamic directions, according to a city’s and community’s needs. This type of historical and contextual planning of open spaces is particularly necessary in Msunduzi because of the legacy of apartheid and spatial planning, which will be discussed further in Chapter Five.

2.6 Types of Open Space

The sources investigated in this review categorize types of open space very differently. Table 1 summarizes the six most common classifications as well as their respective characteristics, with examples of each, adapted from categorization set out by both the JMOSS report (2002) and by Maruani and Amit-Cohen (2007). The types of open space are categorized according to their spatial locations, their levels of use and their levels of intervention (i.e., from the most undisturbed to the most highly developed). For example, public spaces such as paved squares and other areas are representative of natural ecosystem spaces that have high levels of interference and may provide very few ecosystem functions, but they may provide high levels of social and cultural functions. The other extreme of this is wilderness areas which likely have little to no interference or development and provide extremely high levels of ecosystem function (Maruani and
Amit-Cohen, 2007), but may not provide the same social functions as other, more developed spaces. Within this typology prospective areas are also important, which Thompson refers to as “loose-fit places” (Thompson, 2002: 69). These should be considered as important additions to the more traditionally recognized types of open space, such as formal parks or wilderness areas. Thompson (2002; 2004) finds that these places are also particularly relevant for, and highly utilized by, local youth, for social and cultural development. Different types of open space have different predominant functions, which can fall either into providing services to society or conserving natural values. This is clarified by demonstrating which category the functions and the types of open space fall into.

**Table 1: Types of Open Space**

<table>
<thead>
<tr>
<th>Type</th>
<th>Characteristics</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urban Open Space</td>
<td>Within or adjacent to urban built-up areas, often has very high level of intervention. It is readily accessible, often has recreation and intensive activities</td>
<td>Botanical gardens, undeveloped ridges, nature trails, urban squares, community gardens, local parks</td>
</tr>
<tr>
<td>Ecological</td>
<td>Areas of “high” conservation value with 'high' habitat diversity and with low disturbance (as determined by specialists in the field)</td>
<td>Nature reserves, bird sanctuaries, stream/river habitat, water bodies, national parks, forests, waterside areas, undeveloped ridges</td>
</tr>
<tr>
<td>Agricultural land</td>
<td>Agricultural lands in urban margins and rural areas. Often has medium to low intervention, depending on the type of agriculture</td>
<td>Cultivated fields, orchards and plantations</td>
</tr>
</tbody>
</table>
Wilderness  | A distance from the urban centre. Limited to no intervention, but inaccessible for most people because of distance or topography reasons | High mountains and cliffs, areas with extreme climate
---|---|---
Social  | Places for neighbours and community members to interact. | Sports facilities, recreational facilities, places of worship, zoological gardens
Prospective  | Often degraded open space areas. These have the potential of becoming effective open spaces after rehabilitation. | Refuse sites, mine dumps, slime dams, landfill sites, mining land and quarries, canals, abandoned railway lines

*Adapted in part from Maruani and Amit-Cohen, 2007 and JMOSS, 2002*

Having this kind of open space typology is important because it helps planners to recognize and understand the variety of services and functions that different open spaces perform. Because not all open spaces are identical and they do not provide the same services or quantities of environmental services, being able to categorize these different types is essential in creating an effective open space network (Scottish Executive Social Research, 2005). A diversity of open space types is essential in creating a well functioning open space system. The more diverse the types of open space in a city are, the more productive is an open space system in providing services (eThekwini, 2002). As shown, different types will fulfill different functions according to a community’s or a city’s needs and circumstances.

### 2.7 Open Space Planning Models

A wide variety of open spaces planning models exist, each tailored to fit into distinct urban plans. Some of the most common and general planning models will be explored here. Many sources identify two main approaches to planning open space—the demand
approach and the supply approach (Maruani and Amit-Cohen, 2007; eThekwini Municipality, 2002). The demand approach sees open spaces as a way to fulfill the population’s needs and demands for recreation, environmental services and amenities or a certain level of environmental quality. In this approach, the open spaces should relate closely to the values and preferences of the target population. The demand approach is often used by urban planners and geographers, and usually supports a certain type of open space, particularly gardens and parks that are in close proximity to urban areas, or streams and rivers near industrial facilities. The supply approach differs in that it prioritizes conservation. It typically focuses on the protection of ecologically sensitive landscapes and natural values. This approach is most often associated with ecologists and conservationists and a moral/ethical approach (Maruani and Amit-Cohen, 2007).

However, the supply approach is also often taken with the utilitarian intent of supplying different quantities and types of environmental goods and services to users (eThekwini Municipality, 2002).

The planning model that is used depends on whether planners take a demand or supply approach, as well as whether they view open space from an economic, development, ethical or utilitarian approach. Each of the subsequent planning models falls into one of these two categories, although they may use both demand and supply principles. The approach depends on many factors, including the type of open space under consideration as well as the functions that it may serve (i.e., ecological, social or community etc.). The six planning models identified in this paper are: opportunistic
model, space standards model, park system model, shape-related models, landscape related models and ecological determinism models.

### 2.7.1 Opportunistic Model

This term refers to the system of open spaces that is formed more by chance and opportunity rather than as part of a systematic planning process (Maruani and Amit-Cohen, 2007). Examples of this type of model include some of the largest public parks of many major European cities—particularly Paris—where lands were donated to the public by wealthy families or by the monarchy (Schenker, 1995). Related to the opportunistic model is the SLOPE (space left over after planning) pattern of open space. After a city’s land is zoned for all other uses, any ‘left over’ land is allocated for open space purposes. These residual lands usually make very poor open space areas, as they are often small, irregular or inaccessible (Maruani and Amit-Cohen, 2007). Although the opportunistic model can result in some very successful open spaces, such as Regent’s Park in London, it is not a comprehensive or systematic model, and does not ensure that an effective open space system results. Although it can be the result of a demand or a supply approach, since it is created haphazardly, it is often not approached with either forethought.

### 2.7.2 Space Standards

The basis of this model, which comes from a demand approach, is the premise that a certain minimal size of open space is necessary per person. Therefore, open space and the user-population are quantitatively matched in order to effectively meet the needs of the urban population. An example of this is the standards that the city of London had
for many years, whereby 2.4 hectares of open space was allocated per 1000 residents (Turner, 1992). This approach to allocating open space was first suggested by Sir Raymond Unwin at the turn of the 20th century, and quickly spread around the world as an easily implemented planning tool (Turner, 1992). Although it is easy to put into practice since it is based only on quantitative data, it does not taken into account the complexity of social and ecological systems. In order to combat this, newer, more sophisticated models have been developed which do take into account aspects of users’ needs and open space types (Maruani and Amit-Cohen, 2007: 5). However, there is still the danger of this type of system overlooking high-quality landscapes and cultural and heritage values of particular sites. It does not taken into account all of the important services that open space provides.

2.7.3 Shape Models

These models appeared at the end of the 19th century in Britain as a way to control urban sprawl and growth which was threatening rural and agricultural areas. It was first espoused by Ebenezer Howard with his garden city plan for British towns and cities (Howard, 1985). The idea was to create a ‘greenbelt’ of natural areas around the city that served the dual purpose of halting growth and providing access to natural areas for the urban populace. Although it has been found that the greenbelt concept has not stopped urban growth, it has been very useful in preserving open space (Maruani and Amit-Cohen, 2007). The most common shape model examples are greenbelts, green hearts, green fingers and greenways, and are so named based on their shapes. Green heart
models contain a core area of open space at the centre of the city, green fingers are radial areas of open space that go from the centre of the city outwards, and greenways are linear shaped open spaces that usually correspond with either constructed surfaces such as roads and railways, or natural elements, such as streams or ridges (Taylor, 1995; Turner, 2006). Shape models are used alone and often in combination with other models, particularly quantitative models. Because they do not necessarily take population and users' needs into consideration, they are most effective when used in combination with other models. Although shape models can be used by both a demand and a supply approach, they have historically been demand focused.

2.7.4 Landscape Models

The landscape planning approach began to be used as early as the 19th century in order to preserve highly valued landscapes, especially mountain landscapes and views of streams and waterways near city centres (Aelan, 1992). However, since these scenic landscapes are often outside of highly populated areas anyway, this model can be seen as having limited applicability. More recently, there has been a drive to recognize rural agricultural areas as highly valued landscapes (Cook, 1991), which means that this model may prove more useful in the future as many rural open space areas disappear due to encroaching urbanization and the move towards ‘country living’. It is a supply approach in that the main function is to preserve and conserve landscapes of high value.
2.7.5 Park System Model
This approach began towards the end of the 19th century, whereby a system of open spaces interconnected throughout the city became a popular way to connect a city’s parks. This demand approach model is most often used in urban settings, where interrelated parks and open spaces are connected through green trails in order to allow for continuous movement through the city (Maruani and Amit-Cohen, 2007).

2.7.6 Ecological Determinism
This approach allows the natural characteristics of the land to determine the type of planning and development that will take place. Because this supply approach begins with collecting and analyzing large amounts of data regarding the proposed area, it requires high levels of expertise and experienced professionals. Once the areas of high ecological value are determined, planning and development take place in the surrounding area. This approach is particularly useful because it ensures that areas of high environmental and ecosystem value are preserved, but it is expensive and can be complicated to implement, and it does not guarantee that other values—such as social and cultural values—are taken into consideration (Hough, 1984). Perhaps it would be most useful to have an ‘open space determinism model’, where areas of high open space value would determine the planning process that is used. This will be described in more detail in later chapters with particular reference to metropolitan open space systems (MOSS).

2.8 Open Space Services
There are numerous goods and services that open space supplies, which can be categorized as environmental, economic, social, educational, health, psychological,
scenic and scientific. The particulars of each of these services are outlined in Table 2.

From a utilitarian approach, these services can be further sub-categorized as providing direct, indirect, option or existence benefits (eThekwini, 2002). Direct benefits are those services that can be directly used or consumed, such as providing water for consumption or plants for food. Indirect benefits are services that are not directly consumed or used, but are still beneficial, such as increased real estate values or flood protection mechanisms. Option benefits are indirect and are those services that are valuable because of the future opportunities that they may provide, such as plants that may offer as yet unknown medicinal properties. Similarly, existence benefits are indirect services that are created by the existence of undeveloped and ‘natural’ places. The benefits of these are that they offer comfort and feelings of well-being and sense of place by a space’s sheer existence. It is important to note that these services often act in conjunction in order to provide a variety of benefits. Although it has been done for clarity’s sake in this table, it is often not possible to separate one service from another. For example, attempting to provide social or cultural services, such as the provision of space for spiritual usages, is not possible if a healthy ecosystem is not also present. The impacts or effects of one service are usually closely tied to the effects of another service.
Table 2: Open Space Services\textsuperscript{17}

<table>
<thead>
<tr>
<th>Services</th>
<th>Effects/Impacts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environmental/Ecosystem</td>
<td>Gas regulation, microclimate regulation, disturbance regulation, water regulation, water storage and supply, erosion control, soil formation, nutrient cycling, waste treatment, pollination, biological control, habitat nature conservation, air and water purification, wind and noise filtering</td>
</tr>
<tr>
<td>Economic</td>
<td>Reduction in costs of pollution control and prevention measures (through air purification services), increase in attractiveness of the city (leads to increased tourism revenue and employment), increased real estate values</td>
</tr>
<tr>
<td>Social/Cultural</td>
<td>Promotion of social encounters, equality and social integration, reduction of aggression, supports urban renewal and provision of space for active sport, play, recreation, leisure. Place to celebrate cultural diversity and assists in assimilation of values and moral attitudes (in terms of the relationship between people and nature), combines green space and civic space and represents a democratic forum for citizens and society, shaping the cultural identity of an area. Neighborhood social ties (NSTs) substantially depends on informal social contact which occurs these spaces</td>
</tr>
<tr>
<td>Educational</td>
<td>For study and exploration by students and researchers at all education levels provides a sense of aesthetic and historical continuity, crucial to children’s social and cognitive development</td>
</tr>
<tr>
<td>Psychological/Restorative</td>
<td>Provides a sense of refuge and freedom; relaxation and reduction of stress; enhance contemplativeness; provide a sense of peacefulness and tranquility—restorative function, supports place building, urban renewal</td>
</tr>
<tr>
<td>Health</td>
<td>Decreased blood pressure, less use of painkillers, lower stress levels, increased overall fitness levels</td>
</tr>
</tbody>
</table>

\textsuperscript{17} Created in May 2008 with reference to: Durban Metropolitan, 1999; Roberts, 2002; Chiesura, 2004; Acharya and Bennet, 2001; Maruani and Amit-Cohen, 2007; Scottish Executive Social Research, 2005; Thompson, 2002; Kaplan, 1984; Bell et al., 2003; Atwell et al., 2005; Giles-Corti et al., 2005; Schmidt, 2008.
<table>
<thead>
<tr>
<th>Scenic/Landscape</th>
<th>Provides a sense of aesthetic and historical continuity, increased attractiveness of city, urban renewal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scientific</td>
<td>Place for research to take place; location of genetic resources including unique biological materials and products (i.e., medicinal plants, genetic materials)</td>
</tr>
</tbody>
</table>

### 2.9 Metropolitan Open Space Systems

A Metropolitan Open Space System (MOSS) is essentially the systematic categorization of all open spaces and areas within a city. The South African Metropolitan Spatial Development Framework (2000) defines it as an, “inter-connected and managed network of open space, which supports interactions between social, economic and ecological activities, sustaining and enhancing both ecological processes and human settlements.” A MOSS consists of both public and private spaces, specifically developed natural spaces, undeveloped spaces, disturbed ‘natural’ spaces, and undisturbed and pristine ecological spaces. One of the goals of MOSS programs is that the final open space system is the result of a planning process that is community driven and community-serving (JMOSS, 2002). The creation of a MOSS means that open space is valued in its own right and is planned into the urban environment.

An essential aspect of a MOSS is having an effective and functioning open space system. Open space systems are defined as, “networks of different types of open space which form and function as a coherent whole” (Corday, 2006: 8). They often include corridors or greenways that connect diverse habitats and open areas, so that spaces are interconnected rather than isolated units (Cook, 1991). Although individual spaces offer
many services, it is the wider structure that well connected open space networks create that supports the widest variety of goods and services (Scottish Executive Social Research, 2005).

The concern is that without a comprehensive classification and cataloguing of open space within a city, urban open spaces that are not already designated and preserved will be lost in the push to develop and grow too rapidly. There is a need for Msunduzi Municipality to create a comprehensive MOSS program that includes a diversity of open space types and services.18

2.10 Perceptions and Valuation of Open Space

Perceptions and understandings of ‘the environment,’ and thus of open spaces and natural areas, heavily influences the way that they are managed and developed (Magi, 1999). Experts make development and policy decisions based on their own perceptions, and also those of community members. However, the perceptions of experts and policy-makers can often be very different from community members and those who lack formal training in a specific field (Kaplan, 1985; Thompson, 2002). Kaplan (1985) saliently argues that neglecting the general public’s perceptions and valuations of the environment may result in planning approaches and decisions that are inconsistent with a community’s needs and desires, although they may seem applicable at first if these perceptions are not explored. Thus, it is important that open space plans and programs be participatory throughout the planning stages, so that they are relevant to users. Evidence from research

18 Please see Chapter Six for recommendations and for more information.
in environmental psychology and landscape studies demonstrates that people’s perceptions and attitudes are influential in land use patterns and transformations (Balram and Dragicevic, 2005). Studies in environmental psychology have found that attitudes towards urban open spaces are constructed through a mixture of value orientations, demographics, knowledge and context (Blake, 2001 as stated in Balram and Dragicevic, 2005). By incorporating individual attitudes of users at an early stage of planning, plans are more comprehensive and effective.

A study by Burgess et al. (1988) regarding popular meanings and values for open spaces within the city found that a high percentage of respondents most valued open spaces that contribute to and enhance the positive aspects of the urban community. This includes the perceived sociability and cultural diversity of these spaces, and the variety of recreational opportunities and visual landscapes. This study identified a greater need for more diversity of the natural settings of open space areas and of the social and recreational facilities within these spaces. Studies have also found that support for urban green spaces is moderated by income (Balram and Dragicevic, 2005). Income and socio-economic factors must be taken into consideration when creating open space plans and priorities. This is of particular relevance for the Camps Drift case explored in this thesis.

Balram and Dragicevic’s (2005) study also found that urban open space plans that fail to include citizen perceptions will not be widely accepted or understood, and are thus unlikely to be successful. By planners working with communities, it will also become evident when negative perceptions exist and also how to combat these. Studies (Chiesura,
2004; Thompson, 2002) have shown that there can be feelings of insecurity associated with open areas, due to fears of crime and vandalism. Empirical evidence has actually shown that residents living near open spaces and greener surroundings actually show lower levels of crime and less aggressive and violent behavior. When planners recognize these negative perceptions of ‘deserted’ and ‘un-policed’ space, they can work to create safer open space areas where residents feel comfortable and secure.

Age is also a factor in perceptions. It has been shown that different age groups have different motives for visiting open areas and parks and that they participate in very different activities while there (Chiesura, 2004). Urban open spaces are valued in different ways depending on age and activity levels. Hume et al. (2005) in a study regarding the relationship between children’s perceptions of their home and neighborhood environments and their levels of physical activity, found that children living near a park or open space are more likely to be physically active. Sokuto’s (1994) study of the view of South African youth on urban open spaces found that key socio-economic factors can influence the perception of South African youth towards urban open spaces, including whether they were unemployed or students. The results show that there is a sense that natural open areas need to be nearby and accessible, but that this is overshadowed by the housing shortages crisis.

2.11 Summary

The literature shows that there are numerous services, functions and purposes of open space. These can be reduced to three broad, cross-cutting purposes, which are the
importance of open space for ecological health, for urban communities and for the economy. If open space can meet these three purposes then it is most likely effective and quality open space. Because of the broad range of planning models that exist, municipal planners must choose which fits most closely with the objectives and goals of a specific city. This is particularly relevant to Msunduzi Municipality, as will be discussed throughout Chapters Four and Five. However, first the methods that were used throughout this research will be explored in the following chapter.
Chapter 3: Methods and Methodology

3.1 Introduction
This research follows a case study approach, whereby a local case study of open space development in Msunduzi is used to illustrate current open space policies, plans and priorities for the municipality. This chapter provides an overview of the case study approach, as well as the appropriateness of choosing this approach for this thesis, and a review of the implementation of the research. The field work that was undertaken, the interview process that was followed, the selection of data to be analyzed and the limitations of this method are all discussed.

3.2 Case Study Approach
A case study approach was selected for this research because it offered the ability to connect the micro-level experience of one particular open space development with a macro-level understanding of open space planning and policies throughout the municipality. The case study of Camps Drift is instrumental in nature, as it is used in order to provide insights into the broader issue of local open space planning and development. In instrumental case study research, the case study is of secondary importance to the main research goal, and serves as an example of the broader issue as well as a supportive role in providing background information (Berg, 2004). Following this approach provided a better understanding of current open space planning and policies within the municipality, while also serving to illustrate the current method of developing open spaces in the city.
The case study approach is particularly useful for this research because, as Berg (2004) states, this method “is able to capture various nuances, patterns, and more latent elements that other research approaches might overlook” (251). The case study of Camps Drift has allowed for discovery of many issues, such as a lack of communication with stakeholders and improper attention to pressing environmental issues, which may otherwise have been overlooked when considering the broader open space plans. An organizational framework of three objectives was also designed prior to beginning field work in order to guide the research, but it remained flexible and adaptable depending on the results of the research. Taking an exploratory tactic, the three main objectives of the research were not finalized until after the field work and data collection had been undertaken, as the data themselves led to the ultimate research objectives. This method of allowing the data to help lead the researcher has been shown to be useful in drawing conclusions that may otherwise have been missed and is an important element of qualitative research (Kirby et al., 2005).

A criticism of the case study approach can emerge if findings are overly generalized beyond the scope of the research and the unit of analysis (Berg, 2004). In order to avoid this possibility, the scope of the research was kept relatively narrow, based on understanding the current state of open space planning and policies in Msunduzi Municipality using the unit of analysis, the Camps Drift waterfront project, to further illustrate and understand this central objective. However, it remains useful to relate
insights from the case study to the broader literature and theory of open space in order to expand this area of research.

3.3 Research Implementation

3.3.1 Field Work

Before conducting the field research, familiarization with South Africa and Msunduzi Municipality was necessary. Having a strong understanding of the contextual background before beginning research will lead to a greater understanding of the findings at a later date (Berg, 2004). A thorough review of relevant literature and of significant historical periods, with a focus on the province of KwaZulu-Natal, was conducted. It was then possible to formulate a research topic that filled a need within the larger project of ‘Urban Ecosystems and Human Health in South Africa’ that was also contextually informed. Urban open space is a relevant aspect of urban human health, and although there is a strong drive to create comprehensive urban open space systems as part of the South African Cities Network, there has not been a lot of research into how and whether these open space goals are being met. This is particularly the case in Msunduzi, because although it is a provincial capital city, much of the focus in both research and policy has been on larger cities such as Cape Town, Durban and Johannesburg. Therefore, a study of open space and ‘quality’ open space standards and indicators, with direct reference to the Msunduzi Municipality, is relevant to the ‘Urban Ecosystems’ project and to the municipality.

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19 For examples see Durban Metropolitan, 2002 and JMOSS, 2002.
In addition to general South African background literature, open space and place literature was examined before beginning field work. This involved studying theories of urban space, open space, environmental perceptions, and environmental health from books, journals, local reports and government documents that were available online.

The field research component consisted of residency in Msunduzi from May-August 2007, during which time the primary data came from key informant interviews as well as from an exhaustive review of literature from the field. This literature included published journal articles and books, and 'grey' literature NGO and government reports, newspaper articles and unpublished reports, documents and theses. An extensive review of all references to Camps Drift and to the waterfront development project from 1982 until May 2008 in the prominent local daily paper ‘The Witness’, as well as references to current open space developments elsewhere in the city, was conducted. Municipal reports, particularly current Spatial Development Frameworks, Integrated Development Plans, and MOSS conference reports from Durban and Pretoria, that were only available in print from local sources, were also reviewed.

3.3.2 Interview Process

Semi-structured conversational style interviews were conducted from June-August 2007 with relevant stakeholders and those knowledgeable of the Camps Drift case study. The interviewees came from six key groups: the municipality, the provincial government, local NGOs, recreational clubs, the media, and relevant business groups. The respondents were chosen based on their knowledge of the case study area and of
open space issues, as well as their positions within various appropriate organizations. A total of twelve interviews were conducted: four municipal workers, three NGO workers, one recreational user, two provincial employees, one journalist, and one business employee. The sample size (n=12) was based on the availability and willingness of participants to be involved in the process. As is discussed in the limitations section, there were several vital stakeholders and concerned parties that were not interviewed due to a lack of willingness to participate and an inability to contact them. Of the key informant interviews conducted, 5 were digitally recorded and transcribed in full, 6 were taken with considerable notes (due to respondent preference), and 1 interview was conducted over the phone due to distance. The approximate lengths of the interviews were between 45-60 minutes (M1, M2, N6, N7, R8, P9, J12), but one went as long as 90 minutes (B11) and some were as short as 20 minutes (P10, M4, M3). They took place most often at the respondents’ offices; however, one took place at a local coffee shop where the interviewee felt most comfortable.

The semi-structured style of the interviews was chosen because they allowed the respondents to choose which facts they felt were most important and what information should be relayed to the researcher. This method has been found to be highly effective in obtaining information that might not have immediately been evident otherwise (Kirby et al., 2006; Taylor and Bogdan, 1998). It also had the added effect of increasing the respondents’ ease and willingness to discuss the topic, because they felt able to lead the discussion if preferred. Although an interview guide was used (see Appendix B), the
The conversation tended to evolve organically throughout the meeting, depending on the respondent’s interest and background. The interview guide did, however, provide enough structure as to allow for inter-interview comparison during the analysis stage. In some cases, respondents provided information that seemed at first not to be directly related to the case study, and some respondents also wanted to use the interview time to propose suggestions for open space policies that they hoped the researcher would forward to the Municipality for consideration. This flexibility in what was discussed was in fact quite helpful, because it provided additional background information about the respondents’ interests and perceptions regarding the development project and Municipal policies, which have greatly contributed to the research findings.

The key informant interviews required and received ethics approval from Queen’s University for Non-Medical Research Involving Human Subjects (see Appendix A). A letter of information was provided to all interviewees at the start of the interview, stating that their names would not be released and that a digital recording of the meeting would take place at their discretion. Several respondents preferred not to have the interview recorded, and did not wish to be identified in the research. Therefore, official titles and names are not used in this thesis and all transcriptions remain confidential with only the researcher having access to them.

### 3.4 Selection of Data and Analysis

Since many of the interviews were transcribed in full, and the review of all grey literature was quite in-depth, the result was a profusion of documented information. It
was thus necessary to select and use only the information which was most pertinent to the emergent research objectives. Analysis focused around the research objectives and in finding answers to the questions that were posed as part of these.

The first stage of data analysis involved coding of all interview data into themes that corresponded to the original research objectives. The objectives were then refined to the themes and categories that emerged from the interview coding process. As the objectives became firmer, I was able to revisit the grey literature with a focused reading and review and extract the pertinent information that fit within the research objectives. Throughout the coding and review process, it was necessary to consistently return to the objectives so as not to become disengaged from them and to identify themes that were out of context. Steadily returning to and reevaluating the central intention of the research and the resultant themes led to stronger and more focused objectives and analysis. This is advocated in the literature because it keeps the researcher, and thus the research, focused while remaining open to surprises or important new issues in the data (Berg, 2004).

3.5 Limitations of Methods

Although the case study approach provided numerous benefits to the research, there were some limitations associated with this approach and with the key-informant interviews.

As previously mentioned, the case study approach can encourage an overgeneralization of information across the research focus and the unit of analysis. This potential problem was mitigated by remaining cognizant of this issue while analyzing the
data as well as by keeping in mind that generalizability is not the goal of this research approach (Kirby et al., 2006). For example, the researcher kept in mind the knowledge that the Camps Drift case study is highly specific and is not the identical to, for example, the Ashburton open space development, which was occurring at the same time.

A limitation of the key informant interviews involved who was interviewed. The respondents are not a comprehensive survey of everyone who could provide significant information and resources to this research; rather, they are those who were available and willing participants. Several key stakeholders are missing from the interview process, particularly members of the Oceanspray Development Consortium who are proposing the Camps Drift development, as well as members of the environmental consulting firm, Udidi Consultants, who performed the environmental impact assessment of the case study. The Oceanspray Consortium was contacted three separate times, by both email and telephone, and finally by a personal visit to the local office, which had closed by this stage. Udidi Consultants were not at liberty to discuss the Camps Drift project and could not spare an employee to discuss environmental consulting on a more general basis with me at that time.

An additional limitation regards the methods used to record the interview information. Some interviewees did not feel comfortable with digital recording for personal or privacy reasons. In-depth notes were taken, but some information can be missed through this process. Misinterpretation of the information can also occur when reviewing the notes at a later date, especially as pertains to direct quotes. In order to
mitigate this as much as possible, direct quotes that I felt certain were particularly relevant were referred back to the interviewee after the meeting in order to ensure they were correct. Also, some of the interviews, where appropriate, were attended by a research assistant who also took notes, which were later compared with the researcher’s notes. Because of the relatively small group of stakeholders involved in the Camps Drift project, confidentiality, rather than anonymity, was assured. This is quite common when research takes place within a small study area (Kirby et al., 2006).

A final limitation regards knowledge levels regarding the case study and its current stage of development. Information between interviewees varied about whether final approval had been given or not and how far along the development was and what exactly it would entail. Because the full official development proposal was suppressed and not yet open for public comment, much of the information came from newspaper articles and word-of-mouth. There were also diverse understandings of open space services among respondents. Some respondents had a much more limited understanding of the benefits of urban open space and of other subject matter, such as the water quality of the Duzi River. Some respondents’ knowledge of the Duzi water quality was quite exhaustive, while others could only determine water quality through visual sightings of the river. The diversity of understandings of these issues meant that it was more challenging to make comparisons between respondents in the analysis stage.
3.6 Reflexivity

Reflexivity is defined as the examination of people’s social reality, including the researcher’s social context (Kirby et al., 2006). Because the key-informant interviews that were conducted were dynamic and flexible, the data acquired necessitated interpretation by the researcher. These interpretations are affected by the researcher’s social context and background. Although it is impossible to eliminate all possible misinterpretations from this, I attempted to remain cognizant of this throughout the research, particularly during key-informant interviews. As previously discussed, I conducted extensive pre-departure review of relevant literature and contextual information as well as carefully considered the research methods and interview questions that I would employ. During the analysis of the data, I attempted to use as many direct quotes as possible in order not to misrepresent respondents’ contributions or misunderstand their original thoughts.

3.7 Summary

This chapter discussed the methods used in the research of urban open space in Msunduzi Municipality and outlined the case study approach that was used to examine the Camps Drift waterfront development project. The three months of field research that were conducted in order to collect key informant interview data and all relevant grey literature are reviewed as well. In addition, the methods of analysis and the limitations of the methods and methodology used are all discussed. The following chapters present the contextual background of the Msunduzi Municipality and the findings and analysis of the case study of Camps Drift and local open space planning.
Chapter 4: Contextual Background

4.1 Introduction

The purpose of this chapter is to give a brief background of the Municipality of Msunduzi and the Msunduzi River to provide context for the case study that will be discussed in Chapter Five. This chapter also discusses the legacy of apartheid and its effects on the environment, environmental planning in South Africa and open space planning. In addition, there is a brief overview of some of the most recent and relevant environmental policies and acts, including the South African Constitution and the National Environmental Management Act (NEMA).

4.2 Msunduzi and Pietermaritzburg

Although a comprehensive description of the history of Pietermaritzburg and the Msunduzi Municipality is beyond the scope of this thesis, a brief overview is necessary to give some background to the Camps Drift case study and to aid in understanding open space planning within the municipality.

Historically, Pietermaritzburg was settled in the late 1830s and became the capital of the British Colony of Natal in 1856 (SACN, 2006). Today, the city of Pietermaritzburg is the provincial capital of the South African province of KwaZulu-Natal. The municipality of Msunduzi is organized around the Pietermaritzburg city centre. The municipality was created after the 2000 elections, when five previously independent areas were amalgamated to create a large urban area under the jurisdiction of a single council (see Figure 3). The re-demarcation process occurred in order to make South Africa’s
cities more efficient post-apartheid. During the apartheid era, what is now the Msunduzi Municipality had numerous councils and leaders for different townships and areas of the city, which was a highly inefficient system of governance. The implications of this change have created many challenges for the city. The municipality now incorporates the city of Pietermaritzburg as well as the suburbs of Msunduzi, Ashburton, rural Vulindlela, Claridge and Bishopstowe. Its size is now approximately 650 km² and it has a population of over 616 000 people. The municipality consists of thirty-eight wards and contains areas that are urban, peri-urban, rural and agricultural (MIDP, 2002: 8). Its proximity to Durban, the Drakensberg mountains and the spectacular Midlands, as well as its position as one of the best preserved Victorian cities in the world, means that it has a strong tourism sector.

Currently, some of the key issues facing the Municipality are a high unemployment rate, estimated at more than 35%, poor living conditions in terms of lack of formal shelter, sanitation and municipal services, and a very high HIV/AIDS infection rate (MIDP, 2007; South African Cities Network- SACN, 2006). The municipal budget is extremely strained at R1, 750 (approximately CA$250) per capita per annum and there is difficulty in maintaining current services and expansion to un-serviced areas, particularly in the poorer township areas. All of these issues must be dealt with in the coming years in conjunction with the issues of a shrinking municipal budget and a growing urban population (SACN, 2006).
Geographically, the location of the municipality within the Msunduzi Valley and surrounded by hills on all sides, along with a weather pattern of relatively dry months from June-August and short but high volume thunderstorms throughout December-February, make it susceptible to environmental hazards such as flooding, erosion and slope instability (Vogel, 2000). This is particularly relevant to the Camps Drift case study area, as it is a floodplain region and the Msunduzi River frequently experiences flooding of its banks (Umgeni Water, 2007).
4.2.1 The Msunduzi River

The Msunduzi River, also known as the ‘Duzi’, flows through a highly urbanized valley of the province as well as through the city of Pietermaritzburg. It then joins the Mngeni River which flows through Durban and into the Indian Ocean. As one of the major tributaries of the Mngeni, it contributes significantly to the water quality of this river as well. The Duzi rises just outside of the municipal boundaries, near the township of Elandskop and then flows eastward through rural Vulindlela, Henley Dam, Edendale and then finally through the city centre of Pietermaritzburg (See Figure 4). The total catchment size of the Duzi is 875km² and its tributary length 115km (Water Research Commission, 2002).

In the upper catchment, there are urban areas in the vicinity of Edendale and Imbali, but the rest of the area is dominated by subsistence cultivation and rural developments. In 2001, the population of the upper catchment area was 278 000. The water quality in the upper Msunduzi is considered fair20 but has some turbidity and fecal contamination, particularly in the Edendale and Imbali areas.

The Duzi is dominated by the urban sprawl of the city centre and the municipality, which is at an altitude of 750m. The whole area is a mix of formal city, residential and industrial suburbs and informal housing developments.

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20 The classifications of ‘natural’, ‘good’, ‘fair’ and ‘poor’ are used in correspondence with the same terms from the “South African National Biodiversity Assessment Report” (SANBI, 2005), natural being the highest level of river health and poor being the lowest level.
Camps Drift is where the river enters a canalized reach, and then passes through the rest of the city in a narrow channel.\textsuperscript{21} The 2002 KwaZulu-Natal State of the River Report states that, “large parts of PMB {Pietermaritzburg} used to be floodplains and wetlands, but the river system is now a shadow of what it was” (Water Research Commission, 2002: 20). A similar conclusion was reached by the South African National Spatial Biodiversity Institute (SANBI) in its 2004 Biodiversity Assessment Technical Report regarding South African rivers. The report found that of 120 of South Africa’s mainstream rivers, 44% are ‘critically endangered’, 27% are ‘endangered’ and 11% are

\textsuperscript{21} Please see Chapter 5 for more information regarding the Camps Drift case study.
considered ‘vulnerable’ (SANBI, 2005). The Duzi falls within the category of ‘critically endangered’ and its water quality is rated as both 'fair' and 'poor' depending on the area sampled (Water Research Commission, 2002: 20 and 28). In an effort to counteract this, there is currently a province-wide initiative to establish a conservancy along the Msunduzi River, which will be discussed in more detail in Chapter 5 (A Rocha, 2007).

The quality of the water throughout the entire region is considered to be poor due to fecal contamination and it declines sharply as the river passes through the city (see Figure 5). The River Health Programme reports that the poor health of both the in-stream and riparian habitats is of critical concern (Water Research Commission, 2002). Over a stretch of only a few kilometers—from where the river first enters Edendale to the centre of the city—the health of invertebrates declines steeply from good to poor, which clearly demonstrates the effects of the high urbanization in this area. Only the strongest invertebrates survive in the lowest reaches of the city, mostly due to the abundance of pollutant organic materials, upon which they survive (Umgeni Water, 2007; Water Research Commission, 2002).

**Figure 5: Water Quality of the Mngeni and Msunduzi Catchments**

Despite the precarious health of the river, the Duzi provides numerous goods and services to the citizens of the municipality. These include informal domestic water use, subsistence and recreational fishing, as well as river-based outdoor education programs and activities. The river is the central point of Alexandra Park and Camps Drift, an open space and parkland facility. It also provides water of sufficient quality and quantity to support various contact recreation sports, particularly canoeing. However, swimming is no longer safe due to high e-coli counts (Umgeni Water, 2007). The Duzi Canoe marathon begins each January at Camps Drift and ends at Blue Lagoon in Durban. More than 3000 paddlers participate in the Marathon, the total exchange of money is between R20-30 million and the economic value is approximately R100 million. This event is threatened by fecal contamination and poor water quality (see Figure 6), as well as by invasive water hyacinth which ‘chokes’ the river near the estuary (Water Research Commission, 2002; DUCT, 2008).

Figure 6: High Levels of Pollution Close the Msunduzi at Camps Drift

(Source: Witness, 2008)
4.3 The ‘Dislocated City’: The Environment and the Legacy of Apartheid

A thorough historical overview of apartheid and its connections to the South African environment is not possible within the scope of this thesis. However, a brief outline of its legacy on the environment and the creation of ‘dislocated cities’ throughout South Africa will help to understand the current state of Msunduzi Municipality and its open spaces.

Apartheid was the system of legal segregation of races that was in place in South Africa for more than fifty years. Technically starting in 1948, until officially ending with democratic elections in 1994, the apartheid state systematically separated South Africans according to ‘race’ and social class.22 One of the most obvious forms of separation was spatial segregation, whereby, particularly through the Group Areas Act, black, coloured and Indian South Africans were removed to certain areas, often townships and homelands (McDonald, 2002). The Group Areas Act centralized control over racial segregation, and this in turn undermined municipal autonomy and authority. In March 1950, a national report proposed the replacement of the 1946 Act with a comprehensive, national measure that would divide the population into racial groups (Mabin, 1992: 423). Many studies regarding this Act show how it fragmented communities, trivialized participation in the economy for certain groups and undervalued their economic activity (Western, 1981; Hart and Prairie, as cited in Todes, 2006). This Group Areas Act also initiated land

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22 The word ‘race’ is used here in the same way as the post-apartheid African National Congress (ANC) government’s usage, in terms of ‘African’, ‘Coloured’, ‘Asian’, and ‘White’ (ANC, 2008).
allocation planning, which is particularly relevant to how open spaces were, and continue to be, planned.

Although apartheid technically began after 1948, there were many apartheid-like programs and policies in effect long before this time, and many of these are particularly relevant to open space planning (Maylam, 1995). For example, the Social and Economic Planning Council published an important statement with regards to this in its 1944 report on, ‘Regional and Town Planning.’ This was that urban land planning needed state intervention and control in order for “important social objects” to be attained (Mabin, 1992: 415). This planning council followed the British urban planning approach of zoning with open space in between, similar to the ‘garden city’ model of the late 19th century.23 For South Africa, this meant well-planned, racially separated zones throughout the city, divided by green belts and green corridors. The desire to follow this type of model is made clear by the Social and Economic Planning Council’s report on regional and town planning, where it is stated that:

“Full use should be made of the principle of planned neighbourhoods, protected from other neighbourhoods by ‘green belts’ of cultivated and park land and at the same time reasonably close to work places” (Social and Economic Planning Council, 1944, p.1 para.3 as quoted in Mabin, 1992: 415).

There was thus a focus on creating racially defined and homogenous communities that would be separated by open space and green space. This is termed ‘race zone planning’, which means that urban planners designated particular zones for each race

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23 For more information about these and other models, please see Chapter 2, ‘Open Space Planning Models’ and ‘The Historical Creation of Open Spaces’.
(Mabin and Smit, 1997). What this in fact translated into was that whites received more fertile and productive land and more accessible urban space than did blacks, Indians or Coloureds.

This legacy continues to impact South African’s cities, particularly in terms of the inherited spatial structure of its urban centres. The Camps Drift Development proposal recognizes this issue, and describes the problem well, stating,

“The city is surrounded by open space, and yet it epitomizes the idea of a ‘dislocated city’, which was a hallmark of the apartheid state. The inherited spatial structure of the city had divided into specific sections and wards, with open space in between” (Oceanspray Development Consortium, 2007: 4).

Recognizing this, the municipal council is seeking to change this apartheid inherited structure and create a more balanced city centre. The Camps Drift development project, which will be discussed in more detail in the subsequent chapter, forms part of a wider project that will introduce a central axis that will link disparate parts of the city based on Church Street, a road that runs through the city centre (Oceanspray Development Consortium, 2005; Msunduzi LA 21, 2007).

4.4 Relevant Environmental Policies and Laws

Some of the recent and especially relevant environmental policies and acts that affect the way that open space is planned include the South African Constitution, the National Environmental Management Act (NEMA), the Environment Conservation Act (ECA) and the Local Agenda 21 (LA 21). There are also several laws that deal with specific issues, such as the National Water Act, that are relevant to the case study under examination and the broader open space plan. Figure 7 below gives a brief overview of
all relevant environmental policies and laws as well as their placement under national, provincial or local authorities. The national legislation is related to the local and provincial environmental policies because it provides an overarching framework from within which the local and provincial policies operate. For example, the local Integrated Development Plans (IDPs) operate at the municipal level, but they are mandated nationally as a part of the National Environmental Management Act (NEMA). The provincial Environmental Impact Assessment (EIA) policy follows national guidelines including the Republic of South Africa Constitution. Locally, the provincial EIA comes into affect only once various local policies, such as Spatial Development Frameworks and Integrated Development Plans (IDPs) are created and followed.

**Figure 7: Relevant South African Environmental Policies and Laws**
4.4.1 The Republic of South Africa Constitution 1996

The South African constitution was enacted in 1996 with the aim of cementing the post-apartheid ideals. From an environmental standpoint, South Africa’s constitution speaks quite strongly on the issues of environmental rights and protection. Chapter 2, section 24, most illustrates this and states that:

Everyone has the right-

(a) to an environment that is not harmful to their health or well-being, and
(b) to have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that
   (i) prevent pollution and ecological degradation;
   (ii) promote conservation; and
   (iii) secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development” (Republic of South Africa, 1996).

The new focus on environmental issues and on strengthening rights has been linked to other post-apartheid democratic objectives, such as increased civil liberties (McDonald, 2002). Also within the constitution are five objectives for local governments, two of which relate to the environmental rights highlighted above. The first is for municipalities, “to promote social and economic development” and the second is for municipalities, “to promote a safe and healthy environment” (Republic of South Africa, 1996 and MIDP, 2002: 70). Having environmental rights entrenched in the constitution and within municipality objectives results in a much greater focus on environmental issues. For open space, these environmental rights could relate to the needs of people to have an urban environment that includes open space and the services that it renders. However, there is much debate and concern over the interpretation and
application of the environmental rights confirmed in the constitution. For example, the
terms used, such as “not harmful” or “reasonable” imply particular values and
perceptions that may not be universally understood or accepted (Peckham and Rowntree,
1999). In order for the constitution to be as effective as possible in protection of the
ecosystem and environmental rights, there needs to be further clarity regarding this
section.

4.4.2 The National Environmental Management Act (NEMA) 1998

The National Environmental Management Act (NEMA) came into force in 1998
with the aim of ensuring that environmental management be integrated within cities and
in order to provide for cooperative environmental governance between governmental
agencies and bodies (Republic of South Africa, 1998a). The principles of NEMA state
that:

“environmental management must be integrated, acknowledging that all elements of the
environment are linked and interrelated, and it must take into account the effects of
decisions on all aspects of the environment and all people in the environment by pursuing
the selection of the best practicable environmental option” (Republic of South Africa,
1998a: NEMA 2 [4b])

and that:

“environmental management must place people and their needs at the forefront of
its concern, and serve their physical, psychological, developmental, cultural and social
interests equitably” (Republic of South Africa, 1998a: NEMA 2 [2a])

In addition to this, NEMA also asserts that sensitive or stressed ecosystems
require more specific management and planning attention, particularly when there are
high levels of human usage and development pressures (Republic of South Africa, 1998a:
NEMA 2(4r). The NEMA is important for open space planning because it reasserts the need for cooperation across departments and levels of government, and also of the need to protect ecologically sensitive and valuable areas.

4.4.3 Environment Conservation Act (ECA) 1989

The objective of the Environment Conservation Act of 1989 is to, “provide for the effective protection and controlled utilization of the environment and for matters incidental hereto” (Republic of South Africa, 1989).

Two of the principles most applicable to open space planning are:

a) the protection of ecological processes, natural systems and the natural beauty as well as the preservation of biotic diversity in the natural environment;
b) the establishment and maintenance of acceptable human living environments in accordance with the environmental values and environmental needs of communities.

By recognizing the importance of creating acceptable living environments that are in accordance with the needs of communities, the ECA provides an opportunity for open space to be integrated into urban plans.

4.4.4 Local Agenda 21

The ‘Agenda 21’ report was created during the 1992 Earth Summit in Rio de Janeiro with the intention of instigating environmental action at all levels, including international, national, regional and local. The report set out principles and programs to achieve a balance between development and environmental sustainability. The Local Agenda 21 (LA 21) program comes from the relatively brief Chapter 28 of the document focused on local government action (United Nations, 1992). This chapter has precipitated
widespread action on the part of local governments and organizations, and LA 21 is now one of the most active programs to come from the Agenda 21 report (Selman, 1998). Its key objective is that by 1996 local authorities in every country will have undertaken a consultative process with their citizens and achieve a local agenda for their communities (United Nations, 1992). In South Africa, the three largest cities of Johannesburg, Cape Town and Durban were the first to initiate LA 21 programs as part of the post-apartheid reconstruction and development process. Within several years, numerous other cities throughout South Africa created their own LA 21 programs, including Pietermaritzburg. A national LA 21 program was created by the Department of Environmental Affairs and Tourism in 1998 in order to create network support and coordination between LA 21 programs in cities throughout the country. This national program created their own set of principles, based on the United Nations principles, for LA 21 programs within South Africa. These include i) people-centred development, ii) meeting basic needs, iii) integrated planning and development and iv) sustainable development (Durban Metropolitan, 1999). Part of Msunduzi’s LA 21 program is to integrate open space into the city’s spatial plan, and there may be the opportunity within LA 21 to drive the creation of a Metropolitan Open Space System (MOSS), similar to the Durban MOSS, for Msunduzi. The Cities Environmental Reports on the Internet (CEROI) Project was formed in order to ensure that environmental information that is collected throughout the Local Agenda 21 program is made easily available to as many stakeholders and decision-makers as possible.
4.4.5 National Water Act (NWA) 1998

The National Water Act (NWA), enacted in 1998, promotes water equality among South Africans and supersedes earlier apartheid era acts which endorsed a race and class basis for water provision. The NWA promotes the principles of equity, sustainability and efficiency. Some of the most relevant goals of the NWA are the need to ensure the participation of stakeholders and users in relevant decision-making processes, and the need to protect water resources (Republic of South Africa, 1998b). One way of accomplishing these objectives is through the creation of Catchment Management Agencies that involve local stakeholders in water management decisions. The NWA also recognizes the ‘reserve’ as the basis of water rights, which is a fundamental shift in water legislation and water rights in South Africa. The reserve can be either the ecological reserve or the basic human needs reserve; once a catchment has been defined as a reserve it cannot be allocated for development (Rowntree, 1999; Peckham and Rowntree, 1999). However, this is limited because water resources are only protected by law once they are classified as ‘reserves’ and once scientists have identified their ecological functioning.

In Msunduzi, water is provided by both the municipality and by Umgeni Water, which is a private entity that manages water resources in the Mgeni catchment. However, there is currently a large backlog of over 14 000 individual water connections throughout the Vulindlela and Edendale areas. There is also a backlog of close to 35 000 sanitation units in Vulindlela alone (MIDP, 2007: 68). The principles of equality and water sustainability provided for by the NWA are essential, but much of the responsibility for accomplishing this lies with local governments which may be hard-
pressed to provide these services, as the current situation in Msunduzi Municipality demonstrates.

4.5 Summary

Understanding the contextual background of Msunduzi Municipality and the current state of the Msunduzi River, as well as having an insight into the history of apartheid and the relevant environmental policies and acts, will help to comprehend the case study of the Camps Drift development project, to which the thesis now turns.
Chapter 5: Findings and Discussion

5.1 Introduction

This chapter presents an overview and discussion of the findings from this research. The findings are presented and analyzed within the context of each of the three research objectives of this report. This section will use both the interview data and the information gathered during the ‘grey’ literature review to answer the research objectives stated earlier. The interview data show that perspectives vary depending on respondents’ and organizations' positions, interests and backgrounds.

5.1.1 Descriptions of Interview Respondents

Providing a brief background of the interviewees will help in the analysis of their responses and information. They came from six key groups: the municipality, the provincial government, NGOs, recreational clubs, the media, and relevant business groups. The respondents were chosen based on their knowledge of the case study area and the issues, as well as their positions within various relevant organizations. A total of twelve formal interviews were conducted: four municipal workers, three NGO workers, one recreational user, two provincial employees, one journalist, and one business employee. Table 3 below summarizes each respondent’s affiliation, gender, whether or not they are still active within the organization, as well as the interview date and the identification code that is connected to each respondent. As mentioned in the limitations section, the respondents are not a comprehensive survey of everyone who could provide significant information and resources to this research, but rather those who were available.
and willing participants. Several key stakeholders are missing from the interview process, including members of the development consortium who are proposing the Camps Drift waterfront project because they were not willing to become involved in the process.

Table 3: Interviewee Information

<table>
<thead>
<tr>
<th>Affiliation</th>
<th>Gender</th>
<th>Status</th>
<th>Interview Date</th>
<th>Identification Code</th>
</tr>
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<tbody>
<tr>
<td>Municipality—Environmental Health Office</td>
<td>Male</td>
<td>Active</td>
<td>June 2007</td>
<td>M1</td>
</tr>
<tr>
<td>Municipality—Division of Economic Affairs</td>
<td>Male</td>
<td>Active</td>
<td>July 2007</td>
<td>M2</td>
</tr>
<tr>
<td>Municipality-Ward Councilor</td>
<td>Female</td>
<td>Active</td>
<td>June 2007</td>
<td>M3</td>
</tr>
<tr>
<td>Municipality—Division of City Engineering</td>
<td>Male</td>
<td>Active</td>
<td>July 2007</td>
<td>M4</td>
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<tr>
<td>Dusi-Umgeni Conservation Trust (DUCT) Recreation based NGO</td>
<td>Female</td>
<td>Active</td>
<td>June 2007</td>
<td>N5</td>
</tr>
<tr>
<td>Dusi-Umgeni Conservation Trust (DUCT) Recreation based NGO</td>
<td>Male</td>
<td>Non-Active</td>
<td>June 2007</td>
<td>N6</td>
</tr>
<tr>
<td>A Rocha South Africa Living Waterways Project Conservation based NGO</td>
<td>Male</td>
<td>Active</td>
<td>August 2007</td>
<td>N7</td>
</tr>
<tr>
<td>Natal Canoe Club/Duzi Marathon Participant</td>
<td>Male</td>
<td>Non-active</td>
<td>July 2007</td>
<td>R8</td>
</tr>
<tr>
<td>KwaZulu-Natal Wildlife (KZNW)</td>
<td>Female</td>
<td>Active</td>
<td>July 2007</td>
<td>P9</td>
</tr>
<tr>
<td>Department of Agriculture and Environmental Affairs (DAEA)</td>
<td>Male</td>
<td>Active</td>
<td>July 2007</td>
<td>P10</td>
</tr>
<tr>
<td>Umgeni Water</td>
<td>Male</td>
<td>Active</td>
<td>July 2007</td>
<td>B11</td>
</tr>
<tr>
<td>The Witness Newspaper</td>
<td>Female</td>
<td>Active</td>
<td>July 2007</td>
<td>J12</td>
</tr>
</tbody>
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*Abbreviations: M=Municipality, P=Provincial, N= NGO, B=Business, J=Media, R=Recreational User

5.2 The Objectives:

5.3 Objective A: To understand the open space planning context in Msunduzi:

There is not currently a MOSS (Metropolitan Open Space System) for Msunduzi.

The municipality has, however, created a draft Local Development Plan (LDP) and Land
Use Management Plan (LUMP) for the Pietermaritzburg and Greater Edendale Area, with the aim to expand these plans to the whole municipality within the next several years. These plans identify the infrastructural and community facility needs throughout the greater municipal area (MIDP, 2002). The council is also working towards creating a comprehensive GIS map of the entire municipality (MIDP, 2002). Having this type of GIS map is an essential first step in creating a MOSS in the future.

In the Integrated Development Plan, the municipality states that it has an obligation to plan, develop and maintain its open spaces and its infrastructure in an environmentally responsible manner. At the same time, all open space plans and developments must comply with the various laws regarding the environment and conservation, particularly NEMA and the Environment Conservation Act. Within this legislation, the environment is defined as involving the natural world and the built environment, including the traditions and social situations within which people live (MIDP, 2002).

The responsibility for maintenance of all open spaces lies with the Parks and Recreation Department, and this includes any spaces surrounding the Duzi River (M1). Before an open space is re-zoned and developed, there is a services agreement that is signed between the developers and the municipality—it is a binding contract and it is meant to protect both sides from being surprised later by hidden fees or expenses. However, the signing of the services agreement is often considered to benefit the
developers rather than the municipality. One municipal respondent, commenting upon the services agreement, felt that:

Usually, the municipality ends up getting the short-end of the stick with these agreements. Rarely do the developers pay a proper price for the services rendered (M1)

This reflects a view that many respondents hold in regards to the signing of services agreements in general. Another respondent, from the media, states:

And you know it’ll be business around the waterfront, and one of the issues of contention around, you know, why haven’t they signed the services agreement, because the services agreement commits the council to keeping those canals clean and they can’t do it, they can’t afford it, so why would they sign it? (J12)

After the services agreement is signed, an Environmental Impact Assessment (EIA) is performed. After the EIA is passed by the provincial Department of Agriculture and Environmental Affairs (DAEA), development of the space can occur. The EIA process usually takes several months, because the consultants that perform the EIA have to conduct a thorough survey of all possible environmental impacts, engage in public meetings where they ask for any objections, and then submit the EIA to the DAEA for approval.

Although there are numerous references to creating a comprehensive open space plan (MIDP, 2002; MIDP 2008, SDF, 2008), as of the most recent MIDP (2008), it is still a goal that is far from being realized. A respondent explained this well, stating:

Because what you also find is that the municipality pays lip service to environmental issues. And they articulate very well, and when you speak to them you will be totally impressed by what they have to say, but what happens in practice is totally different. So they know the jargon, but they don’t apply it, which I find, I can’t get past how this
municipality pays lip service to all of these issues, you know they talk around them, and the developers take short cuts. I mean basically the end goal is simply to increase the rate space. (J12)

Many respondents share a feeling of distrust in the municipality, seeing a gap between official policy and action on the ground. This gap needs to be closed and information needs to be communicated more clearly between the municipality and local stakeholders and citizens. This will be discussed in more detail in relation to the Camps Drift case study in section 5.5 and also in relation to more general open space literature in section 5.6. In order to more fully understand current open space policy, it is necessary to explore the municipality’s MIDP and SDF, and also its use of quality open space standards and indicators. It becomes clear through this discussion that a particular approach to viewing and planning open space is dominant in Msunduzi.

As discussed, the 1995 constitution set out new legislative and policy frameworks which expanded the role of local government significantly and changed their mandates to focus on a development approach, the impacts of which are discussed in further detail in the final objective. This was cemented by the 2000 Local Governments Municipal Systems Act No. 32 which laid out the requirement for municipal governments to create ‘Integrated Development Plans’ (IDPs). An Integrated Development Plan is a thorough report that assists local governments in fulfilling various developmental duties, and which should be participatory in nature in order to integrate economic, social, fiscal and environmental strategies and consideration (South African Cities Network, 2006). A key aspect of an IDP is that it supports allocation of scarce resources across the population
“in a manner that provides sustainable growth, equity and the empowerment of the poor and the marginalized” (MIDP, 2002: 6). The content of the IDP should reflect the council’s long term vision for the development of the municipality. A spatial framework plan should be included in the IDP which would also have a provision for the creation of a land use management plan.

The municipality created their own Msunduzi Integrated Development Plan (MIDP) in 2002, and it has since been updated in 2008. A key part of the MIDP involves encouraging tourism. Since South Africa is now within the top twenty of the most visited countries in the world, the municipality would like to further develop its tourism attractions—such as its close links with former President Nelson Mandela and Mahatma Gandhi, its cultural and architectural heritage as well as its proximity to Durban—in order to increase visitors to the area. In this vein, it has identified five key investment opportunities, nearly all of which involve the development of currently open space areas and that are approached from an economic standpoint. One of these opportunities is the development of the Msunduzi Waterfront along Camps Drift (MIDP, 2002).

The MIDP concludes with fifteen core recommendations for the municipality (MIDP, 2002: 72). The following are of particular relevance to the Camps Drift case study:

- A full State of the Environment Report is needed.
- A Metropolitan Open Space system (MOSS) does not yet exist and is needed.
- Integration of environmental issues and departments.
• Encouragement of cooperation between municipal officials and university researchers, perhaps through the LA 21 Working Group.

• Need to clean up and highlight the municipality’s many streams and watercourses.

• Resurrection of the Camps Drift Waterfront Development project.

The MIDP also acknowledges that environmental issues and concerns have not been adequately dealt with nor have they been effectively integrated into the municipal plans and projects. One reason for this is the:

“general unpreparedness of the great majority of municipal officials to deal with the implications of current environmental legislation -- one of which, incidentally, is that NEMA offers dissatisfied individuals or groups the opportunity of bringing legal actions against the Municipality on environmental grounds” (MIDP, 2002: 70).

In addition to this, the MIDP is particularly useful in identifying three core areas that need further human resources strengthening, which are ‘economic development’, ‘environmental management’ and ‘community empowerment.’ A key goal of the MIDP is to ensure equitable access to a sustainable, habitable and healthy environment (MIDP, 2002).

However useful the IDPs are, they have been criticized for not having a strong enough focus on open space priorities. The JMOSS criticizes IDPs for not being adequately informed about open space considerations or about the principles of sustainable development because they are too heavily focused on developmental goals (City of Johannesburg, 2002). This is where a MOSS fits, and should form an integral part of IDPs and of Spatial Development Plans.
Associated with an IDP is the creation of a Spatial Framework Plan (SFP), also known as a Spatial Development Framework (SDF), which will define the organization of land uses within the city. Msunduzi designed the Spatial Framework Plan (SFP) in order to “advance the development of the city as a cohesive system made up of functionally interrelated elements” (Msunduzi Municipality, 2002: 157). Spatial restructuring is an important aspect of the SFP, and several of the key principles of spatial restructuring are compaction and densification of the city. These are done in order to make it more efficient economically and socially. Another principle is the integration of the city in order to promote movement between the city centre and the surrounding townships. As has been discussed, Msunduzi is in need of this as its design during apartheid was highly spatially segregated.

The municipality would like to focus on integrating social, economic, institutional and physical aspects of land development, while also enabling the development of a more highly compacted city in order to link different areas of the municipality. The municipality would also like to promote a combination of diverse land uses, which would include business, residential and industrial, and to encourage greater combinations of land use activities. One of the main focuses is to redress the historically fragmented spatial patterns of the municipality and its various settlements (Msunduzi Municipality, 2002: 157).
5.3.1 Quality open space indicators, standards and criteria

There is presently no broadly recognized standard for open space in use either in South Africa or elsewhere. There are, however, some guidelines for standards, particularly quantitative open space standards, which can be quite useful, even though they vary enormously across local authorities.

There are three types of standards by which open space can be judged and reviewed. These are quantity, quality and accessibility. Quantitative standards can be moderately to highly useful in advancing open space provision, depending on the locality. They are most often established through local authority audits and strategies and are based on amount of space per number of people. For example, in the United Kingdom, these space standards range from 1.6 hectares to 2.8 hectares per 1000 people (Scottish Executive Social Research, 2005; Turner, 2004). If Msunduzi were to establish similar quantitative standards, it would be done through the Spatial Development Framework or through a MOSS, similarly to Durban and Johannesburg.

Qualitative standards are different, in that they are based more on the quality and services the open space offers, rather than simply on the amount of space that exists. They are very difficult to develop because of the diverse functions and the variety of open spaces, but they are highly useful for improving local open space provision. Rather than having set standards, qualitative measures often take the form of guidelines. For example, a qualitative standard might be one that sets a criterion that open space in the city must have a high level of ecosystem functioning or habitat protection.
Accessibility standards are set in order to ensure that everyone has the opportunity to access and use local open spaces. These standards are determined through the use of distance thresholds from open spaces. For example, an accessibility standard could be that open space must be a minimum of 100 meters from a residential area. In terms of measuring citizen and community satisfaction, these standards can be highly useful in advancing local open space provision.

The importance of setting such standards is that it ensures that the open spaces that exist within a city are effective and useful in a variety of ways. Not all cities will have the exact same needs, so it is important for local governments to link the standards that they create to local needs and wishes. The Scottish Executive of Social Research (2005) distinguishes three levels to creating local or national standards, which are identifying needs, setting standards, identifying deficiencies, and then developing a strategy and related policies and plans.

These standards and indicators are developed to an extent through Msunduzi’s LA 21 objectives. Part of the Local Agenda 21 objectives of many municipalities is to create their own sustainability and open space indicators, in order to measure the quality of life for citizens in a meaningful way. Along with environmental criteria such as water and energy saving, waste reduction and recycling etc., aspects such as amount of public open spaces per inhabitant and amount of high quality recreation areas are also frequently mentioned as important factors in creating a liveable city (Chiesura, 2004).
Although Msunduzi has an active LA 21 committee, there is a sense among respondents that the committee is not consulted frequently enough nor is it taken seriously by council, as demonstrated by this respondent from the media:

I think environmental concerns are not on the agenda of Council. LA 21 is a subcommittee, and, just on my own observance of how Council works, their [LA 21] reports just get read to the executive of the Council and not much more. See, that’s what I don’t believe, I don’t think it was even considered as a part of that [the Camps Drift project], I don’t think the LA 21 people were even consulted about that. (J12)

If the Msunduzi LA 21 committee is to be effective and a part of the future creation of a MOSS for Msunduzi, they need to be more frequently consulted and have more immediate input into open space plans.

5.3.2 The legacy of spatial segregation

As discussed in Chapter Four, many of the open space areas in Msunduzi are inherited from the apartheid era and from racially segregationist town planning policies. This legacy has had enormous ramifications for the ways in which these spaces are currently planned. The wards just outside of the Central Business District (CBD) are examples of apartheid open space segregation, and Camps Drift, within wards 27 and 36, was created as a large open area in order to divide the CBD from the township areas. Historically, settlement communities of mostly blacks and Indians lived in Camps Drift, but living conditions were considered very poor and a large portion of the land was below flood levels and thus determined to be unsuitable for development (Wills, 1988). As far back as the 1930s, Camps Drift experienced forced clearances and evictions carried out along racial lines. For example, in 1930 the municipal Ministry of Health conducted a
census and found that the population in Camps Drift was 1,717 with an average of 14 people per home. At this time the area was considered a 'menace' to public health and forced evictions occurred from 1933-1940. Throughout this period the population of blacks in Camps Drift was reduced from 753 to 87, however, the population of Indians living in Camps Drift remained stable due to protests by the Natal Indian Congress. These evictions and forced removals occurred as part of a 'slum clearances' campaign followed by the city (McNeely, 2008). An Indian population remained in the area until the 1960s when the Group Areas Act was enacted by the city of Pietermaritzburg and Camps Drift was completely cleared of human settlements (Epprecht, 2008; Laband and Haswell, 1988). It is in part for these reasons that the Camps Drift Waterfront Development Project is meant to form part of a wider project planned by council that will seek to change this inherited structure.

Respondent M2, a municipal employee in the Division of Economic Affairs, is particularly involved in ensuring that the Camps Drift project moves forward. He described some of the difficulties in trying to manage those open spaces, which are leftover from the apartheid era:

Most cities in this country have been laid out on the basis of the apartheid policies of separate…So when we got our democracy in 1994, the cities had to change also, democratic local government came in 1995 and they had interim kind of structures, putting communities together {…} and so largely what happened is that these areas were neglected as township area…the city centres have always been the built up areas, white controlled city councils…these areas… largely rural areas, some urbanized areas, there was lack of planning, no bylaws as such that applied, so development happened in a haphazard kind of manner, and so what happened was that the governments at the time… used open spaces as buffers between the various areas, so that there’s no interaction you know between the different communities (emphasis added). (M2)
In terms of planning and managing these buffer spaces, he continues by stating:

> So, that is one thing that we have to investigate now, to see what, how functional are these public open spaces. It’s not just, because it’s a green area we must keep it. You know, what role does this thing play in the broader picture of the city. We know, for a fact, that there were public open spaces that were there for a reason, that were part of the apartheid plan. So we need to go investigate that, we need to go check it out, you know is it functional, can it be made functional, or can we put it out to development. (M2)

There is a sense, then, that many of these open spaces are ‘tainted’ because they were created as an apartheid town planning strategy. This issue and the contextual background of the city need to be recognized and addressed as part of a comprehensive open space plan.

### 5.3.3 The dominant approach to viewing open space

Of the four approaches to viewing open space identified in the literature—economic, development, ethical/moral and utilitarian—two are dominant in local open space policy. The economic and development approaches dominate the policy in practice, if not always in official policy discourse. This will be discussed in more detail in section 5.6.1 as well.

This is shown by the following example in which a municipal respondent took an economic approach, feeling that waterfront open space, in particular, should be viewed from a development and utilitarian standpoint:

> Well the waterfront is tailor-made for development, you know; we have a waterfront and waterfronts by their nature are development… the waterfront is going through a park, we have a central park… Alexandra Park, which is a huge open space, active public open space with lots going on there, and the river runs through it. You know? So we don’t think we’ve done something that is out of the ordinary. I think the SDF would have identified it for development anyway because of its very, because of the opportunities around it, so I don’t think we’ve…done something that is wrong (emphasis added). (M2)
Similarly, a local NGO respondent also felt that an economic standpoint is the way that the municipality perceives open space in the city, stating:

They [the municipality] perceive it as a marketable space. They perceive it in terms of its cash value, in terms of goods and services, and I think that that is the biggest mistake they can make, because actually the greenspace around Maritzburg is priceless, in terms of its biodiversity value, nobody actually on council understands this, besides Rodney and a few people in Council. (N7)

In contrast, this respondent views open space as green space from an ethical/ecological view:

What we want is to do a plant survey which takes us through a huge range of plants and I know personally from walking the river regularly that there’s a wide variety of birds and mammals along the river, in these spaces. (N7)

These perceptions and ways of viewing open space affect the way that it is understood and managed by relevant stakeholders.

This economic-development dominance is related to perceptions regarding the effectiveness of current municipal open space policies and plans. A broad categorization shows that four respondents felt that current policy is too lax and development oriented. The additional eight respondents’ varied from believing that there are good plans and policies but not enough action or monetary support, to believing that it is excellent and that open space is handled very well. For example, a municipal employee in the department of economic affairs states:

I’m just saying, people criticize us on this, you don’t have an SDF so why are you moving on this, but we can’t wait, you know, the nature of development is such that you, you’ve gotta make decisions that won’t come back to bite you firstly, but secondly, you’ve got to make decisions on the spot, in particular contexts, because if you don’t, then you lose the moment. (M2)
Another respondent from a local NGO had a very different perspective:

I think it’s far too lax. Far too lax. They’re allowing developers, they’re giving them the green light to develop, without being much more circumspect, especially with regard to housing developments in the green space around the city. You know, we’ve got all this space left over…and people say, ‘what do we do?’ and the answer is always ‘develop, develop, develop’ well maybe we should take some time and think about it first, think about it first you know? (N7)

This demonstrates the sense that several respondents had, which is that current policy is development oriented and part of short-term thinking and planning. This, in addition to a lack of communication with stakeholders and users, is of concern:

So from my observance, environment doesn’t mean much. The city is supposed to be working on a spatial development plan, which is supposed to be ready, but is it ready? No. that spatial development plan… is supposed to lay out the open spaces, the green lands, and things like that. And, I don’t expect it to be ready til earliest next year. So when that comes out, we’ll have more of a sense of council…but what worries me about council’s commitment to this thing is that they’re actually selling land right left and centre for development. So, you know, how far open spaces are actually put in, economic concerns take precedence, you know, over environmental concerns, that’s the sense I’m getting at the moment….I mean the municipality says that it needs to increase its rates, and I know there’s open space in Ashburton, and residents there proposed it to the municipality as an eco-tourism corridor, council was not interested, it is backing a developer to put in housing instead. (J12)

Numerous respondents also had concerns about the Ashburton development that is currently taking place in an open area east of the city centre, in the amalgamated area of Ashburton Township. There is a plan to develop several high-density housing estates in the remaining large open spaces in this area (Coan, Witness, June 20, 2007). One respondent felt that the Ashburton example is symptomatic of open space policies broadly:
I mean when I looked at the plans for the Ashburton area, there were no green spaces besides the tiny little valley at the very bottom, which is a corridor, an ecological corridor, there were no big areas of green space left in what is currently a huge green space, you know, for community uses, for churches and mosques, places of worship, community centres, it’s all going to be housing. (N7)

There is also a sense that the Ashburton plans reflect recent open space policies more broadly. Another respondent, working with KZN Wildlife, also identified the Ashburton plans as a prime example of how the municipality manages and develops open spaces, stating that this space has been planned by power players, particularly the developers, and not by community members. She draws attention to the fact that many residents of the Ashburton area, including her, are not even aware of opportunities to discuss these development projects, or of opportunities to guide LA 21 objectives. She states it aptly:

The municipality doesn’t know what they’re doing. They don’t know how to communicate with residents and their goal is to increase rates only. That’s what they care about. (P9)

When asked about their perceptions of the power dynamics in terms of open space planning decisions, the respondents’ answers varied. Table 4 gives a sense of the different groups that are thought to hold the most power and influence in making these open space decisions.

Table 4: Perceptions of Levels of Influence in Open Space Planning

<table>
<thead>
<tr>
<th>Power/Decision-making Perceptions</th>
<th>Number of Replies (n=12)</th>
<th>Interviewees</th>
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</thead>
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<tr>
<td>Municipal Council/Municipal Agencies</td>
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<td>M1, M2, M3, M4, N5, N6, N7, R8, P9, P10, B11, J12</td>
</tr>
<tr>
<td>Developers</td>
<td>9</td>
<td>M1, M3, N5, N6, N7, R8, P9, B11, J12</td>
</tr>
<tr>
<td>Community stakeholders/groups</td>
<td>5</td>
<td>N5, N6, R8, B11, J12</td>
</tr>
</tbody>
</table>
All of the respondents identified the municipality as having a strong influence on decisions relating to open space development, which is to be expected. Nine out of the twelve respondents also, however, identified the developers as having a high level of influence, particularly with reference to the Camps Drift case study, but also more broadly in open space management. For example:

The developers, definitely, because it seems to me that the developers get the best end of these situations, and if they aren’t able to get it through the municipality this time they will try again with a new council, new stakeholders in the municipality. And I don’t know if it’s through bribery or what, how they manage to get this through…To me it seems like it {various municipal spatial plans} doesn’t hold much sway. To me it feels like in the end the developers get what they want. (N7)

Just under half of the respondents felt that local community groups, NGOs such as DUCT and A Rocha, for example, have a significant level of influence. However, only two respondents felt that community users, particularly recreational users that were not associated directly with an NGO such as DUCT, had any influence on open space policy. A municipal employee felt that one reason for a lack of influence among community users was that these projects are very slow to move forward for a long time, and then they speed up very quickly at the last minute, so there is initially a sense that the development will never take place:

There aren’t yet any residents’ organizations that might fight these {developments}, because…there’s a general thought, because it’s taken so long to move forward, that they {the developments} never will. (M1)
The concern is that when the development is eventually ready to take place, residents are unlikely to be involved at that point, and therefore it will move forward without the contributions of community groups. This is where an earlier Environmental Impact Assessment would be particularly useful, because it would ensure that discussions and meetings with residents and community members take place.

Now that the planning context has been explored, the case study of Camps Drift will be discussed in detail, with particular reference to what this case study demonstrates about open space planning in Msunduzi.

5.4 Objective B: To understand the extent to which the Camps Drift case study is a reflection of current open space policy:

5.4.1 The Camps Drift case study

Camps Drift is the canalized section of the Duzi River (see Figure 8). In the late 1980s, it was developed as a flood protection mechanism for the Camps Drift Industrial Estate (Naidoo, 2007a). The final phase of the Camp’s Drift canalization project was approved by the city council in September of 1986 after numerous delays (Oosthuizen, 1986). From the beginning, there was controversy over the creation of this area, with criticisms over the ecological implications of canalizing the river. A report at the time cited a rise in the level of the water table as a possible outcome, which would affect drainage, and would cause the destruction of the breeding habitat of twenty-eight species of water birds. The River Health Programme Report (2002) explains that the extensive canalization of the Msunduzi—particularly at Camps Drift—continues to have significant impacts on the river’s natural flow pattern. Because of the eutrophic and turbid water, the
water quality is very poor and the habitat for the natural fauna and flora is also considered poor. Most of the indigenous species of fish, including carp and bass, are found in the Camps Drift impoundment and migrating fish cannot pass the weirs on this part of the river. This has substantial ramifications for these species. Because canalization and mowing of riparian vegetation reduces a river’s ability to contain floods, there has been considerable damage to the river morphology downstream of the Camps drift point (Water Research Commission, 2002).

**Figure 8: Canalization of the Msunduzi River at Camps Drift**

The thin blue line demonstrates the original river course and the thick green lines demonstrate the river course after canalization (Created April 2008. Source: Witness, 1986)

The canalization project had originally been proposed in September of 1982, and split into two phases due to the immense costs involved. The first phase centered on reclaiming land alongside the river by digging a canal and filling in the adjacent plateau
in order to create an industrial area. The second phase involved protecting this reclaimed land from floodwaters. Even at this early stage, the plan was for the barrage at the outlet to result in a recreational facility of “international caliber” (Oosthuizen, 1986). The original thought in 1986 was that the city of Pietermaritzburg would become the home of canoe sprinting in South Africa, with a 2000 metre canoe and rowing course (Mills, 1986).

A waterfront project that was similar to the project currently proposed first emerged in 1997. The developers at the time—Andrew Boulle and Associates—asked for sole mandate on the project, which was refused due to certain local government ordinances (Naidoo, 2007a). After this initial attempt, there were numerous additional attempts to create a recreational waterfront area consisting of hotels, entertainment areas and conference facilities, and many proposals were considered throughout the period of 1997-2004. In 2004, the city council of the time announced a ‘Call for Proposals Document’ for the Camps Drift Waterfront which invited bidders to help make the city of Pietermaritzburg a, ‘sports, leisure and events destination’ (Oceanspray Development Consortium, 2005: 4) It was compulsory under NEMA\(^\text{24}\) that a site meeting be held to discuss the details of such a project and this took place in May 2004. The Msunduzi Council accepted the Ocean Spray Consortium’s proposal in June of that year. The Consortium is comprised of numerous groups and comprises 100% black owned and

\(^{24}\) For more information regarding NEMA, please see section 4.4.2 “National Environmental Management Act”
managed entities. This is important because there is currently a desire within the province to resolve the discrepancies and racism of the apartheid era.

The R3 billion (approximately CA$500 million) development would be composed of the following core components (see Figure 9):

- Sport and recreation facilities, particularly a canoe course and a whitewater rafting and slalom
- Niche and high-end retail shops and office space
- Conference facilities
- Specialist hotels
- Up-market residential units
- Golf park
- A regional cultural centre

The waterfront would be developed in such a way as to allow for continual expansion as needed and would eventually be a 24hr entertainment complex. Camps Drift would act as an ‘agent of urban change’ and would be the first step in an eventual complete revitalization of the downtown. As the provincial capital, the municipality feels that Pietermaritzburg has a major role to play in terms of stimulating tourism growth for the whole province of KwaZulu-Natal.
5.4.2 Issues surrounding the Camps Drift case study

When analyzing the data from the key informant interviews and from the relevant literature and documents, seven key issues surrounding the Camps Drift waterfront project became clear. Table 5 below summarizes these issues, as well as providing information surrounding how many and which of the respondents identified a particular issue.

Table 5: Issues Surrounding the Camps Drift Project Identified by Stakeholders

<table>
<thead>
<tr>
<th>Camps Drift Issues</th>
<th>Number of Replies (n=12)</th>
<th>Interviewees</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dredging of canal</td>
<td>9</td>
<td>M2, M1, M3, N5, N6, N7, P9, B11, J12</td>
</tr>
<tr>
<td>Water quality of the Duzi</td>
<td>12</td>
<td>M1, M2, M3, M4, N5, N6, N7, R8, P9, P10, B11, J12</td>
</tr>
<tr>
<td>Equality of accessibility to waterfront park</td>
<td>4</td>
<td>N7, N6, B11, J12</td>
</tr>
<tr>
<td>Reliability of the Development</td>
<td>7</td>
<td>M1, M3, N5, N7, R8, P9,</td>
</tr>
</tbody>
</table>
Consortium/Lack of Trust in Municipality

<table>
<thead>
<tr>
<th>Issue</th>
<th>Refs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environmental considerations (i.e., flooding of the drift, habitat destruction for waterfowl, increased erosion etc.)</td>
<td>8 M1, M4, N5, N6, N7, P9, B11, J12</td>
</tr>
<tr>
<td>Infrastructural issues (i.e., sewage pipes, power lines)/Increased costs to municipality</td>
<td>7 M1, M2, M3, M4, N5, B11, J12</td>
</tr>
<tr>
<td>Short-term/political thinking</td>
<td>4 M1, N7, P9, J12</td>
</tr>
</tbody>
</table>

5.4.2.1 Dredging of canal

The controversy surrounding responsibility of silt removal in the canal has been present as long as Camps Drift. Every year, about 1-2 metres of silt are deposited in the canal and the de-silting of this can cost upwards of R1 million to execute (Hartley, 1986). The sediment load carried by a river is determined by the contributions from the river catchment, and therefore vary according to catchment conditions and region. Sediment enters the river through surface runoff, so erosion and other conditions which increase surface runoff increase sediment yields. One way to combat increased surface runoff is dense vegetation cover along the banks, so that the infiltration process is enhanced (Rowntree, 1999). For Msunduzi, the highest rate of surface runoff occurs as the river passes through Vulindlela and Edendale. As previously discussed (see Figure 4: Map of Msunduzi River), the sediment load accumulated in Vulindlela is greatly diminished after the river passes through Henley Dam, but it quickly rises again as it passes through Edendale, due to increased erosion and high surface runoff.
Nine of the respondents identified the dredging of the canal as a serious issue in the Camps Drift waterfront project. The concerns raised focused on where the responsibility would lie for the continued dredging of the canal, particularly who would pay, what effect the new waterfront complex would have on sediment load and whether it would increase the load and therefore the frequency of dredging, and what environmental effects increased dredging would have. Respondent M1, working with the municipal environmental health office, cited the dredging of the canal as the most contentious issue delaying the Camps Drift project. He states that this is because:

> It’s approximately R5 million every 3-4 years to dredge that part of the river, because it was originally designed as both a floodplain area and as a silt trap. The question remains: who pays for this? The upstream issues are related here as well—erosion upstream increases the silt problem, as well as solid waste and sewage flowing from upstream, particularly near Edendale hospital. The watercourse is an extremely contentious area, where the dredged material is deposited. (M1)

Another respondent echoes this view, stating that the dredging of the canal is the main reason why the services agreement has not yet been signed and the development has not moved forward:

> And one of the issues of contention around…why haven’t they signed the services agreement, {it’s} because the services agreement commits the council to keeping those canals clean… one half of {the} council says, we’re barely managing to dredge it now, and keep it clean now, and when it’s all built up, it’s going to generate more pollution and then there’ll probably be more silt, and… it’s going to cost us more. (J12)

Based on this information, it is obvious that an equitable agreement between the developers and the municipality will need to be reached that clearly determines with whom the responsibility will lie for dredging of the canal. In addition, the Environmental Impact Assessment will hopefully clarify what impact the waterfront park and increased
development along the river banks will have on sediment loads. A clean up of the Duzi River and efforts to prevent erosion, particularly in the Edendale area, would help to decrease the sediment load and the necessity of frequent dredging of the canal.

5.4.2.2 Water quality of the Duzi

As discussed, the water quality of the Duzi varies seasonally and depending on the sample point, but is generally rated to be ‘fair’, ‘poor’ or ‘very poor’. This is particularly relevant to the Camps Drift development because of the recreational focus of the waterfront. If an Olympic-sized canoeing water course is proposed, then the water quality is of immense concern. The *South African Water Quality Guidelines, Volume 2: Recreational Use* states that recreation, in particular, can lead to increased rates of people suffering from water-related pathogens and other diseases, as recreation implies more contact with the water (DWAF, 1996). In addition, increased water degradation leads to an increase in water-related disease, which is connected to increases in the rate of mortality and in the level of morbidity in communities that are faced with disease and poor living conditions (Oliver, 2006). As water quality decreases, the water resource of the Msunduzi will become more costly to manage and maintain, and will become an unpleasant place to be near.

All of the respondents identified the water quality of the Duzi to be a critical issue in the Camps Drift development. Referring to a Umgeni spreadsheet showing sample sites and e-coli counts throughout the Duzi, respondent B11 said:

> It very clearly shows the problems that we are faced with. And the conditions, particularly of heavy rainfall, in the catchments it’s a hugely contaminated problem, we
will not be able to do contact recreation without significant risk at times. There are also other problems that occur in the drift area as well, nutrient contamination; we’ve had algal blooms and more... A lot of what they’re proposing as a development, if they’re presuming that the water resource is freely available for them to use, they need to wake up and smell the sewage. Things are not as good as we would like them to be. (B11)

A local recreational user of the river confirmed the problems:

We check the water quality nearly every time before we go in the water. DUCT sends through Umgeni Water reports, and we use that to see if we can go canoeing that day. Sometimes we can’t, cause nobody wants to get Duzi guts. (R8)

The contamination and degradation that most affects the water quality of the Duzi at the Camps Drift point come from industrial spillage, waste dumping, sewerage overload in periods of high rainfall and infrastructural damage to the sewers and weirs (see Figure 10). Within the past eight years, there have been reports of severe industrial effluent leaks and dumps, and faecal contamination due to poor infrastructure in growing informal settlement areas. A respondent from the KZN-Wildlife demonstrates this by stating:

The water quality issue is a multi-faceted problem. There is industrial pollution, hospital pollution (medical waste), the river runs through Edendale first, then hits Camps Drift. So you’d have to clean that up first, and it’s very difficult to clean-up. (P9)

Another respondent, from a local NGO, is more emphatic about the issue of designing a waterfront park along a river that is currently suffering from faecal contamination and very poor water quality:

I think that the waterfront development in the flood plain of the Duzi—with the water quality that I know about because I receive Steve Terry’s statistics every week—is really, at this stage, a bit misguided. You can have a major waterfront development with, you know, world class theatres and shopping areas and all of that, but very little being done, as far as I can see, of changing the e-coli quality of the water (N7)
5.4.2.3 Accessibility to Waterfront Park

Concerns were raised in regards to the accessibility of the waterfront park. Currently, the Camps Drift area is public open space. Anyone can enter and use the space with few restrictions. A concern raised by several of the respondents is whether or not ‘privatizing’ this space will have impacts on the equality of the accessibility to the space.

A provincial employee identifies this as:

There will include a large canoeing area, some recreation areas, tennis courts etc. But in terms of actual open space, there is talk of having a open picnic space but otherwise it won’t be available, unless you're purchasing something at a café or staying at the hotel, the space won’t be public space, open to everyone, open space in that way [emphasis added] (P9).

Similarly, a media respondent described a possible scenario at the new waterfront that would be very inequitable:
So we could actually end up with a situation where there’s this, like, gated community living on this waterfront with this wide-open space around it and the rest of the city is... confined to the little shopping mall where they still spend their money...and maybe a few cafés you know, and all the best is for the others... So, for me, basically it’s one more example where...the rich get the cultural heritage or the natural environment... And I don’t think people would probably even be able to sit at the restaurant sit and enjoy the water, and I mean that’s a harbor, beautiful waterfront, [if] it’s just this commercial enterprise...only useful if you’re staying at the hotel or eating at the restaurant. You can’t just take a stroll, like now, people can take strolls, they take their families there, I mean they may say there’ll be a picnic area, but who knows? How big will it be? It depends on the design, which we don’t really know about. (J12)

The situation that she describes is quite possible. For example, the Cape Town's ‘Victoria and Albert Waterfront’ has been criticized for being exclusionary and restricted to select individuals who can afford to pay for the restaurants and activities available. Because of the population and race dynamics present in Cape Town as a legacy of apartheid, this translates into a race as well as socio-economic issue. This problem was addressed and a way to combat it was described by an NGO respondent:

Because right now, it’s one of the most public spaces in Maritzburg, with the canoe club, picnics, people going down there for fishing and all that, that’s what it’s used for right now, on the East side, on the West side it’s just a no-go area, you know, and that’s the side they’re going to develop the most, cause it’s also the higher bank, so it’s probably where most of the development will go. But if the, at least the East bank could be maintained as a picnic space, public open space, that would be amazing (N7)

Having an area allocated as public space and open to all citizens would be useful in creating a Camps Drift that is accessible and equitable open space. Although there are some provisions for this type of space within the development proposal in the form of a public picnic area, that space is also allocated for expansion and further development in the future as the project grows.
5.4.2.4 Reliability of the development consortium and lack of trust in the municipality

Seven of the respondents identified the reliability of the development consortium and a lack of trust in the municipality as critical issues affecting the Camps Drift project. Very recently, a Durban consortium went bankrupt, and one of the shareholders is the director of the Camps Drift development, Ocean Spray Investments (Naidoo, 2008). This merely adds to a sense of doubt that many respondents already had, as illustrated by these statements:

I know that the council has got reservations about it because the owner of Ocean Spray is the same person who is doing two other major developments in the city, and I read in the paper that they are concerned about the tendering process and concerned that profits of the projects are just going to be going out of the province. So if that’s true…I would also agree that it’s not a good idea that the same company is doing all the projects...that one company should derive all the benefits from all of those major projects (N7)

This was given to me confidentially, the Maritzburg address doesn’t work, and these phone numbers don’t work, so these offices, they are made up …my sense is that these developers are well connected…I have also tried to get a hold of the developers... They aren’t around…There’s no openness about this project… I’ve gone through a real battle to find out who they are, getting that info was hard, so hard, I struggled for months, I really, really struggled to get this information, which isn’t fair. (J12)

Although the investors of the Ocean Spray Consortium have issued a statement reassuring Msunduzi citizens that the Camps Drift project will not be affected because the companies are separate entities, they have also acknowledged that there is no guarantee that something similar will not happen again. Several of the respondents also identified a lack of trust in the municipality which stems from the lack of consultation with stakeholders so far. When questioned about her specific knowledge of the development proposal, a media respondent said:
The[re’s an] allegation that somebody made that certain members of council were wooed by the developers; that they made some contributions, some of the councils were previously against, and then suddenly they rolled over… They [Udidi] are the consultants to the municipality, see, this is the stuff they don’t share with us, they don’t have a chain of people letting citizens know about things. Udidi is actually doing their spatial development plan. So if you’d like to know what the city’s plan is, you need to speak to Udidi. (J12)

One respondent identified the lack of communication as being related to the timing of the EIA process:

The problem is that [the] public participation process, which gives a chance for residents to get involved, only comes in after the EIA moves forward. And sometimes that is late in the game. (P9)

It is clear that the current system the municipality uses to disseminate information and facts about its projects and developments is not adequate. When stakeholders and citizens do not feel that the municipality has circulated all of the relevant information that is required and requested and when there is a lack of trust in the developers, a general distrust of the whole process will emerge which is not conducive to a positive city environment.

5.4.2.5 Environmental considerations

Numerous environmental concerns about the Camps Drift project were identified. These include flooding of the drift, habitat destruction for waterfowl, increase in erosion along the river banks, a decrease in water quality and in biodiversity and a threatening of invertebrate populations. The issue of flooding was of most concern and was identified by eight of the respondents. A municipal employee explained that the “existing
floodplain is already inadequate; under Kershaw Park the diving club is underwater most years” (M1).

Another respondent was more explicit, stating:

I’m just concerned about the wisdom of this project, because it’s being built in a flood plain and the Camps Drift area is known to flood really badly…So I want to know, what are the engineering precautions, what are the structural precautions that will be taken; but then also, what’s going to happen to the river; it’s still possible to turn the river into a conservancy and to manage it with the once every ten year flooding, but with climate change coming I think it’ll be more difficult, and more unpredictable… from what I saw of the initial plans, it looks like it’s going to be a safety hazard as well if there’s a flood. Within the project, I can’t see how they’re going to protect the people that live downstream. (N7)

Concerns about the impact of further development on the biodiversity of the river were also raised:

What is the impact of yet further interference in the river going to be on biodiversity… even though this river is so abused, there’s still a lot of biodiversity along the river, and in A Rocha’s pilot project, the Living Msunduzi waterways project, we do a plant survey which takes us through a huge range of plants and I know personally from walking the river regularly that there’s a wide variety of birds and mammals along the river. (N7)

The following comment, from a member of DUCT, shows that there are serious concerns about the health of fish populations within the river, particularly in the Camps Drift area:

He {an environmental health consultant} says that there still is a remarkable range of fish in the river, but that parasitic animals, the microbiological organisms that are parasitic, are really a threat, so yeah I don’t know much about this, but he says that any fish you pick up from here in Camps Drift would be riddled with parasites. (N6)

Unfortunately, KZN Wildlife would not become involved in the health of the river in the Camps Drift area because it is considered too urban an area. They would only become involved if the EIA identified important environmental considerations that needed to be
addressed, such as issues of extreme biodiversity loss (P9). Although there are numerous environmental considerations and concerns with regards to the Camps Drift project, a provincial employee with the DAEA attempted to put these into perspective by assuring that the “municipality will only agree with the waterfront if some of the environmental considerations are fixed, and the developers feel the same way” (P10). There are thus clearly plans to address the environmental concerns that have been raised before any development moves forward. However, considering the other issues with the municipality—such as a lack of trust in some of its plans and policies with regards to open space, and questions about the reliability of the development consortium—it is questionable whether these plans will materialize.

5.4.2.6 Infrastructural issues

Just over half of the respondents identified infrastructural issues such as the necessity of installing sewage pipes and removing power lines as important constraints to the Camps Drift development. The case of the power pylons is particularly troublesome, because as part of the proposed services agreement, the municipality will be responsible for the removal of these power pylons from the property, at a cost of approximately R2million. Because the developers only paid R2million to purchase the 26 hectare property, there are obvious fears that the advantage of this development for the municipality is questionable (Naidoo, 2007). The rates from each stall sold, of approximately 2-3%, that the municipality will receive will therefore be the main source of revenue from this development.
5.4.2.7 Short-term political thinking

Some of the respondents referred to short-term and political thinking as being detrimental to a successful waterfront development. The apprehension is that because there is such a focus on the economic benefits of the project, other issues, particularly environmental and water quality issues, will be disregarded. A media respondent points this out by stating:

See that’s the sad thing! The [profits] go totally to the developer[…]a little bird told me that…this council just rolled over to everything that the developer said so basically what happened is the profits are all going to go to the developer, and it’s just the rates that they pay that will go to the city council. It’s an interesting case study on Msunduzi…It’s a good example of how cities will meet and city councils and municipalities will be motivated by, you know, getting more money, they let themselves sell their souls to the developer. (J12)

This type of short-term thinking may be quite detrimental in the long-run. For example, if the project is pushed forward without proper hydrological studies taking place to assess the infrastructure necessary to build on a flood-plain, and if adequate alternative flood-plain areas are not present, there may be unforeseen costs and consequences in the future.

5.4.3 The case study and open space planning in Msunduzi

After examining the Camps Drift case study and the issues surrounding the waterfront development, it is clear that the case study reflects several aspects of open space planning in Msunduzi that are worth exploring. First, and perhaps most importantly, the case study reflects that although reports and plans state that open space is to be maintained with the view to creating an open space network, this is not necessarily what is happening on the ground, particularly with reference to Camps Drift. Without a
MOSS and a viable management plan, spaces like Camps Drift will continue to be developed without understanding the wider perspective.

Also, the Camps Drift study reflects that the approach of the municipality and of the current council is predominantly an economic or development approach to open space. Although there are large environmental and technical constraints, the development plan is still moving forward with seemingly little attention or consideration to these issues. A media respondent acknowledges this problem with the assertion:

I think, basically, for me, when the city council accepted it, they didn’t accept it as an environmental project, they accepted it as an economic project...so basically the people who want the project won, which is crazy. I think environmental concerns and open space concerns are not really part of this project. They’ve taken a back seat to this development. (J12)

The presence of this economic and development oriented approach is evident from this statement by a municipal employee:

To the municipality, it was a flood plain. So it wasn’t an active open space...some people used it for recreational purposes because they knew that they couldn’t build anything on it you know, so I think there was a BMX kind of thing that was happening there, picnics, canoeing, on the banks, on the property that is going to be developed now; it was largely under-utilized, you know, for all the reasons that I’ve mentioned. It had no value outside of providing a place for water that always shot the bank. (M2)

A respondent, discussing the Environment Outlook South Africa 2006 Report, describes the problems associated with water security and food security in South Africa:

Because basically it says that there’s no more water in South Africa to be sustained...and it says that South Africa cannot feed its present population, let alone any future generations. So in terms of food security, and in terms of water security, South Africa is basically a basket case...all of the short term development is basically very short-sighted... not only the Msunduzi...the water source itself is in question, you know, in terms of its reliability, and its sustainability for the long term. So, do you want to go
ahead with such a huge money spender when in fact you’ve got a very fragile water resource that you’re working with? (N7)

Throughout the key informant interviews, it became evident that there are alternate options for this space besides the current waterfront proposal. When discussing what respondents might like to see done with this space, the perspectives varied from wanting to see fairly small changes to the waterfront development plan to a complete overhaul of the plans:

I would like to see parkland, seriously. Yeah, recreational areas…and then nature reserves… then that [the river] would become a formerly protected area all the way down, and there wouldn’t be an inch more development along the river. I’d like to see how their plans fit in with an integrated development plan, so in their proposal, I’d like to see evidence… there’s enough wild space, green space, along the river, because it’s right now a very wild place, pretty much transformed… See if what they’re planning to develop takes cognizance of the terms etc…and I’d be wanting to voice. (N7)

Another group, DUCT, feels that the current development is a positive step for the Camps Drift space, because it will result in enhancement of the area, a creation of a system of canals. The project is also generally well supported by paddlers because of the sport possibilities, as respondents N5, N6 and R8 made clear. Respondent N5 clarified this, stating that she is very pro-open space, but only if it is used properly, which they feel is not the current situation in Camps Drift:

That space is just sitting there, the water quality is bad, and the canoeing opportunities are bad…sure, let’s make something of it. (N5)

Both the media and business respondents had similar views:

I think this is a good idea. We need something to generate some income you know, and so I think that this is a good idea. Ah, but I mean, there are some big issues, at this point, I question the objectives of this project, and I think I’d certainly like to know more about what the development is, you know, it’s hard to say at this point when we have no idea what the final product will look like. (J12)
What would I like to see being done? Oh...anything that would help improve it. Wetland conservation is a fairly big part that we’re not really dealing with adequately; riparian wetlands of course, since we don’t have a lot, but constructed wetlands could also be a part of this as well, the upper part of camps Drift, that upper sedimentation base, could effectively be, if you like, a constructed wetland. You wouldn’t necessarily dig out all of the established reed bed, but you could utilize what’s already formed itself there (B11)

These perspectives show that the opinions regarding the Camps Drift project vary immensely between stakeholders depending on their use of the space and what alternatives they feel are possible. The general perception, however, is that the Camps Drift project could have numerous beneficial aspects, but there are many key issues that need to be addressed before this can occur.

Based on the information regarding open space standards and guidelines, as well as the criteria necessary for high quality open space, the Camps Drift project requires substantial modification before these criteria will be met. Based on the findings presented within the framework of the first two objectives, the criteria that are most essential for the Camps Drift project to adopt are increased communication with stakeholders and users, increased equitableness of accessibility to the waterfront, increased awareness of environmental considerations and a commitment to LA 21 objectives and goals.

There is a lack of interaction and communication with stakeholders and users, as demonstrated by this respondent:

I mean, here’s a wide open space here, and how much of it will be dedicated to parks and open spaces for people. So this is a question that all of us are asking: what is your environmental plan, what is your plan for open spaces, Council? Please let us know, if you have one. (J12)
This lack has manifested itself in a lack of trust in Municipal decisions and a questioning of the reliability of the development consortium in charge of the Camps Drift development. A business respondent demonstrates this by stating:

> We don’t have enough feedback from what their intentions are to be able to say anything. I think they’re quite likely to be affected by water quality issues in general, and the resource issues we’ve been talking about, and they won’t be able to deliver what they seem to be implicitly promising, they’re certainly not going to be able to deliver a safe water resource to the doorstep, because it’s out of their control, and there are too many things that are wrong with what’s upstream of them to ever think that it’s in their control. This project may even contribute to problems, we don’t know yet, cause we’ve not seen what it is they’re proposing. (B11)

A stronger commitment to ensuring that the waterfront will be accessible to all users and citizens of the Municipality is also necessary, as is an increased focus on environmental considerations such as the water quality of the Duzi river and the feasibility of building in a floodplain area. Recommendations for how the Municipality could ensure that these criteria are met and will be discussed in more depth in Chapter 6.

**5.5 Objective C: To understand how this research relates and contributes to the broader open space literature, debates and concepts**

There are four particular areas in which this case study and research contribute to the broader literature and theory. The first involves the discrepancy between open space policy and actual practice on the ground, which has not been widely identified in the literature. The second involves the neglect of the socio-spatial dimension in local open space policy, which has been widely discussed in the literature about urban space theory. The third is that the case study reinforces the need for local planners to include historical and contextual considerations when planning and managing open space. Finally, the case
study is a reflection of the economic and development approaches to viewing open space that are dominant in both this local situation as well as in open space literature itself and more generally in South African policy.

5.5.1 Discrepancy between policy and practice

The case study is a reflection of the discrepancy that exists within the translation of policy into practice. Although some authors\textsuperscript{25} cite the discrepancy between creating effective standards and policies in order to have high quality open space and the difficulty in actually implementing these policies, these are a minority. In general, much of the literature does not identify this discrepancy and instead focuses on creating the best and most accurate open space plans, systems and models. Although this is valuable and needed, there is a need for more critical planning literature that identifies this discrepancy and offers solutions and ways of overcoming it. In the Camps Drift case study, the plans that are on paper, such as the MIDP and the SDF, are not necessarily what are followed on the ground.

While acknowledging that other explanations may be relevant, this research project suggests that there are several possible reasons why these policies are not easily implemented on the ground. The first is simply because of the definitions and explanations of terms that are used in policies. For example, the definition of sustainable development that is advocated in the MIDP has multiple and sometimes contradictory meanings, as do open space and public space definitions. There needs to be a broader

\textsuperscript{25} Arendt, 1992; Scottish Executive Social Research, 2005; Cook, 1991.
consensus on what these terms signify in order for them to be used more effectively. Similarly, there are different perspectives and opinions of what constitutes 'quality' open space amongst stakeholders and municipal planners and employees. By developing more comprehensive definitions for these terms and ensuring that stakeholders and community members understand the terms, some of this discrepancy could hopefully be eliminated.

Another possible reason for the disconnect between policy and implementation is the structural and resource issues in the form of funding and human capital. Throughout the past seven years, South Africa has experienced a large delineation of responsibility to local governments (Hart, 2002). This has meant that limited municipal budgets have been stretched to meet changing needs and a growing urban population, which is reflected in the case of Msunduzi. A final reason for this discrepancy in Msunduzi is the lack of participation by and communication with stakeholders and community members. In terms of Camps Drift, many stakeholders interviewed felt a lack of trust in the municipality and felt that they were not consulted in the development of this project.

There is thus obviously no 'quick' fix that will solve this divide between policy and practice and there needs to be large scale structural development as well as a further focus on this issue within research.

5.5.2 Neglect of socio-spatial dimension within open space policy

Similarly, the case study exhibits the disconnect between recognition at the theoretical level of the importance of the socio-spatial and the actual inclusion of this within planning and policy-making. As Spinks (2001) discusses, traditional research on
open space often overlooks the socio-spatial dimension and regards urban space as simply geographical. Although this is changing as modern interpretations of urban space focus more on the historical, social and political aspects, it is still common at the implementation level, as the Camps Drift project demonstrates, to treat urban space as primarily geographical. The proposed waterfront project does not have a strong focus on the socio-spatial dimension of this space and thus there are important issues surrounding accessibility and equality. This case study must be understood within the socio-spatial debate as it is space that is intimately linked with the social relations that occur within and around it. Plans and developments of the area must consider the socio-spatial implications. As Bond (2005) discusses, not recognizing open spaces as having a social dimension can lead to a 'class apartheid' whereby segregation is based on class rather than race, because only people from a particular class can socialize in certain areas. As revealed in the literature review, modern open space research increasingly recognizes the importance of the socio-spatial dimension to open space management and planning, but that is not being properly translated into developments and policies on the ground.

5.5.3 Importance of history and context to planning policy

The case study also reinforces the need for planning to include historical and contextual considerations when creating open space policies. Plans and policies have to fit with the contextual background of each particular area. For example, South Africa and Msunduzi have very specific contexts in which open space is simply one aspect of creating a liveable city. Many of Msunduzi’s open spaces exist as part of an inherited
spatial structure from the apartheid era, and this must be taken into account in all planning. Not all stakeholders have the same view of these ‘left-over’ open spaces. As shown, some view the Camps Drift space as not optimal or positive, because it was used as a way to segregate. There is some desire to move beyond this inheritance and begin designing spaces anew so that they fit with the new vision of the municipality.

The case study shows some reactionary elements in the development of the Camps Drift space. Because it was originally designed as a segregationist tool, the first, reactionary instinct, may be to convert the space into something else in order to remove past connotations of the space. Doing this would be problematic because decisions about management and development of the space would not be based on quality open space indicators (Urban Task Force, 1999).

Another reason why planning should consider the historical and contextual background is because the categorization of the space, and thus the planning model that is used, will be different according to its past usage and design. In general, the open space categories are relatively broad and overarching. For example, Camps Drift fits best within the category of 'urban open space' according to the typology discussed in section 2.3. However, if the historical considerations are also considered, it can be categorized as social open space or ecological open space. This shows that there should be a broader categorization of spaces within the literature that ensures that planning is historical and contextual.
South Africa’s SLOAP (Spaces Left Over After Planning), which, arguably Camps Drift fits into, are very different spaces than those in Western Europe or North America, which is where much of the literature focuses. As the JMOSS (2002) points out, there is a need for further research that is specific to South Africa. A broader focus in the geography of the research and literature would be beneficial.

The case study illustrates that there is a need not only for planning to be historical and contextual, but also for it to recognize the influence of the surrounding political sphere as well. The economic paradigm that is currently dominant in South Africa and its effects on the approach to open space planning that is used are also worthy of exploration and consideration in the literature, as discussed in the following section.

5.5.4 Dominance of economic and development approaches

Finally, this research demonstrates very clearly that the four approaches to viewing open space identified in the literature (please see section 2.4) do in fact exist on the ground in Msunduzi Municipality. Although the case study shows that all four approaches exist, the most dominant approaches were the economic and development approaches.

The dominance of these two approaches is reflected in the literature as well. Increasingly, research on open space services and functions focuses on the economic values of the space and disregards many of the other values, particularly social, cultural and ecological services (Schmidt, 2008; Fausold and Lilieholm, 1999; Stirling, 1993). The problem with this focus in research is that it can lead to a form of what Schmidt
(2008) refers to as 'economic reductionism' as research attempts to prove the economic benefits of nature.

This economic dominance is not unique to open space planning in South Africa, but rather it is part of the prevailing political economy, which allows development with limited constraints. The case study demonstrates this clearly as development is moving forward without the existence of an SDF or a MOSS and with the focus on increasing the municipality's rates rather than the quality of life of the community.

The prevailing neoliberal orthodoxy has been gathering force in South Africa since the end of apartheid. Official neoliberalism can be defined as the adherence to free market economic principles (Bond, 2005). South Africa adopted neoliberalism over a very short period of time, with the GEAR (Growth, Employment and Redistribution) program as a starting point 8 years ago. GEAR is a package of conservative neoliberal economic policies that the ANC government embraced soon after the end of apartheid (Lester et al., 2000). It is increasingly evident in the critical literature on South Africa that concerns about the current direction of South Africa's post-apartheid transition are paramount (Bond, 2005; Hart, 2002; Lester et al., 2000; Marais, 2001). There are thoughts that every step forward in sustainable development for the country is in effect two steps backward because of neoliberal ideology in development policy and economic management.

In addition to the push towards neoliberalism and economic growth, Hart (2002) describes how fiscal austerity, including a retrenchment of direct welfare provision, has
gone hand in hand with the devolution of power and responsibilities to the local
governments. In Msunduzi, the increased responsibilities of the municipal government
have led to scarcer resources and tighter budgets. It is therefore not surprising,
considering this broader political economy, that the economic approach is also dominant
in open space planning in Msunduzi.

5.6 Summary

The results of the key informant interviews and of the in-depth review of grey
literature highlight the issues surrounding the Camps Drift case study and the problems
associated with moving forward too quickly with the development of open spaces.

It also expanded upon some of these observations and identified key themes of a
lack of communication with local stakeholders and citizens, and a lack of attention to
serious environmental considerations. Finally, linking this research to the broader
literature and debates surrounding open space offers areas for further research specific to
Msunduzi and also more broadly to the field of open space research.
Chapter 6: Conclusions and Recommendations

6.1 Introduction
The aim of this chapter is to review the key objectives of this thesis and bring them together into some general conclusions regarding urban open space policies and plans in Msunduzi. It will also present several recommendations and areas for further research.

6.2 General Conclusions
In light of the findings and analysis presented in Chapter Five, it is clear that there are difficulties with planning and management of urban open spaces in Msunduzi. The three objectives illuminated the issues surrounding current open space policy and planning as well as the problems with the Camps Drift case study.

The difficulties identified with current open space policy are a lack of clear standards for open space and of policies to direct the development of these spaces. There is also a lack of clear communication with stakeholders and with community users. The case study of Camps Drift reflects these aspects in that although the Camps Drift Waterfront Development could be beneficial to the city, there are many reservations and issues that need to be addressed first. Clearer information about the development, the developers and the whole process is needed in order for community members to feel secure in the development of this space. In addition, the Duzi River needs to be restored and cleaned-up in order for this space to be safely used recreationally. One of the
potential benefits of the waterfront project is the possibility that it will encourage
restoration and conservation of this water resource.

In terms of open space standards and LA 21 objectives and their relation to open
space planning, it is clear that they are essential to effectively plan and manage urban
open spaces. It is difficult to move forward with the spatial planning of a city’s open
space when it is unclear what indicators of quality open space are and when standards do
not exist to ensure that developments meet these criteria and indicators.

In terms of this research’s contributions to the broader open space literature and
debates, the case study demonstrates that there is a discrepancy between open space
policy and what happens in practice. Policies need to be developed which are feasible
and that will take place on the ground. This discrepancy needs to be addressed through
multifaceted and large-scale structural changes to the current system. The case study also
shows a neglect of the importance of the socio-spatial dimension in open space practice
and the importance of history and context to creating effective and implementable open
space policy. Finally, this research demonstrates that the economic and development
approaches to open space are dominant in both the literature and in practice. This focus
on economic considerations to the exclusion of other essential services of open space is
detrimental and will fail to result in viable and accessible open space for the whole
community. It is clear from the literature\footnote{Examples include Atwell et al., 2005; Chiesura, 2004 and Thompson, 2002.} that different open spaces have different
qualities and services for different people and that one area cannot replace another. Thus, a range of open space types are necessary to create a vibrant urban open space system.

6.3 Recommendations

With these general conclusions highlighted, several recommendations can be made for improving the planning, management and development of urban open spaces with reference to Msunduzi Municipality. These include the creation of a MOSS for the city, the development of open space standards and indicators of quality open space and greater dissemination of information to community members and stakeholders.

- **Creation of a MOSS**

  A Metropolitan Open Space System is necessary in order to accurately plan open space in the municipality. This should include a spatial development framework for the entire city. It is necessary to know what open space exists throughout the municipality, the location of this space and its level of accessibility and quality before planning decisions take place. Having a MOSS and a detailed SDF will ensure that open space is taken into account when planning developments within the city.

- **Creation of standards and indicators of open space quality**

  It is recommended that permission for development in the existing and desired ecological open spaces be withheld until measurements and standards for high quality open space be established. This remains constant with the JMOSS report on open space and its recommendations for development of un-categorized open spaces (City of Johannesburg, 2002). There should also be a greater integration of LA 21 goals and
objectives with council decisions. As discussed, there seems to be a divergence between the recommendations and objectives of the LA 21 committee and the actions of council.

- **Greater dissemination of information**

  There is a need for greater dissemination of information and plans to local citizens and relevant stakeholders. This could be done through stakeholder meetings which would announce plans and circulate information. Environmental impact assessments perform this function as well, but the difficulty is that they often come later in the development process. Perhaps having LA 21 meetings and minutes publicized would help to rectify this problem.

6.4 **Future Research Directions**

This research will be shared with all of the key-informant interview respondents as well as with other relevant stakeholders as requested. Copies will also be made available to CEAD at the University of KwaZulu-Natal as a reference for future researchers. It is clear that the findings of this report could be useful for future planners and municipal employees when creating open space policies and planning decisions. A key area for future research centres on the issues of how to make open space considerations more central to both decision-makers and to community members. Open space concerns will become more prevalent in the future, and it will be necessary to incorporate them into urban planning decisions more than ever. A fitting final thought comes from Ebenezer Howard, one of the first urban open space planners, in his 1902 work *Garden Cities of To-morrow*:
There are few objects which the people so jealously guard as their parks and open spaces...the town will grow; but it will grow in accordance with a principle which will result in this--that such growth shall not lessen or destroy, but ever add to its social opportunities, to its beauty, to its convenience. Its object is, in short, to raise the standard of health and comfort of all true workers of whatever grade--the means by which these objects are to be achieved being a healthy, natural, and economic combination of town and country life, and this on land owned by the municipality (Howard, 1985: 17-18).

It is my hope that this vision will inspire future planning and management of open spaces both in Msunduzi and more broadly.
References


DUCT Dusi Umegeni Conservation Trust. 2007. "Camps drift project discussion".


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Appendix A: Ethics Approval

April 23, 2007

Ms. Colleen Sutton
Master's Student
Environmental Studies
Queen's University

GREB Ref # GENSC-009-07
Title: “Urban Ecosystems and Human Health in South Africa: Perceptions of Urban Green Space”

Dear Ms. Sutton:

The General Research Ethics Board (GREB) has given expedited approval to your proposal titled “Urban Ecosystems and Human Health in South Africa: Perceptions of Urban Green Space”. In accordance with the Tri-Council Guidelines (article D.1.6) and Senate Terms of Reference (article G), your project has been approved for one year. At the end of each year, GREB will ask if your project has been completed and if not, what changes have occurred or will occur in the next year.

You are reminded of your obligation to advise the GREB of any adverse event(s) that occur during this approval period (details on webpage www.queensu.ca/vpr/greb/add/forms.htm?Adverse). An adverse event includes, but is not limited to, a complaint, a change or unexpected event that alters the level of risk for the researcher or participants or situation that requires a substantial change in approach to a participant(s). You are also advised that any adverse events must be reported to the GREB within 48 hours.

You are also reminded that all changes that might affect human participants must be approved by the GREB. Examples of required approvals are: changes in study procedures or implementations of new aspects into the study procedures that affect human subjects. These changes must be sent to Linda Frid at the Office of Research Services or FRIDL@queensu.ca prior to implementation. Ms. Frid will seek the approval of the GREB reviewer(s) who originally assessed your application or the GREB Chair.

On behalf of the General Research Ethics Board, I wish you continued success in your research.

Yours sincerely,

[Signature]
Joan M. Stevenson, Ph.D.
Professor and Chair
General Research Ethics Board

Copy: Dr. Allison Goebel, Faculty Supervisor
Appendix B: Interview Guide

General open space planning information:
- What do you think about the current state of open space in Msunduzi?
- What direction do you think the municipality is currently taking in terms of planning open space?
- What direction do you think the municipality should take in terms of open space?
- Where do you think the power lies in terms of making open space planning decisions? Who is most influential in making these decisions?
- What is your vision for open space in the municipality?

General Camps Drift information:
- What is your understanding of the Camps Drift Waterfront Development at this stage? Why the delay? What do you believe are some of the issues surrounding the project?
- What is your organization’s role in the project? What would you like it to be?
- How do you think the municipality perceives the space at Camps Drift? (ie: as public space, recreation space, development space etc)
- Is the waterfront development project what you would most like to see in this space? Why or why not? If not, what would you prefer to see?
- Do you think this project fits into the LA 21 project and plan? In which ways?
- Who do you think are the relevant stakeholders/groups involved in the project? Who do you believe should be involved in the project?
- Who do you think is most influential in the development of this project?
- How involved has the community been in this project thus far? How involved should it be?
- What effect do you think the project will have on the water quality of the Duzi?