

CHAPTER TWO: PROJECT DESCRIPTION

2.1 INTRODUCTION

The proponent, Umgcambo Trading (Pty) Ltd, proposes to develop a portion of Portion 525 of Farm Strathsomers Estate No. 42 (~154.28ha, hereafter known as Umgcambo), in the Sundays River Valley Municipality (SRVM), for the establishment of citrus orchards and associated infrastructure (e.g. new dam, internal roads, internal irrigation pipes, logistical services area). Irrigation water for the development is proposed to be supplied from the Lower Sundays River Water Users Association (LSRWUA) canal system, via a pipeline with an internal diameter of \varnothing 500mm and a length of ~1.5km, to be installed on an adjacent property, Portion 523 of Farm Strathsomers Estate No. 42, which is owned by the same landowner.

The nearest town to Umgcambo, Kirkwood, is located ~6.8km northwest of the site (see Map 2.1). The nearest boundary of the Addo Elephant National Park (AENP) is located more than 10km north of Umgcambo and therefore, project activities proposed to take place on this property do not trigger listed activities which would require the assessment of impacts on the National Park. The installation of the irrigation water pipeline is proposed to take place on Portion 523, which is adjacent to Portion 525. While Portion 523 is located within 10km of the AENP, the installation of the irrigation water pipeline does not trigger any listed activities, which would require the assessment of impacts on the National Park (i.e. activities in Listing Notice 3).

As per the requirements of the NEMA EIA Regulations, 2014 (as amended), GN R326, Appendix 2, Section 2. (1) (b), (c) and (d), this chapter of the report provides the following information, where relevant:

2. (1) (b) *the location of the activity, including-*
 - (i) *the 21-digit Surveyor General code of each cadastral land parcel;*
 - (ii) *where available, the physical address and farm name;*
 - (iii) *where the required information in items (i) and (ii) is not available, the coordinates of the boundary of the property or properties;*
2. (1) (c) *a plan which locates the proposed activity or activities applied for at an appropriate scale, or, if it is-*
 - (i) *a linear activity, a description and coordinates of the corridor in which the proposed activity or activities is to be undertaken;* or
 - (ii) *on land where the property has not been defined, the coordinates within which the activity is to be undertaken;*
2. (1) (d) *a description of the scope of the proposed activity, including-*
 - (i) *all listed and specified activities triggered¹;*
 - (ii) *a description of the activities to be undertaken, including associated structures and infrastructure;*

2.1.1 Proposed Project Location

Map 1.1 in Chapter One of this report, includes a locality map indicating the location of Umgcambo, as well as the proposed irrigation pipeline corridor originating on Portion 523, in relation to the nearest town and main roads. The cadastral information listed in Table 2.1 below is relevant to both Umgcambo and Portion 523. In addition, because the project has a component which is a linear activity (irrigation pipeline), the co-ordinates of the proposed pipeline corridor are also provided.

¹ Listed activities requiring environmental authorisation in terms of the NEMA EIA Regulations, 2014 (as amended) are contained in Chapter 4 of this report.

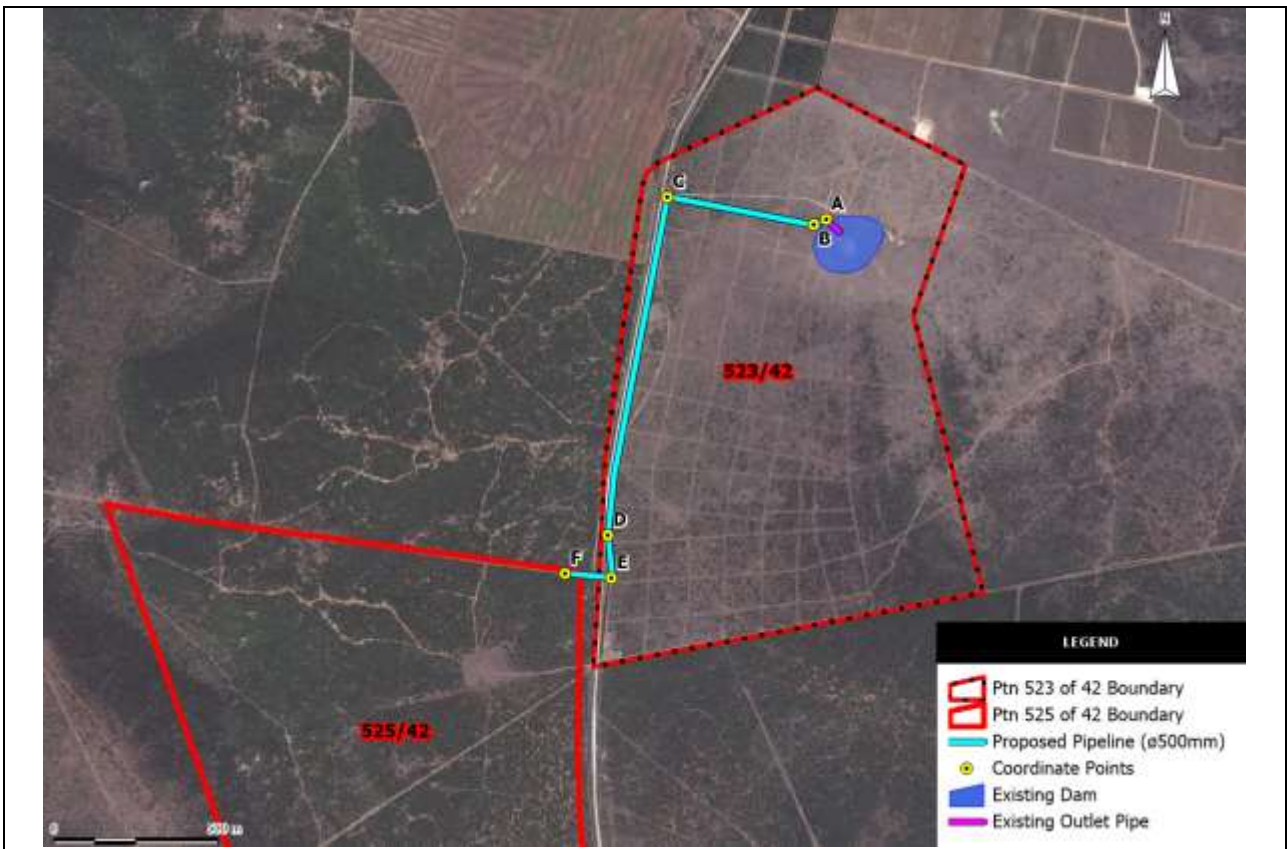
Table 2.1: Project cadastral information.

SURVEYOR GENERAL 21 DIGIT CODE																				
C	0	7	6	0	0	0	0	0	0	0	0	0	0	4	2	0	0	5	2	5
C	0	7	6	0	0	0	0	0	0	0	0	0	0	4	2	0	0	5	2	3
PHYSICAL ADDRESS AND FARM NAME																				
<ul style="list-style-type: none"> • Portion 525 of Farm Strathsomers Estate No. 42, Uitenhage RD, Bluecliff Road, SRVM • Portion 523 of Farm Strathsomers Estate No. 42, Uitenhage RD, Bluecliff Road, SRVM 																				
SITE COORDINATES: PORTION 525, UMGCAMBO																				
Point Number	Latitude (S) (DDMMSS)						Longitude (E) (DDMMSS)													
1	33°	28'	2.23"S				25°	27'	37.43"E											
2	33°	28'	8.04"S				25°	28'	24.44"E											
3	33°	28'	26.50"S				25°	28'	24.21"E											
4	33°	28'	40.94"S				25°	28'	25.90"E											
5	33°	28'	58.18"S				25°	28'	22.68"E											
6	33°	28'	58.44"S				25°	28'	0.78"E											
COORDINATES OF THE PROPOSED IRRIGATION PIPELINE CORRIDOR																				
Point Number	Latitude (S) (DDMMSS)						Longitude (E) (DDMMSS)													
A	33°	27'	38.98"S				25°	28'	48.57"E											
B	33°	27'	39.47"S				25°	28'	47.31"E											
C	33°	27'	37.15"S				25°	28'	32.94"E											
D	33°	28'	4.93"S				25°	28'	27.05"E											
E	33°	28'	8.44"S				25°	28'	27.41"E											
F	33°	28'	8.07"S				25°	28'	22.85"E											

Map 2.1 below shows the boundary of Umgcambo upon which the agricultural development is proposed to take place. Map 2.2 below indicates the proposed irrigation pipeline corridor, originating on Portion 523.



Map 2.1: A plan indicating the coordinates of the boundary of Portion 525 of Farm Strathsomers Estate No. 42, known as Umgcambo, upon which the agricultural development is proposed to take place.



Map 2.2: A plan indicating the coordinates of the pipeline corridor originating on Portion 523 of Farm Strathsomers Estate No. 42.

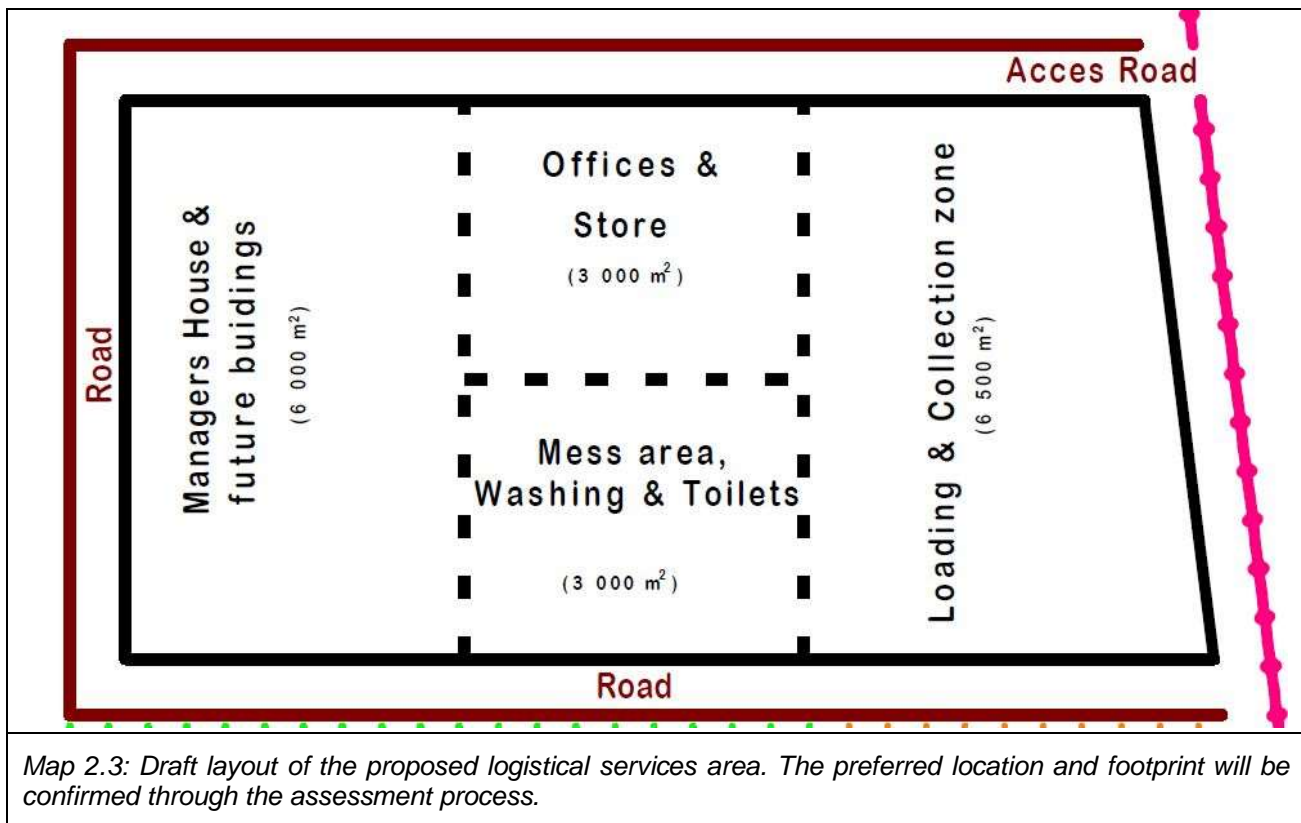
The final preferred development footprint for the proposed project will be determined by the outcome of the assessment process, which will include a consultation process, specialist assessments and technical input. The listed activities which potentially require Environmental Authorisation are included in Chapter Four of this report. The proposed specialist studies, scope and methodology for the assessment process is outlined in Chapter Six of this report and the assessment of alternatives is outlined in Chapter Five.

2.2 PROPOSED PROJECT SCOPE AND ACTIVITIES

Subject to the outcome of the assessment process, specialist studies, technical input and consultation process, the project proponent, Umgcambo Trading (Pty) Ltd, intends to utilise the agricultural potential of the land for the establishment of citrus orchards. Umgcambo measures ~154.28ha in extent and is zoned Agriculture I. It is anticipated that a portion of Umgcambo will not be deemed suitable for development, subject to the recommendations by the various specialists, as well as technical input (aquatic resources and associated buffers, areas required to meet biodiversity targets, soil suitability, slope etc). The area to be developed will be informed by the various specialist assessments through the assessment process.

Irrigation of the proposed agricultural development requires the construction of a new dam with a capacity of ~80 000m³ (~4 ha footprint) and the installation of irrigation pipelines of varying diameters. Irrigation water for the development is proposed to be supplied from the LSRWUA canal system, via a pipeline with an internal diameter of ø500mm and a length of ~1,5km, to be installed on an adjacent property, Portion 523, which is owned by the same landowner (See Map 2.2 above). The pipeline will convey water from an existing dam located on Portion 523 and is proposed to follow the fenceline of that property until it reaches the boundary of Umgcambo, at which point it is proposed to be installed under the DR01976 to connect into the new dam to be constructed on Umgcambo.

In order to provide logistical support to the development it is proposed that a logistical services area of ~2ha is constructed to include offices and a store for tractors, trailers, maintenance equipment, as well as a fully enclosed bunded, roofed facility of 30m³ for temporary chemical storage; mess area and ablution facilities (washing and toilets); loading and collection zone for the delivery and collection of product; and a new access road around the facility, as well as a manager's house and other future buildings (See Map 2.3). The additional services infrastructure required to support the logistical services area will require input from a suitably qualified professional (Roads and Wet Services Report), as well as a Traffic Impact Assessment.



During spraying season, chemicals are purchased, delivered and utilised on a needs basis and thus, do not require storage in bulk on site. The proposed new logistical series area will include a fully enclosed bunded, roofed facility with a capacity to temporarily store 30m³ of chemicals.

Plastic crates and wooden pallets required during harvesting seasons are proposed to be hired from an independent contractor and transported via truck to delivery and collection areas within the orchards (see photo 2.1). Once a crate is full it is transported via tractor-trailer to the vehicle collection and delivery area at the proposed new logistical services area where it is collected and directly transported to a packhouse for sorting and packaging. The fruit is not stored in bulk on site and needs to be transported to the packhouses in as short a time as possible to prevent degradation of the product.



Photo 2.1: Example of crates being packed within the orchards during harvest season.

The now, empty plastic crates and wooden pallets are returned to the designated areas within the orchards, to be refilled with fruit for processing. At the end of the harvest season the crates and pallets that have been hired are returned. Thus, no additional storage areas are required for wooden pallets and plastic crates. The proponent utilises an independent packhouse for the processing and export of its product and transport companies are hired on a needs basis to transport fruit. Based on market conditions, the fruit produced as a result of the proposed agricultural expansion will be sold as fresh fruit to local and international markets (export).

During harvesting season, portable toilets are placed within the orchards to provide sanitation facilities for workers. In order to accommodate the proposed agricultural development, a new logistical services area, comprising of office/ admin space, storage/ workshop area, as well as various staff facilities, will be required.

The proposed agricultural development on Umgambo and installation of irrigation infrastructure on Portion 523 can be divided into the following phases, which are outlined in more detail in the sections below:

- Preconstruction;
- Construction; and
- Operational

At this stage of the assessment process decommissioning is not proposed and would be subject to the regulations applicable at the time.

2.2.1 Preconstruction

The fruit proposed to be produced on site is predominantly for international markets, with some of the fruit to be processed (juiced) for local markets. In order to meet the requirements of export stock, seed (the foundation block seed) is required to be booked and purchased from a certified agency, the Citrus Foundation. This is booked approximately two years in advance in order to secure the seed, which includes a financial deposit.

The seed is provided to a certified nursery for a two year grow-out period, during which the seeds are germinated and the seedlings grown to sapling stage. Meticulous coordination is required between the Citrus Foundation for the purchase of the seed, the nursery for grow-out, and the citrus producer, in order to meet contractual obligations for harvesting and export of the crop. This is an on-going process, which is carefully timed and coordinated to allow the development of the site to take place seamlessly over the development timeframe proposed by Umgambo.

The preconstruction phase for securing the foundation block seed and growing of the saplings occurs in parallel to site preparation which is outlined below.

2.2.2 Construction

The project will entail the clearing of vegetation, levelling of the site, and the installation of the drip/ micro irrigation system, as well as the establishment of the bulk irrigation infrastructure (i.e. pipeline and proposed dam), prior to the planting of the saplings. Once the site is prepared, citrus orchards will be established (refer to the operational phase of the development). It is anticipated that vegetation clearing, landscaping, site preparation and planting will be done both by hand and with the aid of suitable earth moving equipment (excavators, bulldozers, TLBs). No workers' accommodation will be provided on site during the construction phase.

Site preparation will entail the following activities on site:

- Clearing of indigenous vegetation;
- Landscaping and levelling the site for citrus orchards, as well as to provide runoff control and stormwater management;
- Establishment of internal unpaved service roads;
- pipeline connection to the existing outlet associated with the dam on Portion 523 and installation of the ø500mm irrigation pipe to Umgambo;

- Construction of the new irrigation dam (~80 000m³) on Umgcambo;
- Installation of internal water reticulation and irrigation infrastructure;
- Construction of the logistical services area and new access road; and
- Construction of the manager's house
- Construction of associated domestic water and effluent management systems
- Planting of orchards and windbreaks (if necessary).

Site preparation needs to be completed to coincide with the planting of the trees, which occurs annually between September to March.

2.2.2.1 *Vegetation Clearing and Landscaping*

An area of ~155ha is under assessment for the establishment of citrus orchards. However, the final area to be cleared will be subject to the outcome of the detailed specialist assessments, technical input and consultation process, and is likely to be less than 155ha.

Vegetation clearing will commence with the aid of both mechanised plant/ earth-moving equipment and by hand. Once vegetation has been removed from the development footprint, the area will be landscaped to provide for the establishment of unpaved internal service roads, access roads irrigation infrastructure and laydown areas, as well as the orchards; and to facilitate stormwater management. Vegetation will also be in order to construct a new irrigation balancing dam within the area under assessment. The new pipeline connection on Portion 523 will be installed in already cleared internal unpaved roads and vehicle tracks.

Chapter Five of this report outlines the assessment of alternatives and provides more detail on the methodology that will be adopted for the identification of the preferred area proposed for development, which will be assessed in full in the EIA phase of the assessment.

2.2.2.2 *Construction of the Logistical Services Area*

A new logistical services area is proposed to be constructed in order to provide administrative and logistical support for the development. The proposed logistical services area will measure ~2ha in extent and is proposed to consist of the following support infrastructure/ structures:

- Loading and collection zone (6 500m²)
- Access road including turning circles
- Offices and storage area (3 000m²)
- Staff facilities including ablution blocks and mess area (3 000m²)
- Manager's house and other future buildings (6 000m²)
- Domestic water, effluent and stormwater management systems

The proposed workshop and storage area will include a fully enclosed bunded, roofed facility with a capacity to temporarily store ~30m³ of chemicals required for the proposed agricultural development.

2.2.2.3 *Internal Roads and Access*

Access to the farm is proposed off the gravel DR01976. An existing access point is proposed to be utilised to access the proposed development. A new access road will be constructed from the existing access in order to allow for the movement of trucks and tractor-trailers in and around the logistical services area.

The suitability of the existing access point, as well as the impact that the additional trip generation may have on the public road network will require assessment by a suitably qualified traffic specialist.

Integral to the internal operations within the proposed orchards are a number of new internal service roads (See Photo 2.2). These internal service roads are anticipated to be upwards of 4m in width. It is anticipated the main internal roads will be provided with a gravel wearing course, while the vehicle tracks amongst the individual orchards will remain unpaved. All internal roads will be designed and constructed to accommodate stormwater runoff, e.g. avoid steep gradients, stormwater cut-off/ diversion berms, and judicious use of erosion protection measures.



Photo 2.2: Example of internal service roads on an existing citrus farm in the Sundays River Valley.

2.2.2.4 Installation of Irrigation Infrastructure and Dam Construction

The proposed orchards will be irrigated with water from the LSRWUA supply system. Irrigation water is extracted from the canal, under agreement with the LSRWUA. Individual farmers are permitted to extract water from the canal only at certain allocated pumping/ release times according to a predetermined schedule. Between the allocated pumping/ release times, the holder of water entitlements does not have access to the canal water. Therefore, since water is not continually available from the canal, the orchards cannot be irrigated directly from the canal and irrigation water is required to be stored in farm dams (balancing dams). More detail regarding proponent's water use entitlements is outlined below in the Operational Phase under section 2.2.3.2.

The nearest portion of the LSRWUA canal is located north of an adjacent property owned by the same landowner (Portion 523). The irrigation water required for the proposed agricultural expansion is pumped from the canal into two existing balancing dams on the adjacent property. The dam on the southern section of Portion 523 has an existing outlet connection point into which the proposed new $\varnothing 500\text{mm}$ irrigation pipeline will link (see map 2.2 above). The proposed new $\varnothing 500\text{mm}$ pipeline will be installed over a distance of $\sim 1,5\text{km}$, on the adjacent property (Portion 523), to convey water from the existing dam (via gravity feed) to the new dam on Umgcambo. The pipeline is proposed to be installed along the existing access road on the adjacent



Photo 2.3: Existing outlet connection point at the dam on Portion 523.

property, as well as the fenceline, until it reaches the boundary of Umgcambo, at which point it is proposed to be installed under the DR01976 to connect into a new dam to be constructed on Umgcambo. It is anticipated that the proposed dam will be required to have a capacity of $\sim 80\,000\text{m}^3$ with a footprint of $\sim 4\text{ha}$ and a maximum wall height of 6 metres. Water will be pumped from the dam into the orchards, which will require the construction of a new pump house.

Irrigation water will be reticulated within the orchards via a network of underground pvc irrigation pipes and valves, with varying internal diameters (60mm to 160mm). The proponent proposes to utilise drip irrigation as the preferred method of water delivery to the trees within the orchards.

Additional power supply will be required in order to pump the irrigation water out of the proposed new dam on Umgcambo. Electricity is available up to the existing dam on the adjacent property. An extension to the existing electrical infrastructure of ~1km in length from the existing infrastructure to the new dam on Umgcambo will be required. Written confirmation is required from Eskom regarding the spare capacity of this line to provide the additional electricity required to service the proposed development as well as approval of the proposed line extension.

2.2.2.5 Windbreaks

The exotic *Cassuarina cunninghamiana* (Beefwood) is commonly used as a windbreak species in the Sundays River Valley. However, this tree is listed in Category 2 of CARA which requires that a permit be obtained prior to planting this species. There are also certain requirements/ conditions which need to be met in order to be able to plant Category 2 plants.

It is preferable that a tree species, which is not listed in terms of the CARA Regulations, is selected for planting as a windbreak. Hardly any information is available in the literature on indigenous species which would be potentially suitable as windbreaks. Indigenous Yellowwood trees (*Podocarpus* sp.) have been utilised by some farmers in the SRVM as windbreaks, however, they are known to be hosts to false codling moth (citrus pest). In addition, most of the indigenous species which have potential as windbreaks (e.g. *Ekebergia capensis*, *Pittosporum viridifolium*, *Ptaeroxylon obliquum*) tend to grow in moister regions and will likely require additional irrigation water to establish and reach the required height (~20m).

The proponent has indicated, however, that they do not propose to make use of windbreaks for the proposed agricultural development on Umgcambo.

2.2.3 Operational

Once the site is suitably prepared, the area will be utilised for the establishment of citrus orchards for predominantly international markets, with some fruit being sent for processing (juicing) for local markets. It is also the intention of the project proponent to plant vegetables for the local market (butternut and pumpkin) in between the orchards until the trees reach production stage.

Equipment required for the new operations will be stored in the proposed new storage sheds and workshop areas on Umgcambo. The following operational phase activities are associated with the project:

- Water for the development will be supplied from the LSRWUA canals which will be reticulated from the proposed new balancing dam; and
- It is anticipated that a number of additional seasonal (96) and permanent (11) employment opportunities will be created by the project.

2.2.3.1 Orchard Establishment

The final size, layout and configuration of the orchards will be determined based on the following:

- Soil Suitability Assessment by a recognised soil specialist;
- Irrigation infrastructure and efficiency requirements to provide drip/ micro irrigation, as well as the size dimensions, location and storage capacity of the new dam;

- Technical requirements (runoff and stormwater management, accessibility, slope);
- Size and location of the additional services infrastructure, including recommendations for bulk services (domestic water, effluent management, stormwater management) by a qualified engineer.
- Biophysical constraints (e.g. sensitive areas, Species of Special Concern, maintenance of ecological corridors); and
- Heritage constraints (if any).

2.2.3.2 *Water Use Entitlements and Availability*

Water for the proposed agricultural expansion will be provided by the LSRWUA supply system. Water entitlements from the LSRWUA provide for 900mm/ha/yr (9000m³/ha/yr). The drip/ micro irrigation water delivery system which will be used in the orchards will use ~600mm/ha/yr (6000m³/ha/yr). The proponent has obtained a Water Use Licence from DWS for the taking of water from a water resource in terms of Section 21 (a) of the National Water Act which entitles them to utilise 100ha (900 000m³ per annum) of water from the LSRWUA canal system. The extent of the area to be cultivated, as well as the amount of water required (per annum) for the proposed development, will be informed by the various specialist studies, as well as technical input (e.g. varieties to be planted and soil types) throughout the assessment process.

A copy of the water use entitlements to develop a portion of Portion 525 of Farm Strathsomers Estate No. 42, are contained in Appendix G.

2.3 CAPITAL INVESTMENT AND EMPLOYMENT GENERATION

The anticipated capital investment of the agricultural expansion, upon completion of the construction phase, will be approximately R28 000 000. It is estimated that the construction phase of the development will create approximately 15 new employment opportunities at a value of R390 000 annually.

Upon completion of construction and during the operational phase of the development, it is estimated that 11 new permanent employment opportunities will be created at a value of R422 000 annually, and 96 seasonal opportunities at an annual value of R1.6 million. Labour will be sourced locally from communities predominantly in the SRVM and if required, the Nelson Mandela Bay Municipality (NMBM).

In addition to the direct employment opportunities that are created as part of the farming operations, a number of indirect jobs will also be created by the proposed development particularly within the packaging and logistics industries, amongst others.

2.4 PROJECT SCHEDULE

The following table provides a preliminary overview of the proposed project schedule and an indication of the anticipated approvals process. Should Environmental Authorisation be positive, it is estimated that the project construction phase will take place over a period of 3 years (36 months).

Table 2.2: Proposed project schedule.

PHASES	ACTIVITY	TIMEFRAME
PRE-CONSTRUCTION PERIOD		
Detailed Planning and Design Phase	<ul style="list-style-type: none"> • Prepare final layouts • Relevant permit & licence applications • Pre-Construction Audit 	Completed within 12 months from date of Environmental Authorisation
CONSTRUCTION PERIOD		
PHASES	ACTIVITY	TIMEFRAME
1	<ul style="list-style-type: none"> • Construction of dam • Installation of irrigation pipelines • Clearance of vegetation • Establishment of orchards 	Completed within 24 months of Pre-Construction Period
OPERATIONAL PERIOD		
Farming Phase	<ul style="list-style-type: none"> • Commence with Farming Activities (orchard operation and harvesting) 	Commence upon completion of vegetation clearing and orchard establishment

2.5 CONCLUDING REMARKS

Alternatives and the assessment thereof are outlined in Chapter Five of this report. The specialist reports forming part of the EIA phase of the assessment should include:

- A Soil Suitability Assessment in the form of a Reconnaissance Soil Survey should be conducted to determine the suitability of the soil for the establishment of a variety of citrus, before the layout is finalised. The soil assessment will also include a discussion on the suitability of the slopes on site for the commercial production of citrus;
- An Ecological (fauna and flora) Specialist Assessment, as well as an Aquatic Specialist Assessment to inform the proposed layout for the project, to include:
 - Identify potential project related impacts on natural vegetation and faunal habitat on the site.
 - An aquatic survey to identify and map wetlands and watercourses on the site, as well as assigning suitable buffers for aquatic resources identified on the site.
 - Provide comment on the potential impact of the proposed development on Aquatic and Terrestrial CBAs, as identified in the ECBCP.
 - Determination of suitable buffers associated with meeting biodiversity conservation targets specific to the vegetation types on the site, and in line with those targets indicated by the relevant planning frameworks for the area.
- A Heritage Impact Assessment (Phase 1 Archaeological and Palaeontological Assessment) to identify heritage features on site, if any;
- Written confirmation is required from the LSRWUA regarding the capacity of the canal at the proposed offtake point for the irrigation water for the proposed development;
- Recommendations regarding stormwater and surface water runoff management;
- Traffic Impact Assessment regarding access and egress from the site onto the DR01976, as well as the impact of the additional trips generated;
- Written confirmation from Eskom regarding the capacity of and extension of an existing power line, as well as electrical supply for the proposed development;
- Taking into account the recommendations of the above specialist assessments, an irrigation specialist will determine the size dimensions, locality and storage capacity for the dam on site. In addition, the specialist will provide specifications for the size and throughput capacity of various irrigation pipes for drip/ micro irrigation; and
- Roads and Wet Services report by a qualified individual to confirm services footprint/ configuration for the bulk services (domestic water, effluent management, internal roads and stormwater) on site for the proposed new logistical services area.