Managed Land Settlement Project

TOWN PLANNING REPORT

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1. INTRODUCTION

NPM Geomatics and NPM Planning have been appointed as Land Surveying and Town & Regional Planning consultants on the Afesis-Corplan “Managed Land Settlement” Project. The purpose of this project in general is to create a hypothetical case study of an incremental land settlement process, ranging from initial settlement to final formalisation.

Maybe include a paragraph introducing the “story” concept and its main themes – i.e. flood, savings and municipal development – which form the thrust of the report.

This report represents work from a land survey and town and regional perspective on the project, and includes the following items that have been addressed:

- Site selection
- Constraints analysis
- A broad overall neighbourhood plan showing the blocks, main roads, facilities, and agricultural spaces
- Guidelines for how plots can be laid out by communities
- Examples of what blocks could look like that are laid out by the community following the plot layout guidelines on church land
- Examples of what blocks could look like that would be laid out by planners and more informal layouts done by communities as part of the initial settlement process.
- A zoning category for the incremental development approach
- Comments on the story and the sequencing of the various events in the story itself.

This report has included the input of various discussions with officials of Afesis-Corplan, the project team and research into the subject of emergency settlement, incremental settlement and formal town planning options. Due to the nature of the project as a hypothetical case study, specific references to real places, properties or communities have been avoided. No references are therefore made to any identifying aspects of the land or hypothetical community involved.
2. SITE SELECTION

A hypothetical land parcel has been created that resembles a typical real-world scenario in terms of topography, planning context and cadastral information. As part of the settlement time-line being developed, the property has the following locational characteristics:

- The site is located partially within the urban edge of the local municipality. The site is bisected into two portions by the urban edge which implies that only a portion of the farm can be developed for settlement purposes, with the remaining portion being held for agricultural purposes.
- There is an existing church on the site, defined by its own cadastral land portion.
- The site is located in close proximity to a formal settlement to the north which consists of mostly privately owned land.
- The site is accessible to major transportation routes in the vicinity of the site.

Please refer to attached Locality Plan. (Plan No.).

3. LAND OWNERSHIP PATTERN

The site is split into two cadastral land portions under separate ownership (Refer to attached Ownership Plan). The ownership of the site is as follows:

- Portion 1 of Farm MLS: Church
- Remainder of Farm MLS: Local Municipality.

The split in ownership is significant to the development of the settlement time-line and parallel processes of the incremental settlement process. In terms of the settlement time-line being developed initial settlement takes place on the church-owned portion as emergency housing. The second stage of settlement (savings schemes) takes place on the remaining portion of church-owned land.
The final stage of formalisation of the settlement and surrounding land takes place on the municipal-owned portion of the farm. During this stage, it is also envisaged that the church-owned land portions that have been settlement informally will be transferred to the various savings scheme members.

4. SETTLEMENT TIMELINE

The settlement process of the subject property is incremental in nature. This implies that during the story sequence, various different forms of settlement can be expected. As is the case with real-world scenarios of land settlement, the formalisation and establishment of new settlement areas is a protracted process and can take a number of years to reach the point of actual construction of dwellings on-site.

The purpose of the incremental settlement process is to identify the various stages of settlement, and to propose the optimal management of these processes. The key assumption of the this approach is that it is required and desirable to have a form of managed land settlement process. This implies that certain optimal approaches can be followed and that certain guidelines for settlement should be used for the planning of the various stages of settlement.

In this regard the following types of settlement processes have been identified as part of the project story:

- Emergency housing for displaced flood victims on church-owned land. The site for such emergency housing has been previously identified as part of the Municipality's Disaster Management Plan and earmarked for temporary use for emergency housing.
- Initial settlement of further displaced communities in the form of savings schemes on the remaining church-owned land, which has been donated to the savings schemes.
Managed Land Settlement Report

- Incremental formalisation of the remaining municipal-owned land in the form of formal township establishment.

The above processes will take place in parallel, however the final settlement objective for each component is to end in an upgraded and formalises settlement with formal services and housing.

5. DEVELOPMENT SCENARIOS

5.1 EMERGENCY HOUSING (FLOOD VICTIMS)

As a result of flooding within a nearby informal settlement, approximately 20 families have been displaced and is accommodated temporarily on the main premises of the church. After approximately one week some temporary shelters are made available in terms of the Department of Human Settlements Emergency Housing Subsidy.

The settlement of these families is accommodated on a vacant portion of the church-owned land, adjacent to an existing access point of the main regional road adjoining the property.

Basic services are provided to these families, together with modular temporary housing.

As part of the settlement process of these families, the following basic investigations takes place of the settlement site:

- Mapping of topography (contours) from available aerial photography – in the absence of contours from aerial mapping, a basic tachy survey would be required for basic planning purposes.
- Any servitudes and services
- Any adverse soil conditions identified on-site
- Any watercourses/flood risks.
Although no formal layout planning takes place for this process, a very broad site assessment is done by a professional team consisting of land surveyors, engineers and town planners to verify the safety of the site for temporary settlement.

5.2 Settlement of Saving Scheme Members

The second stage of settlement commences shortly after the initial settlement of flood victims, as more families are displaced from the nearby informal settlements due to the lack of formal services and associated health risks. These communities have organised themselves into saving scheme groups of approximately 20 families per saving scheme.

The purpose of these saving schemes is to collectively raise enough funds to provide formal housing and tenure to the members of each savings scheme. These saving scheme members move onto the remaining church-owned land in a more structured and planned manner, with the assistance of a formal professional team.

The initial stages of settlement follows broad development guidelines, produced by the professional team, which is intended to guide the settlement pattern. These guidelines are produced in an understandable and easily implementable manner, to enable the communities to organise their separate savings scheme groups into organised “clusters' of dwelling units.

These savings scheme units are organised into groups of 20 families which follow the “Woonerf” concept of an enclosed community cluster type development. These separate “Woonerf” blocks are interlinked and have limited internal vehicular capacity.

The “Woonerf” concept originated in the Netherlands during the 1960s, and can be described as a “living street”, where both pedestrian and vehicular traffic have equal use of the road reserve. Typically road surface is not kerbed, which provides for an interface between the pavement, gardens and roadway. The internal roadway of a
Woonerf is designed to alert drivers to reduce speed and ensure the safe use of the development for pedestrian purposes.

5.3 **Formal Township Establishment on Municipal Land**

The third development scenario involves the formal planning and establishment of a new settlement area on the municipal-owned land adjoining the church-owned land that has already been settled in the previous two stages. The formal township establishment process also includes the upgrade of the land occupied by the emergency housing units, as well as the various savings schemes.

The township establishment process involves the following aspects;

- Planning and provision to formal standards of dwelling units at various densities.
- Planning and provision business sites
- Planning for the provision of community facilities, e.g. schools, clinics, crèches.
- Planning for urban agriculture
- Planning an integrated open space network of hard and soft open spaces.
- Provision of access roads to the various components of the township.
- Provision of formal engineering services.

The township establishment process culminates in the development of formal dwellings, businesses and other community facilities with registration of the various dwellings in the names of the various beneficiaries.

6. **Development Guidelines**

The following development guidelines are applicable to the various stages of settlements:
6.1 Emergency Housing

The development of the emergency housing component should follow the specifications of the specific type of emergency shelter being provided by the Department of Human Settlements. In terms of the story line being developed for the project, it is anticipated that the Local Authority would have identified some land in its Disaster Management Plan as suitable for emergency housing settlement areas.

The land identified for emergency housing purposes in the project story is thus considered to be suitable and available for emergency settlement. It can be assumed that the site is generally suitable for the settlement of temporary emergency structures, e.g. tents, however some on-site investigations checks would have to be done to ensure safety, including the following:

- Land within 32 metres of watercourses should be avoided, unless an otherwise determined setback has been calculated.
- Areas with sensitive / protected vegetation or ecosystems should be avoided.
- Any existing engineering services – such as water, electricity, sewerage, telecommunications that may traverse the site must be avoided
- Any evident soil conditions that are not favourable for the placement of the emergency structures, e.g. groundwater, clay or rock outcrops.

6.2 Saving Schemes

The settlement pattern of the saving schemes groups will consist of a very basic planned (designed) public access road that would provide as a minimum access to fire trucks, buses and taxis to each separate saving scheme development block. The internal layout each of these saving scheme group development blocks will be based on guidelines that would enable the community to settle in a Woonerf type layout.

At the initial stage of settlement, the guidelines will provide for enough choice and options to the community to enable them to decide on a variety of land uses in
addition to the basic residential land uses, e.g. crèches, shared community facilities and public community gardens. It is also envisaged that the communities will require some land for children's playgrounds within each block.

Attached as Annexure A is a set of guidelines provided for the purposes of assistance of during the initial settlement stage. This can be used as a field manual for the relevant communities, but some professional oversight is advisable in the initial training of the communities to utilise and implement the guidelines.

6.3 **Formal Township Establishment**

It is expected that the portion of land earmarked for the formal township establishment process will be subject to formal planning and as such no additional guidelines are provided. It is expected that a variety of different types of layouts would be utilised as part of an incremental upgrade process, however, most of these layouts would be formally planned and consideration given to various design criteria.

7. **Typical Settlement Patterns**

7.1 **Woonerf**

The principles of the Woonerf layout pattern are on the idea that people should take preference in the residential environment over vehicles. The road reserve in the Woonerf block becomes a shared living street, rather than a specific transportation orientated space. To this end, Woonerf blocks are characterised by the following:

- Curved roads to reduce vehicular speeds.
- Traffic calming influences, that could be specifically designed as such, or by way of multi-purpose use of shared spaces, traffic is forced to reduce speed.
- Community orientated shared public space, including the roadway. This includes areas that may be reserved for playgrounds, communal gardens or community facilities.
In the project story line it is anticipated that the savings scheme members will form groups who will settle into a woonerf type layout pattern. Emphasis will be placed on providing choices and options to the communities on the use of communal open spaces. Some groups may be decide to use common space for gardening or urban agriculture, whereas other groups might want to use such spaces for formal community facilities.

A range of plot sizes and configurations is expected, depending on the individual need and affordability of each individual savings scheme group member. It is also anticipated that some households may own motor vehicles and would require vehicular access to their sites, whereas other households may only require basic access to their sites, with parking provided centrally.

The Woonerf block layout pattern provides a pedestrian and resident friendly environment where the common open space serves as the playground, meeting place and access way to the individual dwellings. A major consideration, though, is that with such use of the site comes the shared responsibility to maintain and look after the common space.

Such maintenance is normally undertaken by means of a levy imposed by a joint home owners association. It is to be expected, however, that in the incremental settlement process, the community will not necessarily be able to afford such maintenance at the initial stages of settlement. It is thus proposed that the local authority should play at least some role in the maintenance of the shared common space at the initial settlement stage, with the aim of making each Woonerf block more self-sufficient at the formalisation of the development at a later stage in the incremental settlement process.
The following picture depicts a typical scene within a Woonerf type development:

![Woonerf scene](image)

The international road-sign for a Woonerf, which clearly indicates the nature of the open space environment is the following:

![Woonerf sign](image)
The typical woonerf block layout is depicted below:

![Woonerf Block Layout](image)

### 7.2 Formal Super Block Layouts

The formal township establishment process on the Municipal-owned land will show a variety of different layout patterns, ranging from conventional low-cost housing designs, to a superblock type layout. The superblock concept has evolved out of necessity to make the servicing of low-cost housing more affordable by planning for more individual dwellings per length of service network.

The superblock has thus become prevalent in low-cost subsidized housing developments, and is typically characterised by four individual residential sites in each residential block, i.e. with two plots on either side of the mid-block line. This is in contrast with a conventional block which contains only one plot on either side of the mid-block line.

The proposed layout pattern contained in the project story would form part of the formally planned area on the municipal-owned land. The superblock type pattern
proposed will have a few variations on the standard type super-block layout, with the following key differences to be noted:

- The superblock will contain six rows of individual residential plots, i.e. three on either side of the mid-block line.
- A separate pedestrian movement system, together with interspersed functional open spaces will be provided at fixed lengths.
- At some places the central open space network will be utilised for communal ablation facilities.

In some instances it may be desirable to plan for a combination of Woonerf and Superblock principles. This layout typology can be considered a hybrid of superblock and woonerf principles, in that it achieves the same extended utilisation of the usage of linear engineering services, but also provides a more functional communal open space internal to the block.

A typical superblock-woonerf hybrid layout of this nature is depicted below:
7.3 **Conventional Layout Patterns**

Conventional layout planning principles follow a simple rectangular subdivision pattern with single plots being narrower in street frontage than in length. Two rows of land parcels are placed back-to-back which forms a conventional street block. Each land parcel created gains direct access off the public road surrounding the site.

An example of a typical subdivision pattern following conventional town planning principles is as follows:
7.4 **Panhandle Subdivisions**

In conventional layout patterns, some land parcels may inevitably be located at the edge or boundary of a specific feature that prevents back-to-back placement of land parcels. This is necessitated where it will be practically impossible to place another public road to provide access on both sides of what would be a conventional street block (see above). The result of this is that in conventional layouts, there will invariably be areas that cannot be optimally developed as only one access way can be provided.

The simplest solution to this is to provide an additional row of land parcels at the back of the first row of parcels, but taking access off the same public road, vis-a-vie a different public road, as in the case of conventional planning layout.

The typical panhandle subdivision is shown below:

A typical panhandle subdivision gains access via a four metre wide access strip if the panhandle is a single panhandle, and via two combine three metre wide access strips if two panhandles are adjoining each other.
7.5 **Planned Emergency Housing**

Formal temporary emergency housing units that can be constructed in a modular manner on short notice in emergency situations are normally placed in a very easily accessible manner. Care should be taken to provide adequate vehicular access throughout the site, however, vehicular access to each individual site is not a minimum requirement.

Furthermore, central ablution facilities are to be provided at a ratio of one ablution block per 40 dwellings.

A common configuration for the provision of modular emergency housing units is shown in the following diagram:
7.6 **High Density Residential**

Provision is made in the proposed layout for a high density residential site. Such high-density residential sites are provided in a variety of typologies ranging from single storey detached buildings to three storey walk-up buildings.

8. **Statutory Town Planning Process**

8.1 **Emergency Housing**

As a general rule the typical time available for the provision of emergency housing in an emergency situation is too short to enable a full statutory town planning process to be concluded, before the actual housing units can be provided. Most often, some form of basic site assessment would be carried out by the relevant authority to ensure that a specific identified site for emergency housing is in fact suitable for such purposes.

If required, some form a temporary consent can be provided by the relevant authority from a town planning perspective. Such consent can be in the form of a departure (deviation) from the formal provisions of the relevant zoning scheme.
applicable to the land under consideration. Such approval would be temporary in nature and for a maximum period of five years.

Due to the difficulty in dealing with pertinent locational attributes when considering the location of an emergency housing shelter site in short period time associated with emergency situations, it is advisable that a number of formally earmarked emergency shelter sites be identified as part of the spatial planning process of local authorities. The local authority would thus identify the most suitable emergency shelter site systematically as part of its spatial planning programmes and ensure that such sites are readied for settlement in eventual emergency situations.

8.2 **Savings Scheme**

The statutory process to provide the rights to settle on the savings scheme portion of the farm will be a two-stage process. The initial settlement will commence once when the rights to subdivide the property further has been established. The formal subdivision of the site into the respective individual land parcels will take place at a later formalisation stage.

The first stage rights to settle on the project will be achieved by means of an application to rezone the property to “Subdivisional Area” in terms of the Land Use Planning Ordinance, No. 15 of 1985. This will involve the provision of basic road network as well as densities of the residential settlement of the farm. This process will, however, not permit separate title ownership at the initial settlement stage.

The “Subdivisional Area” zoning can be considered an overlay zoning, in that it does provide the rights to subdivide the site into different smaller parcels in future, according to the approved site development plan, however, it does not grant the actual rights to survey or register the subdivided parcels. A further formal subdivision application is required to subdivide the site when the relevant community wants to obtain registration.

After the initial settlement process has been concluded, the property will be formally subdivided into the respective separate ownership units. This process will be done as a formal subdivision application in terms of the Land Use Planning Ordinance,
and should be based on the same densities as approved in the original Subdivisional Area rezoning application.

Once a subdivision consent has been obtained, the properties will be surveyed and a general plan will be framed for the layout. The general plan will then be submitted to the Surveyor-General for approval.

Registration of the individual properties can commence only once the general plan has been approved and all conditions of establishment of the subdivision have been complied with. This has to be concluded within a period of five years from obtaining the subdivision consent, failing which the subdivision will lapse.

8.3 **FORMAL TOWNSHIP ESTABLISHMENT**

The formal township establishment process will be conducted in terms of the Land Use Planning Ordinance No. 15 of 1985. The process will include a rezoning from Agricultural/Undetermined to Residential and other uses, e.g. Institutional, as well as a subdivision of the land into the respective subdivided plots/parcels.
Once a subdivision consent has been obtained, the properties will be surveyed and a general plan will be framed for the layout. The general plan will then be submitted to the Surveyor-General for approval.

Registration of the individual properties can commence only once the general plan has been approved and all conditions of establishment of the subdivision have been complied with. This has to be concluded within a period of five years from obtaining the subdivision consent, failing which the subdivision will lapse.

The typical township establishment time-line and processes are set in out Gantt Chart format overleaf.
9. LAYOUT PLANNING GUIDELINES

9.1 TYPICAL LAND USE DISTRIBUTION

The typical land use budget for this type of development will be as follows:

<table>
<thead>
<tr>
<th>Land Use Type</th>
<th>Percentage of Total Development Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single Residential:</td>
<td>50.00%</td>
</tr>
<tr>
<td>High Density Residential:</td>
<td>3.00%</td>
</tr>
<tr>
<td>Roads &amp; Servitudes:</td>
<td>28.00%</td>
</tr>
<tr>
<td>Social Facilities:</td>
<td>5.00%</td>
</tr>
<tr>
<td>Business:</td>
<td>2.00%</td>
</tr>
<tr>
<td>Public Open Space:</td>
<td>12.00%</td>
</tr>
</tbody>
</table>

It is important to note that this budget is an idealised development scenario and will be subject to change upon the drafting of a final layout plan, but is required to guide the development planning goals for the layout planning process.

9.2 RESIDENTIAL LAND USE

The typical housing to be accommodated within the layout planning process is as follows:

- RDP type housing, being typically 40 square metre single storey dwellings.
- GAP Housing, being typically 50 square metres single or double storey dwellings.
- Affordable housing, being approximately 60 square metres single storey detached housing.
- High density and Social Housing types that are to be provided on separate residential parcels to be provided at maximum of 75 dwelling units per hectare.
The typical residential erf size per housing type will be as follows:

<table>
<thead>
<tr>
<th>Housing Type</th>
<th>Erf Size</th>
<th>Street Frontage</th>
<th>Plot Depth</th>
</tr>
</thead>
<tbody>
<tr>
<td>RDP:</td>
<td>180 m²</td>
<td>12m</td>
<td>15m</td>
</tr>
<tr>
<td>GAP Housing:</td>
<td>240 m²</td>
<td>12m</td>
<td>20m</td>
</tr>
<tr>
<td>Affordable Housing:</td>
<td>350 m²</td>
<td>14m</td>
<td>25m</td>
</tr>
<tr>
<td>High Density Housing:</td>
<td>To be determined based on development requirements</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

9.3 **Road Reserves**

A well-defined road hierarchy is to be provided, distinguishing between residential access, local distributor functions and intra-city mobility functions. Specific provision needs to be made for inter-leading pedestrian access points to a separate pedestrian open space network from the road network.

Road reserve widths are to be provided in terms of the servicing requirements and function of the road reserve. It is envisaged that the following minimum road reserve widths are to be provided:

<table>
<thead>
<tr>
<th>Road Type</th>
<th>Road Function</th>
<th>Road Reserve Width</th>
</tr>
</thead>
<tbody>
<tr>
<td>Major Distributors</td>
<td>Intra-city traffic distribution</td>
<td>30m</td>
</tr>
<tr>
<td>Minor Distributors</td>
<td>Inter-neighbourhood distributors</td>
<td>20m</td>
</tr>
<tr>
<td>Major Collectors</td>
<td>Collectors of intra-neighbourhood traffic, and linking this traffic with the minor distributors for further connectivity.</td>
<td>16m</td>
</tr>
<tr>
<td>Local Access Streets</td>
<td>Provides access to residential erven</td>
<td>12m</td>
</tr>
<tr>
<td>Local Access Strips/Cul-de-Sac</td>
<td>Local closed residential access</td>
<td>10m</td>
</tr>
<tr>
<td>--------------------------------</td>
<td>---------------------------------</td>
<td>-----</td>
</tr>
<tr>
<td>Woonerf</td>
<td>Local closed residential access</td>
<td>Variable, depending on design criteria. A suggested minimum of 8m is to be used to allow services and traffic to be placed in the road reserve</td>
</tr>
</tbody>
</table>

### 9.4 Pedestrian Network

In order to improve pedestrian movement and connectivity with the business areas and neighbourhoods it is proposed that an inter-leading public open space network be provided within the development. Parks and playgrounds will be strategically placed within the open space network, giving access to a 400m radius for residential units.

A minimum pedestrian through-connection per residential block of at least one connection per 200 metres will be provided, where no road connection is provided within such 200 metre block length.

Where areas are separated by a low-level/low-volume watercourse it is proposed that a pedestrian causeway/crossing be provided to maintain the connectivity.

### 9.5 Businesses

Major business nodes must be accessible and will therefore be strategically placed at busy intersections on higher order roads. These business areas will not only accommodate the formal retail and office sector, but will also include planned/designated areas for the informal traders.

A formal network of lower-order business opportunities will be provided in terms of generally acceptable standards for such business sites. Such sites will include local shops, and community shopping centres.
Opportunities will be created for the local spaza-type businesses which serve a local street within suitable land use management guidelines upon development.

9.6 ENGINEERING SERVICES

In order to minimise the cost of engineering services provision, the following design principles from an engineering perspective are to be implemented:

• The layout should integrate stormwater drainage into the road reserve network, and separate stormwater servitudes are to be restricted to a minimum.

• Where separate stormwater servitudes are required, such servitudes are to be integrated with the pedestrian open space network.

• Straight road reserves, topography permitting, should be followed as much as possible to reduce the total costs of linear engineering services, by reducing the number of manholes for sewers.

• Mid-block provision of services (apart from sewers) should be avoided as this may require additional space to be provided in block width which can be accommodated in the road reserve.

• No development is to be permitted within a 500m radius of bulk sewer treatment works or other engineering facility that may negatively impact of the built environment (if applicable).

• No development is to be permitted below the 1:100 flood line, except for recreation/pedestrian use.

• Sites are to be provided and allocated for engineering installations, as per the requirements of the Municipality, Developer and/or Project Engineer, e.g. electrical mini-subs.
• Engineering services that cannot be located in normal road reserves are to be protected by suitable servitudes.

### 9.7 Public Transport

To maximise the accessibility within the layout, provision will be made for a well-planned and public transport network, either integrated into road reserve design, or as alternatively provided as separate sites. Such public transport sites will be focussed in the vicinity of major community facilities and business nodes.

Public transport will be planned to be integrated with the road network as well as pedestrian open space network.

### 10. Incremental Zoning Guidelines

Generally traditional zoning schemes/town planning schemes, which regulate permissible land use at land parcel level, have not made provision for a form of informal or incremental settlement. Some Municipalities have, however, provided some high level zoning regulations for incremental settlement.

In terms of the subject property, no such initial zoning regulations existed that would permit the initial recognition of the settlement of the site by the community, in an informal manner. The community therefore negotiated with the local authority for approval of their initial settlement on the church land, without a formal township establishment process. The Municipality then imposed a set of zoning regulations, based in part on the, that would regulate the settlement of the site in an incremental manner.

These zoning regulations have been drafted to provide some form of control over the settlement pattern to be adopted on the site, through coverage restrictions and building exclusion areas. The zoning regulations also permit the construction of informal or traditional structures at first, which would then allow for later upgrade to a formal dwelling.
These zoning regulations are attached as Annexure B.

11. CONCLUSION

This report highlighted the different layout options, legal processes and technical matters involved in the incremental settlement upgrade process of a hypothetical land parcel as part of a hypothetical settlement process. This settlement process is typical of the situation faced by many displaced communities, as well as beneficiaries on housing waiting lists throughout the country.

The incremental settlement planning approach is presented as an alternative to the conventional beneficiary-linked planning approach to public funded settlement planning. Linked to this alternative settlement method, is also a number of alternative settlement planning layout typologies. These typologies provide more cost-effective solutions to conventional layout planning practices, but also provide more choice in the eventual development form.

The concept of incremental settlement is further developed by including a formalisation process of the initial semi-formal settlement on the hypothetical land parcel. This formalisation process follows typical town planning processes, however, the final resultant development area may show different stages of settlement upgrade at differing times. As such, a set of zoning regulations is proposed that would cater for incremental settlement and tenure options during the entire upgrade process.
Annexure A

Field Manual for Site Planning & Pegging

Initial Settlement Stage
1. **Site Preparation Stage:**

i. The outer figure of the site to be settled needs to be pointed out by a professional land surveyor. It may be useful to connect the outer figure corners with string to clearly have the boundaries visible during site preparation.

ii. Assess the gradient of the property. Any areas steeper than 1:5 need to be avoided.

iii. Any specific vegetation pattern that may pose a problem to settlement needs to be identified, and if needed an expert opinion obtained whether the vegetation should remain undisturbed.

iv. Any watercourses will have to be identified. Where there is a risk of flooding, no settlement is to take place below the 1:100 flood line, or nearer than 32 meters from the watercourse. The flood line or buffer needs to be clearly demarcated on-site by means of placing pegs/beacons along the watercourse.

v. Access to the settlement area must be defined, within minimum sight distance and gradient parameters.

vi. Any servitudes and services crossing the site will be identified and should be pointed out on-site as areas to avoid during the settlement phase.

2. **Settlement Planning Phase**

After site preparation and initial constraints analysis have been done, settlement can be commenced with for informal structures. In order to assist with the initial settlement process the following minimum guidelines must be complied with.

i. **Access roads**

1. Settlement areas are to be developed in cluster units at approximately 20 units per cluster.
2. Access to such clusters should be provided from a publicly accessible access road reserve which is not less than 5.5 meters wide, but with a road reserve of a minimum of 16 meters.

3. These access roads must be graded/hardened and provide access to each cluster for refuse removal and fire and police (as a minimum)

4. Turning circles should be provided at the end-points of these access roads to ensure vehicles can turn around without problems, if such roads are designed as culs-de-sac.

5. Where possible these internal access roads should be planned as loops, to connect back onto itself, ensure ease of access.

ii. Fire Safety:
- No structure should be further than 90 meters from the main access roads.
- Where structures cannot be clustered in a maximum of 20 units, the minimum spacing between 9 meters between shelters should be adhered to.
- If buildings are clustered in groups of 20 units, with adequate separation between the clusters, then the minimum distance between buildings will be 4 meters.

iii. Open Space
- A minimum of 10m by 20m open space should be provided at the center of each cluster to serve as playground and open space.
- These open spaces should be functional and integrated with the movement networks within the settlement area.

iv. Community Facilities
- Space needs to be set aside for a minimum of local crèche facilities at the discretion of each woonerf block.
- Ideally multi-purpose shared community facilities should be provided per two “woonerf” blocks
- These sites are to be shared between the different clusters/settlement groups.
v. Public Transport Faculties

- Public Transport facilities should be provided at the access point to the settlement site.
- Provision should be made for minibus taxis and buses to not interfere with access to the site and other vehicular traffic on the main access road(s).

vi. Land Surveying and Pegging

1. Before site demarcation commences a basic layout plan should be prepared based on the contours and design principles set out above. The layout plan should have dimensions of each site.

2. It is important to remember to keep boundary lines as straight as possible to facilitate the installation and upgrade of services (roads, pipes) over time.

3. There are 2 options for demarcating sites –
   1. the first is to use a surveyor who can place markers in accordance with the basic layout plan. If the terrain is not flat or the layout is not simple, then this would be the preferred option.
   2. The second is to do basic demarcation using a 50m tape to determine the approximate positions of site corner points. This option is suitable when the terrain is fairly flat and the woonerf design is simple.

4. If option 2 is chosen, then basic demarcation can be done using wooden droppers or fence standards to mark the corners or bend points in the boundaries.
   1. Setting out and measurements should be supervised by a person who can read and understand the layout plan and who has experience with measuring and setting out points using simple geometry and distances.
   2. The person supervising should note the field measurements on the layout plan and compare these with the dimensions given on the plan. This will enable the community to confirm that the sites have been set out reasonably correctly in accordance with the layout plan.
3. Where sites are to be set out along an established erf boundary, care needs to be taken not to create encroachments over the boundary into the neighbouring property.

4. An easy starting point must be selected – such as the line between 2 well defined points on the boundary of the property. Measurements will be based on these points and extended to define the roads and sites.

5. It will be important to keep the road widths consistent through the woonerf so that vehicles can move through the area as planned. Specific care should be given to this aspect of the setting out, so access problems are minimised as the development formalises.

6. Measurements should be done with the tape as level, straight and tight as possible to reduce taping errors.

7. On straight lines along roads and erf boundaries, the site corner points should be set out first. A check measurement can be done between the front and back markers to make sure that the site is approximately the same as shown on the layout plan.

8. The layout plan with design and final measured dimensions should be returned to the authority dealing with the settlement for record purposes.
Annexure B

Zoning Regulations for

Transitional Settlement Areas
Transitional Settlement Area
Zoning Regulations

1. Settlement shall take place in terms of an approved layout plan. Such a “layout plan” means a plan that indicates the sites upon which buildings / structures have been established and are used for human occupation and economic and other activities. A draft layout plan is to be drawn from either the on-site measurements or the use of aerial orthophotography, and must be verified with the relevant community on-site.

2. The draft layout plan must submitted for approval to the relevant Settlement Planning/Town Planning Section of the Local/District Authority. Consideration of the application shall take into account the relevant spatial principles of incremental housing and other requirements of the Local/District Authority.

3. On approval of the draft layout plan, the relevant community shall in consultation with the Local/District Authority, identify each structure and the structure shall be numbered.

4. Each identified occupant household will be issued with a “Permission to Occupy” certificate that identifies such household as the officially recognized occupant of the building/structure/site and indicates what activities may be permitted on site.

5. A register of such “Permission to Occupy” certificates issued shall be kept by the appropriate Department as designated by the Local/District Authority.

6. The compilation of the layout plan shall include the identification of any social and community facilities, business (retail) sites, as well as access to the settlement and major access road networks. Density and minimum sizes of sites for residential uses shall be determined as part of the layout plan. At this point the layout plan may proceed with additional formalization in respect of pegging and infrastructure provision.

7. For the purpose of these conditions “structure” means any building or construction
or premise that is intended or used for human occupation and use, irrespective of the material from which it has been manufactured or built.

8. The construction and placement of any structure shall be regulated by the applicable standards contained in SANS 10400:2011 (as applicable), and any local specific policy provisions of the Local/District Authority. Provision shall be explicitly made for the construction of temporary shelters of traditional/informal materials to the satisfaction of the Local/District Authority.

9. Where an approved layout plan has progressed to the identification of individual land parcels, the number of buildings/structures which may be erected on the identified residential sites shall be restricted to one dwelling/structure per site.

10. For any structures on individually identified sites on the layout plan, a minimum of one meter wide on all boundaries shall remain free of any structures. No solid walls may be used to define boundaries. Only fencing may be used if an occupant wishes to secure the site.

11. The height on any structure on the residential sites shall not exceed one storey without the permission of the local authority, which permission may be declined, granted or approved subject to such conditions relating to the submission of a building plan as defined in SANS 10400:2011.

12. No land parcel on the layout plan for residential purposes shall be smaller than 150 square meters in total.

13. No land parcels on the layout plan shall have a developable width of less than 9 meters.

14. The coverage on individually identified sites on the layout plan may not exceed 60% without the permission of the local authority, which permission may be declined, granted or approved subject to such conditions as the local authority may impose.

15. Any informal shelters placed on individual sites shall be so positioned to permit the construction of a dwelling of a minimum of 40 square meters on the site without the
need for the removal of the informal shelter during construction. No encroachment into the one meter building restriction area parallel to the inside boundary of each site will be permitted, either during construction of the permanent dwelling or subsequent occupation.

16. Where temporary shelters are located on a land parcel, natural earth flooring must be suitably compacted before occupation.

17. Soil around the perimeter of any structure shall be graded away from the structure so that stormwater is diverted away from the structure.

18. After the layout plan has been approved by the local authority, the legal occupant of a residential site/structure may apply in writing to the local authority to permit a new alternative land use on the site (excluding a spaza shop). The legal occupant of the site/structure as per approved register must submit such application in writing to the local authority. The application must be accompanied by written confirmation from all registered occupants of all adjacent sites/structures that they have been notified and indicate their support or objection for such application.

19. A residential structure that has been construction from permanent materials and accordance with SANS 10400:2011 may be utilised for a spaza shop provided that the environmental health regulations of the Local/District Authority are complied with.

20. The local authority may decline or approve any application in terms of these regulations and/or any other zoning regulations in effect in the area of the application, subject to conditions it may deem fit. The local authority shall keep a register recording the decisions of such applications. If the application is granted, the layout plan shall be endorsed accordingly to reflect the land use change.

21. If any site is used in contravention of these conditions the local authority may give the occupant notice in writing requiring him/her to rectify such condition or contrary use within a period of 30 days from such notification, failing which further legal action shall be instituted in terms of theses regulations and/or any other relevant legislation.
22. The provisions and conditions as set out above shall prevail on the identified and
demarcated “Transitional Residential Settlement Area” as indicated on the layout
plan, notwithstanding whether any other zoning is applicable or not.

23. These regulations do not supersede or replace any other requirements imposed in
terms of National or Provincial Legislation, or any other Local Authority By-Laws or
Regulations. Such requirements must also be complied with, as may be applicable.
Annexure C
Settlement Planning Time-line
LUPO SETTLEMENT PLANNING PROJECT - Town Planning Approval

OVERALL PROGRAMME

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<td>PROJECT INCEPTION AND PROJECT PLAN AMENDED AND ACCEPTED</td>
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| PROJECT TEAM MEMBERS: |
| Submission to Planning Dept and Land Administration |

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Plan 1
Locality Plan
Plan 2
Site Base Plan
Plan 3
Slope Analysis
Plan 4
Ownership Plan
SITE BOUNDARY ± 142.76ha

NOTATION USE
Managed Land Settlement Project

CADASTRAL BOUNDARIES ARE EXTRACTED FROM RECORDS AT THE SURVEYOR GENERALS OFFICE. ALL CADASTRAL BOUNDARIES ARE TO BE CONFIRMED BY A PROFESSIONAL LAND SURVEYOR.

NOTES

OWNERSHIP PLAN

CLIENT: AFESIS CORPLAN

DATE: 31 AUGUST 2011

Scale 1:7500

Prepared by:

NPM PLANNING
TOWN & REGIONAL PLANNERS

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Plan 5
Initial Settlement Plan
Plan 6
Conceptual Planning Framework: Church-owned Land
Plan 7
Conceptual Planning Framework: Neighbourhood Plan
Plan 8
Conceptual Layout
Plan 9
Typical Block Layout: Conventional Layout Principles
Cadastral boundaries are as extracted from records at the Surveyor General’s Office. All cadastral boundaries are to be confirmed by a professional land surveyor.

Land Use Table

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Total

Notes

Title: CONVENTIONAL LAYOUT PRINCIPLES

Plan No:

Prepared by:

Scale 1: 1500

Client:

Date: December 2011

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Public Road 10m

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PUBLIC ROAD 16m

PUBLIC ROAD 10m
Plan 10
Typical Block Layout: Panhandle Subdivisions
Plan 11
Typical Planned Emergency Housing Units
Plan 12

Typical Block Layout: Superblock
Plan 13
Typical Block Layout: Woonerf
Plan 14
Typical Block Layout: Superblock-Woonerf Hybrid