TRAFFIC IMPACT STATEMENT

FARM ALICEVILLE NO. 2147, PENNINGTON

Royal HaskoningDHV
Enhancing Society Together

Aliceville, Pennington
September 2014

VERIFICATION PAGE

PROJECT NAME: Traffic Impact Statement Farm Aliceville No. 2147, Pennington		
PROJECT NO: T01.PZB.000441	**DATE:** September 2014	**REPORT STATUS:** FINAL
CARRIED OUT BY: ROYAL HASKONING DHV P O BOX 55 PINETOWN 3600 TEL: 031 719 5500 FAX: 031 719 5505		**COMMISSIONED BY:** VENTURE PARTNERS 110A COMPTON STREET PINETOWN 3610 TEL: 031 701 1069 FAX: 031 701 1036
AUTHOR: Jacqueline Mouws		**CLIENT CONTACT PERSONS:** Chris le Sueur
SYNOPSIS: Traffic Impact Statement for the proposal to establish a development comprising of a retirement development of some 300 units and auxiliary facilities.		

QUALITY VERIFICATION

This report has been prepared under the controls established by a quality management system that meets the requirements of ISO 9001: 2000.

UKAS QUALITY MANAGEMENT 022

Verification	Capacity	Name	Signature	Date
By Author	Traffic engineer	Jacqueline Mouws		September 2014
Checked by	Principal Associate	Derek McGuigan		September 2014
Authorised by	Principal Associate	Derek McGuigan		September 2014

CONTENTS

1 INTRODUCTION

1.1 Purpose of Report

The purpose of this report is to assess the likely traffic impact of the proposal to establish a development consisting of 300 retirement units and auxiliary facilities on the Farm Aliceville No. 2147 at Pennington on the KwaZulu-Natal South Coast (refer Figure 1: Site Location). This report takes cognisance of both existing and future road and traffic conditions with a view to providing comment on the access and traffic conditions that will prevail on completion of the project.

This report is an update on the Traffic Impact Statement that was undertaken in January 2008, by BCP Engineers. The proposed development on Farm Aliceville No. 2147 has subsequently changed in type and size.

1.2 Need for a Traffic Statement

According to the *Manual for Traffic Impact Studies (RR93/635)* issued by the Department of Transport a *Traffic Impact Statement* is required in this instance as against a full traffic impact study. (Refer table below)

Threshold Value for a Traffic Impact Study
Recommended Threshold
i) More than 150 peak hour trips – prepare a Traffic Impact Study (TIS).
ii) Less than 150 and more than 50 peak hour trips – prepare a Traffic Impact Statement (TISm).
iii) Less than 50 peak hour trips – no study required except if the surrounding road network is operating at or above capacity.
iv) Discretion of the responsible authority.

1.3 Executive Summary

The investigation covered in this report reveals that the proposed development will not materially affect the traffic volumes or trends that currently exist on Provincial Main Road 3 Section 1, nor will there be a significant impact on the overall local street system of Pennington. However Minerva Avenue will be affected to various extents. Measures are recommended to minimise impact on this road. Routine maintenance at intersections is identified along with improvements to roadmarkings and signage.

Figure 1: Site Location

2 PROPOSED DEVELOPMENT

2.1 Development details

The following details describe the site and the proposed development:

- 300 retirement units
- Administration building
- Care Centre
- Amenities building
- Chapel

2.2 Access

At present access to the entire site is gained from a private road which leads to the Umdoni Golf Course and is an extension of Minerva Road.

Figure 2: Private road from the Golf Course

For the proposed development one formalised access is planned as an extension of Minerva Road just south of Sheila Road (refer Annexure B). This includes controlled access arrangements.

Connections to other local streets (Dirk Uys Street and Elizabeth Avenue) are proposed but they will only be used during construction or for service vehicles. All development generated traffic will exit at the gate to Minerva Avenue.

3 EXISTING AREA CONDITIONS

3.1 Area of Traffic Impact

The area of traffic impact is confined to the road network in the immediate vicinity of the access to the site, Minerva Avenue and Pennington Drive and Provincial Main Road 3. The following sub-sections detail the components of the road network comprising the study area and are assessed in the analysis.

3.2 Roads

- **Provincial Main Road 3, Section 1 (P3-1)** is a two-lane road with additional lanes at intersections and an 80km/h posted speed limit. The road is typically 7,0m in width with nominal shoulders and turning lanes at the more major intersections. The proposed development will have nominal or little effect on the operational aspects of this road (refer Section 7 – Previous Study).

Figure 3: Provincial Main Road 3

- **Pennington Drive** is an undulating and winding blacktop surfaced local collector road in fair condition with direct access to individual properties and generally varying in width between 6,0m and 7,0m. The section between Provincial Main Road 3 and Nanette Avenue has a side walk on the south side.

Figure 4: Pennington Drive

- **Minerva Avenue** is generally a straight and level blacktop surfaced local access road in fair to poor condition with direct access to individual properties and generally 5,0m in width. Speed tables are strategically placed along sections of the road and there are wide verges on either side.

Figure 5: Minerva Avenue

3.3 Intersections

Intersections that will be most affected by the proposed development are:

- **Minerva Avenue / Savell Road**
- **Minerva Avenue / Pennington Drive**

These intersections are appropriate for the satisfactory servicing of the existing infrastructure. However intersections could have restricted sight lines due to intruding vegetation and also inappropriate signage and / or insufficient roadmarkings. A typical intersection is shown below.

Figure 6: Minerva Avenue – Savell Road intersection

4 FUTURE AREA CONDITIONS

4.1 Roads

There is no current planning in place to significantly change or modify any of these roads so they are assessed at their present status and condition.

4.2 Traffic

Future traffic levels are dependent on several factors including residential/holiday development and tourism offerings and are therefore difficult to confidently predict.

Given the exceptionally low base volumes on the local road network, the likely growth in traffic will not play an influential role in the assessment of the traffic impact.

5 DEVELOPMENT TRAFFIC GENERATION

5.1 Trip Generation

The estimation of the traffic generation potential of the proposed development is in accordance with the rationale adopted in the guidelines document, South African Trip Generation Rates (Report RR92/228) 2nd Edition, issued by the Department of Transport.

The Trip Generation Guidelines of the Department of Transport do not specifically detail the type of development proposed and the following, based on other similar developments and professional experience, is considered most appropriate.

A Generation Rate for a retirement village component of the development of the type proposed of 0,4 trip-ends per unit, split 75:25 is applicable for an assumed peak hour.

Therefore, the traffic generation potential of the proposal in the morning peak period (in this case 10:00 – 11:00) is:

Outbound	90 trips
Inbound	30 trips

5.2 Trip Distribution

The trip distribution pattern is assumed to be in proportion to the existing traffic patterns and also a function of the position and quantity of units in the various areas. Cognisance has been taken of the proximity of the development to local shopping areas, sports facilities, beaches etc.

The distribution of this traffic, outbound, from the proposed development is predicted as shown on Annexure C.

These distributions are reversed for the inbound movements.

5.3 Traffic Assignment

The generated traffic is assigned to the road network according to the distribution pattern described above and as shown on Annexure C.

6 TRAFFIC ASSESSMENT

6.1 Traffic Operations

Several traffic related aspects relating to the proposed development need to be addressed to ensure satisfactory and safe operations.

The existing situation on the local Pennington road network is generally satisfactory notwithstanding the condition and width of the existing roads. This is due to their very low traffic volumes. The nominal volume of generated traffic from the development can therefore be adequately accommodated without loss of service to existing users.

Several intersections have vegetation encroaching into sight lines which could lead to potentially hazardous situations. Regular routine maintenance (responsibility of Local Authority) including clearing of vegetation from sight lines, and maintaining appropriate signage and roadmarking are necessary.

Two issues relating to the traffic impact need to be considered:

- the impact of construction traffic during construction, and
- the impact of development generated traffic on completion of the development.

During the construction phase large, heavy trucks, plant and equipment will be accessing the site. The impact on traffic operations will be that these vehicles, being large, take up the majority of the available roadway, particularly on roads that are only 5,0m wide. Opposing traffic, whilst it is infrequent, will be faced with a reduction in serviceability (and to an extent, safety) and will be forced onto the verge. Whilst this condition cannot be quantified, the situation will present itself to existing users (albeit on an infrequent, random basis). Construction traffic should where possible utilise the wider roads on the network in order to reduce inconvenience.

On completion of construction, once the proposed development is up and running, the generated traffic will be on the roads in question. The impact on the local road network will be acceptable given the improved facility and small traffic volumes.

6.2 Access

The access point is connecting to Minerva Avenue. The access will be boom controlled.

Figure 7: the extension Minerva Avenue, the access will be to the right

At present the extension of Minerva Avenue into the proposed development is used as the entry to the Umdoni Golf Course and is of similar standard to the adjoining street system.

No specific upgrading is necessary except for the formalisation of the nearest intersection (at Sheila Road).

Any controlled access arrangement to the proposed development must be constructed such that there is no interference with other residential accesses.

7 PREVIOUS STUDIES

Previous studies on the site where undertaken:

- By MMC Engineers, a 'Traffic Impact Analysis Report' dated July 2007.
- By BCP Engineers, a 'Traffic Impact Statement Report' dated January 2008.

These reports detailed the impact of a development of a different type, size and nature to the one proposed in this report.

The study by MMC, appropriately, utilised generation rates and peak periods relating to the expected critical conditions for that particular scenario. This study is relevant in that the volumes of traffic produced are higher than those predicted in this report and the conclusions relating to operational efficiency of the major intersections are pertinent.

In the study by BCP Engineers the following comments are relevant:

> *'The above evaluation showed that the existing traffic volumes on the road network surrounding the site are very low and no existing adverse traffic conditions occur during peak periods.*
>
> *Using accepted trip generation rates and directional splits, the proposed residential development is expected to generate 152 veh/h two-way for a maximum impact scenario during the AM and PM peak hours. Once distributed onto the surrounding road network, the impact of this additional traffic on existing traffic conditions is not expected to be significant. No increased congestion or delay is expected at any of the intersections through which the development generated traffic will pass.*
>
> *No improvements to the surrounding road network will therefore be required to accommodate the increase in traffic volumes generated by the proposed development.'*

This Traffic Impact Statement reviews the BCP scope of development. The difference between the BCP study and this Traffic Impact Statement are:

- the access to the development (viz. one point in this study as opposed to three access points in the BCP study)

- the size of the development, In this study the development is 88 residential units as up-market holiday/residential and 94 unit retirement use whereas BCP used 155 retirement units and 91 up-market holiday/residential units.

8 CONCLUSIONS

The following conclusions can be drawn from this investigation:

i) The existing road system, although ageing, satisfactorily serves its intended purpose.

ii) Traffic flows on the adjacent road system are light with acceptable levels of service being experienced.

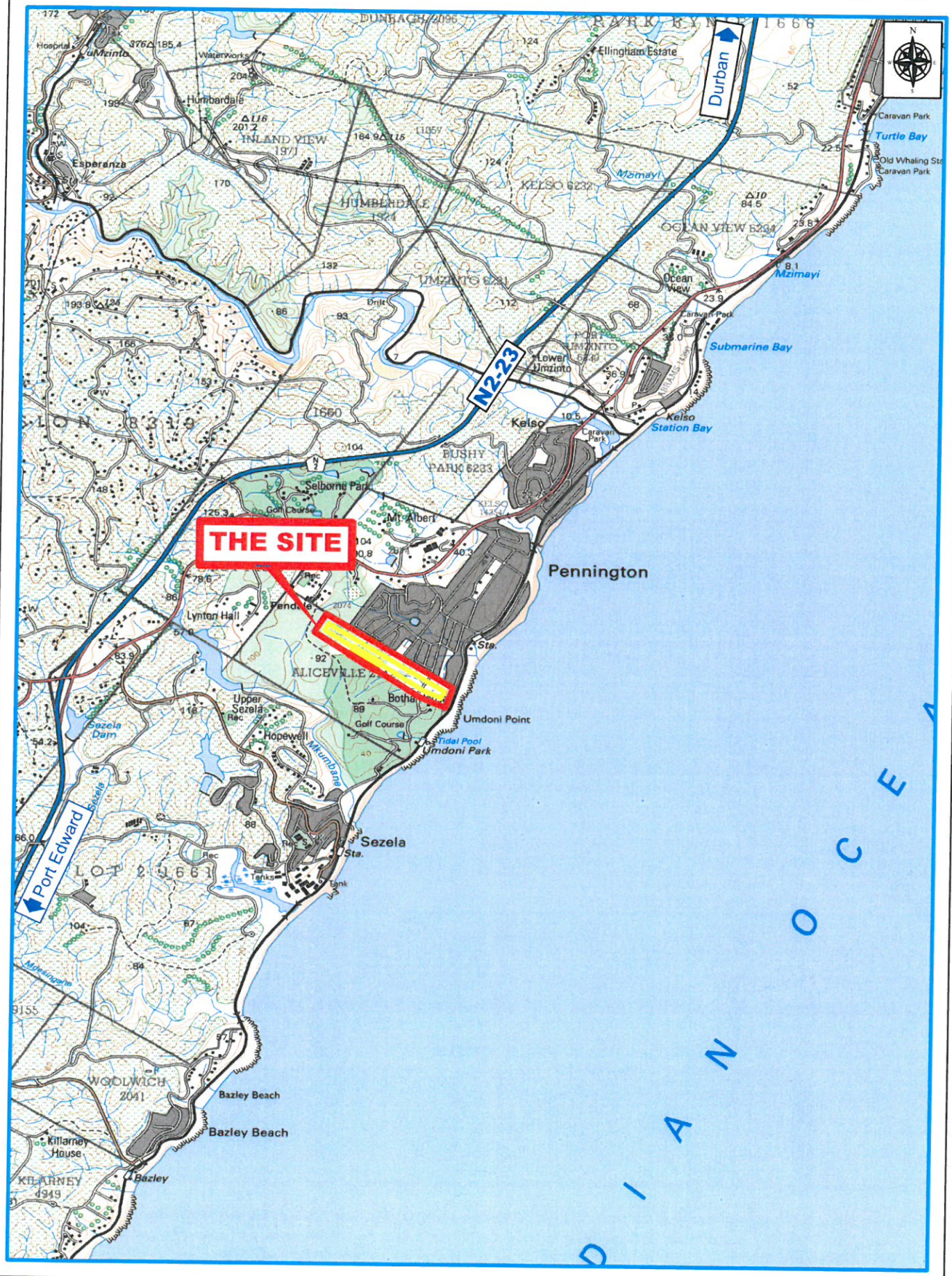
iii) The proposed development has the potential to generate moderate volumes of traffic which are well within the carrying capacity of the existing local road network.

iv) The position of the access to the proposed development is appropriate but careful design will be needed to accommodate requirements of existing dwellings and other proposed developments in the vicinity. If a controlled access arrangement is to be installed then this must not interfere with other accesses in the vicinity.

v) Daylighting, signage, roadmarkings and associated standards at intersections should be reviewed by the local municipality with a view to upgrading (if sub-standard) to meet the required standards.

J.W.A. Mouws
Royal HaskoningDHV **SEPTEMBER 2014**

ANNEXURE A -
SITE LOCATON

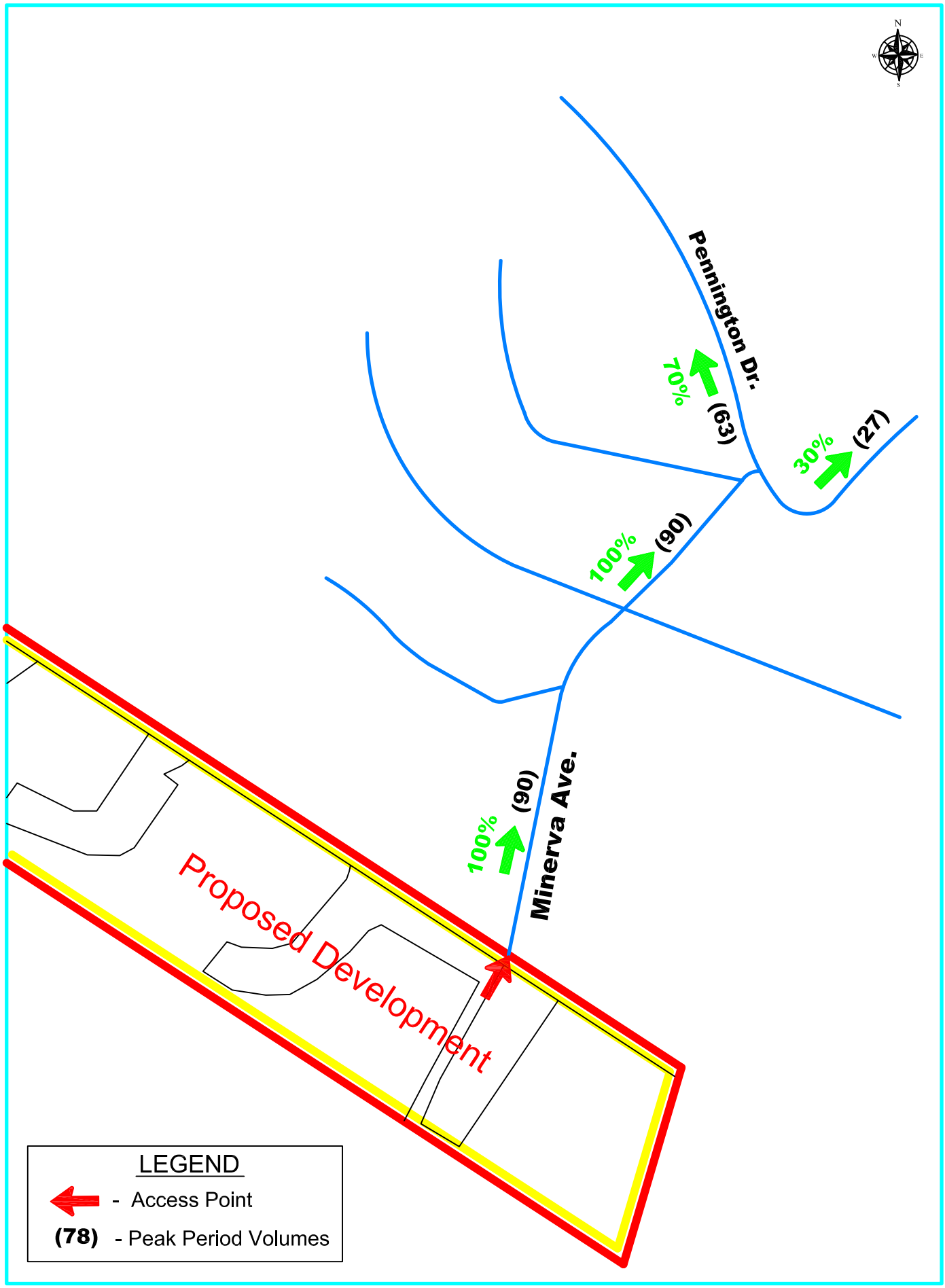


Royal HaskoningDHV Enhancing Society Together	**FARM ALICEVILLE NO.2147 - PENNINGTON**	Figure : 1 Scale : 1 : 50000
	LOCALITY PLAN	Date : August 2014 Dwg/Project No. 000441/1 — Rev.

ANNEXURE B -
SITE LAYOUT

Royal HaskoningDHV Enhancing Society Together	**FARM ALICEVILLE NO.2147 - PENNINGTON**	Figure : 2 Scale : 1 : 15000
	SITE PLAN	Date : August 2014 Dwg/Project No. 000441/2 — Rev.

ANNEXURE C -
TRIP DISTIBUTION & TRAFFIC ASSIGNMENT



Royal HaskoningDHV
Enhancing Society Together

FARM ALICEVILLE NO.2147 - PENNINGTON

TRIP DISTRIBUTION AND TRAFFIC ASSIGNMENT

Figure :	3
Scale :	NTS
Date :	August 2014
Dwg/Project No.	Rev.
000441/3	