## Northern Territory Town Camps

### Electrical Infrastructure

**Inspection Date** 30/11/2016 2:19:29 PM

<table>
<thead>
<tr>
<th>Insp ID: 763</th>
<th>Group 3 - Tennant Creek, Elliott</th>
<th>Ngalpa Ngalpa</th>
</tr>
</thead>
</table>

- **What Category are you capturing:** Overhead Poles
- **Is street light fitted:** Yes
- **Street Light Power Supply:**
  - **Street Light Type:** M125D 10
  - **Street Light Watts:** 125
  - **Street Light Condition:** 3
  - **Street Light Height:**

![Image of Overhead Poles](P:\GIS\Projects\253963_NT)
Northern Territory Town Camps

Electrical Infrastructure

Inspection Date  30/11/2016 2:19:29 PM
Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 30/11/2016 2:16:25 PM

Insp ID: 764  Group 3 - Tennant Creek, Elliott  Ngalpa Ngalpa

What Category are you capturing: Overhead Poles

Is street light fitted: Yes
Street Light Power Supply:
Street Light Type M125D 10
Street Light Watts 125
Street Light Condition 2
Street Light Height

![Image of Overhead Poles]
Northern Territory Town Camps

Electrical Infrastructure

Inspection Date  30/11/2016 2:16:25 PM
Northern Territory Town Camps

Electrical Infrastructure

**Inspection Date**  
30/11/2016 2:06:22 PM

| Insp ID: 765 | Group 3 - Tennant Creek, Elliott | Ngalpa Ngalpa |

What Category are you capturing: **Overhead Poles**

<table>
<thead>
<tr>
<th>Is street light fitted:</th>
<th>Yes</th>
</tr>
</thead>
</table>

**Street Light Power Supply:**

<table>
<thead>
<tr>
<th>Street Light Type</th>
<th>M125D 10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Street Light Watts</td>
<td>125</td>
</tr>
<tr>
<td>Street Light Condition</td>
<td>3</td>
</tr>
<tr>
<td>Street Light Height</td>
<td></td>
</tr>
</tbody>
</table>
Northern Territory Town Camps

Electrical Infrastructure

Inspection Date  30/11/2016 2:06:22 PM
Northern Territory Town Camps

Electrical Infrastructure

**Inspection Date**: 30/11/2016 2:03:25 PM

**Insp ID**: 766  |  **Group**: Group 3 - Tennant Creek, Elliott  |  **Location**: Ngalpa Ngalpa

What Category are you capturing: **Overhead Poles**

- Is street light fitted: **Yes**
- Street Light Power Supply:
  - Street Light Type: S70D 15
  - Street Light Watts: 70
  - Street Light Condition: 3
  - Street Light Height

![Image of Overhead Poles](P:\GIS\Projects\253963_NT\Image found and displayed.)

![Image of Overhead Poles](P:\GIS\Projects\253963_NT\Image found and displayed.)

![Image of Overhead Poles](P:\GIS\Projects\253963_NT\Image found and displayed.)

![Image of Overhead Poles](P:\GIS\Projects\253963_NT\Image found and displayed.)
Northern Territory Town Camps

Electrical Infrastructure

Inspection Date  30/11/2016 1:57:48 PM

Insp ID:  767  Group 3 - Tennant Creek, Elliott  Ngalpa Ngalpa

What Category are you capturing:  Overhead Poles

Is street light fitted:  Yes

Street Light Power Supply:

Street Light Type  M125D 10

Street Light Watts  125

Street Light Condition  3

Street Light Height
Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 30/11/2016 1:57:48 PM
Northern Territory Town Camps

Electrical Infrastructure

**Inspection Date**  30/11/2016 1:51:20 PM

<table>
<thead>
<tr>
<th>Insp ID</th>
<th>Group 3 - Tennant Creek, Elliott</th>
<th>Ngalpa Ngalpa</th>
</tr>
</thead>
<tbody>
<tr>
<td>769</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

What Category are you capturing:  **Overhead Poles**

Is street light fitted:  Yes

Street Light Power Supply:

Street Light Type  S70D 11

Street Light Watts  70

Street Light Condition  2

Street Light Height
Northern Territory Town Camps

Electrical Infrastructure

Inspection Date  30/11/2016 3:22:38 PM

Insp ID:  749  Group 3 - Tennant Creek, Elliott  Ngalpa Ngalpa

What Category are you capturing: Transformers

What is Transformer installation method: Pole
If method know: 11SS1P
What is the condition of the mounting: 3
What is Transformer Rating: Unknown
Is there access to transformers name plate to take a photo: No
What is the condition of transformer: 3
What is cable type to transformer: PVC insulated black
What is cable size to transformer:
Is there switch gear or fusing associated with the transformer: Cut out fuse
Transformer Comment:
Northern Territory Town Camps

Electrical Infrastructure

Inspection Date  30/11/2016 3:22:38 PM
## Northern Territory Town Camps

### Electrical Infrastructure

**Insp ID:** 768  
**Group 3 - Tennant Creek, Elliott**  
**Ngalpa Ngalpa**

<table>
<thead>
<tr>
<th>What Category are you capturing:</th>
<th>Transformers</th>
</tr>
</thead>
<tbody>
<tr>
<td>What is Transformer installation method:</td>
<td>Pole</td>
</tr>
<tr>
<td>If method know:</td>
<td>11SS1P</td>
</tr>
<tr>
<td>What is the condition of the mounting:</td>
<td>3</td>
</tr>
<tr>
<td>What is Transformer Rating:</td>
<td>Unknown</td>
</tr>
<tr>
<td>Is there access to transformers name plate to take a photo:</td>
<td>No</td>
</tr>
<tr>
<td>What is the condition of transformer:</td>
<td>3</td>
</tr>
<tr>
<td>What is cable type to transformer:</td>
<td>PVC insulated black</td>
</tr>
<tr>
<td>What is cable size to transformer:</td>
<td></td>
</tr>
<tr>
<td>Is there switch gear or fusing associated with the transformer:</td>
<td>Cut out fuse</td>
</tr>
</tbody>
</table>

Transformer Comment:

![Transformer Image 1](P:\GIS\Projects\253963_NT)  
![Transformer Image 2](P:\GIS\Projects\253963_NT)  
![Transformer Image 3](P:\GIS\Projects\253963_NT)  
![Transformer Image 4](P:\GIS\Projects\253963_NT)
Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 30/11/2016 1:54:26 PM
Road map
Existing drawings
## HOUSE CONNECTIONS

<table>
<thead>
<tr>
<th>LOT</th>
<th>DISTANCE FROM HOUSE CONNECTION POINT TO MAIN</th>
<th>SOUTHWEST ERICHO STEEL CHFA</th>
<th>N OF HOUSE CONNECTIONS</th>
<th>DISTANCE HOUSE CONNECTIONS WITH PROPEHY END</th>
<th>HOUSE CONNECTION TYPE</th>
</tr>
</thead>
<tbody>
<tr>
<td>299</td>
<td>48.31 11/3/08</td>
<td>732.616</td>
<td>1  0.1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>397</td>
<td>13.85 11/3/08</td>
<td>732.720</td>
<td>1  0.2</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>393</td>
<td>14.86 11/3/08</td>
<td>732.720</td>
<td>1  0.2</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>297</td>
<td>16.53 11/3/08</td>
<td>732.720</td>
<td>1  0.2</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>291</td>
<td>14.85 11/3/08</td>
<td>732.791</td>
<td>1  0.3a</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>292</td>
<td>14.85 11/3/08</td>
<td>732.791</td>
<td>1  0.3a</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>293</td>
<td>14.85 11/3/08</td>
<td>732.791</td>
<td>1  0.3a</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>294</td>
<td>14.85 11/3/08</td>
<td>732.791</td>
<td>1  0.3a</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

### FIRE PIPES & CLASS

**GRADE**: Length Diameter

**DATUM**: RL 367.000

**SEWER MAIN INVERT LEVEL**:

**EXISTING NATURAL SURFACE LEVEL**:

**DEPTH TO SEWER MAIN**:

**CHAINAGE**

---

**SEWER MAIN - LONGITUDINAL SECTION**

---

**AS CONSTRUCTED**

---

**ON LOT CONNECTION INSPECTION OPENING DETAIL**

---

**TEHNIQUE**

---

**AS National Government Infrastructure Design Project for Tenant Creek Urban Living Areas Sewage - Notes and Rising Main Longitudinal Section**
OVERFLOW CHAMBER - PLAN

OVERFLOW CHAMBER - SECTION C

OVERFLOW CHAMBER - SECTION D

PREMISE TO USE FOR CONSTRUCTION PURPOSES ONLY

SCHED AS SUITABLE DATE

IN REPAIR BY WATER SERVICES FOR THE INTEGRATION INTO
POWER AND WATER CORPORATION'S NETWORK

This permission to use this drawing/desgin is granting for the
these to be designed and constructed to the
responsibility to the correctness and accuracy of the
design and all documents attached.

This drawing is valid for 2 years from the date of signing.

REфер TO SHEET R09-1604 FOR NOTES

TENANT CREEK
NOWPA NGALPA (2440) LOT 1271 AND 1272 PATERNIA STREET TENANT CREEK INFRASTRUCTURE REPAIR PROJECT FOR TENANT CREEK URBAN LIVING AREAS
SEWERAGE PUMP STATION - OVERFLOW CHAMBER

OPUS PANTIC M.C. WILLIAM

Northern Territory Government
Department of Planning and Building Services
SEARCH CERTIFICATE

CROWN LEASE IN PERPETUITY 01191

Lot 1273 Town of Tennant Creek from plan(s) S 74/062A
Area under title is 9180 square metres

Owner:
Julalikari Housing Incorporated
of PO Box 158, Tennant Creek NT 0861

Registered Date Dealing Number Description
17/08/2001 472777 Previous title is Volume 639 Folio 011
                      End of Dealings
                      Notice of a Right to a Grant of Interest

Commencement Date: 17 August 2001) Expiry Date: In Perpetuity

Reservations:
1. Reservation of a right of entry and inspection.
2. Reservation of all minerals, mineral substances and ores in or upon the land, including gems, stones, sands, valuable earths and fossil fuels.
3. Reservation of a power of resumption.

Provisions:
1. The lease will be in perpetuity.
2. The annual rent for the lease ("called the rent") will be nil
3. The lease is granted under and subject to the Crown Lands Act ("the Act") and the Regulations for the time being in force thereunder, and is conditional upon compliance by the Lessee and will, subject to the Crown Lands Act and the Regulations be liable to be determined and forfeited for non-compliance with any such lease condition.
4. The Lessee may at any time surrender the lease in the manner prescribed under the Crown Lands Act.
5. For the purpose of section 58 of the Crown Lands Act the Lessee agrees that the Minister may at his absolute discretion determine the Lessee's rights in improvements.

Conditions and Covenants:
1. Subject to the Crown Lands Act, the Lessee will not use the leased land for a purpose other than the purpose for which it is leased, viz: Aboriginal Communal Living.
2. The Lessee will pay rates and taxes which may at any time become due in respect of the leased land.
3. The Lessee will at all times comply with any Control Plan and/or Development Permit under the Planning Act affecting the leased land.
Date Registered: 17/08/2001

Duplicate Certificate as to Title issued? No

4. The Lessee will in respect of the land included in the lease, ensure that at all times and to the satisfaction of the Minister, the land is kept clean, tidy and free of weeds, debris, dry herbage, rubbish, carcasses of animals and other unsightly or offensive poisonous, toxic or hazardous matter and harbour for insects, pests and the breeding of mosquitoes.

5. If the Lessee fails to observe and carry out or cause to be observed or carried out the conditions of condition 4 above on his part, the Territory shall have the right to enter onto the demised premises and do all things necessary to that end and the expense and cost thereof, as determined by the Minister, shall be borne and payable by the Lessee on demand.

6. The Lessee will at all times maintain and repair and keep in repair all improvements on the leased land to the satisfaction of the Minister.
Date Registered: 17/08/2001
Duplicate Certificate as to Title issued? No
# Record of Administrative Interests and Information

The information contained in this record of Administrative Interests only relates to the below parcel reference.

**Parcel Reference:** Lot 01273 Town of Tennant Creek plan(s) S 74/062A

(See section 38 of the Land Title Act)

Note: The Record of Administrative Interests and Information is not part of the Land Register and is not guaranteed by the Northern Territory of Australia, and the NT Government accepts no Liability for any omission, misstatement or inaccuracy contained in this statement.

Registrar General

<table>
<thead>
<tr>
<th>Government Land Register</th>
</tr>
</thead>
<tbody>
<tr>
<td>(none found)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Custodian - Registrar General (+61 8 8999 6252)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Current Title</strong></td>
</tr>
<tr>
<td>CUFT 639 012 (order 1)</td>
</tr>
<tr>
<td><strong>Tenure Type</strong></td>
</tr>
<tr>
<td>CROWN LEASE IN PERPETUITY 1191</td>
</tr>
<tr>
<td><strong>Tenure Status</strong></td>
</tr>
<tr>
<td>Current</td>
</tr>
<tr>
<td><strong>Area Under Title</strong></td>
</tr>
<tr>
<td>9180 square metres</td>
</tr>
<tr>
<td><strong>Owners</strong></td>
</tr>
<tr>
<td>Julalikari Housing Incorporated</td>
</tr>
<tr>
<td>PO Box 158, Tennant Creek NT 0861</td>
</tr>
<tr>
<td><strong>Easements</strong></td>
</tr>
<tr>
<td>(none found)</td>
</tr>
<tr>
<td><strong>Scheme Name</strong></td>
</tr>
<tr>
<td>(none found)</td>
</tr>
<tr>
<td><strong>Scheme Body Corporate Name</strong></td>
</tr>
<tr>
<td>(none found)</td>
</tr>
<tr>
<td><strong>Reserved Name(s)</strong></td>
</tr>
<tr>
<td>(none found)</td>
</tr>
<tr>
<td><strong>Unit Entitlements</strong></td>
</tr>
<tr>
<td>(none found)</td>
</tr>
</tbody>
</table>
Transfers
   (none found)

Tenure Comments
   (none found)

Historic Titles
   CUFT 639 011 (order 1)
   CUCL 191 040 (order 1)

Custodian - Surveyor General (+61 8 8995 5362)

Address
   29 UDALL RD, TENNANT CREEK

Survey Plan
   S 74/062A

Survey Status
   Approved

Parcel Status
   CURRENT

Parcel Area
   9180 square metres

Map Reference
   Code 730 Scale 2500 Sheet 22.32

Parent Parcels
   (none found)

Parcel Comments
   SUBD OF LOTS 1212 & 1213. WARRAMUNGA PABULU HOUSING ASSOCIATION VID E S74/62/94. S2008/31
   LOTS 2368(A) TO 2375(A) S2008/30 LOTS 2328(A) TO 2367(A) SEE S2008/29 LOTS 2298(A) TO
   2327(A) ALLOCATION OF ADMIN PARCELS AT MUNJI MARIA TOWN CAMP LOT 1273 TENNANT CREEK

Survey Comments
   (none found)

Proposed Easements
   (none found)

Municipality
   BARKLY SHIRE

Region
   BARKLY

Custodian - Valuer General (+61 8 8995 5375)

Owner's Last Known Address
   Department of Housing, PROPERTY RATES OFFICER, GPO BOX 4621, DARWIN NT 0801

Parcels in Valuation
   Lot 01273 Town of Tennant Creek
Unimproved Capital Value
$91,000 on 01/07/2015
$91,000 on 01/07/2012
$70,000 on 01/07/2010
$24,000 on 01/07/2004
$28,250 on 01/07/2001
$28,250 on 01/07/1998
$25,000 on 01/07/1995
$24,750 on 01/07/1992
$24,750 on 01/01/1990
$18,750 on 01/01/1987
$17,000 on 01/01/1984
$2,000 on 01/01/1981

Valuation Improvements
01/02/1996 House x 5
15/09/1988 Residential other
01/11/1983 Special uses other
Improvement type( ABOR EING)

Custodian - Property Purchasing (+61 8 8999 6631)

Acquisitions
(none found)

Custodian - Building Advisory Service (+61 8 8999 8965)

Building Control Areas
BBTEN001 - Building Control Area TENNANT CREEK BUILDING AREA

Building Permits

Application Number: 5 of 7
Description: DWELLING (HOUSE 4)
Number of Residential Units: 1
Australian Bureau of Statistics Type: Separate House
Building Class: Single Dwelling
Area: 144 square metres

Application Number: 1 of 7
Description: HOUSE
Number of Residential Units: 0
Australian Bureau of Statistics Type: (none found)
Building Class: House
Area: 177 square metres
Certification: House - Full Code - issued on 26/05/1988

Visit the website http://www.nt.gov.au/building/
**Custodian - Town Planning and Development Assessment Services (+61 8 8999 6046)**

**Planning Scheme Zone**
- CL (Community Living)

**Interim Development Control Orders**
- (none found)

**Planning Notes**
- (none found)

**Planning Applications**
- (none found)

---

**Custodian - Power and Water Corporation (1800 245 092)**

**Meters on Parcel**
- Power Water - Electricity: 1
- Power Water - Water: 1

For Account balances, contact the Power and Water Corporation.

---

**Custodian - Pool Fencing Unit (+61 8 8924 3641)**

**Swimming Pool/Spa Status**
- (none found)

For more information, contact the Pool Fencing Unit (+61 8 8924 3641).

---

**Custodian - Mines and Energy (+61 8 8999 5322)**

For information on possible Exploration Licences, contact Mines & Energy or visit the website http://www.nt.gov.au/d/Minerals_Energy/

For information on possible Petroleum Titles, contact Mines & Energy for further details.

---

**Custodian - NT Environment Protection Authority (+61 8 8924 4218)**

**Results of site contamination assessment**
- (none found)

For further information contact Environment Protection Authority or visit the website https://intepa.nt.gov.au/waste-pollution/contaminated-land

---

**Custodian - Heritage Branch (+61 8 8999 5039)**

**Heritage Listing:**
- (none found)

For further information on heritage places contact Heritage Branch or visit the website https://nt.gov.au/property/land/heritage-register-search-for-places-or-objects

---

**Other Interests**

For Account balances, contact Barkly Shire Council
Transformer data
<table>
<thead>
<tr>
<th>Group</th>
<th>Comm No</th>
<th>Location</th>
<th>Community Name</th>
<th>Dewar Ends No. (Punished Dwelling)</th>
<th>Dev/Dew Ends No. (Benevolent Design)</th>
<th>New Hours **</th>
<th>Future Demand</th>
<th>Primary Volatge Level (KV)</th>
<th>PWG Substation ID</th>
<th>PWG Test Number</th>
<th>Transformer size (KVA)</th>
<th>KVA Total Developments @ 4.5kVA</th>
<th>KVA Total Developments @ 6kVA</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>209</td>
<td>Bagot</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1.24</td>
<td>1.924</td>
<td>1735</td>
<td>300</td>
<td>247.5</td>
<td>385</td>
<td></td>
</tr>
<tr>
<td></td>
<td>249</td>
<td>Broadway</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1.24</td>
<td>1.717</td>
<td>1543</td>
<td>100</td>
<td>35.3</td>
<td>65</td>
<td></td>
</tr>
<tr>
<td></td>
<td>347</td>
<td>Rogatina</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1.24</td>
<td>3.075</td>
<td>10917</td>
<td>100</td>
<td>85.3</td>
<td>135</td>
<td></td>
</tr>
<tr>
<td></td>
<td>403</td>
<td>Kimberly</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1.24</td>
<td>1.9368</td>
<td>152.40</td>
<td>100</td>
<td>90.0</td>
<td>140</td>
<td>2x transformers for this Town Camp. Transformers are not in boundary of Town Camp. (The nearest transformer data to Town Camp are highlighted in yellow).</td>
</tr>
<tr>
<td></td>
<td>427</td>
<td>Salvation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1.24</td>
<td>2.28</td>
<td>140.89</td>
<td>25</td>
<td>2.7</td>
<td>42</td>
<td>Transformer is not in boundary of Town Camp. (The nearest transformer data to Town Camp are highlighted in yellow).</td>
</tr>
<tr>
<td></td>
<td>428</td>
<td>Salvation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1.24</td>
<td>2.28</td>
<td>140.89</td>
<td>25</td>
<td>2.7</td>
<td>42</td>
<td>Transformer is not in boundary of Town Camp. (The nearest transformer data to Town Camp are highlighted in yellow).</td>
</tr>
<tr>
<td></td>
<td>403</td>
<td>Kimberley</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1.24</td>
<td>2.28</td>
<td>140.89</td>
<td>25</td>
<td>2.7</td>
<td>42</td>
<td>Transformer is not in boundary of Town Camp. (The nearest transformer data to Town Camp are highlighted in yellow).</td>
</tr>
<tr>
<td>2</td>
<td>606</td>
<td>Katherine</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1.24</td>
<td>2.28</td>
<td>140.89</td>
<td>25</td>
<td>2.7</td>
<td>42</td>
<td>Transformer is not in boundary of Town Camp. (The nearest transformer data to Town Camp are highlighted in yellow).</td>
</tr>
<tr>
<td>3</td>
<td>387</td>
<td>Desert</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1.24</td>
<td>2.28</td>
<td>140.89</td>
<td>25</td>
<td>2.7</td>
<td>42</td>
<td>Transformer is not in boundary of Town Camp. (The nearest transformer data to Town Camp are highlighted in yellow).</td>
</tr>
</tbody>
</table>

** For New hours’ demand calculation see section 13.4 “Future Demand”.
Village Camp
Village Camp

1 Design
The infrastructure reviews have been undertaken against current relevant standards for typical sub-divisions. The following standards have been used in undertaking the reviews.

Sewerage and water supply
- Water Services Association of Australia – Sewerage Code – WSA 02 Part 1: Planning and Design
- Power and Water Corporation supplement to WSA 02
- Power and Water Corporation supplement to WSA 04
- Power and Water Corporation supplement to WSA 03
- Department of Housing and Community Development Indigenous Community Engineering Guidelines (ICEG 2014, updated September 2016)
- Power and Water Corporation Essential Services Infrastructure Assessment and Upgrade Guidelines (for Town Camps in Urban Communities, 2009)
- Power and Water Corporation Standard Drawings
- Australian Standards

Electrical services
Electrical infrastructure has been assessed against AS/NZS3000 Wiring Rules and against PWC Service, Installation and Metering Rules and Urban Residential Development (URD) Design Standards where possible.

With one exception, town camps are each a single lot and compliance with AS/NZS3000 is sufficient to address potential safety concerns.

As such application of PWC URD Design Standards will mainly apply to the incoming supply and bulk or initial multi-metering panels if provided.

URD Design Standards for internal reticulation and street lighting appear to have been applied in many cases for convenience rather than compliance.

For the purposes of this report, the demand per dwelling allowances of URD Design Standards have been used to estimate incoming supply and overall distribution capacity requirements.

The following standards apply:
- Australian Standards
- Power Networks Design and Construction Guidelines, Power and Water Corporation
  - NP001.1_Design and Construction of Network Assets – General Requirements
  - NP001.3_General Specification for Overhead Electrical Reticulation
  - NP001.6_General Specification for URD Subdivisions
  - NP003_Installation Rules_V3
  - NP007_Service Rules
Further referral to the guidelines in this report will be designated by the guidelines number, NP001.1.

**Communications**

**General**
It should be noted that if the town camps are proposed to be subdivided and services assets gifted to Power and Water Corporation (PWC) for operation and maintenance, all of these services will need to fully meet PWC standards. With the exception of a few town camps that have recently been upgraded, this will require the full replacement and/or realignment of most services.
2 Condition assessment

2.1 Rating assessment matrix
A condition rating matrix was developed and used to assess all municipal infrastructure. The same rating was used for all services to maintain consistency in assessments. Table 1 below shows the condition rating and operability.

Table 1 Condition rating

<table>
<thead>
<tr>
<th>Condition rating</th>
<th>Operability</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Very Poor</td>
<td>Not operational</td>
</tr>
<tr>
<td>2 Poor</td>
<td>Not fully operational or requires immediate maintenance to keep operational</td>
</tr>
<tr>
<td>3 Good</td>
<td>Fully operational, may require routine maintenance</td>
</tr>
<tr>
<td>4 Very Good</td>
<td>Fully operational, may require maintenance in the next six months</td>
</tr>
<tr>
<td>5 Excellent</td>
<td>New, fully operational</td>
</tr>
</tbody>
</table>

2.2 Civil assessment limitations
The civil infrastructure condition investigations were subject to a number of limitations. These include:

- Only accessible services have been investigated. This includes inspecting the top of sewer manholes, side entry pits, etc., however, does not include opening pits to inspect infrastructure below ground.
- No physical testing of the sewer, water or stormwater network was undertaken.
- No survey or service locating was undertaken.
  As there was no survey, potholing or CCTV undertaken on the underground infrastructure there is insufficient information to make determinations on the asset condition. The condition assessments discussed in this report are only for the accessible services and do not necessarily represent the condition of the underground infrastructure. For the majority of the town camps, other than a few that have recently been upgraded it was found that the underground services are generally undersized and it is likely, due to their age, that these services are in poor condition. Either factor would trigger the need for a complete replacement to meet current relevant standards.

2.3 Electrical assessment limitations
The electrical infrastructure condition investigations were subject to a number of limitations. These include:

- Inspections were carried out without the assistance of an electrical tradesman.
- Only accessible services were investigated. Assessments were of a visual nature and no pit covers were removed.
- Overhead equipment was assessed from ground level.
- Switchboards were not opened and no assessment of the internal connections or bus ratings was made.
- Electrical infrastructure was assessed down to the meter for multi-meter panels and down to the termination, overhead pole or distribution pillar, of the supply cable to a meter located at a dwelling.
3 Current infrastructure issues

Power and Water Corporation (PWC) have advised of the following concerns and issues in regard to the sewerage, water and electrical infrastructure at all town camps.

3.1 Ownership and maintenance
PWC stated there has always been confusion regarding the ownership and responsibilities of the internal sewer, water and electrical infrastructure. PWC have advised that they have no legal tenure on the majority of assets in any town camps and that the owner is essentially that of the land owner or leaseholder. This is further discussed for each type of infrastructure for each town camp.

The ownership and who is responsible for the maintenance of the sewage pump stations and street lighting is a major concern. In most town camps it was found that PWC have been maintaining the assets on an in-kind basis, although there are no maintenance or access agreements in place and the infrastructure is generally not compliant to PWC standards.

3.2 Access to infrastructure
PWC advised that due to the uncertainty surrounding ownership and responsibility of the sewerage, water and electrical infrastructure, each town camp is seen as a single lot with multiple houses on it. There are no formal road reserves or easements where the municipal infrastructure should be located. PWC therefore have no legal right to enter the town camps to work on the infrastructure, nor can PWC stop others from working on the infrastructure. There is a risk that the maintenance undertaken by others may be to a lower standard than PWC.

It should be noted that there are currently no legal services easements within the town camps, except for a few cases where a town service passes through the town camp. Therefore it is recommended that easements are created over any infrastructure owned by PWC and any future assets to be gifted to PWC, to allow the service providers access to the infrastructure.

3.3 Existing infrastructure
PWC have stated that although the existing sewerage and water infrastructure appears to comply with relevant standards in some locations, the capacity cannot be assumed to meet PWC requirements due to the potential for underground substandard condition and/or grading of pipework. It is likely that these assets will need to be fully replaced to PWC standards to ensure sufficient capacity.

The planning process currently allows construction within the town camps on Commonwealth land without requiring service authority (PWC) approvals. This means that there has been no opportunity for PWC to recover contributions towards required upgrades to headworks servicing the developments and these upgrades have been paid for by PWC in the past. This inconsistency needs to be addressed for future developments within the town camps to ensure PWC are able to continue to provide adequate services.

3.4 Safety concerns
PWC have expressed concerns with safety of PWC staff and contractors working within the camps. PWC have employed procedures such as multiple people / vehicles to attend the site, with police or housing safety officers as required. This
generally leads to a delayed response time and increased cost to respond to and remediate emergency situations.

PWC have also raised the concern that if others work on water infrastructure within the town camps and do not apply the correct sanitation procedures they not only risk contaminating the entire water supply network within the town camp, at some town camps with direct connections to the town supply, they risk contaminating the entire town’s water supply.
4 Available information

As the site investigations were limited to accessible / visible services, information on below ground services (such as electrical cables, sewer pipes, water supply pipes, etc.) were determined from available information. This information included:

- Serviced Land Availability Program (SLAP) maps,
- Department of Family & Community Services - Connecting Neighbours Program – Essential Services Scoping Study Report Volume 1 April 2005,
- Connecting Neighbours Project – Infrastructure Assessment and Recommendation Report - Arup Pty Ltd, April 2005,
- Drawings supplied by NT Department of Infrastructure - Technical Records,
- Drawings supplied by Power and Water Corporation,
- Bennett Design inspection reports and population data.

Aurecon undertook a site investigation of Village Camp on 2 December 2016 to inspect roads, stormwater drainage, electrical services, sewerage and water supply, and community structures. The following sections detail the outcomes of this investigation and the assessments of the infrastructure.

The civil and electrical inspection reports can be found in the Appendices.
5 Sewerage

5.1 Ownership and boundaries
The internal reticulation sewer within Village Camp are owned by Julalikari Housing Incorporated, however are the responsibility of Far North - T & J Contractors to maintain. The connection to town sewer and the town sewer is owned by Power and Water Corporation.

Village Camp is currently serviced by a DN150 PVC reticulation main which discharges to a pump station. The rising main from the pump station is DN100 PVC which connects to the external existing town sewer.

As-constructed drawings from the SIHIP program (2011) can be found in Appendices. Land Title information show that there is a sewerage easement within Village Camp however it does not cover the internal sewer network.

5.1.1 Connection methods and billing
PWC advised that they currently charge a single sewerage bill based on the number of houses, which for Village Camp is 12. The sewerage bill is charged to the Department of Housing and Community Development.

It is not known what contribution the residents make towards the sewerage bills.

5.2 Existing infrastructure condition assessment
The sewer infrastructure inspection was limited to inspecting the condition of manhole covers, as all other sewerage infrastructure is below ground. A comprehensive review of all available documentation, including reviewing as-constructed drawings and having discussions with Power and Water Corporation was conducted. The following table compares the assets that have been constructed, according to the as-constructed drawings, and the assets assessed during the inspections conducted by Aurecon.

<table>
<thead>
<tr>
<th>Asset type</th>
<th>Number of assets as per documentation</th>
<th>Number of assets assessed during inspection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manholes</td>
<td>16</td>
<td>10</td>
</tr>
</tbody>
</table>

As per Table 2, a number of manholes were not assessed during the inspections, this is likely due to access limitations such as manholes being located within private property or outside of the town camp. As other manholes along the same sewer line were investigated, it is assumed that all assets have been constructed as per the as-constructed drawings. The condition ratings of the manholes inspected are as follows:
Table 3 Sewer condition assessment

<table>
<thead>
<tr>
<th>Asset</th>
<th>1 Very Poor</th>
<th>2 Poor</th>
<th>3 Good</th>
<th>4 Very Good</th>
<th>5 Excellent</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manholes</td>
<td>10</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td>12</td>
</tr>
<tr>
<td>Pump station</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
</tbody>
</table>

Figure 1 Sewer manhole, condition: good

Figure 2 Sewage pump station, condition: very good

Figure 3 Sewage pump station, condition: very good
5.3 Current performance and risks

5.3.1 Current sewer network performance

The current capacity of the sewer network was calculated based on the following design assumptions:

- The adopted minimum grade for the pipework is 1.0%, as advised by Power and Water Corporation.
- The Equivalent Population (EP) has been calculated assuming one household equates to 9 EP, based on discussions with Power and Water Corporation.
- The capacity has been assessed by calculating the current flow rate, and the maximum flow rate when the sewer pipe flows full. The result is then a percentage of how much of the pipe is currently being used.
- Manning’s roughness coefficient of the pipework is 0.012, as recommended by PWC for PVC pipes.
- Where the sewer pipe grade, size or material is not known, it is assumed to be non-compliant to PWC standards.
- As Village Camp disposes to a pump station, the capacity of the pump station has also been assessed.

The current number of houses in Village Camp is 16, including four non-house dwellings, this multiplied by 9 EP per house gives a total current EP of 144. The capacity of the existing sewer was then calculated. The percentage shows how much of the pipe capacity is currently being used.

Table 4 Existing sewer capacity

<table>
<thead>
<tr>
<th>Catchment 1</th>
<th>Current total EP</th>
<th>Diameter of connection (mm)</th>
<th>Adopted PWC minimum slope (%)</th>
<th>Qfull (L/s)</th>
<th>Current Q (L/s)</th>
<th>Current capacity (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Catchment 1</td>
<td>144</td>
<td>150</td>
<td>1.0</td>
<td>16.50</td>
<td>1.78</td>
<td>11%</td>
</tr>
</tbody>
</table>

Table 4 above shows that the capacity of the existing sewer network is adequate for the current peak population.

It is likely that due to the low flows in the pipe that the self-cleansing minimum velocity will not be achieved.

5.3.2 Current sewage pump station performance

The capacity of the pump station was checked against the following criteria, based on PWC guidelines:

- Less than 12 pump starts per hour (for pumps less than 15kW),
- Minimum velocity 0.9 m/s,
- Maximum velocity 2.5 m/s,
- Overflow storage equal to three hours of peak dry weather flow.

Detailed design drawings of the pump station were available so an assessment of the current performance could be undertaken. The design EP for the pump station was 192 EP, although the current EP for the community is only 144 EP, so it is expected that the capacity is sufficient.
Using the current EP of 144, it appears that the minimum velocity in the rising main is insufficient for self-cleansing. This would indicate that the pumps need to be upgraded to provide a faster flow rate.

The overflow storage is also insufficient, as there is not enough storage for three hours of peak dry weather flow. The overflow storage capacity should also be upgraded to meet PWC guidelines.

5.4 Future demands
The future demand analysis showed that one additional house is required to provide permanent accommodation for residents that are currently living in non-house dwellings. The type and location of house, number of bedrooms, etc. will need to be determined by the Department of Housing and Community Development when this work is undertaken.

An allowance of 9 EP has already been provided for each temporary house (caravans, structures, etc) in the current demand calculations, so the future EP will not increase since the residents from the temporary housing will be living in the new accommodation and the number of tenants will not be increased.

The location of the new house is assumed to be close to the existing houses such that significant extension of the existing sewerage infrastructure would not be required. This means that no additional sewerage infrastructure upgrades would be required to cater for the new house, other than what has already been recommended for the current demand, and not including a new house drain and connection to the existing network. The cost estimates for these works have been allowed for in the upgrades for current demand.

5.5 Recommended works

5.5.1 Works required to existing infrastructure for current demand
The infrastructure that was assessed as very poor or poor is recommended to be upgraded to prevent failure in the future. In this case, there was no infrastructure requiring immediate maintenance.

To be in accordance with PWC guidelines, it is recommended that the following works are constructed, however these will require further engineering design.

- Two new pumps to increase velocity in rising main
- Increase capacity of overflow storage

5.5.2 Works required to existing infrastructure for future demand
The upgrades required for the single new house include a new house drain and new connection to the existing network.
6 Water supply

6.1 Ownership and boundaries
The water supply infrastructure was upgraded to PWC standards as part of the SIHIP program. The reticulation servicing the community is a DN150 PVC looped main, with multiple supply points (refer Appendices for as constructed drawings).

The water supply assets within Village Camp are believed to be owned by Julalikari Housing Incorporated, but are the responsibility of Far North – T&J Contractors to maintain. The water is supplied from DN150 CICL and DN200 PVC water mains outside of the community, which are the responsibility of PWC.

6.1.1 Connection methods and billing
Through consultation with PWC it has been determined that the water usage is currently charged as a fixed daily rate for 12 house water meters within Village Camp. The bill is issued to the Department of Housing and Community Services. It is not known what contribution the residents make towards water bills.

It is proposed that PWC measure the water supply to the entire community, as opposed to individual lots within the community. This requires the installation of a bulk water meter on the water mains located at the community boundary. Under this scheme, the water bill for the entire community is the responsibility of the governing body, being Julalikari Housing Incorporated for Village Camp. It will be up to governing body to assign bills to residents accordingly.

It is recommended that the individual lot meters are maintained in addition to the proposed use of a bulk water meter. This will assist the governing body with distributing bills to residents, the identification of any leaks in the network, and meeting PWC standards should the town camp be subdivided in the future.

A total of 12 residential lot water meters were assessed during the inspection. Bennett Design reported 16 dwellings in the community, however only 13 on these dwellings were permanent houses.

6.2 Existing infrastructure condition assessment
The site investigation for the water infrastructure included assessing the condition of any air valves, fire hydrants, tanks, taps, and water meters. The assessment was limited to services that could be assessed above ground; no below ground services were inspected. A comprehensive review of all available documentation, including reviewing as-constructed drawings and having discussions with Power and Water Corporation was conducted. The following table compares the assets that have been constructed, according to the as-constructed drawings, and the assets assessed during the inspections conducted by Aurecon.

Table 5 Water supply assets inspected

<table>
<thead>
<tr>
<th>Asset type</th>
<th>Number of assets as per documentation</th>
<th>Number of assets assessed during inspection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fire hydrants</td>
<td>7</td>
<td>6</td>
</tr>
<tr>
<td>Water meter (residential lots)</td>
<td>13</td>
<td>12</td>
</tr>
</tbody>
</table>
As per Table 5, a fire hydrant and a water meter were not assessed during the inspections, this is likely due to overgrown flora or restricted property access as previously discussed. The condition of each asset is as follows:

Table 6 Water asset condition assessment

<table>
<thead>
<tr>
<th>Asset</th>
<th>1 Very Poor</th>
<th>2 Poor</th>
<th>3 Good</th>
<th>4 Very Good</th>
<th>5 Excellent</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fire hydrants</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>6</td>
</tr>
<tr>
<td>Water meter (residential lots)</td>
<td>1</td>
<td>10</td>
<td></td>
<td>1</td>
<td></td>
<td>12</td>
</tr>
</tbody>
</table>

Figure 4 Fire hydrant, condition: *good*

Figure 5 Water meter (residential lot), condition: *poor*

A single residential lot water meter was assessed as being in poor condition due to broken handles. The missing handles should be replaced.

6.3 Current performance and risks

The current demand of the community was calculated based on the following design assumptions:

- The nominal peak day flow is 1300 L/capita/day, based on PWC’s supplement to WSA 03 2002. This value is for the southern region of NT. It was assumed that the nominal peak day flow of 1300 L/capita/day also applies to water usage within the community, although it is possible that this value could be higher in real life due to a lack of controls to reduce water usage.
- The Equivalent Population (EP) has been calculated assuming one household equates to 9 EP, based on discussions with Power and Water Corporation.
The peak hour factors are listed in PWC’s Supplement to WSA 03-2002, and they depend on the population range of the community. The peak hour factor of 3.0 has been adopted, for populations less than 500.

Table 7 shows the calculated demand.

<table>
<thead>
<tr>
<th>Total dwellings</th>
<th>EP</th>
<th>Demand (l/s)</th>
<th>Peak hour demand (l/s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>16</td>
<td>144</td>
<td>2.16</td>
<td>6.48</td>
</tr>
</tbody>
</table>

The system is expected to meet PWC flow (peak hour and fire flow) requirements.

The assessment of water supply for firefighting has been based on the size of the water mains and the condition of the accessible fire hydrants. Additional hydrants have been recommended where it appears the existing number of hydrants are insufficient. In the case of Village Camp no additional fire hydrants appear to be required at this time.

The existing network is believed to have sufficient capacity and appears the pipe sizes are to compliant with PWC standards. The as-constructed drawings show a section of the water main is installed in a dedicated water main easement. However, as detailed in Section 3.2 the land title documents, refer appendices, indicate no formal easements are located within the community.

### 6.4 Future demands

The future demand analysis showed that one additional house is required to provide permanent accommodation for residents that are currently living in non-house dwellings. The type and location of house, number of bedrooms, etc. will need to be determined by the Department of Housing and Community Development when this work is undertaken.

An allowance of 9 EP has already been provided for each temporary house (caravans, structures, etc.) in the current demand calculations, so the future EP will not increase since the residents from the temporary housing will be living in the new accommodation and the number of tenants will not be increased.

The location of the new house is assumed to be close to the existing houses such that significant extension of the existing water supply infrastructure would not be required. This means that no additional water supply infrastructure upgrades would be required to cater for the new house, other than what has already been recommended for the current demand, and not including a new residential water meter. The cost estimates for these works have been allowed for the in the upgrades for current demand.

### 6.5 Recommended works

#### 6.5.1 Works required to existing infrastructure for current demand

The infrastructure that was assessed as very poor or poor is recommended to be upgraded to prevent failure in the future. The following maintenance works are recommended;

- Clear dirt and grass covering fire hydrants covers, x 4
• Restore broken handle on residential lot water meter

The community is viewed overall as a large single lot and as previously detailed, proposed to have the water usage measured accordingly. In order to measure the water usage as a single lot, a bulk water meter should be installed. Since the existing network has three supply points, two should be disconnected and reconnected creating network looping. This allows the single remaining point to be metered. The cost estimates for upgrades at Village Camp include;

• Disconnect two of three supply points and reconnect to water main creating a looped network.
• Install bulk water meter
• Install up to one residential lot water meter

6.5.2 Works required to existing infrastructure for future demand

The upgrades required to supply water to the new house include a new residential lot meter and connection to the network.
7 Roadworks

7.1 Ownership and boundaries
The roads within Village Camp are owned by Julalikari Housing Incorporated, however are the responsibility of Far North - T & J Contractors to maintain.

Village Camp consists of sealed roads and unsealed ‘short-cuts’. The unsealed ‘short-cuts’ were not assessed during the inspection as they are not formal roads.

7.2 Existing infrastructure condition assessment
Road furniture including signs, foot paths and car parks were inspected. Table 8 below summarise the condition of the road furniture as assessed during the site inspection.

Table 8 Roadworks condition assessment

<table>
<thead>
<tr>
<th>Asset</th>
<th>1 Very Poor</th>
<th>2 Poor</th>
<th>3 Good</th>
<th>4 Very Good</th>
<th>5 Excellent</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Footpaths</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>Signs</td>
<td>2</td>
<td></td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>6</td>
</tr>
</tbody>
</table>

Figure 6 Sign, condition: very poor
Figure 7 Footpath, condition: good
The footpaths at Village Camp were assessed as being in good to very good condition. Some sections of the footpaths were covered by dirt, grass cuttings and other debris. It is recommended that these sections are cleared for aesthetic purposes.

Two signs were assessed as being in very poor condition. In both these cases the sign was missing altogether, however the post remained in place. It is recommended that these two signs are replaced.

Figure 8 Village Camp road network

Table 9 below details the condition of the roads within Village Camp for specific segments. Figure 8 shows a map of the road network with the condition ratings, road name, and chainage direction. Note, the percentage refers to the percentage of that particular road segment which experiences the defect.
Table 9 Road network condition assessment

<table>
<thead>
<tr>
<th>Road Name</th>
<th>Chainage start (km)</th>
<th>Chainage end (km)</th>
<th>Road segment condition (1-5)</th>
<th>Defects and associated condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>271_1</td>
<td>0</td>
<td>0.18</td>
<td>3</td>
<td>-30% bleeding (3)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-gutters filled with dirt in some sections</td>
</tr>
<tr>
<td>271_2</td>
<td>0</td>
<td>0.16</td>
<td>3</td>
<td>-20% bleeding (3)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-gutters filled with dirt in some sections</td>
</tr>
<tr>
<td>Village Camp Internal</td>
<td>0</td>
<td>0.15</td>
<td>3</td>
<td>-30% bleeding (3)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-gutters filled with dirt in some sections</td>
</tr>
<tr>
<td></td>
<td>0.15</td>
<td>0.32</td>
<td>3</td>
<td>-20% bleeding (3)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-gutters filled with dirt in some sections</td>
</tr>
</tbody>
</table>
7.3 Current performance and risks
The road network is sufficient for the current number of houses. It was noted during the site inspections that a number of unsealed 'short-cuts' had been created and were regularly used. It is not recommended that these paths are formalised. The road conditions were assessed as good. It is recommended that some minor works are undertaken to clear soil and other debris build up in the gutters. This will improve the stormwater drainage and prevent blockages in the stormwater drainage pipes.

7.4 Future demands
The addition of one new house will not require any upgrades to the road network. The additional house will require minor upgrades to the kerb to provide a layover kerb for a driveway.

7.5 Recommended works

7.5.1 Works required to existing infrastructure for current demand
The infrastructure that was assessed as very poor or poor is recommended to be upgraded to prevent failure in the future. The following works are recommended to upgrade the current infrastructure;

- Replace two signs
- Clear dirt and debris covering footpaths, approximately 300 m
- Clear road gutters of soil and debris build, approximately 600 m

7.5.2 Works required to existing infrastructure for future demand
Works required to provide for one additional house include upgrading the existing kerb to a layover kerb.
8 Stormwater drainage

8.1 Ownership and boundaries
The stormwater drainage assets within Village Camp are believed to be owned by Julalikari Housing Incorporated, but are the responsibility of Far North – T&J Contractors to maintain.

Stormwater drainage infrastructure outside of the community is owned by Barkly Regional Council.

8.2 Existing infrastructure condition assessment
The site investigation for the stormwater infrastructure included assessing the condition of swales, culverts, headwalls, and side entry pits (SEP). Only the above ground infrastructure was assessed. As the inspection was undertaken outside of a storm event and no CCTV of the pipes was undertaken, flooding due to blockages or damage to the underground infrastructure could not be assessed. Table 10 below summarises the condition of the stormwater assets as assessed during the inspection.

Table 10 Stormwater condition assessment

<table>
<thead>
<tr>
<th>Asset</th>
<th>1 Very Poor</th>
<th>2 Poor</th>
<th>3 Good</th>
<th>4 Very Good</th>
<th>5 Excellent</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>SEP</td>
<td>8</td>
<td>11</td>
<td></td>
<td></td>
<td></td>
<td>19</td>
</tr>
<tr>
<td>Swale</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
</tbody>
</table>

Figure 11 Swale, condition: poor
8.3 Current performance and risks

The detailed performance of the stormwater network cannot be fully analysed without significant hydraulic and hydrodynamic modelling, which is outside the scope of this project. However, based on the condition of the stormwater infrastructure assessed, it would appear to be operating somewhat adequately. The blocked pits are reducing the effectiveness of the stormwater drainage network.

It was noted during the inspection that the swale is not connected to any underground drainage and appears to be causing ponding. It is recommended that a headwall and new pipe are installed so that water can drain from the swale into the existing underground drainage. As shown in Figure 11, a side entry pit is located near the swale, so it is assumed that an underground pipe can be connected.

There were also a number of side entry pits that were blocked up to 100%. It is recommended that these pits are cleared of any blockages. It is likely that the...
underground drainage will also be blocked and will require further cleaning. As the underground drainage could not be assessed, no works have been recommended.

8.4 Future demands
The addition of one new house in the community will not have an impact on the stormwater drainage infrastructure, and no upgrades are required as a result.

8.5 Recommended works

8.5.1 Works required to existing infrastructure for current demand
The following works are recommended to upgrade or improve the current infrastructure:

- Install new headwall, and pipe to connect to existing underground drainage.
- Clear blockages from eight side entry pits (currently blocked between 20% and 100%)

8.5.2 Works required to existing infrastructure for future demand
No upgrades required.
9 Community structures

9.1 Ownership and boundaries
The community structures within Village Camp are believed to be owned by Julalikari Housing Incorporated, but are the responsibility of Far North – T&J Contractors to maintain.

9.2 Existing infrastructure condition assessment
The site investigation for the community structures included assessing the condition and features of a playground. The following table shows the condition rating given to the community structures.

Table 11 Community structures condition assessment

<table>
<thead>
<tr>
<th>Asset</th>
<th>1 Very Poor</th>
<th>2 Poor</th>
<th>3 Good</th>
<th>4 Very Good</th>
<th>5 Excellent</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Playground</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
</tbody>
</table>

There were two playground areas next to a shelter with a sand flooring. It appears as though there used to be equipment under the shelter. It was noted during the inspection that there was broken glass in the sand, and broken equipment.

Figure 14 Shelter, in poor condition

12.2 Current performance and risks
They playgrounds were in poor condition in both condition assessment and appearance. It is recommended that the playgrounds are either covered, or the playground equipment moved to be beneath the existing shelter. The sand flooring will also require cleaning to remove broken glass, and other debris.

9.3 Future demands
The population of Village Camp is not expected to increase with the addition of one new house, as this house will provide permanent accommodation for residents that currently live in temporary housing. No additional community structures are required.
9.4 Recommended works

9.4.1 Works required to existing infrastructure for current demand
The following works are recommended to upgrade the community structures:

- Repair broken equipment
- Move playground to beneath the shade structure

9.4.2 Works required to existing infrastructure for future demand
No upgrades required.
10 Electrical services

10.1 Ownership and boundaries
The following points, from Network Policy NP003 Installation Rules Section 3, define the typical shared ownership of electrical infrastructure by Power and Water Corporation (PWC) and customers.

- The point of supply is defined as the point where PWC makes the electrical supply available. For domestic supply, this is normally one of the following:
  - A point of attachment of an overhead service on to a building or pole on which a metering panel is fitted.
  - A point of attachment of an overhead service on to a pole forming part of unmetered aerial consumer’s mains.
  - A nominated point on a distribution substation located on the customer’s lot.
  - A point of connection of an underground service in a metering panel, including underground services originating at an overhead line.
  - A point of connection of an underground service in a pillar or junction box forming part of unmetered consumer’s mains, located on the customer’s lot.
  - A point on a Power and Water pillar located on the customer’s lot.

Typically, distribution infrastructure upstream of the Point Of Supply is owned and maintained by PWC and infrastructure below the point of supply is owned and maintained by the customer.

In many cases PWC have defined a Point Of Supply to ensure that they retain responsibility for aerial high voltage infrastructure, and aerial low voltage infrastructure where installed with aerial high voltage infrastructure, to minimise the possibility of the community or it’s contractors coming into contact, either deliberately or inadvertently, with aerial high voltage infrastructure.

In other cases isolation facilities are present or desired by PWC to define the Point of Supply at or near the boundary of the town camp.

PWC advise that most of Tennant Creek/Alice Springs Town Camps have undergone upgrades under the SIHIP program with the intent to normalise the services to look like an urban subdivision but have never been formally handed over to PWC for operations and maintenance.

Village Camp community electrical reticulation systems is supplied by a transformer to an overhead reticulation scheme to individual house and overhead power pole mount street lights.

PWC advise that the Point Of Supply is the LV terminals of the substations and that they own and are responsible for the first pole mount substation and upstream infrastructure.

PWC recommend that a GBS (Gas Break Switch) be provided upstream of the first transformer to establish a demarcation point.

PWC advise that street lighting is supplied from unmetered LV infrastructure and is the responsibility of the lot holder and not PWC.

All meters, whether pre- or post-paid are the property of PWC.

Village Camp community are responsible for maintain all unmetered and metered LV infrastructure including the main switchboard, metering panel (excluding meter), LV distribution feeders, distribution pillars, consumers’ mains and consumer switchboards and street lights.
### 10.2 Existing infrastructure condition assessment

Table 12 shows the condition rating given to the Distribution panels. The Distribution panel was in the pump station and not accessible.

<table>
<thead>
<tr>
<th>Asset</th>
<th>1 Very Poor</th>
<th>2 Poor</th>
<th>3 Good</th>
<th>4 Very Good</th>
<th>5 Excellent</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Distribution panels</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1 (status unknown)</td>
</tr>
</tbody>
</table>

The street lights were of a low voltage overhead feeder design, mercury type M125D. Table 13 shows the condition rating given to the street lights. The street lights have 33.33% operational rating and 66.66% inoperable.

<table>
<thead>
<tr>
<th>Asset</th>
<th>1 Very Poor</th>
<th>2 Poor</th>
<th>3 Good</th>
<th>4 Very Good</th>
<th>5 Excellent</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Street light on O/H pole</td>
<td>12</td>
<td>6</td>
<td></td>
<td></td>
<td></td>
<td>18</td>
</tr>
</tbody>
</table>

Table 14 shows the condition rating given to the transformer. The transformer was of pole mount substation design. The transformer was visually accessed to be in good condition.

<table>
<thead>
<tr>
<th>Asset</th>
<th>1 Very Poor</th>
<th>2 Poor</th>
<th>3 Good</th>
<th>4 Very Good</th>
<th>5 Excellent</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transformer</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
</tbody>
</table>

Table 15 shows the condition rating given to the Overhead poles. The overhead poles are of Weld Construction (Universal Pole construction).

<table>
<thead>
<tr>
<th>Asset</th>
<th>1 Very Poor</th>
<th>2 Poor</th>
<th>3 Good</th>
<th>4 Very Good</th>
<th>5 Excellent</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overhead pole</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>20</td>
</tr>
</tbody>
</table>

Table 16 shows the condition rating given to the Metering panels.

<table>
<thead>
<tr>
<th>Asset</th>
<th>1 Very Poor</th>
<th>2 Poor</th>
<th>3 Good</th>
<th>4 Very Good</th>
<th>5 Excellent</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-paid Meter</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>10</td>
</tr>
<tr>
<td>Post-paid Meter</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Switchboard</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>9</td>
</tr>
</tbody>
</table>
Table 17 shows the condition rating given to the switchboards associated to dwellings.

Table 17 Switchboard condition assessment (Housing footprint)

<table>
<thead>
<tr>
<th>Asset</th>
<th>1 Very Poor</th>
<th>2 Poor</th>
<th>3 Good</th>
<th>4 Very Good</th>
<th>5 Excellent</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Switchboard</td>
<td>1</td>
<td>8</td>
<td></td>
<td></td>
<td></td>
<td>9</td>
</tr>
</tbody>
</table>

The details of the individual inspections and photographs of each infrastructure item are included in Appendices.

### 10.3 Current performance and risks

The electrical infrastructure evaluation was conducted against the following criteria:

- Number of dwellings on tenure, the higher value of the funded dwelling and as quoted in the population report was utilised.
- Urban area, NP001.1, 4. Definitions.
- General Specification for URD Subdivisions, NP001.6, 4.3 Substation Size.
- Normal ADMD (After Diversity Maximum Demand) of 4.5 kVA and high cost subdivisions at 7 kVA.
- Transformer ratings were assumed to be correct in Dekho (PWC asset information system) and compared against photographs of test or transformer numbers collected.
- Substation loads were compared against transformer sizes only. No load flow analysis was conducted.
- No load calculations were performed or assessment conducted on overhead or underground cable, visual inspection from the ground only.
- Street lighting loads were ignored as they are not significant.

The calculated maximum demand of the Village Camp community transformer is 27% of rated capacity based on 4.5kVA/dwelling. The calculated maximum demand is within the total capacity of the substation on site.

Table 18 Village Camp current demand load vs transformer ratings

<table>
<thead>
<tr>
<th>Com Id</th>
<th>Community name</th>
<th>Dwellings</th>
<th>Transformer (kVA)</th>
<th>kVA Total @ 4.5kVA</th>
<th>kVA Total @ 7kVA</th>
</tr>
</thead>
<tbody>
<tr>
<td>271</td>
<td>Village Camp</td>
<td>12</td>
<td>200</td>
<td>54</td>
<td>84</td>
</tr>
</tbody>
</table>

A tabulated summary of all the community transformers in Appendices.

There is a risk of equipment not being maintained associated with the non-standard division of responsibilities between the customer and PWC.

The following points from the PWC Metering Rules should be noted:

- The routine maintenance of metering installations and the replacement of any faulty meters is the responsibility of PWC.
• The property owners are responsible for the maintenance and upkeep of meter rooms, boxes and panels (including lids, doors and locking mechanisms).
• The installation of pre-paid metering is a cost to the customer, refer NP010 Meter Manual-Maintenance of Metering Installations, Power and Water Corporation.

10.4 Future demands
There is one new development currently planned for Village Camp community. Calculated future maximum demand of the Village Camp community transformer is 29% of rated capacity based on 4.5kVA/dwelling. The calculated future maximum demand is within the total capacity of the substation on site.

Table 19 Village Camp future demand load vs transformer ratings

<table>
<thead>
<tr>
<th>Com Id</th>
<th>Community name</th>
<th>Dwellings</th>
<th>Transformer (kVA)</th>
<th>kVA Total @ 4.5kVA</th>
<th>kVA Total @ 7kVA</th>
</tr>
</thead>
<tbody>
<tr>
<td>271</td>
<td>Village Camp</td>
<td>13</td>
<td>200</td>
<td>58.5</td>
<td>91</td>
</tr>
</tbody>
</table>

10.5 Recommended works
The following maintenance works and upgrades are recommended:
• Replace twelve street lights 125W
• Replace one switchboard inside the metering panel
• Replace one switchboard associated to dwellings
11 Communications

11.1 Ownership and boundaries
Details of Telstra pit and conduit infrastructure within the town camp boundaries were sought but were not forthcoming.

11.2 Existing infrastructure condition assessment
The telecommunications infrastructure assessed included pits and telephone booths. There were no telephone booths found at Village Camp.
Appendices contains the individual reports.

Table 20 Telecommunication pit condition assessment

<table>
<thead>
<tr>
<th>Asset</th>
<th>1 Very Poor</th>
<th>2 Poor</th>
<th>3 Good</th>
<th>4 Very Good</th>
<th>5 Excellent</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Telecommunication pit</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3</td>
</tr>
</tbody>
</table>

11.3 Current performance and risks
No details of the performance of communications infrastructure were obtained.

11.4 Future demands
The current availability of broadband services at Village Camp is displayed in the Figure 15 below. NBN is available to residents via a fixed telecommunication line on application to an appropriate NBN access provider.

Figure 15 NBN Network Availability map
The NBN rollout map confirms that NBN is planned to be made available to residents via fixed telecommunications line on application to an appropriate NBN access provider.

### 11.5 Recommended works

Representatives from NBN’s Land Access and Stake Holder management teams are currently engaged with Yilli Housing and NT Housing to look at how camps will be serviced. It is expected that any existing premises in these camps will have some type of NBN service via the NBN brownfields rollout in the future.

No works are required at Village Camp because NBN is available to residents via fixed telecommunications line on application to an appropriate NBN access provider.
**12 Cost estimates**

Table 21 below shows a summary of the cost estimates to undertake the maintenance required to fix the existing infrastructure, to upgrade the existing network to meet current design standards, and to upgrade the existing network to cater for the future design. Note, the minor infrastructure upgrades required for the one new house have been included in the upgrades to meet current design cost estimate. The estimates take into account a 30% contingency, are inclusive of GST, and a location factor has been applied to town camps outside of Darwin.

Table 21 Cost estimates

<table>
<thead>
<tr>
<th>Infrastructure</th>
<th>Maintenance of existing infrastructure</th>
<th>Upgrades to meet current design</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sewerage</td>
<td>$ 0</td>
<td>$ 69,000</td>
</tr>
<tr>
<td>Water supply</td>
<td>$ 2,000</td>
<td>$ 86,000</td>
</tr>
<tr>
<td>Roadworks</td>
<td>$ 38,000</td>
<td>$ 0</td>
</tr>
<tr>
<td>Stormwater drainage</td>
<td>$ 10,000</td>
<td>$ 7,000</td>
</tr>
<tr>
<td>Community structures</td>
<td>$ 21,000</td>
<td>$ 0</td>
</tr>
<tr>
<td>Electrical</td>
<td>$ 22,000</td>
<td>$ 0</td>
</tr>
<tr>
<td>Communications</td>
<td>$ 0</td>
<td>$ 0</td>
</tr>
<tr>
<td>Miscellaneous provisions</td>
<td>$ 23,000</td>
<td>$ 30,000</td>
</tr>
<tr>
<td><strong>Total (including GST)</strong></td>
<td><strong>$ 116,000</strong></td>
<td><strong>$ 192,000</strong></td>
</tr>
<tr>
<td><strong>Grand total</strong></td>
<td><strong>$ 308,000</strong></td>
<td></td>
</tr>
</tbody>
</table>

The cost estimates are a preliminary estimate only. Since Aurecon has no control over the cost of labour, materials, equipment or services furnished by others, or over contractors' methods of determining prices, or over competitive bidding or market conditions, Aurecon cannot guarantee actual costs will not vary from these estimates.
13 Summary

The following works are recommended for Village Camp community:

**Sewerage**
- Two new pumps to increase velocity in rising main
- Increase capacity of overflow storage

**Water supply**
- Clear dirt and grassing covering fire hydrants covers, x 4
- Restore broken handle on residential lot water meter
- Install new bulk water meter at the community boundary
- Install up to one residential lot water meter

**Roadworks**
- Replace two signs
- Clear dirt and debris covering footpaths, approximately 300 m
- Clear road gutters of soil and debris build, approximately 600 m

**Stormwater drainage**
- Install new headwall, and pipe to connect to existing underground drainage.
- Clear blockages from eight side entry pits (currently blocked between 20% and 100%)

**Community structures**
- Repair broken equipment
- Move playground to beneath the shade structure

**Electrical services**
- Replace twelve street lights 125W
- Replace one switchboard inside the metering panel
- Replace one switchboard associated to dwellings

**Communications**
- No works are required because NBN is available to residents via fixed telecommunications line on application to an appropriate NBN access provider.
Civil inspection reports
Northern Territory Town Camps
Civil Infrastructure

**Inspection Date**  2/12/2016 8:23:12 AM

Insp ID:  1621  Group 3 - Tennant Creek, Elliott Village Camp

What Water Asset Are you Capturing:  Fire Hydrants

Single or Double:  
Sluice Valve:  No
Above or Below ground:  Below ground
FH Leakage:  No Access
Bollards around hydrant:  No
FH Condition:  3 - Good
FH Comment:  Covered in dirt
Northern Territory Town Camps
Civil Infrastructure

**Inspection Date**  2/12/2016 8:07:21 AM

**Insp ID:** 1632  **Group 3 - Tennant Creek, Elliott Village Camp**

What Water Asset Are you Capturing: **Fire Hydrants**

Single or Double:  
Sluice Valve: No

Above or Below ground: Below ground

FH Leakage: No Access

Bollards around hydrant: No

FH Condition: 3 - Good

FH Comment: Grass growing over lid
Northern Territory Town Camps
Civil Infrastructure

Inspection Date  2/12/2016 7:52:04 AM

Insp ID:  1642  Group 3 - Tennant Creek, Elliott  Village Camp

What Water Asset Are you Capturing:  Fire Hydrants

Single or Double:  
Sluice Valve:  No
Above or Below ground:  Below ground
FH Leakage:  No Access
Bollards around hydrant:  No
FH Condition:  3 - Good
FH Comment:

[Image of a fire hydrant]
Northern Territory Town Camps

Civil Infrastructure

Inspection Date  2/12/2016 8:55:27 AM

Insp ID:  1648  Group 3 - Tennant Creek, Elliott  Village Camp

What Water Asset Are you Capturing:  Fire Hydrants

Single or Double:  No
Sluice Valve:  No
Above or Below ground:  Below ground
FH Leakage:  No Access
Bollards around hydrant:  No
FH Condition:  3 - Good
FH Comment:

![Image of Fire Hydrant](image.png)
What Water Asset Are you Capturing: Fire Hydrants

Single or Double:  
Sluice Valve: No  
Above or Below ground: Below ground  
FH Leakage: No Access  
Bollards around hydrant: No  
FH Condition: 3 - Good  
FH Comment: Paint fading on kerb. Lid half covered with dirt
Civil Infrastructure

Northern Territory Town Camps

Inspection Date  2/12/2016 9:10:06 AM

Insp ID:  1668  Group 3 - Tennant Creek, Elliott  Village Camp

What Water Asset Are you Capturing:  Fire Hydrants

Single or Double:  No
Sluice Valve:  No
Above or Below ground:  Below ground
FH Leakage:  No Access
Bollards around hydrant:  No
FH Condition:  3 - Good
FH Comment:  Paint on kerb faded
## Northern Territory Town Camps

### Civil Infrastructure

**Inspection Date**  2/12/2016 8:19:03 AM

<table>
<thead>
<tr>
<th>Insp ID:</th>
<th>1626</th>
<th>Group 3 - Tennant Creek, Elliott</th>
<th>Village Camp</th>
</tr>
</thead>
<tbody>
<tr>
<td>Road Name:</td>
<td>Village Camp Internal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>What are you inspecting:</td>
<td>Foot Paths</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Footpath Width (mm):</td>
<td>1200</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Footpath Type:</td>
<td>Concrete</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Footpath Condition:</td>
<td>3 - Good</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Comment:</td>
<td>Needs tidy up</td>
<td></td>
<td></td>
</tr>
<tr>
<td>General Comment:</td>
<td>Rhs of road</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Northern Territory Town Camps

Civil Infrastructure

**Inspection Date**  2/12/2016 7:50:19 AM

<table>
<thead>
<tr>
<th>Insp ID:</th>
<th>1644</th>
<th>Group 3 - Tennant Creek, Elliott</th>
<th>Village Camp</th>
</tr>
</thead>
</table>

Road Name: Village Camp Internal

What are you inspecting: Foot Paths

Footpath Width (mm): 1200

Footpath Type: Concrete

Footpath Condition: 4 - Very Good

Comment: Needs general tidy up, right side of road only

General Comment:
## Northern Territory Town Camps

### Civil Infrastructure

**Inspection Date** 2/12/2016 8:43:05 AM

<table>
<thead>
<tr>
<th>Insp ID: 1658</th>
<th>Group 3 - Tennant Creek, Elliott</th>
<th>Village Camp</th>
</tr>
</thead>
</table>

**Road Name:** 271_1  
**What are you inspecting:** Foot Paths  
**Footpath Width (mm):** 1200  
**Footpath Type:** Concrete  
**Footpath Condition:** 3 - Good  
**Comment:** Needs tidy up, some graffiti  
**General Comment:**
## Northern Territory Town Camps

### Civil Infrastructure

**Inspection Date** 2/12/2016 9:03:24 AM

<table>
<thead>
<tr>
<th>Insp ID: 1674</th>
<th>Group 3 - Tennant Creek, Elliott</th>
<th>Village Camp</th>
</tr>
</thead>
<tbody>
<tr>
<td>Road Name: 271_2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>What are you inspecting: Foot Paths</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Footpath Width (mm): 1200</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Footpath Type: Concrete</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Footpath Condition: 4 - Very Good</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Comment: Needs tidy up</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

General Comment:

![Footpath Image 1](image1.jpg)

![Footpath Image 2](image2.jpg)
### Civil Infrastructure

**Northern Territory Town Camps**

**Inspection Date**  
2/12/2016 8:19:55 AM

<table>
<thead>
<tr>
<th>Insp ID: 1625</th>
<th>Group 3 - Tennant Creek, Elliott Village Camp</th>
</tr>
</thead>
</table>

- **What Sewerage Asset are you capturing:** Manholes
- **MH Cover Shape:** Rectangular
- **Manhole Cover Diam (mm):**
- **Manhole Length (mm):** 1000
- **Manhole Width (mm):** 700
- **Manhole Condition:** 3 - Good
- **Notes on Lid:** 8/1
- **Comments:** Graffiti
Northern Territory Town Camps

Civil Infrastructure

**Inspection Date**  2/12/2016 8:12:10 AM

<table>
<thead>
<tr>
<th>Insp ID:</th>
<th>1629</th>
<th>Group 3 - Tennant Creek, Elliott</th>
<th>Village Camp</th>
</tr>
</thead>
</table>

What Sewerage Asset are you capturing: Manholes

MH Cover Shape: Rectangular

Manhole Cover Diam (mm):

Manhole Length (mm): 1000

Manhole Width (mm): 700

Manhole Condition: 3 - Good

Notes on Lid: 7/2

Comments:

![Manhole Image](image_url)
Northern Territory Town Camps

Civil Infrastructure

**Inspection Date**: 2/12/2016 8:11:12 AM

<table>
<thead>
<tr>
<th>Insp ID</th>
<th>Group 3 - Tennant Creek, Elliott</th>
<th>Village Camp</th>
</tr>
</thead>
<tbody>
<tr>
<td>1630</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- **What Sewerage Asset are you capturing**: Manholes
- **MH Cover Shape**: Rectangular
- **Manhole Cover Diam (mm)**:  
- **Manhole Length (mm)**: 1000
- **Manhole Width (mm)**: 700
- **Manhole Condition**: 3 - Good
- **Notes on Lid**: 7/1
- **Comments**: Graffiti
## Northern Territory Town Camps

### Civil Infrastructure

**Inspection Date**: 2/12/2016 8:06:01 AM

<table>
<thead>
<tr>
<th>Insp ID</th>
<th>Group 3 - Tennant Creek, Elliott</th>
<th>Village Camp</th>
</tr>
</thead>
<tbody>
<tr>
<td>1633</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

What Sewerage Asset are you capturing: **Manholes**

MH Cover Shape: **Round**

Manhole Cover Diam (mm): **450**

Manhole Length (mm):  

Manhole Width (mm):  

Manhole Condition: **4 - Very Good**

Notes on Lid: **7/3**

Comments:

![Image of Manhole](image-url)
Northern Territory Town Camps

Civil Infrastructure

Inspection Date  2/12/2016 7:55:10 AM

Insp ID:  1639  Group 3 - Tennant Creek, Elliott  Village Camp

What Sewerage Asset are you capturing:  Manholes
MH Cover Shape:  Rectangular
Manhole Cover Diam (mm):  
Manhole Length (mm):  1000
Manhole Width (mm):  700
Manhole Condition:  3 - Good
Notes on Lid:  2/14
Comments:  Graffiti
Civil Infrastructure

Northern Territory Town Camps

Inspection Date  2/12/2016 8:54:11 AM

Insp ID: 1649  Group 3 - Tennant Creek, Elliott  Village Camp

What Sewerage Asset are you capturing: Manholes

MH Cover Shape: Rectangular

Manhole Cover Diam (mm): 1000

Manhole Length (mm): 700

Manhole Width (mm): 700

Manhole Condition: 3 - Good

Notes on Lid: 3/3

Comments:

![Manhole Image]
Northern Territory Town Camps

Civil Infrastructure

Inspection Date 2/12/2016 8:53:20 AM

<table>
<thead>
<tr>
<th>Insp ID: 1650</th>
<th>Group 3 - Tennant Creek, Elliott</th>
<th>Village Camp</th>
</tr>
</thead>
</table>

What Sewerage Asset are you capturing: Manholes

MH Cover Shape: Rectangular

Manhole Cover Diam (mm): 1000

Manhole Length (mm): 700

Manhole Width (mm): 700

Manhole Condition: 4 - Very Good

Notes on Lid: 3/4

Comments:

[Image of manhole]

P:\GIS\Projects\253963_NT

Image found and displayed.
Northern Territory Town Camps

Civil Infrastructure

**Insp ID:** 1655  **Group 3 - Tennant Creek, Elliott**  **Village Camp**

**Inspection Date:** 2/12/2016 8:47:51 AM

What Sewerage Asset are you capturing: Manholes

MH Cover Shape: Rectangular

Manhole Cover Diam (mm):

Manhole Length (mm): 1000

Manhole Width (mm): 700

Manhole Condition: 3 - Good

Notes on Lid: 3/6

Comments:

![Manhole Image](image-url)
### Northern Territory Town Camps

#### Civil Infrastructure

**Inspection Date** 2/12/2016 8:31:46 AM

<table>
<thead>
<tr>
<th>Insp ID</th>
<th>Group 3 - Tennant Creek, Elliott</th>
<th>Village Camp</th>
</tr>
</thead>
<tbody>
<tr>
<td>1660</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

What Sewerage Asset are you capturing: **Manholes**

MH Cover Shape: **Rectangular**

Manhole Cover Diam (mm): 600

Manhole Length (mm): 1000

Manhole Width (mm): 700

Manhole Condition: **3 - Good**

Notes on Lid: **8/1**

Comments:

![Manhole Image](image.png)
## Civil Infrastructure

**Inspection Date**: 2/12/2016 9:18:05 AM

<table>
<thead>
<tr>
<th>Insp ID</th>
<th>Group 3 - Tennant Creek, Elliott</th>
<th>Village Camp</th>
</tr>
</thead>
<tbody>
<tr>
<td>1661</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- **What Sewerage Asset are you capturing**: Manholes
- **MH Cover Shape**: Rectangular
- **Manhole Cover Diam (mm)**: 
- **Manhole Length (mm)**: 1000
- **Manhole Width (mm)**: 700
- **Manhole Condition**: 3 - Good
- **Notes on Lid**: 3/8

**Comments**: P:\GIS\Projects\253963_NT Image found and displayed.
Northern Territory Town Camps

Civil Infrastructure

**Inspection Date** 2/12/2016 9:14:43 AM

| Insp ID: 1664 | Group 3 - Tennant Creek, Elliott Village Camp |

What Sewerage Asset are you capturing: **Manholes**

MH Cover Shape: **Rectangular**

Manhole Cover Diam (mm): 

Manhole Length (mm): 1000

Manhole Width (mm): 700

Manhole Condition: **3 - Good**

Notes on Lid: 3/7

Comments:

![Manhole Image]
### Northern Territory Town Camps

#### Civil Infrastructure

**Inspection Date**: 2/12/2016 9:07:58 AM

<table>
<thead>
<tr>
<th>Insp ID: 1670</th>
<th>Group 3 - Tennant Creek, Elliott</th>
<th>Village Camp</th>
</tr>
</thead>
</table>

What Sewerage Asset are you capturing: **Manholes**

MH Cover Shape: **Round**

Manhole Cover Diam (mm): **450**

Manhole Length (mm):

Manhole Width (mm):

Manhole Condition: **3 - Good**

Notes on Lid:

Comments: **Covered in dirt**
Civil Infrastructure

Northern Territory Town Camps

**Inspection Date** 2/12/2016 8:13:06 AM

| Insp ID: 1618 | Group 3 - Tennant Creek, Elliott | Village Camp |

Road Name: Village Camp Internal

What are you inspecting: Pavements

Ch From (km): 0.15

Ch To (km): 0.32

Road Type: Sealed - spray seal

Section Width (m): 7.2

Road Condition: 3 - Good

General Comment:

Road Defects Section

<table>
<thead>
<tr>
<th>Defect Type</th>
<th>Defect QTY</th>
<th>Defect Condition</th>
<th>Defect Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bleeding</td>
<td>20</td>
<td>3 - Good</td>
<td>20% of road</td>
</tr>
</tbody>
</table>

Kerbs Section

<table>
<thead>
<tr>
<th>Kerb Type</th>
<th>Kerb Cond</th>
<th>Kerb Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kerb and Gutter</td>
<td>3 - Good</td>
<td>Gutters filled with dirt</td>
</tr>
</tbody>
</table>

Shoulders Section

Linemarking Section

Obstruction Section
Northern Territory Town Camps

Civil Infrastructure

Inspection Date  2/12/2016 8:13:06 AM
Northern Territory Town Camps
Civil Infrastructure

Inspection Date  2/12/2016 8:13:06 AM
**Northern Territory Town Camps**

**Civil Infrastructure**

**Inspection Date** 2/12/2016 7:59:30 AM

<table>
<thead>
<tr>
<th>Insp ID: 1635</th>
<th>Group 3 - Tennant Creek, Elliott</th>
<th>Village Camp</th>
</tr>
</thead>
</table>

- Road Name: Village Camp Internal
- What are you inspecting: Pavements
- Ch From (km): 0
- Ch To (km): 0.15
- Road Type: Sealed - spray seal
- Section Width (m): 7.2
- Road Condition: 3 - Good

**General Comment:**

**Road Defects Section**

<table>
<thead>
<tr>
<th>Defect Type</th>
<th>Defect QTY</th>
<th>Defect Condition</th>
<th>Defect Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bleeding</td>
<td>30</td>
<td>3 - Good</td>
<td>30% of road</td>
</tr>
</tbody>
</table>

**Kerbs Section**

<table>
<thead>
<tr>
<th>Kerb Type</th>
<th>Kerb Cond</th>
<th>Kerb Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kerb and Gutter</td>
<td>3 - Good</td>
<td>Gutters filled with dirt</td>
</tr>
</tbody>
</table>

**Shoulders Section**

**Linemarking Section**

**Obstruction Section**
Northern Territory Town Camps

Civil Infrastructure

Inspection Date  2/12/2016  7:59:30 AM
Northern Territory Town Camps

Civil Infrastructure

Inspection Date  2/12/2016 7:59:30 AM
## Civil Infrastructure

### Northern Territory Town Camps

**Inspection Date** 2/12/2016 8:43:52 AM

<table>
<thead>
<tr>
<th>Insp ID</th>
<th>Group 3 - Tennant Creek, Elliott</th>
<th>Village Camp</th>
</tr>
</thead>
<tbody>
<tr>
<td>1652</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- **Road Name**: 271_1
- **What are you inspecting**: Pavements
- **Ch From (km)**: 0
- **Ch To (km)**: 0.18
- **Road Type**: Sealed - spray seal
- **Section Width (m)**: 7.2
- **Road Condition**: 3 - Good

#### General Comment:

#### Road Defects Section

<table>
<thead>
<tr>
<th>Defect Type</th>
<th>Defect QTY</th>
<th>Defect Condition</th>
<th>Defect Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bleeding</td>
<td>30</td>
<td>3 - Good</td>
<td>30% of road</td>
</tr>
</tbody>
</table>

#### Kerbs Section

<table>
<thead>
<tr>
<th>Kerb Type</th>
<th>Kerb Cond</th>
<th>Kerb Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kerb and Gutter</td>
<td>3 - Good</td>
<td>Gutters filled with dirt</td>
</tr>
</tbody>
</table>

### Shoulders Section

### Linemarking Section

### Obstruction Section
Northern Territory Town Camps

Civil Infrastructure

**Inspection Date**  2/12/2016 8:43:52 AM
Northern Territory Town Camps
Civil Infrastructure

**Inspection Date**  2/12/2016 8:43:52 AM

![Image of a road or path in a rural setting]
Northern Territory Town Camps
Civil Infrastructure

**Inspection Date**  2/12/2016 9:04:45 AM

<table>
<thead>
<tr>
<th>Insp ID: 1673</th>
<th>Group 3 - Tennant Creek, Elliott</th>
<th>Village Camp</th>
</tr>
</thead>
</table>

- **Road Name:** 271_2
- **What are you inspecting:** Pavements
- **Ch From (km):** 0
- **Ch To (km):** 0.16
- **Road Type:** Sealed - spray seal
- **Section Width (m):** 7.2
- **Road Condition:** 3 - Good

**General Comment:**

**Road Defects Section**

<table>
<thead>
<tr>
<th>Defect Type</th>
<th>Defect QTY</th>
<th>Defect Condition</th>
<th>Defect Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bleeding</td>
<td>20</td>
<td>3 - Good</td>
<td>20% of road</td>
</tr>
</tbody>
</table>

**Kerbs Section**

- **Kerb Type**
- **Kerb Cond**
- **Kerb Comments**

- **Kerb and Gutter**
- **Kerb Cond**
- **Kerb Comments**

**Shoulders Section**

**Linemarking Section**

**Obstruction Section**
Northern Territory Town Camps

Civil Infrastructure

Inspection Date  2/12/2016 9:04:45 AM
Northern Territory Town Camps

Civil Infrastructure

Inspection Date  2/12/2016 9:04:45 AM
## Northern Territory Town Camps

**Civil Infrastructure**

**Inspection Date** 2/12/2016 8:08:13 AM

<table>
<thead>
<tr>
<th>Insp ID: 1631</th>
<th>Group 3 - Tennant Creek, Elliott</th>
<th>Village Camp</th>
</tr>
</thead>
</table>

### Sewerage Asset Details

- **What Sewerage Asset are you capturing:** Pump Station
- **No of Pumps in Pump Station:** 2
- **Cabinet Condition:** 4 - Very Good
- **Cabinet Comment:**
- **Alarm Light:** Yes
- **Alarm Light Condition:** 4 - Very Good
- **Overhead Light:** Yes
- **Overhead Light Condition:** 4 - Very Good
- **Light Comments:**
- **Davit Crane Present:** Yes
- **Davit Crane Capacity (kg):**
- **Davit Crane Condition:** 4 - Very Good
- **Davit Crane Comments:**
- **Fence TYPE:** Standard Security Fence (3 Strands barbed)
- **PS Fence Height (m):** 1.8
- **PS Gates Locked:** Yes
- **PS Fence Condition:** 4 - Very Good
- **Fence Comment:**
- **Flow meter type:**
- **Flow meter condition:**
- **Flow meter comments:**
- **Macerator Pump Make/Model:**
- **Manufacturers Date:**
- **Macerator Pump:**
- **Macerator Pump Condition:**
- **Macerator Pump Comments:**
- **Outgoing Pipe Diameter (mm):**
- **Valves:**
- **Outgoing Pipe Comments:**
- **Water Supply to pump station:** Yes
- **Fire hose reel:** No
- **Access cover locked:** Yes
- **Safety grid beneath access cover:** No Access
Northern Territory Town Camps

Civil Infrastructure

Inspection Date 2/12/2016 8:08:13 AM

Condition:
Cabinet Locked: No Access
Cabinet Lock Condition:
Hand rails around entrance: Yes
Fixed or removable:
Rail Condition:
Safety Comments:
Pump Station Pumps section
Northern Territory Town Camps

Civil Infrastructure

Inspection Date  2/12/2016 8:08:13 AM
**Northern Territory Town Camps**

**Civil Infrastructure**

**Inspection Date** 2/12/2016 8:24:12 AM

<table>
<thead>
<tr>
<th>Insp ID: 1620</th>
<th>Group 3 - Tennant Creek, Elliott</th>
<th>Village Camp</th>
</tr>
</thead>
</table>

- **Stormwater Infrastructure:** SEP
- **Number of Bays:** 1
- **On grade or sag pit:** Both
- **Both sides of road:** Both
- **Condition:** 3 - Good
- **Blockage (%):** 100
- **Comment:** Rhs blocked 100, lhs blocked 60%

![Image of stormwater infrastructure](image-url)
<table>
<thead>
<tr>
<th>Stormwater Infrastructure:</th>
<th>SEP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Bays:</td>
<td>1</td>
</tr>
<tr>
<td>On grade or sag pit:</td>
<td></td>
</tr>
<tr>
<td>Both sides of road:</td>
<td>Right</td>
</tr>
<tr>
<td>Condition:</td>
<td>4 - Very Good</td>
</tr>
<tr>
<td>Blockage (%):</td>
<td>10</td>
</tr>
<tr>
<td>Comment:</td>
<td></td>
</tr>
</tbody>
</table>
### Northern Territory Town Camps

#### Civil Infrastructure

**Inspection Date**  2/12/2016 8:20:43 AM

<table>
<thead>
<tr>
<th>Insp ID</th>
<th>Group 3 - Tennant Creek, Elliott</th>
<th>Village Camp</th>
</tr>
</thead>
<tbody>
<tr>
<td>1624</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- **Stormwater Infrastructure:** SEP
- **Number of Bays:** 1
- **On grade or sag pit:**
- **Both sides of road:** Left
- **Condition:** 4 - Very Good
- **Blockage (%):** 10
- **Comment:**

![Image of stormwater infrastructure](P:\GIS\Projects\253963_NT\Image found and displayed.1162)
# Northern Territory Town Camps

## Civil Infrastructure

**Inspection Date**  2/12/2016 8:18:15 AM

<table>
<thead>
<tr>
<th>Insp ID:</th>
<th>Group 3 - Tennant Creek, Elliott</th>
<th>Village Camp</th>
</tr>
</thead>
<tbody>
<tr>
<td>1627</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Stormwater Infrastructure:**  SEP

**Number of Bays:**  2

**On grade or sag pit:**

**Both sides of road:**  Left

**Condition:**  4 - Very Good

**Blockage (%):**  0

**Comment:**

[Image found and displayed.]

---

1163
## Northern Territory Town Camps

### Civil Infrastructure

**Inspection Date**: 2/12/2016 8:17:29 AM

<table>
<thead>
<tr>
<th>Insp ID:</th>
<th>1628</th>
<th>Group 3 - Tennant Creek, Elliott</th>
<th>Village Camp</th>
</tr>
</thead>
</table>

- **Stormwater Infrastructure**: SEP
- **Number of Bays**: 2
- **On grade or sag pit**: Both sides of road
  - **Both sides of road**: Right
- **Condition**: 3 - Good
- **Blockage (%):** 10
- **Comment**: Image found and displayed.
Northern Territory Town Camps

Civil Infrastructure

**Inspection Date**  2/12/2016 8:04:33 AM

<table>
<thead>
<tr>
<th>Insp ID:</th>
<th>Group 3 - Tennant Creek, Elliott</th>
<th>Village Camp</th>
</tr>
</thead>
</table>

- **Stormwater Infrastructure:** SEP
- **Number of Bays:** 1
- **On grade or sag pit:** Both
- **Both sides of road:** Both
- **Condition:** 3 - Good
- **Blockage (%):** 40
- **Comment:** Graffiti, concrete cracks
Northern Territory Town Camps

Civil Infrastructure

**Inspection Date** 2/12/2016 7:58:33 AM

<table>
<thead>
<tr>
<th>Insp ID: 1636</th>
<th>Group 3 - Tennant Creek, Elliott</th>
<th>Village Camp</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stormwater Infrastructure:</td>
<td>SEP</td>
<td></td>
</tr>
<tr>
<td>Number of Bays:</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>On grade or sag pit:</td>
<td>Both</td>
<td></td>
</tr>
<tr>
<td>Both sides of road:</td>
<td>Both</td>
<td></td>
</tr>
<tr>
<td>Condition:</td>
<td>3 - Good</td>
<td></td>
</tr>
<tr>
<td>Blockage (%):</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Comment:</td>
<td>Image 1 left, image 2 right</td>
<td></td>
</tr>
</tbody>
</table>
Northern Territory Town Camps

Civil Infrastructure

Inspection Date  2/12/2016 7:54:04 AM

<table>
<thead>
<tr>
<th>Insp ID: 1640</th>
<th>Group 3 - Tennant Creek, Elliott</th>
<th>Village Camp</th>
</tr>
</thead>
</table>

Stormwater Infrastructure: SEP
Number of Bays: 1
On grade or sag pit: Both
Both sides of road: Both
Condition: 4 - Very Good
Blockage (%): 0
Comment: Image 1 left. Image 2 right
## Stormwater Infrastructure: SEP

### Number of Bays:
1

### On grade or sag pit:

### Both sides of road:
Right

### Condition:
4 - Very Good

### Blockage (%):
0

### Comment:
P:\GIS\Projects\253963_NT Image found and displayed.
Northern Territory Town Camps

Civil Infrastructure

Inspection Date   2/12/2016 8:56:30 AM

Insp ID: 1647 Group 3 - Tennant Creek, Elliott Village Camp

Stormwater Infrastructure: SEP
Number of Bays: 2
On grade or sag pit: Both
Both sides of road: Both
Condition: 4 - Very Good
Blockage (%): 20
Comment:
Northern Territory Town Camps

Civil Infrastructure

**Inspection Date**  2/12/2016 8:50:22 AM

<table>
<thead>
<tr>
<th>Inspect ID:</th>
<th>Group 3 - Tennant Creek, Elliott</th>
<th>Village Camp</th>
</tr>
</thead>
<tbody>
<tr>
<td>1653</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- **Stormwater Infrastructure**: SEP
- **Number of Bays**: 1
- **On grade or sag pit**:  
- **Both sides of road**: Right
- **Condition**: 4 - Very Good
- **Blockage (%):** 0
- **Comment:**

[Image: P:\GIS\Projects\253963_NT Image found and displayed. 1170]
## Northern Territory Town Camps

### Civil Infrastructure

**Inspection Date**  
2/12/2016 8:48:46 AM

<table>
<thead>
<tr>
<th>Insp ID:</th>
<th>1654</th>
<th>Group 3 - Tennant Creek, Elliott Village Camp</th>
</tr>
</thead>
</table>

- **Stormwater Infrastructure:** SEP
- **Number of Bays:** 1
- **On grade or sag pit:** Both
- **Both sides of road:** Both
- **Condition:** 4 - Very Good
- **Blockage (%):** 40

**Comment:**

![Image of stormwater infrastructure](P:\GIS\Projects\253963_NT)

![Image of stormwater infrastructure](P:\GIS\Projects\253963_NT)
## Civil Infrastructure

### Northern Territory Town Camps

**Inspection Date** 2/12/2016 9:17:06 AM

<table>
<thead>
<tr>
<th>Insp ID: 1662</th>
<th>Group 3 - Tennant Creek, Elliott</th>
<th>Village Camp</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stormwater Infrastructure:</td>
<td>SEP</td>
<td></td>
</tr>
<tr>
<td>Number of Bays:</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>On grade or sag pit:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Both sides of road:</td>
<td>Right</td>
<td></td>
</tr>
<tr>
<td>Condition:</td>
<td>3 - Good</td>
<td></td>
</tr>
<tr>
<td>Blockage (%):</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Comment:</td>
<td>Some graffiti</td>
<td></td>
</tr>
</tbody>
</table>
## Civil Infrastructure

### Northern Territory Camps

**Inspection Date** 2/12/2016 9:13:21 AM

<table>
<thead>
<tr>
<th>Insp ID: 1665</th>
<th>Group 3 - Tennant Creek, Elliott</th>
<th>Village Camp</th>
</tr>
</thead>
</table>

- **Inspection Type:** Shade Structure
- **Shade Structure Type:** Play ground
- **Shade Floor Type:** Sand
- **Roof Type:** Tin Roof
- **Width (mm):**
- **Length (mm):**
- **Appearance:** 2
- **Appearance Comment:**
- **Condition:** 2 - Poor
- **Comment:** Glass in sand, broken equipment
### Northern Territory Camps

#### Civil Infrastructure

**Inspection Date** 2/12/2016 9:12:17 AM

<table>
<thead>
<tr>
<th>Insp ID: 1666</th>
<th>Group 3 - Tennant Creek, Elliott</th>
<th>Village Camp</th>
</tr>
</thead>
</table>

- **Inspection Type:** Shade Structure
- **Shade Structure Type:** Playground
- **Shade Floor Type:** Natural ground
- **Roof Type:** Not Covered
- **Width (mm):**
- **Length (mm):**
- **Appearance:** 2
- **Appearance Comment:**
- **Condition:** 2 - Poor
- **Comment:**

![Image of the inspection site](P:\GIS\Projects\253963_NT\Image found and displayed.1174)
Northern Territory Town Camps
Civil Infrastructure

**Inspection Date**  2/12/2016 7:56:51 AM

<table>
<thead>
<tr>
<th>Insp ID: 1637</th>
<th>Group 3 - Tennant Creek, Elliott</th>
<th>Village Camp</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Road Name:</strong></td>
<td>271_1</td>
<td></td>
</tr>
<tr>
<td><strong>What are you inspecting:</strong></td>
<td>Signs</td>
<td></td>
</tr>
<tr>
<td><strong>Type of Sign:</strong></td>
<td>Give Way</td>
<td></td>
</tr>
<tr>
<td><strong>Sign Condition:</strong></td>
<td>3 - Good</td>
<td></td>
</tr>
<tr>
<td><strong>Sign Comment:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>General Comment:</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Northern Territory Town Camps

**Civil Infrastructure**

**Inspection Date** 2/12/2016 7:56:12 AM

<table>
<thead>
<tr>
<th>Insp ID: 1638</th>
<th>Group 3 - Tennant Creek, Elliott</th>
<th>Village Camp</th>
</tr>
</thead>
</table>

- **Road Name:** 271_1
- **What are you inspecting:** Signs
- **Type of Sign:** Street name
- **Sign Condition:** 1 - Very Poor
- **Sign Comment:** No sign
- **General Comment:**

![Image of the road with a street sign](P:\GIS\Projects\253963_NT\Image found and displayed.1176)
### Northern Territory Town Camps

**Civil Infrastructure**

**Inspection Date**  2/12/2016 7:49:44 AM

<table>
<thead>
<tr>
<th>Insp ID:</th>
<th>1645</th>
<th>Group 3 - Tennant Creek, Elliott</th>
<th>Village Camp</th>
</tr>
</thead>
</table>

- **Road Name:** Village Camp Internal
- **What are you inspecting:** Signs
- **Type of Sign:** Liquor act warning
- **Sign Condition:** 4 - Very Good
- **Sign Comment:**

![Image of Liquor Act Warning Sign](P:\GIS\Projects\253963_NT)

---

1177
## Northern Territory Town Camps

### Civil Infrastructure

**Inspection Date**: 2/12/2016 7:46:05 AM

<table>
<thead>
<tr>
<th>Insp ID</th>
<th>Group 3 - Tennant Creek, Elliott</th>
<th>Village Camp</th>
</tr>
</thead>
<tbody>
<tr>
<td>1646</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Road Name**: Village Camp Internal

**What are you inspecting**: Signs

**Type of Sign**: Give Way

**Sign Condition**: 5 - Excellent

**Sign Comment**:  

**General Comment**:  

![Image of a give way sign](image-url)
## Northern Territory Town Camps

### Civil Infrastructure

**Inspection Date** 2/12/2016 8:52:22 AM

<table>
<thead>
<tr>
<th>Insp ID:</th>
<th>Group 3 - Tennant Creek, Elliott</th>
<th>Village Camp</th>
</tr>
</thead>
</table>

Road Name: 271_1

What are you inspecting: Signs

Type of Sign: Street name

Sign Condition: 1 - Very Poor

Sign Comment: No sign

General Comment:

![Image found and displayed.](image_url)
<table>
<thead>
<tr>
<th>Insp ID: 1675</th>
<th>Group: Group 3 - Tennant Creek, Elliott</th>
<th>Village Camp</th>
</tr>
</thead>
</table>

- **Road Name:** 271_2
- **What are you inspecting:** Signs
- **Type of Sign:** Give Way
- **Sign Condition:** 3 - Good
- **Sign Comment:**

**General Comment:**

![Image of a Give Way sign](image-url)
# Northern Territory Town Camps

## Civil Infrastructure

**Inspection Date**  
2/12/2016 9:15:35 AM

<table>
<thead>
<tr>
<th>Insp ID: 1663</th>
<th>Group 3 - Tennant Creek, Elliott</th>
<th>Village Camp</th>
</tr>
</thead>
</table>

Stormwater Infrastructure: Swales  
Type of lining: Natural Grasses  
Are dimensions uniform along drain: No  
Base Width (m):  
Overall Width (m): 5  
Swale Depth (m): 1  
Length of Batter 1 (m):  
Length of Batter 2 (m):  
Swale Condition: 2 - Poor  
Swale Ponding: No  
Drain flooded at time of inspection: No  
Swale Comments: No culverts, not a defined Swale
What Water Asset Are you Capturing: Water Meter

Water Meter Type: Lot

Bulk Water Meter Size (mm): 

Bulk Water Meter Condition: 

Bulk Water Meter Comment: 

Lot Number: 

Lot Water Meter Size: 25

Lot Water Meter Condition: 3 - Good

Lot Water Meter Comment: Two meters, outside of lot
## Northern Territory Town Camps

### Civil Infrastructure

**Inspection Date** 2/12/2016 8:22:26 AM

<table>
<thead>
<tr>
<th>Insp ID:</th>
<th>1622</th>
<th>Group 3 - Tennant Creek, Elliott</th>
<th>Village Camp</th>
</tr>
</thead>
</table>

**What Water Asset Are you Capturing:** Water Meter

**Water Meter Type:** Lot

**Bulk Water Meter Size (mm):**

**Bulk Water Meter Condition:**

**Bulk Water Meter Comment:**

**Lot Number:**

**Lot Water Meter Size:** 25

**Lot Water Meter Condition:** 3 - Good

**Lot Water Meter Comment:**

![Image of water meter](image-url)
What Water Asset Are you Capturing: Water Meter

Water Meter Type: Lot

Bulk Water Meter Size (mm):

Bulk Water Meter Condition:

Bulk Water Meter Comment:

Lot Number:

Lot Water Meter Size: 25

Lot Water Meter Condition: 3 - Good

Lot Water Meter Comment: No tap handle
### Northern Territory Town Camps

**Civil Infrastructure**

**Inspection Date** 2/12/2016 8:47:06 AM

<table>
<thead>
<tr>
<th>Insp ID: 1656</th>
<th>Group 3 - Tennant Creek, Elliott</th>
<th>Village Camp</th>
</tr>
</thead>
</table>

**What Water Asset Are you Capturing:** Water Meter

- **Water Meter Type:** Lot
- **Bulk Water Meter Size (mm):**
- **Bulk Water Meter Condition:**
- **Bulk Water Meter Comment:**
- **Lot Number:**
- **Lot Water Meter Size:** 25
- **Lot Water Meter Condition:** 4 - Very Good
- **Lot Water Meter Comment:**

![Image of water meter](P:\GIS\Projects\253963_NT)
## Northern Territory Town Camps

### Civil Infrastructure

**Inspection Date**  2/12/2016 8:41:39 AM

<table>
<thead>
<tr>
<th>Insp ID:</th>
<th>1659</th>
<th>Group 3 - Tennant Creek, Elliott</th>
<th>Village Camp</th>
</tr>
</thead>
</table>

**What Water Asset Are you Capturing:** Water Meter

**Water Meter Type:** Lot

**Bulk Water Meter Size (mm):**

**Bulk Water Meter Condition:**

**Bulk Water Meter Comment:**

**Lot Number:**

**Lot Water Meter Size:** 25

**Lot Water Meter Condition:** 3 - Good

**Lot Water Meter Comment:** Two meters, outside of lots
Northern Territory Town Camps

Civil Infrastructure

**Inspection Date**  2/12/2016 9:11:02 AM

<table>
<thead>
<tr>
<th>Insp ID:</th>
<th>Group 3 - Tennant Creek, Elliott</th>
<th>Village Camp</th>
</tr>
</thead>
<tbody>
<tr>
<td>1667</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

What Water Asset Are you Capturing:  Water Meter

<table>
<thead>
<tr>
<th>Water Meter Type:</th>
<th>Lot</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bulk Water Meter Size (mm):</td>
<td></td>
</tr>
<tr>
<td>Bulk Water Meter Condition:</td>
<td></td>
</tr>
<tr>
<td>Bulk Water Meter Comment:</td>
<td></td>
</tr>
<tr>
<td>Lot Number:</td>
<td></td>
</tr>
<tr>
<td>Lot Water Meter Size:</td>
<td>25</td>
</tr>
<tr>
<td>Lot Water Meter Condition:</td>
<td>2 - Poor</td>
</tr>
<tr>
<td>Lot Water Meter Comment:</td>
<td>No tap handle, no bollards</td>
</tr>
</tbody>
</table>
Northern Territory Town Camps

Civil Infrastructure

Inspection Date 2/12/2016 9:08:40 AM

Insp ID: 1669  
Group 3 - Tennant Creek, Elliott  
Village Camp

What Water Asset Are you Capturing: Water Meter

Water Meter Type: Lot

Bulk Water Meter Size (mm):

Bulk Water Meter Condition:

Bulk Water Meter Comment:

Lot Number:

Lot Water Meter Size: 25

Lot Water Meter Condition: 3 - Good

Lot Water Meter Comment: Two meters, outside of lot
### Northern Territory Town Camps

#### Civil Infrastructure

**Inspection Date**: 2/12/2016 9:07:18 AM

<table>
<thead>
<tr>
<th>Insp ID:</th>
<th>1671</th>
<th>Group 3 - Tennant Creek, Elliott</th>
<th>Village Camp</th>
</tr>
</thead>
</table>

**What Water Asset Are you Capturing**: Water Meter

**Water Meter Type**: Lot

**Bulk Water Meter Size (mm)**: 

**Bulk Water Meter Condition**: 

**Bulk Water Meter Comment**: 

**Lot Number**: 

**Lot Water Meter Size**: 25

**Lot Water Meter Condition**: 3 - Good

**Lot Water Meter Comment**: Outside of lot

![Image of water meter](image-url)
## Northern Territory Town Camps

### Civil Infrastructure

**Inspection Date**  2/12/2016 9:06:28 AM  

<table>
<thead>
<tr>
<th>Insp ID</th>
<th>Group 3 - Tennant Creek, Elliott</th>
<th>Village Camp</th>
</tr>
</thead>
<tbody>
<tr>
<td>1672</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**What Water Asset Are you Capturing:**  Water Meter

- **Water Meter Type:** Lot
- **Bulk Water Meter Size (mm):** Lot
- **Bulk Water Meter Condition:** Lot
- **Bulk Water Meter Comment:** Lot

- **Lot Number:** 25
- **Lot Water Meter Size:** 25
- **Lot Water Meter Condition:** 3 - Good
- **Lot Water Meter Comment:** Outside of lot
Electrical inspection reports
Road map
Legend

- Start of road

Road Condition

1. Very poor
2. Poor
3. Good
4. Very good
5. Excellent

Town Camp boundary

NT Town Camp Road Assessments
271 - Village Camp (Tennant Creek)
Existing drawings
CROWN LEASE IN PERPETUITY 01113

Lot 2057 Town of Tennant Creek from plan(s) S 86/102A
Area under title is 4 hectares 6000 square metres

Owner:
Julalikari Housing Incorporated
of PO Box 158, Tennant Creek NT 0861

Easements:
Sewerage Easement to Power and Water Authority

<table>
<thead>
<tr>
<th>Registered Date</th>
<th>Dealing Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>26/11/1996</td>
<td>364700</td>
<td>Statutory Notice - Prescribed Property</td>
</tr>
<tr>
<td>27/05/1993</td>
<td>284559</td>
<td>Notice of a Right to a Grant of Interest</td>
</tr>
</tbody>
</table>

End of Dealings

IMPORTANT MESSAGE: This title information is compiled from the paper register and may be incomplete. Please refer to the scanned image of the paper title for further details. Contact Land Titles Office staff for assistance.

Commencement Date: 6th April, 1993

Expiring Date: In Perpetuity

Reservations:
All reservations and rights to which this grant is made subject by the Crown Lands Act.

Provisions:
1. This lease is granted under and subject to the Act and the Regulations for the time being in force thereunder, and is conditional upon compliance by the Lessee with the covenants and conditions to be complied with by the Lessee, and will, subject to the Act and the Regulations, be liable to be determined and forfeited for non-compliance with any such covenant or condition.

2. The Lessee may at any time surrender the lease in the manner prescribed under the Act.

3. For the purposes of Sections 58 & 59 of the Act the Lessee agrees that the Minister may at his absolute discretion determine the Lessee's rights in improvements and whether compensation is payable for improvements following surrender, expiry, termination or forfeiture of this lease.

Lease Conditions:
1. The lease purpose is Aboriginal Residential Complex and Ancillary.

2. The Lessee will pay rates and taxes which may at any time become due in respect of the leased land.

3. The Lessee will at all times maintain and repair and keep in repair all buildings and improvements on the leased land all to the satisfaction of the Minister.

4. The Lessee will comply with any Planning Instrument affecting the land.
5. The Lessee will maintain landscaping of the whole of the front boundary (driveways excepted) of the leased land with suitable vegetation which will provide a screen at least 2 metres high.

6. All electrical and water reticulation plus sewerage will conform at all times with the appropriate by-laws, standards and specifications of the Power and Water Authority.

7. That the leased land will be dust suppressed and adequately drained for stormwater, all such drainage will conform at all times with the appropriate by-laws, standards and specifications of the Department of Transport and Works and the Town Engineer, Tennant Creek Town Council.
Date Registered: 27/05/1993
Duplicate Certificate as to Title issued? Yes
Record of Administrative Interests and Information

The information contained in this record of Administrative Interests only relates to the below parcel reference.

**Parcel Reference:** Lot 02057 Town of Tennant Creek plan(s) S 86/102A

(See section 38 of the Land Title Act)

Note: The Record of Administrative Interests and Information is not part of the Land Register and is not guaranteed by the Northern Territory of Australia, and the NT Government accepts no Liability for any omission, misstatement or inaccuracy contained in this statement.

Registrar General

---

**Government Land Register**

* (none found) *

---

**Custodian - Registrar General (+61 8 8999 6252)**

**Current Title**

CUFT 311 019 (order 1)

**Tenure Type**

CROWN LEASE IN PERPETUITY 1113

**Tenure Status**

Current

**Area Under Title**

4 hectares 6000 square metres

**Owners**

Julalikari Housing Incorporated
PO Box 158, Tennant Creek NT 0861

**Easements**

Sewerage Easement to Power and Water Authority

**Scheme Name**

* (none found) *

**Scheme Body Corporate Name**

* (none found) *

**Reserved Name(s)**

* (none found) *

**Unit Entitlements**

* (none found) *
Transfers
(none found)

Tenure Comments
(none found)

Historic Titles
CUCL 200 099 (order 2)
CUCL 200 099 (order 1)

Custodian - Surveyor General (+61 8 8995 5362)
Address
33 STANDLEY ST, TENNANT CREEK

Survey Plan
S 86/102A

Survey Status
Approved

Parcel Status
CURRENT

Parcel Area
4 hectares, 6000 square metres

Map Reference
(none found)

Parent Parcels
Lot 00987 Town of Tennant Creek plan(s) A 000814
Lot 00988 Town of Tennant Creek plan(s) A 000814
Lot 01005 Town of Tennant Creek plan(s) S 82/012

Parcel Comments
SUBDIVISION OF LOTS 987,988 & 1005 (NOW CANCELLED) INTO LOT 2057 VIDE S86/102. NOTICE OF DETERM OF A CL(T) GRANTED TO JULALIKARI COUNCIL INC. FOR ABORIGINAL SOCIAL & CULTURAL AREA (VILLAGE CAMP- NYINK KANYUNU) VIDE NTG G16 22/4/87,SEE S2008/29 LOTS 2298(A) TO 2327(A) ALLOCATION OF ADMIN PARCELS AT VILLAGE AND SORRY TOWN CAMP LOTS 1004 AND 2057 TENNANT CREEK

Survey Comments
SURVEY ON PLANS A - B

Proposed Easements
(none found)

Municipality
BARKLY SHIRE

Region
BARKLY

Custodian - Valuer General (+61 8 8995 5375)

Owner’s Last Known Address
Department of Housing, PROPERTY RATES OFFICER, GPO BOX 4621, DARWIN NT 0801
Parcels in Valuation
Lot 02057 Town of Tennant Creek

Unimproved Capital Value
$105,000 on 01/07/2015
$106,000 on 01/07/2012
$82,000 on 01/07/2010
$26,500 on 01/07/2004
$31,250 on 01/07/2001
$31,250 on 01/07/1998
$29,500 on 01/07/1995
$39,000 on 01/07/1992
$47,000 on 01/01/1990
$43,000 on 01/01/1987

Valuation Improvements
01/02/1996 House x 15
15/09/1988 Land

Custodian - Property Purchasing (+61 8 8999 6631)

Acquisitions
(none found)

Custodian - Building Advisory Service (+61 8 8999 8965)

Building Control Areas
BBTEN001 - Building Control Area TENNANT CREEK BUILDING AREA

Building Permits

Application Number: 8 of 8
Description: HOUSE
Number of Residential Units: 1
Australian Bureau of Statistics Type: Separate House
Building Class: Single Dwelling
Area: 181 square metres
Certification: Single Dwelling - Full Code - issued on 03/12/2003

Visit the website http://www.nt.gov.au/building/

Custodian - Town Planning and Development Assessment Services (+61 8 8999 6046)

Planning Scheme Zone
CL (Community Living)

Interim Development Control Orders
(none found)

Planning Notes
(none found)

Planning Applications

File Number
PA1990/0288
Type
Development

Date Received
24/05/1990

Application Purpose
COMMUNITY CENTRE THIS SITE IS ON STANDLEY CRESCENT

Application Status
Approved

Other Affected Parcels
(none found)

Instrument Signed
28/05/1990

Instrument Number

Instrument Issued
Not Complete

Instrument Status
Current

Custodian - Power and Water Corporation (1800 245 092)

Meters on Parcel

<table>
<thead>
<tr>
<th>Meters on Parcel</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power Water - Electricity</td>
<td>2</td>
</tr>
<tr>
<td>Power Water - Water</td>
<td>1</td>
</tr>
</tbody>
</table>

For Account balances, contact the Power and Water Corporation.

Custodian - Pool Fencing Unit (+61 8 8924 3641)

Swimming Pool/Spa Status
(none found)

For more information, contact the Pool Fencing Unit (+61 8 8924 3641).

Custodian - Mines and Energy (+61 8 8999 5322)

For information on possible Exploration Licences, contact Mines & Energy or visit the website http://www.nt.gov.au/d/Minerals_Energy/

For information on possible Petroleum Titles, contact Mines & Energy for further details.

Custodian - NT Environment Protection Authority (+61 8 8924 4218)

Results of site contamination assessment
(none found)

For further information contact Environment Protection Authority or visit the website https://ntepa.nt.gov.au/waste-pollution/contaminated-land
Custodian - Heritage Branch (+61 8 8999 5039)

Heritage Listing:
(none found)

For further information on heritage places contact Heritage Branch or visit the website
https://nt.gov.au/property/land/heritage-register-search-for-places-or-objects

Other Interests
For Account balances, contact Barkly Shire Council
Transformer data
Tingkarli
Tingkarli

1 Design
The infrastructure reviews have been undertaken against current relevant standards for typical sub-divisions. The following standards have been used in undertaking the reviews.

Sewerage and water supply
- Water Services Association of Australia – Sewerage Code – WSA 02 Part 1: Planning and Design
- Power and Water Corporation supplement to WSA 02
- Power and Water Corporation supplement to WSA 04
- Power and Water Corporation supplement to WSA 03
- Department of Housing and Community Development Indigenous Community Engineering Guidelines (ICEG 2014, updated September 2016)
- Power and Water Corporation Essential Services Infrastructure Assessment and Upgrade Guidelines (for Town Camps in Urban Communities, 2009)
- Power and Water Corporation Standard Drawings
- Australian Standards

Electrical services
Electrical infrastructure has been assessed against AS/NZS3000 Wiring Rules and against PWC Service, Installation and Metering Rules and Urban Residential Development (URD) Design Standards where possible.

With one exception, town camps are each a single lot and compliance with AS/NZS3000 is sufficient to address potential safety concerns.

As such application of PWC URD Design Standards will mainly apply to the incoming supply and bulk or initial multi-metering panels if provided.

URD Design Standards for internal reticulation and street lighting appear to have been applied in many cases for convenience rather than compliance.

For the purposes of this report, the demand per dwelling allowances of URD Design Standards have been used to estimate incoming supply and overall distribution capacity requirements.

The following standards apply:
- Australian Standards
- Power Networks Design and Construction Guidelines, Power and Water Corporation
  - NP001.1_Design and Construction of Network Assets – General Requirements
  - NP001.3_General Specification for Overhead Electrical Reticulation
  - NP001.6_General Specification for URD Subdivisions
  - NP003_Installation Rules_V3
  - NP007_Service Rules
- NP027_Capture of Newly Installed Street Lighting Information
- NP041_Guidelines for Electrical Design Consultants

Further referral to the guidelines in this report will be designated by the guidelines number, NP001.1.

**Communications**

**General**
It should be noted that if the town camps are proposed to be subdivided and services assets gifted to Power and Water Corporation (PWC) for operation and maintenance, all of these services will need to fully meet PWC standards. With the exception of a few town camps that have recently been upgraded, this will require the full replacement and/or realignment of most services.
2 Condition assessment

2.1 Rating assessment matrix
A condition rating matrix was developed and used to assess all municipal infrastructure. The same rating was used for all services to maintain consistency in assessments. Table 1 below shows the condition rating and operability.

Table 1 Condition rating

<table>
<thead>
<tr>
<th>Condition rating</th>
<th>Operability</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Very Poor</td>
</tr>
<tr>
<td></td>
<td>Not operational</td>
</tr>
<tr>
<td>2</td>
<td>Poor</td>
</tr>
<tr>
<td></td>
<td>Not fully operational or requires immediate maintenance to keep operational</td>
</tr>
<tr>
<td>3</td>
<td>Good</td>
</tr>
<tr>
<td></td>
<td>Fully operational, may require routine maintenance</td>
</tr>
<tr>
<td>4</td>
<td>Very Good</td>
</tr>
<tr>
<td></td>
<td>Fully operational, may require maintenance in the next six months</td>
</tr>
<tr>
<td>5</td>
<td>Excellent</td>
</tr>
<tr>
<td></td>
<td>New, fully operational</td>
</tr>
</tbody>
</table>

2.2 Civil assessment limitations
The civil infrastructure condition investigations were subject to a number of limitations. These include:

- Only accessible services have been investigated. This includes inspecting the top of sewer manholes, side entry pits, etc., however, does not include opening pits to inspect infrastructure below ground.
- No physical testing of the sewer, water or stormwater network was undertaken.
- No survey or service locating was undertaken.

As there was no survey, potholing or CCTV undertaken on the underground infrastructure there is insufficient information to make determinations on the asset condition. The condition assessments discussed in this report are only for the accessible services and do not necessarily represent the condition of the underground infrastructure. For the majority of the town camps, other than a few that have recently been upgraded it was found that the underground services are generally undersized and it is likely, due to their age, that the these services are in poor condition. Either factor would trigger the need for a complete replacement to meet current relevant standards.

2.3 Electrical assessment limitations
The electrical infrastructure condition investigations were subject to a number of limitations. These include:

- Inspections were carried out without the assistance of an electrical tradesman.
- Only accessible services were investigated. Assessments were of a visual nature and no pit covers were removed.
- Overhead equipment was assessed from ground level.
- Switchboards were not opened and no assessment of the internal connections or bus ratings was made.
• Electrical infrastructure was assessed down to the meter for multi-meter panels and down to the termination, overhead pole or distribution pillar, of the supply cable to a meter located at a dwelling.
3 Current infrastructure issues

Power and Water Corporation (PWC) have advised of the following concerns and issues in regard to the sewerage, water and electrical infrastructure at all town camps.

3.1 Ownership and maintenance

PWC stated there has always been confusion regarding the ownership and responsibilities of the internal sewer, water and electrical infrastructure. PWC have advised that they have no legal tenure on the majority of assets in any town camps and that the owner is essentially that of the land owner or leaseholder. This is further discussed for each type of infrastructure for each town camp.

The ownership and who is responsible for the maintenance of the sewage pump stations and street lighting is a major concern. In most town camps it was found that PWC have been maintaining the assets on an in-kind basis, although there are no maintenance or access agreements in place and the infrastructure is generally not compliant to PWC standards.

3.2 Access to infrastructure

PWC advised that due to the uncertainty surrounding ownership and responsibility of the sewerage, water and electrical infrastructure, each town camp is seen as a single lot with multiple houses on it. There are no formal road reserves or easements where the municipal infrastructure should be located. PWC therefore have no legal right to enter the town camps to work on the infrastructure, nor can PWC stop others from working on the infrastructure. There is a risk that the maintenance undertaken by others may be to a lower standard than PWC.

It should be noted that there are currently no legal services easements within the town camps, except for a few cases where a town service passes through the town camp. Therefore it is recommended that easements are created over any infrastructure owned by PWC and any future assets to be gifted to PWC, to allow the service providers access to the infrastructure.

3.3 Existing infrastructure

PWC have stated that although the existing sewerage and water infrastructure appears to comply with relevant standards in some locations, the capacity cannot be assumed to meet PWC requirements due to the potential for underground substandard condition and/or grading of pipework. It is likely that these assets will need to be fully replaced to PWC standards to ensure sufficient capacity.

The planning process currently allows construction within the town camps on Commonwealth land without requiring service authority (PWC) approvals. This means that there has been no opportunity for PWC to recover contributions towards required upgrades to headworks servicing the developments and these upgrades have been paid for by PWC in the past. This inconsistency needs to be addressed for future developments within the town camps to ensure PWC are able to continue to provide adequate services.

3.4 Safety concerns

PWC have expressed concerns with safety of PWC staff and contractors working within the camps. PWC have employed procedures such as multiple people / vehicles to attend the site, with police or housing safety officers as required. This
generally leads to a delayed response time and increased cost to respond to and remediate emergency situations.

PWC have also raised the concern that if others work on water infrastructure within the town camps and do not apply the correct sanitation procedures they not only risk contaminating the entire water supply network within the town camp, at some town camps with direct connections to the town supply, they risk contaminating the entire town’s water supply.
4 Available information

As the site investigations were limited to accessible / visible services, information on below ground services (such as electrical cables, sewer pipes, water supply pipes, etc.) were determined from available information. This information included:

- Serviced Land Availability Program (SLAP) maps,
- Department of Family & Community Services - Connecting Neighbours Program – Essential Services Scoping Study Report Volume 1 April 2005,
- Connecting Neighbours Project – Infrastructure Assessment and Recommendation Report - Arup Pty Ltd, April 2005,
- Drawings supplied by NT Department of Infrastructure - Technical Records,
- Drawings supplied by Power and Water Corporation,
- Bennett Design inspection reports and population data.

Aurecon undertook a site investigation of the Tingkarli community on Thursday 1 December 2016 to inspect roads, stormwater drainage, electrical services, sewerage and water supply, and community structures. The following sections detail the outcomes of this investigation and the assessments of the infrastructure.

The civil and electrical inspection reports can be found in the Appendices.
5 Sewerage

5.1 Ownership and boundaries
The sewer network in Tingkali consists of reticulation gravity main that discharges to a pump station. The pump station then pumps the sewage via a DN80 rising main.

The sewer network has not been upgraded recently, while all other town camps in Tennant Creek have received upgrades as part of the SIHIP program.

The sewer infrastructure inspected is assumed to be owned by Julalikari Housing Incorporated, but are the responsibility of Far North – T&J Contractors to maintain.

There are currently no easements over the sewerage infrastructure according to the Land Title, refer Appendices.

5.1.1 Connection methods and billing
PWC advised that they currently charge a single sewerage bill based on the number of houses, which for Tingkarli is 12. The sewerage bill is charged to the Department of Housing and Community Development.

It is not known what contribution the residents make towards the sewerage bills.

5.2 Existing infrastructure condition assessment
The sewer infrastructure inspection was limited to inspecting the condition of manhole covers, as all other sewerage infrastructure is below ground. A total of 8 manholes and one pump station was inspected, with condition ratings as follows.

Table 2 Sewer condition assessment

<table>
<thead>
<tr>
<th>Asset</th>
<th>1 Very Poor</th>
<th>2 Poor</th>
<th>3 Good</th>
<th>4 Very Good</th>
<th>5 Excellent</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manholes</td>
<td>8</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>8</td>
</tr>
<tr>
<td>Pump station</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
</tbody>
</table>
Figure 1 Sewage pump station, condition: *good*

Figure 2 Sewage pump station gate, condition: *good*

Figure 3 Sewer manhole, condition: *good*

Figure 4 Sewer manhole, condition: *good*
5.3 Current performance and risks

5.3.1 Current sewer network performance
The current capacity of the sewer network was calculated based on the following design assumptions:

- The adopted minimum grade for the pipework is 1.0%, as advised by Power and Water Corporation.
- The Equivalent Population (EP) has been calculated assuming one household equates to 9 EP, based on discussions with Power and Water Corporation.
- The capacity has been assessed by calculating the current flow rate, and the maximum flow rate when the sewer pipe flows full. The result is then a percentage of how much of the pipe is currently being used.
- Manning’s roughness coefficient of the pipework is 0.012, as recommended by PWC for PVC pipes.
- Where the sewer pipe grade, size or material is not known, it is assumed to be non-compliant to PWC standards.
- As Tingkarli disposes to a pump station, the capacity of the pump station has also been assessed.

The current number of houses in Tingkarli is 12, plus two non-house dwellings, this multiplied by 9 EP per house gives a total current EP of 126. The capacity of the existing sewer was then calculated. The percentage shows how much of the pipe capacity is currently being used.

Table 3 Existing sewer capacity

<table>
<thead>
<tr>
<th>Catchment</th>
<th>Current total EP</th>
<th>Diameter of connection (mm)</th>
<th>Adopted PWC minimum slope (%)</th>
<th>Q_{full} (L/s)</th>
<th>Current Q (L/s)</th>
<th>Current capacity (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Catchment 1</td>
<td>126</td>
<td>150</td>
<td>1.0</td>
<td>16.50</td>
<td>1.64</td>
<td>10%</td>
</tr>
</tbody>
</table>

Table 3 above shows that the capacity of the existing sewer network is adequate for the current peak population. It is likely that that since the flows are relatively low, the minimum velocity for self-cleansing is not achieved.

The age or condition of the underground pipework is not known, so it is recommended that the pipework is upgraded to meet PWC standards.

5.3.2 Current sewage pump station performance
The capacity of the pump station was checked against the following criteria, based on PWC guidelines:

- Less than 12 pump starts per hour (for pumps less than 15kW),
- Minimum velocity 0.9 m/s,
- Maximum velocity 2.5 m/s,
- Overflow storage equal to three hours of peak dry weather flow.

As detailed drawings of the pump station were available, refer Appendices, an assessment of the current performance could be undertaken.
The existing drawings had a design EP of 352, which is significantly higher than the assumed current EP for Tingkarli. For the purpose of the assessment, the current EP was used.

It was found that the pump station complies with current PWC standards, as the minimum velocity in the rising main is greater than 0.9 m/s and less than 2.5 m/s, and there is sufficient overflow storage provided.

No upgrades are currently required to the pump station.

5.4 Future demands
As no new developments are currently planned for the community, there are no additional upgrades required to cater for future demand.

5.5 Recommended works
It is recommended that the pipework is upgraded to DN150 PVC in accordance with PWC standards. Approximately 1200 m of reticulation main has been allowed for. The cost estimates do not include upgrading the rising main between Tingkarli and Wuppa.
6 Water supply

6.1 Ownership and boundaries
The water supply infrastructure was upgraded to PWC standards as part of the SIHIP program. The water reticulation servicing Tingkarli is a DN150 PVC ring main, (refer Appendices).

The water supply assets within Tingkarli are believed to be owned by Julalikari Housing Incorporated, but are the responsibility of Far North – T&J Contractors to maintain. The water is supplied from a water main outside of the community, which are the responsibility of PWC.

PWC have advised that they currently maintain the water assets up to the residential lot water meters, although there is no formal agreement covering this maintenance.

Figure 5 shows the extent of water services.

![Figure 5 Tingkarli water supply network](image)

6.1.1 Connection methods and billing
Through consultation with PWC it has been determined that the water usage is currently charged as a fixed daily rate for 12 house water meters within Tingkarli. The bill is issued to the Department of Housing and Community Services. It is not known what contribution the residents make towards water bills.
It is proposed that PWC measure the water supply to the entire community using a bulk water meter, as opposed to individual bills for the individual lots within the community. This requires the installation of a bulk water meter on the water mains located at the community boundary. Under this scheme, the water bill for the entire community is the responsibility of the governing body, being Julalikari Housing Incorporated for Tingkarli. It will be up to governing body to assign bills to residents accordingly.

It is recommended that the individual lot meters are maintained in addition to the proposed use of bulk water meters. This will assist the governing body with distributing bills to residents, the identification of any leaks in the network, and meeting PWC standards should the town camp be subdivided in the future.

A total of ten water meters were assessed during the inspection. Bennett Design reported 12 permanent dwellings. Therefore, up to two additional water meters are required to cover the properties without an existing water meter. Note, some water meters may have been present however, not visible due to overgrown flora or restricted property access. Consequently, water meters may not have been discovered during the inspection.

### 6.2 Existing infrastructure condition assessment

The site investigation for the water infrastructure included assessing the condition of any air valves, fire hydrants, tanks, taps, and water meters. The assessment was limited to services that could be assessed above ground; no below ground services were inspected. A comprehensive review of all available documentation, including reviewing as-constructed drawings and having discussions with Power and Water Corporation was conducted. The following table compares the assets that have been constructed, according to the as-constructed drawings, and the assets assessed during the inspections conducted by Aurecon.

<table>
<thead>
<tr>
<th>Asset type</th>
<th>Number of assets as per documentation</th>
<th>Number of assets assessed during inspection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fire hydrants</td>
<td>9</td>
<td>9</td>
</tr>
<tr>
<td>Water meter (residential lots)</td>
<td>13</td>
<td>10</td>
</tr>
</tbody>
</table>

As per Table 4, a number of water meters were not assessed during the inspections, this is likely due to overgrown flora or restricted property access as previously discussed. The condition of each asset is as follows:

<table>
<thead>
<tr>
<th>Asset</th>
<th>1 Very Poor</th>
<th>2 Poor</th>
<th>3 Good</th>
<th>4 Very Good</th>
<th>5 Excellent</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fire hydrants</td>
<td>1</td>
<td>8</td>
<td></td>
<td></td>
<td></td>
<td>9</td>
</tr>
<tr>
<td>Water meter (residential lots)</td>
<td>1</td>
<td>1</td>
<td>8</td>
<td></td>
<td></td>
<td>10</td>
</tr>
</tbody>
</table>
In general, the fire hydrants were in good condition, however one was almost entirely covered by debris and requires general clearing.

The water meters were typically in good condition. Two need maintenance works including a full replacement of a missing water meter, and replacing handles for other. Note, only qualified personnel are to undertake maintenance, specifically on the missing water meter, as it is understood that the water meter pipes are sometimes used to earth electrical supplies which poses a safety hazard when disconnected.

6.3 Current performance and risks

- The current demand of the community was calculated based on the following design assumptions:
  - The nominal peak day flow is 1300 L/capita/day, based on PWC’s supplement to WSA 03 2002. This value is for the southern region of NT. It was assumed that the nominal peak day flow of 1300 L/capita/day also applies to water usage within the community, although it is possible that this value could be higher in real life due to a lack of controls to reduce water usage.
  - The Equivalent Population (EP) has been calculated assuming one household equates to 9 EP, based on discussions with Power and Water Corporation.
  - The peak hour factors are listed in PWC’s Supplement to WSA 03-2002, and they depend on the population range of the community. The peak hour factor of 3.0 has been adopted, for populations less than 500.
Table 6 shows the calculated demand.

Table 6 Current water demand

<table>
<thead>
<tr>
<th>Total dwellings</th>
<th>EP</th>
<th>Demand (l/s)</th>
<th>Peak hour demand (l/s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>14</td>
<td>126</td>
<td>1.89</td>
<td>5.67</td>
</tr>
</tbody>
</table>

The system is expected to meet PWC flow (peak hour and fire flow) requirements. The assessment of water supply for firefighting has been based on the size of the water mains and the condition of the accessible fire hydrants. Additional hydrants have been recommended where it appears the existing number of hydrants are insufficient. In the case of Tingkarli, the existing fire hydrants are expected to provide adequate coverage throughout the community and no additional hydrants are required.

The existing network is believed to have sufficient capacity and appears the pipe sizes are to compliant with PWC standards. The as-constructed drawings show a section of the water main is installed in a dedicated water main easement, however the Land Titles indicate no formal easements are located within the community.

### 6.4 Future demands

As no new developments are currently planned for the community, there are no additional upgrades required to cater for future demand.

### 6.5 Recommended works

The infrastructure that was assessed as very poor or poor is recommended to be upgraded to prevent failure in the future. The following maintenance works are recommended;

- Clear dirt and overgrown grass from two fire hydrants
- Replace one lot water meter
- Replace two tap handles
- Repair leak to one residential lot water meter

The community is viewed overall as a large single lot and as previously detailed, proposed to have the water usage measured accordingly. In order to measure the water usage as a single lot, a bulk water meter should be installed. Since the existing network has two supply points, one should be disconnected and reconnected creating network looping. This allows the remaining point to be metered. The cost estimates for upgrades at Tingkarli include;

- Disconnect secondary supply point and loop dead ends
- Install new bulk water meter
- Install up to two new lot water meters
7 Roadworks

7.1 Ownership and boundaries
The roads within Tingkarli are owned by Julalikari Housing Incorporated, but are the responsibility of Far North – T&J Contractors to maintain.

7.2 Existing infrastructure condition assessment
The road network within Tingkarli consists primarily of sealed roads. There are also numerous tracks which appear to be used frequently which are not included in the inspection and report. Road furniture including signs, foot paths and car parks were also inspected. Table 7 below summarise the condition of the road furniture as assessed during the site inspection.

Table 7 Roadworks condition assessment

<table>
<thead>
<tr>
<th>Asset</th>
<th>1 Very Poor</th>
<th>2 Poor</th>
<th>3 Good</th>
<th>4 Very Good</th>
<th>5 Excellent</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Footpaths</td>
<td></td>
<td></td>
<td>3</td>
<td>1</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>Signs</td>
<td>2</td>
<td>1</td>
<td></td>
<td>1</td>
<td></td>
<td>4</td>
</tr>
</tbody>
</table>

The signs in Tingkarli are generally in poor condition. There were two sign posts that had no sign, which are believed meant to be street name signs. One give way sign was bent and chipped paint.
The footpaths were generally in good and very good condition. Some sections of the paths require a general tidy up, to remove weeds and debris, etc. One path had a broken down car impeding on the path which should also be moved.

Table 8 below details the condition of the roads within Tingkarli community for specific segments. Figure 10 shows a map of the community’s road network with the condition ratings, road name, and chainage direction. Note, the percentage refers to the percentage of that particular road segment which experiences the defect.

Table 8 Road network condition assessment
<table>
<thead>
<tr>
<th>Road Name</th>
<th>Chainage start (km)</th>
<th>Chainage end (km)</th>
<th>Road segment condition (1-5)</th>
<th>Defects and associated condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>681_1</td>
<td>0</td>
<td>0.35</td>
<td>3</td>
<td>-gutters filled with dirt (3)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-40% of road has bleeding defects (3)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-50% of road has poor general appearance</td>
</tr>
<tr>
<td>681_2</td>
<td>0.1</td>
<td>0.23</td>
<td>3</td>
<td>-gutters filled with dirt (3)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-30% of road has bleeding defects (3)</td>
</tr>
<tr>
<td>Tinkarli Town Camp</td>
<td>0.45</td>
<td>0.66</td>
<td>3</td>
<td>-gutters filled with dirt (3)</td>
</tr>
<tr>
<td>Internal</td>
<td></td>
<td></td>
<td></td>
<td>-30% of road has bleeding defects (3)</td>
</tr>
</tbody>
</table>

Figure 11 Road 681_2, condition: *good*

Figure 12 Tingkarli Town Camp Internal road, condition: *good*
7.3 Current performance and risks
The road network in Tingkarli is in good condition, although there were bleeding defects, gutters filled with dirt and were in generally poor appearance. The layout of the road network is sufficient for the current number of houses.

It was noted during the site inspections that a number of unsealed ‘short-cuts’ had been created and were regularly used. It is not recommended that these paths are formalised. It is also recommended that a road safety audit is undertaken to determine where signage, line marking, etc. are required.

7.4 Future demands
As no new developments are currently planned for the community, there are no additional upgrades required to cater for future demand.

7.5 Recommended works
The infrastructure that was assessed as very poor or poor is recommended to be upgraded to prevent failure in the future. The following works are recommended to upgrade the current infrastructure;

- Install two street name signs (signs only)
- Replace one give way sign
- Clean out gutters – approximately 200 m
- General tidy up road – approximately 150 m
8 Stormwater drainage

8.1 Ownership and boundaries
The stormwater drainage assets within Tingkarli are believed to be owned by Julalikari Housing Incorporated, but are the responsibility of Far North – T&J Contractors to maintain.

Stormwater drainage infrastructure outside of the community is owned by Barkly Regional Council.

8.2 Existing infrastructure condition assessment
The site investigation for the stormwater infrastructure included assessing the condition of swales, culverts, headwalls, and side entry pits (SEP). Only the above ground infrastructure was assessed. As the inspection was undertaken outside of a storm event and no CCTV of the pipes was undertaken, flooding due to blockages or damage to the underground infrastructure could not be assessed. Table 9 below summarises the condition of the stormwater assets as assessed during the inspection.

Table 9 Stormwater condition assessment

<table>
<thead>
<tr>
<th>Asset</th>
<th>1 Very Poor</th>
<th>2 Poor</th>
<th>3 Good</th>
<th>4 Very Good</th>
<th>5 Excellent</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Culverts</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>SEP</td>
<td>2</td>
<td>21</td>
<td>2</td>
<td></td>
<td></td>
<td>25</td>
</tr>
<tr>
<td>Swales</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3</td>
</tr>
</tbody>
</table>

Figure 13 One bay side entry pit, condition: poor
Figure 14 One bay side entry pit, condition: poor
Two side entry pits were assessed as having poor condition, this was due to one pit having a broken lid (refer Figure 13), and the second pit having damage to the concrete (refer Figure 14). The functionality of the second pit is not affected by the concrete damage so no repairs are recommended. The first pit should have the lid replaced to avoid further damage.

8.3 Current performance and risks
The detailed performance of the stormwater network cannot be fully analysed without significant hydraulic and hydrodynamic modelling, which is outside the scope of this project. However based on the condition of the stormwater infrastructure assessed it would appear to be operating adequately.

8.4 Future demands
As no new developments are currently planned for the community, there are no additional upgrades required to cater for future demand.

8.5 Recommended works
The following works are recommended to upgrade or improve the current infrastructure:

- Clear blockages from 13 side entry pits (currently blocked between 20% and 90%)
- Replace one side entry pit lid
9 Community structures

9.1 Ownership and boundaries
There were no community structures at Tingkarli community.

9.2 Future demands
As no new developments are currently planned for the community, there are no additional upgrades required to cater for future demand.
10 Electrical services

10.1 Ownership and boundaries
The following points, from Network Policy NP003 Installation Rules Section 3, define the typical shared ownership of electrical infrastructure by Power and Water Corporation (PWC) and customers.

- The point of supply is defined as the point where PWC makes the electrical supply available. For domestic supply, this is normally one of the following:
  - A point of attachment of an overhead service on to a building or pole on which a metering panel is fitted.
  - A point of attachment of an overhead service on to a pole forming part of unmetered aerial consumer’s mains.
  - A nominated point on a distribution substation located on the customer’s lot.
  - A point of connection of an underground service in a metering panel, including underground services originating at an overhead line.
  - A point of connection of an underground service in a pillar or junction box forming part of unmetered consumer’s mains, located on the customer’s lot.
  - A point on a Power and Water pillar located on the customer’s lot.

Typically, distribution infrastructure upstream of the Point Of Supply is owned and maintained by PWC and infrastructure below the point of supply is owned and maintained by the customer.

In many cases PWC have defined a Point Of Supply to ensure that they retain responsibility for aerial high voltage infrastructure, and aerial low voltage infrastructure where installed with aerial high voltage infrastructure, to minimise the possibility of the community or its contractors coming into contact, either deliberately or inadvertently, with aerial high voltage infrastructure.

In other cases isolation facilities are present or desired by PWC to define the Point of Supply at or near the boundary of the town camp.

PWC advise that most of Tennant Creek/Alice Springs Town Camps have undergone upgrades under the SIHIP program with the intent to normalise the services to look like an urban subdivision but have never been formally handed over to PWC for operations and maintenance.

The Tingkarli community electrical reticulation systems is supplied by a transformer to an overhead reticulation scheme to individual house.

PWC advise that the Point Of Supply is the LV terminals of the substations and that they own and are responsible for the first pole mount substation and upstream infrastructure.

PWC recommend that a GBS (Gas Break Switch) be provided upstream of the first transformer to establish a demarcation point.

PWC advise that street lighting is supplied from unmetered LV infrastructure and is the responsibility of the lot holder and not PWC.

All meters, whether pre- or post-paid are the property of PWC.

Tingkarli community are responsible for maintain all unmetered and metered LV infrastructure including the main switchboard, metering panel (excluding meter), LV distribution feeders, distribution pillars, consumers’ mains and consumer switchboards and street lights.
### 10.2 Existing infrastructure condition assessment

Table 10 shows the condition rating given to the street lights. The street lights were of a low voltage overhead feeder design, sodium lamp type, S70D. The street lights have 54% operational rating and 46% inoperable.

<table>
<thead>
<tr>
<th>Asset</th>
<th>1 Very Poor</th>
<th>2 Poor</th>
<th>3 Good</th>
<th>4 Very Good</th>
<th>5 Excellent</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Street light on O/H Pole</td>
<td>11</td>
<td>13</td>
<td></td>
<td></td>
<td></td>
<td>24</td>
</tr>
</tbody>
</table>

Table 11 shows the condition rating given to the transformer. The transformer was of pole mount substation design. The transformer was visually accessed to be in good condition.

<table>
<thead>
<tr>
<th>Asset</th>
<th>1 Very Poor</th>
<th>2 Poor</th>
<th>3 Good</th>
<th>4 Very Good</th>
<th>5 Excellent</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transformer</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
</tbody>
</table>

Table 12 shows the condition rating given to the Overhead poles. The overhead poles are of Weld Construction (Universal Pole construction).

<table>
<thead>
<tr>
<th>Asset</th>
<th>1 Very Poor</th>
<th>2 Poor</th>
<th>3 Good</th>
<th>4 Very Good</th>
<th>5 Excellent</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overhead pole</td>
<td>24</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>24</td>
</tr>
</tbody>
</table>

Table 13 shows the condition rating given to the Metering panels. All assessed meters in this community are prepaid digital meters.

<table>
<thead>
<tr>
<th>Asset</th>
<th>1 Very Poor</th>
<th>2 Poor</th>
<th>3 Good</th>
<th>4 Very Good</th>
<th>5 Excellent</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-paid Meter</td>
<td>9</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>9</td>
</tr>
<tr>
<td>Switchboard</td>
<td>1</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td>5</td>
</tr>
</tbody>
</table>

Table 14 shows the condition rating given to the switchboards associated to dwellings.

<table>
<thead>
<tr>
<th>Asset</th>
<th>1 Very Poor</th>
<th>2 Poor</th>
<th>3 Good</th>
<th>4 Very Good</th>
<th>5 Excellent</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Switchboard</td>
<td>10</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>10</td>
</tr>
</tbody>
</table>

The details of the individual inspections and photographs of each infrastructure item are included in Appendices.
10.3 Current performance and risks

The electrical infrastructure evaluation was conducted against the following criteria:

- Number of dwellings on tenure, the higher value of the funded dwelling and as quoted in the population report was utilised.
- Urban area, NP001.1, 4. Definitions.
- General Specification for URD Subdivisions, NP001.6, 4.3 Substation Size.
- Normal ADMD (After Diversity Maximum Demand) of 4.5 kVA and high cost subdivisions at 7 kVA.
- Transformer ratings were assumed to be correct in Dekho (PWC asset information system) and compared against photographs of test or transformer numbers collected.
- Substation loads were compared against transformer sizes only. No load flow analysis was conducted.
- No load calculations were performed or assessment conducted on overhead or underground cable, visual inspection from the ground only.
- Street lighting loads were ignored as they are not significant.

The calculated maximum demand of the Tingkarli community transformer is 27% of rated capacity based on 4.5kVA/dwelling. The calculated maximum demand is within the total capacity of the substation on site.

Table 15 Tingkarli current demand load vs transformer ratings

<table>
<thead>
<tr>
<th>Com Id</th>
<th>Community name</th>
<th>Dwellings</th>
<th>Transformer (kVA)</th>
<th>kVA Total @ 4.5kVA</th>
<th>kVA Total @ 7kVA</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>681</td>
<td>Tingkarli</td>
<td>12</td>
<td>200</td>
<td>54</td>
<td>84</td>
<td></td>
</tr>
</tbody>
</table>

A tabulated summary of all the community transformers in Appendices.

There is a risk of equipment not being maintained associated with the non-standard division of responsibilities between the customer and PWC.

The following points from the PWC Metering Rules should be noted:

- The routine maintenance of metering installations and the replacement of any faulty meters is the responsibility of PWC.
- The property owners are responsible for the maintenance and upkeep of meter rooms, boxes and panels (including lids, doors and locking mechanisms).
- The installation of pre-paid metering is a cost to the customer, refer NP010 Meter Manual-Maintenance of Metering Installations, Power and Water Corporation.

10.4 Future demands

As no new developments are currently planned for the community, there are no additional upgrades required to cater for future demand.

10.5 Recommended works

The following maintenance works and upgrades are recommended:

- Replace 11 street lights 70W
- Replace one switchboard inside the metering panel
11 Communications

11.1 Ownership and boundaries
Details of Telstra pit and conduit infrastructure within the town camp boundaries were sought but were not forthcoming.

11.2 Existing infrastructure condition assessment
The telecommunications infrastructure assessed included pits and telephone booths.

Appendices contains the individual reports.

Table 16 Telecommunication pit condition assessment

<table>
<thead>
<tr>
<th>Asset</th>
<th>1 Very Poor</th>
<th>2 Poor</th>
<th>3 Good</th>
<th>4 Very Good</th>
<th>5 Excellent</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Telecommunication pit</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
</tbody>
</table>

Table 17 Telephone booth condition assessment

<table>
<thead>
<tr>
<th>Asset</th>
<th>1 Very Poor</th>
<th>2 Poor</th>
<th>3 Good</th>
<th>4 Very Good</th>
<th>5 Excellent</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phone booth</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
</tbody>
</table>

<p>| | | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2 (status is unknown)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

11.3 Current performance and risks
No details of the performance of communications infrastructure were obtained.

11.4 Future demands
The current availability of broadband services at Tingkarli is displayed in the Figure 16 below. NBN is available to residents via a fixed telecommunication line on application to an appropriate NBN access provider.
The NBN rollout map confirms that NBN is planned to be made available to residents via fixed telecommunications line on application to an appropriate NBN access provider.

11.5 **Recommended works**

Representatives from NBN’s Land Access and Stake Holder management teams are currently engaged with Yilli Housing and NT Housing to look at how camps will be serviced. It is expected that any existing premises in these camps will have some type of NBN service via the NBN brownfields rollout in the future.

No works are required at Tingkarli because NBN is available to residents via fixed telecommunications line on application to an appropriate NBN access provider.
12 Cost estimates

Table 18 below shows a summary of the cost estimates to undertake the maintenance required to fix the existing infrastructure and to upgrade the existing network to meet current design standards. There are no upgrades required for the future design. The estimates take into account a 30% contingency, are inclusive of GST, and a location factor has been applied to town camps outside of Darwin.

<table>
<thead>
<tr>
<th>Infrastructure</th>
<th>Maintenance of existing infrastructure</th>
<th>Upgrades to meet current design</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sewerage</td>
<td>$ 0</td>
<td>$ 1,047,000</td>
</tr>
<tr>
<td>Water supply</td>
<td>$ 4,000</td>
<td>$ 106,000</td>
</tr>
<tr>
<td>Roadworks</td>
<td>$ 18,000</td>
<td>$ 0</td>
</tr>
<tr>
<td>Stormwater drainage</td>
<td>$ 16,000</td>
<td>$ 0</td>
</tr>
<tr>
<td>Community structures</td>
<td>$ 0</td>
<td>$ 0</td>
</tr>
<tr>
<td>Electrical</td>
<td>$ 14,000</td>
<td>$ 0</td>
</tr>
<tr>
<td>Communications</td>
<td>$ 0</td>
<td>$ 0</td>
</tr>
<tr>
<td>Miscellaneous provisions</td>
<td>$ 18,000</td>
<td>$ 150,000</td>
</tr>
<tr>
<td><strong>Total (including GST)</strong></td>
<td><strong>$ 70,000</strong></td>
<td><strong>$ 1,303,000</strong></td>
</tr>
<tr>
<td><strong>Grand total</strong></td>
<td><strong>$ 1,373,000</strong></td>
<td></td>
</tr>
</tbody>
</table>

The cost estimates are a preliminary estimate only. Since Aurecon has no control over the cost of labour, materials, equipment or services furnished by others, or over contractors’ methods of determining prices, or over competitive bidding or market conditions, Aurecon cannot guarantee actual costs will not vary from these estimates.
13 Summary

The following works are recommended for Tingkarli community:

**Sewerage**
- 1200 m of DN150 PVC reticulation main, including new manholes and housing connections.

**Water supply**
- Clear dirt and overgrown grass from two fire hydrants
- Replace one lot water meter
- Replace two tap handles
- Repair leak to one residential lot water meter
- Disconnect secondary supply point and loop dead ends
- Install new bulk water meter
- Install up to two new lot water meters

**Roadworks**
- Install two street name signs (signs only)
- Replace one give way sign
- Clean out gutters – approximately 200 m
- General tidy up road – approximately 150 m

**Stormwater drainage**
- Clear blockages from 13 side entry pits (currently locked between 20% and 90%)
- Replace one side entry pit lid

**Community structures**
- No community structures so no upgrades required

**Electrical services**
- Replace 11 street lights 70W
- Replace one switchboard inside the metering panel

**Communications**
- No works are required because NBN is available to residents on application to an appropriate NBN access provider.
Civil inspection reports
Label numbers refer to survey IDs

Date: 23/02/2017  Version: 2
Coordinate system: MGA94 Zone 52

Legend
- Town Camp boundary
- Sewerage
  - Manholes (8)
  - Pump Station (1)

A3 scale: 1:2,000

Note:
- Label numbers refer to survey IDs

NT Town Camp Infrastructure Assessments: Sewerage

681 - Tinkarli (Tennant Creek)
NT Town Camp Infrastructure Assessments: Water
681 - Tinkarli (Tennant Creek)

Legend
- Town Camp boundary
- Water
  - Fire Hydrants (9)
  - Water Meter (7)

A3 scale: 1:2,000

Note:
Label numbers refer to survey IDs

Coordinate system: MGA94 Zone 52
Date: 23/02/2017 - Version: 2
Imagery: Digital Globe WV2 2013-2016
Northern Territory Town Camps

Civil Infrastructure

**Inspection Date** 1/12/2016 12:10:39 PM

<table>
<thead>
<tr>
<th>Insp ID: 1536</th>
<th>Group 3 - Tennant Creek, Elliott</th>
<th>Tingkarli</th>
</tr>
</thead>
</table>

- **Stormwater Infrastructure:** Culverts
- **Culvert Type:** RCP
- **Diameter (mm):** 450
- **Width (mm):**
- **Culvert Depth (mm):**
- **Culvert Length (m):**
- **Culvert Condition:** 3 - Good
- **Culvert Blockage (%):** 0
- **Culvert Comments:**
- **Culvert Head Wall:** No
- **Safety Grate:**
- **Headwall Blockage:**
- **Headwall Condition:**
- **Headwall Comment:**
- **End Wall:** Yes
- **End Wall condition:** 3 - Good
- **EW Comment:**

[Image of a dry landscape with a culvert entrance]
## Northern Territory Town Camps

### Civil Infrastructure

**Inspection Date**  1/12/2016 12:16:56 PM

<table>
<thead>
<tr>
<th>Insp ID: 1538</th>
<th>Group 3 - Tennant Creek, Elliott</th>
<th>Tingkarli</th>
</tr>
</thead>
</table>

- **Stormwater Infrastructure:** Culverts
- **Culvert Type:** RCP
- **Diameter (mm):** 375
- **Width (mm):**
- **Culvert Depth (mm):**
- **Culvert Length (m):**
- **Culvert Condition:** 3 - Good
- **Culvert Blockage (%):** 0
- **Culvert Comments:**
- **Culvert Head Wall:** No
- **Safety Grate:**
- **Headwall Blockage:**
- **Headwall Condition:**
- **Headwall Comment:**
- **End Wall:** Yes
- **End Wall condition:** 4 - Very Good
- **EW Comment:**

![Image of culvert with rocks around it](image)
Northern Territory Town Camps

Civil Infrastructure

**Inspection Date** 1/12/2016 12:27:25 PM

<table>
<thead>
<tr>
<th><strong>Insp ID:</strong></th>
<th>1544</th>
<th><strong>Group 3 - Tennant Creek, Elliott</strong></th>
<th><strong>Tingkarli</strong></th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th><strong>Stormwater Infrastructure:</strong></th>
<th>Culverts</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Culvert Type:</strong></td>
<td>RCP</td>
</tr>
<tr>
<td><strong>Diameter (mm):</strong></td>
<td>375</td>
</tr>
<tr>
<td><strong>Width (mm):</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Culvert Depth (mm):</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Culvert Length (m):</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Culvert Condition:</strong></td>
<td>3 - Good</td>
</tr>
<tr>
<td><strong>Culvert Blockage (%):</strong></td>
<td>20</td>
</tr>
<tr>
<td><strong>Culvert Comments:</strong></td>
<td>Blocked with rock</td>
</tr>
<tr>
<td><strong>Culvert Head Wall:</strong></td>
<td>No</td>
</tr>
<tr>
<td><strong>Safety Grate:</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Headwall Blockage:</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Headwall Condition:</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Headwall Comment:</strong></td>
<td></td>
</tr>
<tr>
<td><strong>End Wall:</strong></td>
<td>Yes</td>
</tr>
<tr>
<td><strong>End Wall condition:</strong></td>
<td>4 - Very Good</td>
</tr>
<tr>
<td><strong>EW Comment:</strong></td>
<td></td>
</tr>
</tbody>
</table>
Northern Territory Town Camps

Civil Infrastructure

**Inspection Date** 1/12/2016 10:51:57 AM

<table>
<thead>
<tr>
<th>Insp ID: 1485</th>
<th>Group 3 - Tennant Creek, Elliott</th>
<th>Tingkarli</th>
</tr>
</thead>
</table>

What Water Asset Are you Capturing: Fire Hydrants

- **Single or Double:** No
- **Sluice Valve:** No
- **Above or Below ground:** Below ground
- **FH Leakage:** No Access
- **Bollards around hydrant:** No
- **FH Condition:** 3 - Good
- **FH Comment:**

![Image of fire hydrant](image.png)
Northern Territory Town Camps
Civil Infrastructure

Inspection Date  1/12/2016 10:50:37 AM

Insp ID:  1486  Group 3 - Tennant Creek, Elliott  Tingkarli

What Water Asset Are you Capturing:  Fire Hydrants

Single or Double:  No
Sluice Valve:  No
Above or Below ground:  Below ground
FH Leakage:  No Access
Bollards around hydrant:  No
FH Condition:  3 - Good
FH Comment:

[Image of fire hydrant]
Northern Territory Town Camps

Civil Infrastructure

**Inspection Date**  1/12/2016 10:43:12 AM

| Insp ID: | 1491 | Group 3 - Tennant Creek, Elliott | Tingkarli |

What Water Asset Are you Capturing:  Fire Hydrants

Single or Double:  
Sluice Valve:  No
Above or Below ground:  Below ground
FH Leakage:  No Access
Bollards around hydrant:  No
FH Condition:  3 - Good
FH Comment:

![Image of fire hydrant]

![Image of fire hydrant]
What Water Asset Are you Capturing: **Fire Hydrants**

- Single or Double: No
- Sluice Valve: No
- Above or Below ground: Below ground
- FH Leakage: No Access
- Bollards around hydrant: No
- FH Condition: 3 - Good
- FH Comment: Paint starting to peel
Northern Territory Town Camps

Civil Infrastructure

**Inspection Date** 1/12/2016 11:33:10 AM

| Insp ID: 1515 | Group 3 - Tennant Creek, Elliott | Tingkarli |

What Water Asset Are you Capturing: Fire Hydrants

- **Single or Double:** No
- **Sluice Valve:** No
- **Above or Below ground:** Below ground
- **FH Leakage:** No Access
- **Bollards around hydrant:** No
- **FH Condition:** 3 - Good
- **FH Comment:** Covered in grass and weeds
**Northern Territory Town Camps**

**Civil Infrastructure**

**Inspection Date**  1/12/2016 11:41:58 AM

<table>
<thead>
<tr>
<th>Insp ID: 1518</th>
<th>Group 3 - Tennant Creek, Elliott</th>
<th>Tingkarli</th>
</tr>
</thead>
</table>

What Water Asset Are you Capturing: **Fire Hydrants**

- **Single or Double:** No
- **Sluice Valve:** No
- **Above or Below ground:** Below ground
- **FH Leakage:** No Access
- **Bollards around hydrant:** No
- **FH Condition:** 3 - Good

**FH Comment:**

[Image of a fire hydrant]
What Water Asset Are you Capturing: Fire Hydrants

Single or Double: No
Above or Below ground: Below ground
FH Leakage: No Access
Bollards around hydrant: No
FH Condition: 2 - Poor
FH Comment: Covered in grass/debris
Northern Territory Town Camps
Civil Infrastructure

Inspection Date 1/12/2016 12:18:59 PM

Insp ID: 1537  Group 3 - Tennant Creek, Elliott  Tingkarli

What Water Asset Are you Capturing: Fire Hydrants

Single or Double: No
Sluice Valve: No
Above or Below ground: Below ground
FH Leakage: No Access
Bollards around hydrant: No
FH Condition: 3 - Good
FH Comment:

Image found and displayed.
### Northern Territory Town Camps

#### Civil Infrastructure

**Inspection Date**: 1/12/2016 12:37:59 PM

<table>
<thead>
<tr>
<th>Insp ID</th>
<th>Group 3 - Tennant Creek, Elliott</th>
<th>Tingkarli</th>
</tr>
</thead>
<tbody>
<tr>
<td>1546</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**What Water Asset Are you Capturing**: Fire Hydrants

- **Single or Double**: No
- **Sluice Valve**: No
- **Above or Below ground**: Below ground
- **FH Leakage**: No
- **Bollards around hydrant**: No
- **FH Condition**: 3 - Good
- **FH Comment**: Erosion around lid
## Northern Territory Town Camps

### Civil Infrastructure

**Inspection Date** 1/12/2016 11:05:55 AM

<table>
<thead>
<tr>
<th>Insp ID:</th>
<th>Group 3 - Tennant Creek, Elliott</th>
<th>Tingkarli</th>
</tr>
</thead>
<tbody>
<tr>
<td>1501</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- **Road Name:** 681_2
- **What are you inspecting:** Foot Paths
- **Footpath Width (mm):** 1200
- **Footpath Type:** Concrete
- **Footpath Condition:** 3 - Good
- **Comment:** Broken down cars on footpath
- **General Comment:** Needs tidy up
Civil Infrastructure

Inspection Date  1/12/2016 11:21:07 AM

Insp ID: 1511  Group 3 - Tennant Creek, Elliott  Tingkarli

Road Name:  681_2
What are you inspecting:  Foot Paths
Footpath Width (mm):  1200
Footpath Type:  Concrete
Footpath Condition:  3 - Good
Comment:  Needs tidy up, covered in dirt

General Comment:
## Northern Territory Town Camps

### Civil Infrastructure

**Inspection Date**  1/12/2016 11:33:55 AM

<table>
<thead>
<tr>
<th>Insp ID:</th>
<th>Group 3 - Tennant Creek, Elliott</th>
<th>Tingkarli</th>
</tr>
</thead>
<tbody>
<tr>
<td>1514</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Road Name:**  Tinkarli Town Camp Internal

**What are you inspecting:**  Foot Paths

**Footpath Width (mm):**  1200

**Footpath Type:**

**Footpath Condition:**  4 - Very Good

**Comment:**

**General Comment:**

![Image of Tinkarli Town Camp Internal]
## Northern Territory Town Camps

### Civil Infrastructure

**Inspection Date**  1/12/2016 12:31:51 PM

<table>
<thead>
<tr>
<th>Insp ID: 1552</th>
<th>Group 3 - Tennant Creek, Elliott</th>
<th>Tingkarli</th>
</tr>
</thead>
</table>

- **Road Name:** 681_1
- **What are you inspecting:** Foot Paths
- **Footpath Width (mm):** 1200
- **Footpath Type:** Concrete
- **Footpath Condition:** 3 - Good
- **Comment:** Needs tidy up

**General Comment:**

![Image 1](image1.png)

![Image 2](image2.png)
### Northern Territory Town Camps

**Civil Infrastructure**

**Inspection Date**  1/12/2016 10:46:19 AM

<table>
<thead>
<tr>
<th>Insp ID:</th>
<th>1489</th>
<th>Group 3 - Tennant Creek, Elliott</th>
<th>Tingkarli</th>
</tr>
</thead>
</table>

- **What Sewerage Asset are you capturing:** Manholes
- **MH Cover Shape:** Rectangular
- **Manhole Cover Diam (mm):**
- **Manhole Length (mm):** 1000
- **Manhole Width (mm):** 700
- **Manhole Condition:** 3 - Good

**Notes on Lid:**

**Comments:**

![Manhole Image]
**Northern Territory Town Camps**

**Civil Infrastructure**

**Inspection Date** 1/12/2016 11:10:12 AM

| Insp ID: 1497 | Group 3 - Tennant Creek, Elliott | Tingkarli |

What Sewerage Asset are you capturing: **Manholes**

MH Cover Shape: **Rectangular**

Manhole Cover Diam (mm): 

Manhole Length (mm): 1000

Manhole Width (mm): 700

Manhole Condition: 3 - Good

Notes on Lid:

Comments:

![Image of a manhole cover](image-url)
## Northern Territory Town Camps

### Civil Infrastructure

**Inspection Date** 1/12/2016 11:03:22 AM

<table>
<thead>
<tr>
<th>Insp ID: 1503</th>
<th>Group 3 - Tennant Creek, Elliott</th>
<th>Tingkarli</th>
</tr>
</thead>
</table>

**What Sewerage Asset are you capturing:** Manholes

**MH Cover Shape:** Rectangular

**Manhole Cover Diam (mm):**

**Manhole Length (mm):** 1000

**Manhole Width (mm):** 700

**Manhole Condition:** 3 - Good

**Notes on Lid:**

**Comments:**

![Image found and displayed.](1272)
<table>
<thead>
<tr>
<th>What Sewerage Asset are you capturing:</th>
<th>Manholes</th>
</tr>
</thead>
<tbody>
<tr>
<td>MH Cover Shape:</td>
<td>Rectangular</td>
</tr>
<tr>
<td>Manhole Cover Diam (mm):</td>
<td></td>
</tr>
<tr>
<td>Manhole Length (mm):</td>
<td>1000</td>
</tr>
<tr>
<td>Manhole Width (mm):</td>
<td>700</td>
</tr>
<tr>
<td>Manhole Condition:</td>
<td>3 - Good</td>
</tr>
<tr>
<td>Notes on Lid:</td>
<td>EX101/6</td>
</tr>
<tr>
<td>Comments:</td>
<td>Covered in paint</td>
</tr>
<tr>
<td>What Sewerage Asset are you capturing:</td>
<td>Manholes</td>
</tr>
<tr>
<td>--------------------------------------</td>
<td>----------</td>
</tr>
<tr>
<td>MH Cover Shape:</td>
<td>Rectangular</td>
</tr>
<tr>
<td>Manhole Cover Diam (mm):</td>
<td></td>
</tr>
<tr>
<td>Manhole Length (mm):</td>
<td>1000</td>
</tr>
<tr>
<td>Manhole Width (mm):</td>
<td>700</td>
</tr>
<tr>
<td>Manhole Condition:</td>
<td>3 - Good</td>
</tr>
<tr>
<td>Notes on Lid:</td>
<td>EX101C/1</td>
</tr>
<tr>
<td>Comments:</td>
<td></td>
</tr>
</tbody>
</table>
What Sewerage Asset are you capturing: Manholes
MH Cover Shape: Rectangular
Manhole Cover Diam (mm):
Manhole Length (mm): 1000
Manhole Width (mm): 700
Manhole Condition: 3 - Good
Notes on Lid: EX101C/2
Comments:

[Image of a manhole cover]

Northern Territory Town Camps
Civil Infrastructure

Insp ID: 1521
Group 3 - Tennant Creek, Elliott
Tingkarli

Inspection Date 1/12/2016 11:39:28 AM
### Civil Infrastructure

**Inspection Date**: 1/12/2016 11:52:32 AM

<table>
<thead>
<tr>
<th>Insp ID</th>
<th>Group 3 - Tennant Creek, Elliott</th>
<th>Tingkarli</th>
</tr>
</thead>
<tbody>
<tr>
<td>1527</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

What Sewerage Asset are you capturing: **Manholes**

MH Cover Shape: **Rectangular**

Manhole Cover Diam (mm): **Unknown**

Manhole Length (mm): **1000**

Manhole Width (mm): **700**

Manhole Condition: **3 - Good**

Notes on Lid: **EX101/2**

Comments:

![Manhole Image](image.png)
### Northern Territory Town Camps

**Civil Infrastructure**

**Inspection Date** 1/12/2016 12:33:33 PM

| Insp ID: | 1549 | Group 3 - Tennant Creek, Elliott | Tingkarli |

What Sewerage Asset are you capturing: Manholes

MH Cover Shape: Rectangular

Manhole Cover Diam (mm):

Manhole Length (mm): 1000

Manhole Width (mm): 700

Manhole Condition: 3 - Good

Notes on Lid: 101B/1

Comments:

![Image of Manhole](image_url)
Northern Territory Town Camps

Civil Infrastructure

**Inspection Date** 1/12/2016 10:35:12 AM

<table>
<thead>
<tr>
<th>Insp ID:</th>
<th>Group 3 - Tennant Creek, Elliott</th>
<th>Tingkarli</th>
</tr>
</thead>
</table>

Road Name: 681_1

What are you inspecting: Pavements

Ch From (km): 0.05

Ch To (km): 0.35

Road Type: Sealed - spray seal

Section Width (m): 7.2

Road Condition: 3 - Good

General Comment:

Road Defects Section

<table>
<thead>
<tr>
<th>Defect Type</th>
<th>Defect QTY</th>
<th>Defect Condition</th>
<th>Defect Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bleeding</td>
<td>20</td>
<td>3 - Good</td>
<td></td>
</tr>
</tbody>
</table>

Kerbs Section

<table>
<thead>
<tr>
<th>Kerb Type</th>
<th>Kerb Cond</th>
<th>Kerb Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kerb and Gutter</td>
<td>3 - Good</td>
<td>Gutters filled with dirt</td>
</tr>
</tbody>
</table>

Shoulders Section

Linemarking Section

Obstruction Section
Northern Territory Town Camps

Civil Infrastructure

Inspection Date  1/12/2016 10:35:12 AM
Northern Territory Town Camps

Civil Infrastructure

Inspection Date  1/12/2016 10:35:12 AM
## Northern Territory Town Camps

### Civil Infrastructure

**Inspection Date**  1/12/2016 11:04:19 AM

<table>
<thead>
<tr>
<th>Insp ID</th>
<th>Group 3 - Tennant Creek, Elliott</th>
<th>Tingkarli</th>
</tr>
</thead>
</table>

- **Road Name**: 681_2
- **What are you inspecting**: Pavements
- **Ch From (km)**: 0.1
- **Ch To (km)**: 0.23
- **Road Type**: Sealed - spray seal
- **Section Width (m)**: 7.2
- **Road Condition**: 3 - Good

**General Comment**: Kerbs Section

**Defect Type** | **Defect QTY** | **Defect Condition** | **Defect Comments**
--- | --- | --- | ---
Bleeding | 30 | 3 - Good |  

**Kerbs Section**

- **Kerb Type**
- **Kerb Cond**
- **Kerb Comments**
  - Kerb and Gutter: 3 - Good (Gutters filled with dirt)

**Shoulders Section**

**Linemarking Section**

**Obstruction Section**
Northern Territory Town Camps

Civil Infrastructure

Inspection Date 1/12/2016 11:04:19 AM
Northern Territory Town Camps

Civil Infrastructure

Inspection Date  1/12/2016 11:04:19 AM
## Northern Territory Town Camps

### Civil Infrastructure

**Inspection Date** 1/12/2016 11:19:01 AM

<table>
<thead>
<tr>
<th>Insp ID:</th>
<th>1512</th>
<th>Group 3 - Tennant Creek, Elliott</th>
<th>Tingkarli</th>
</tr>
</thead>
</table>

- **Road Name:** 681_2
- **What are you inspecting:** Pavements
- **Ch From (km):** 0
- **Ch To (km):** 0.1
- **Road Type:** Sealed - spray seal
- **Section Width (m):** 7.2
- **Road Condition:** 3 - Good

### General Comment:

#### Road Defects Section

<table>
<thead>
<tr>
<th>Defect Type</th>
<th>Defect QTY</th>
<th>Defect Condition</th>
<th>Defect Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bleeding</td>
<td>30</td>
<td>3 - Good</td>
<td>30% of road</td>
</tr>
</tbody>
</table>

#### Kerbs Section

- **Kerb Type**
  - Kerb Cond
  - Kerb Comments
- **Kerb and Gutter**
  - Kerb Cond
  - Kerb Comments
  - Gutters filled with dirt

#### Shoulders Section

#### Linemarking Section

#### Obstruction Section
Northern Territory Town Camps

Civil Infrastructure

**Inspection Date**  1/12/2016 11:19:01 AM
Northern Territory Town Camps
Civil Infrastructure

Inspection Date  1/12/2016 11:19:01 AM
Northern Territory Town Camps

Civil Infrastructure

**Inspection Date** 1/12/2016 11:29:27 AM

<table>
<thead>
<tr>
<th>Insp ID: 1517</th>
<th>Group 3 - Tennant Creek, Elliott</th>
<th>Tingkarli</th>
</tr>
</thead>
</table>

**Road Name:** Tinkarli Town Camp Internal

**What are you inspecting:** Pavements

**Ch From (km):** 0.45

**Ch To (km):** 0.66

**Road Type:** Sealed - spray seal

**Section Width (m):** 7.2

**Road Condition:** 3 - Good

**General Comment:**

<table>
<thead>
<tr>
<th>Defect Type</th>
<th>Defect QTY</th>
<th>Defect Condition</th>
<th>Defect Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bleeding</td>
<td>30</td>
<td>3 - Good</td>
<td></td>
</tr>
</tbody>
</table>

**Kerbs Section**

- **Kerb Type:** Kerb Cond
- **Kerb and Gutter:** 3 - Good

**Shoelers Section**

**Linemarking Section**

**Obstruction Section**
Northern Territory Town Camps

Civil Infrastructure

Inspection Date  1/12/2016 11:29:27 AM
## Northern Territory Town Camps

### Civil Infrastructure

**Inspection Date**  
1/12/2016 12:28:45 PM

<table>
<thead>
<tr>
<th>Insp ID: 1543</th>
<th>Group 3 - Tennant Creek, Elliott</th>
<th>Tingkarli</th>
</tr>
</thead>
</table>

### Road Name: 681_1

#### What are you inspecting: Pavements

#### Ch From (km): 0

#### Ch To (km): 0.25

#### Road Type: Sealed - spray seal

#### Section Width (m): 7.2

#### Road Condition: 3 - Good

### General Comment:

#### Road Defects Section

<table>
<thead>
<tr>
<th>Defect Type</th>
<th>Defect QTY</th>
<th>Defect Condition</th>
<th>Defect Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bleeding</td>
<td>40</td>
<td>3 - Good</td>
<td>40 % of road</td>
</tr>
<tr>
<td>General Appearance</td>
<td>50</td>
<td>3 - Good</td>
<td>50% of road</td>
</tr>
</tbody>
</table>

#### Kerbs Section

<table>
<thead>
<tr>
<th>Kerb Type</th>
<th>Kerb Cond</th>
<th>Kerb Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kerb and Gutter</td>
<td>3 - Good</td>
<td></td>
</tr>
</tbody>
</table>

#### Shoulders Section

#### Linemarking Section

#### Obstruction Section
Northern Territory Town Camps

Civil Infrastructure

**Inspection Date**  1/12/2016 12:28:45 PM
Northern Territory Town Camps

Civil Infrastructure

Inspection Date 1/12/2016 12:28:45 PM
Northern Territory Town Camps

Civil Infrastructure

Inspection Date 1/12/2016 12:01:32 PM

Insp ID: 1529

Group 3 - Tennant Creek, Elliott

Tingkarli

What Sewerage Asset are you capturing: Pump Station

No of Pumps in Pump Station: 2

Cabinet Condition: 4 - Very Good

Cabinet Comment:

Alarm Light: No

Alarm Light Condition:

Overhead Light: Yes

Overhead Light Condition: 3 - Good

Light Comments:

Davit Crane Present: Yes

Davit Crane Capacity (kg): 

Davit Crane Condition:

Davit Crane Comments:

Fence TYPE: Standard Security Fence (3 Strands barbed)

PS Fence Height (m): 1.8

PS Gates Locked: Yes

PS Fence Condition: 3 - Good

Fence Comment:

Flow meter type:

Flow meter condition:

Flow meter comments:

Macerator Pump Make/Model:

Manufacturers Date:

Macerator Pump:

Macerator Pump Condition:

Macerator Pump Comments:

Outgoing Pipe Diameter (mm):

Valves:

Outgoing Pipe Comments:

Water Supply to pump station: Yes

Fire hose reel: No

Access cover locked: Yes

Safety grid beneath access cover: No Access
Northern Territory Town Camps

Civil Infrastructure

Inspection Date  1/12/2016 12:01:32 PM

Condition:
Cabinet Locked:               No Access
Cabinet Lock Condition:           
Hand rails around entrance:    Yes
Fixed or removable:             
Rail Condition:                
Safety Comments:               

<table>
<thead>
<tr>
<th>Pump Station Pumps  section</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pump Capacity</td>
</tr>
<tr>
<td>---------------</td>
</tr>
<tr>
<td>1294</td>
</tr>
</tbody>
</table>
Northern Territory Town Camps
Civil Infrastructure

Inspection Date   1/12/2016 12:01:32 PM
### Stormwater Infrastructure

- **Stormwater Infrastructure:** SEP
- **Number of Bays:** 2
- **On grade or sag pit:** Both sides of road: Left
- **Condition:** 3 - Good
- **Blockage (%):** 10

### Comment:

---

Image found and displayed.
<table>
<thead>
<tr>
<th>Stormwater Infrastructure:</th>
<th>SEP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Bays:</td>
<td>1</td>
</tr>
<tr>
<td>On grade or sag pit:</td>
<td></td>
</tr>
<tr>
<td>Both sides of road:</td>
<td>Right</td>
</tr>
<tr>
<td>Condition:</td>
<td>3 - Good</td>
</tr>
<tr>
<td>Blockage (%):</td>
<td>0</td>
</tr>
<tr>
<td>Comment:</td>
<td></td>
</tr>
</tbody>
</table>
## Northern Territory Town Camps

### Civil Infrastructure

**Inspection Date** 1/12/2016 10:42:17 AM

<table>
<thead>
<tr>
<th>Insp ID: 1492</th>
<th>Group 3 - Tennant Creek, Elliott</th>
<th>Tingkarli</th>
</tr>
</thead>
</table>

- **Stormwater Infrastructure:** SEP
- **Number of Bays:** 2
- **On grade or sag pit:**
- **Both sides of road:** Left
- **Condition:** 3 - Good
- **Blockage (%):** 10
- **Comment:**

![Image found and displayed.](image-url)
<table>
<thead>
<tr>
<th>Stormwater Infrastructure:</th>
<th>SEP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Bays:</td>
<td>3</td>
</tr>
<tr>
<td>On grade or sag pit:</td>
<td></td>
</tr>
<tr>
<td>Both sides of road:</td>
<td>Right</td>
</tr>
<tr>
<td>Condition:</td>
<td>3 - Good</td>
</tr>
<tr>
<td>Blockage (%):</td>
<td>40</td>
</tr>
<tr>
<td>Comment:</td>
<td></td>
</tr>
</tbody>
</table>
### Northern Territory Town Camps

#### Civil Infrastructure

**Inspection Date**: 1/12/2016 11:11:04 AM

<table>
<thead>
<tr>
<th>Insp ID</th>
<th>Group 3 - Tennant Creek, Elliott</th>
<th>Tingkarli</th>
</tr>
</thead>
<tbody>
<tr>
<td>1496</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- **Stormwater Infrastructure**: SEP
- **Number of Bays**: 1
- **On grade or sag pit**: Both
- **Both sides of road**: Both
- **Condition**: 3 - Good
- **Blockage (%)**: 40

**Comment**: [Image found and displayed.]

![Image](P:\GIS\Projects\253963_NT)
Northern Territory Town Camps

Civil Infrastructure

**Inspection Date**  1/12/2016 11:09:26 AM

<table>
<thead>
<tr>
<th>Insp ID: 1498</th>
<th>Group 3 - Tennant Creek, Elliott</th>
<th>Tingkarli</th>
</tr>
</thead>
</table>

- **Stormwater Infrastructure:** SEP
- **Number of Bays:** 2
- **On grade or sag pit:** Both sides of road: Right
- **Condition:** 3 - Good
- **Blockage (%):** 40
- **Comment:** P:\GIS\Projects\253963_NT Image found and displayed.

![Image of stormwater infrastructure](image-url)
Stormwater Infrastructure: SEP
Number of Bays: 1
On grade or sag pit: Left
Both sides of road: Left
Condition: 3 - Good
Blockage (%): 0
Comment: P:\GIS\Projects\253963_NT Image found and displayed.

Northern Territory Town Camps
Civil Infrastructure

Inspection Date 1/12/2016 11:08:31 AM

Insp ID: 1499 Group 3 - Tennant Creek, Elliott Tingkarli
## Civil Infrastructure

**Inspection Date**  1/12/2016 11:24:22 AM

<table>
<thead>
<tr>
<th>Insp ID: 1507</th>
<th>Group 3 - Tennant Creek, Elliott</th>
<th>Tingkarli</th>
</tr>
</thead>
</table>

- **Stormwater Infrastructure:** SEP
- **Number of Bays:** 1
- **On grade or sag pit:**
- **Both sides of road:** Right
- **Condition:** 3 - Good
- **Blockage (%):** 20
- **Comment:**

Image found and displayed.
Northern Territory Town Camps

Civil Infrastructure

Inspection Date  1/12/2016 11:22:58 AM

<table>
<thead>
<tr>
<th>Insp ID: 1509</th>
<th>Group 3 - Tennant Creek, Elliott</th>
<th>Tingkarli</th>
</tr>
</thead>
</table>

Stormwater Infrastructure: SEP
Number of Bays: 2
On grade or sag pit:
Both sides of road: Left
Condition: 3 - Good
Blockage (%): 90
Comment:

Image found and displayed.
## Northern Territory Town Camps

### Civil Infrastructure

**Inspection Date**: 1/12/2016 11:22:04 AM

<table>
<thead>
<tr>
<th>Insp ID: 1510</th>
<th>Group 3 - Tennant Creek, Elliott</th>
<th>Tingkarli</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stormwater Infrastructure:</td>
<td>SEP</td>
<td></td>
</tr>
<tr>
<td>Number of Bays:</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>On grade or sag pit:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Both sides of road:</td>
<td>Right</td>
<td></td>
</tr>
<tr>
<td>Condition:</td>
<td>3 - Good</td>
<td></td>
</tr>
<tr>
<td>Blockage (%):</td>
<td>40</td>
<td></td>
</tr>
<tr>
<td>Comment:</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## Northern Territory Town Camps

### Civil Infrastructure

**Inspection Date** 1/12/2016 11:41:11 AM

<table>
<thead>
<tr>
<th>Insp ID: 1519</th>
<th>Group 3 - Tennant Creek, Elliott</th>
<th>Tingkarli</th>
</tr>
</thead>
</table>

Stormwater Infrastructure: SEP

Number of Bays: 2

On grade or sag pit: 

Both sides of road: Right

Condition: 3 - Good

Blockage (%): 20

Comment:

[Image of a manhole cover with water pooled around it]
Civil Infrastructure

Inspection Date 1/12/2016 11:40:20 AM

Insp ID: 1520

Group 3 - Tennant Creek, Elliott

Tingkarli

Stormwater Infrastructure: SEP

Number of Bays: 1

On grade or sag pit:

Both sides of road: Left

Condition: 2 - Poor

Blockage (%): 0

Comment: Broken lid

Image found and displayed.
Northern Territory Town Camps

Civil Infrastructure

Inspection Date 1/12/2016 11:38:33 AM

Insp ID: 1522  Group 3 - Tennant Creek, Elliott  Tingkarli

Stormwater Infrastructure: SEP
Number of Bays: 2
On grade or sag pit:
Both sides of road: Left
Condition: 3 - Good
Blockage (%): 10
Comment:
### Stormwater Infrastructure: SEP

- **Number of Bays:** 1
- **On grade or sag pit:** Both sides of road: Right
- **Condition:** 3 - Good
- **Blockage (%):** 0

**Comment:**

![Image of stormwater infrastructure](image)
## Northern Territory Town Camps

### Civil Infrastructure

**Inspection Date** 1/12/2016 11:45:24 AM

<table>
<thead>
<tr>
<th>Insp ID:</th>
<th>Group 3 - Tennant Creek, Elliott</th>
<th>Tingkarli</th>
</tr>
</thead>
</table>

- **Stormwater Infrastructure:** SEP
- **Number of Bays:** 2
- **On grade or sag pit:** Left
- **Both sides of road:** Left
- **Condition:** 3 - Good
- **Blockage (%):** 10
- **Comment:**

![Image found and displayed.](image.png)
### Northern Territory Town Camps

#### Civil Infrastructure

**Inspection Date**  
1/12/2016 11:54:09 AM

<table>
<thead>
<tr>
<th>Insp ID: 1528</th>
<th>Group 3 - Tennant Creek, Elliott</th>
<th>Tingkarli</th>
</tr>
</thead>
</table>

- **Stormwater Infrastructure:** SEP
- **Number of Bays:** 1
- **On grade or sag pit:**
- **Both sides of road:** Right
- **Condition:** 3 - Good
- **Blockage (%):** 10

**Comment:**

![Image of Stormwater Infrastructure](image_url)
# Northern Territory Town Camps

## Civil Infrastructure

**Inspection Date** 1/12/2016 12:00:50 PM

<table>
<thead>
<tr>
<th>Insp ID: 1530</th>
<th>Group 3 - Tennant Creek, Elliott</th>
<th>Tingkarli</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stormwater Infrastructure:</td>
<td>SEP</td>
<td></td>
</tr>
<tr>
<td>Number of Bays:</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>On grade or sag pit:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Both sides of road:</td>
<td>Left</td>
<td></td>
</tr>
<tr>
<td>Condition:</td>
<td>3 - Good</td>
<td></td>
</tr>
<tr>
<td>Blockage (%):</td>
<td>70</td>
<td></td>
</tr>
<tr>
<td>Comment:</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

[Image of stormwater infrastructure](image-url)
## Northern Territory Town Camps

### Civil Infrastructure

**Inspection Date**  1/12/2016 12:00:06 PM

<table>
<thead>
<tr>
<th>Insp ID: 1531</th>
<th>Group 3 - Tennant Creek, Elliott</th>
<th>Tingkarli</th>
</tr>
</thead>
</table>

- **Stormwater Infrastructure:** SEP
- **Number of Bays:** 2
- **On grade or sag pit:**
- **Both sides of road:** Right
- **Condition:** 3 - Good
- **Blockage (%):** 50
- **Comment:** P:\GIS\Projects\253963_NT Image found and displayed.
## Northern Territory Town Camps

### Civil Infrastructure

**Inspection Date** 1/12/2016 12:06:18 PM

<table>
<thead>
<tr>
<th>Insp ID:</th>
<th>Group 3 - Tennant Creek, Elliott</th>
<th>Tingkarli</th>
</tr>
</thead>
</table>

- **Stormwater Infrastructure:** SEP
- **Number of Bays:** 2
- **On grade or sag pit:**
- **Both sides of road:** Right
- **Condition:** 3 - Good
- **Blockage (%):** 50
- **Comment:**

![Image found and displayed.](P:\GIS\Projects\253963_NT)
### Northern Territory Town Camps

#### Civil Infrastructure

**Inspection Date** 1/12/2016 12:12:40 PM

<table>
<thead>
<tr>
<th>Insp ID: 1540</th>
<th>Group 3 - Tennant Creek, Elliott</th>
<th>Tingkarli</th>
</tr>
</thead>
</table>

- **Stormwater Infrastructure:** SEP
- **Number of Bays:** 2
- **On grade or sag pit:** Both sides of road: Right
- **Condition:** 4 - Very Good
- **Blockage (%):** 10
- **Comment:** P:\GIS\Projects\253963_NT Image found and displayed.
## Civil Infrastructure

**Inspection Date** 1/12/2016 12:23:08 PM

<table>
<thead>
<tr>
<th>Insp ID:</th>
<th>Group 3 - Tennant Creek, Elliott</th>
<th>Tingkarli</th>
</tr>
</thead>
<tbody>
<tr>
<td>1541</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- **Stormwater Infrastructure:** SEP
- **Number of Bays:** 1
- **On grade or sag pit:**
- **Both sides of road:** Right
- **Condition:** 2 - Poor
- **Blockage (%):** 30

**Comment:**

![Image](image-url)
### Stormwater Infrastructure

<table>
<thead>
<tr>
<th><strong>Inspector ID:</strong></th>
<th><strong>Group:</strong> Group 3 - Tennant Creek, Elliott</th>
<th><strong>Tingkarli</strong></th>
</tr>
</thead>
</table>

- **Stormwater Infrastructure:** SEP
- **Number of Bays:** 2
- **On grade or sag pit:** Right
- **Both sides of road:** Right
- **Condition:** 3 - Good
- **Blockage (%):** 10
- **Comment:** P:\GIS\Projects\253963_NT Image found and displayed.
## Northern Territory Town Camps

### Civil Infrastructure

**Inspection Date**  1/12/2016 12:36:09 PM

<table>
<thead>
<tr>
<th>Insp ID: 1548</th>
<th>Group 3 - Tennant Creek, Elliott</th>
<th>Tingkarli</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Stormwater Infrastructure:</strong></td>
<td>SEP</td>
<td></td>
</tr>
<tr>
<td><strong>Number of Bays:</strong></td>
<td>2</td>
<td></td>
</tr>
<tr>
<td><strong>On grade or sag pit:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Both sides of road:</strong></td>
<td>Left</td>
<td></td>
</tr>
<tr>
<td><strong>Condition:</strong></td>
<td>3 - Good</td>
<td></td>
</tr>
<tr>
<td><strong>Blockage (%):</strong></td>
<td>20</td>
<td></td>
</tr>
</tbody>
</table>

**Comment:**

![Image of stormwater infrastructure](image_url)
Civil Infrastructure

Northern Territory Town Camps

**Inspection Date**  1/12/2016 12:33:51 PM

<table>
<thead>
<tr>
<th>Insp ID: 1550</th>
<th>Group 3 - Tennant Creek, Elliott</th>
<th>Tingkarli</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stormwater Infrastructure:</td>
<td>SEP</td>
<td></td>
</tr>
<tr>
<td>Number of Bays:</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>On grade or sag pit:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Both sides of road:</td>
<td>Right</td>
<td></td>
</tr>
<tr>
<td>Condition:</td>
<td>4 - Very Good</td>
<td></td>
</tr>
<tr>
<td>Blockage (%):</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Comment:</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Image found and displayed.
## Northern Territory Town Camps

### Civil Infrastructure

**Inspection Date** 1/12/2016 11:26:28 AM

| Insp ID: 1506 | Group 3 - Tennant Creek, Elliott | Tingkarli |

- **Road Name:** Tinkarli Town Camp Internal
- **What are you inspecting:** Signs
- **Type of Sign:** Street name
- **Sign Condition:** 1 - Very Poor
- **Sign Comment:** No sign
- **General Comment:**

![Image of street](image-url)
Road Name: 681_2

What are you inspecting: Signs

Type of Sign: Give Way

Sign Condition: 2 - Poor

Sign Comment: Bent sign, chipped paint

General Comment:
Northern Territory Town Camps

Civil Infrastructure

Inspection Date 1/12/2016 11:45:57 AM

Insp ID: 1524

Group 3 - Tennant Creek, Elliott

Tingkarli

Road Name: 681_1

What are you inspecting: Signs

Type of Sign: Street name

Sign Condition: 1 - Very Poor

Sign Comment: No sign

General Comment:

Image found and displayed.
## Northern Territory Town Camps

### Civil Infrastructure

**Inspection Date** 1/12/2016 11:58:18 AM

<table>
<thead>
<tr>
<th>Insp ID: 1532</th>
<th>Group 3 - Tennant Creek, Elliott</th>
<th>Tingkarli</th>
</tr>
</thead>
</table>

- **Road Name:** 681_1
- **What are you inspecting:** Signs
- **Type of Sign:** Give Way
- **Sign Condition:** 3 - Good
- **Sign Comment:**

**General Comment:**

![Image of Give Way sign](Image)
## Stormwater Infrastructure:

**Swales**

### Type of lining:
- **Natural Grasses**

### Are dimensions uniform along drain:
- **No**

### Base Width (m):
- **3**

### Overall Width (m):
- **12**

### Swale Depth (m):
- **2.5**

### Length of Batter 1 (m):
- **3**

### Length of Batter 2 (m):
- **2 - Good**

### Swale Ponding:
- **No**

### Drain flooded at time of inspection:
- **No**

### Swale Comments:
- **Approximate dimensions**
**Northern Territory Town Camps**

**Civil Infrastructure**

**Inspection Date**  1/12/2016 12:15:34 PM

<table>
<thead>
<tr>
<th>Insp ID: 1539</th>
<th>Group 3 - Tennant Creek, Elliott</th>
<th>Tingkarli</th>
</tr>
</thead>
</table>

- **Stormwater Infrastructure:** Swales
- **Type of lining:** No Lining
- **Are dimensions uniform along drain:**
  - **Base Width (m):** 3
  - **Overall Width (m):** 8
  - **Swale Depth (m):** 1.5
- **Length of Batter 1 (m):**
- **Length of Batter 2 (m):**
- **Swale Condition:** 3 - Good
- **Swale Ponding:** No
- **Drain flooded at time of inspection:** No
- **Swale Comments:** Approximate Dimensions
## Northern Territory Town Camps

### Civil Infrastructure

**Inspection Date**  1/12/2016 12:26:25 PM

<table>
<thead>
<tr>
<th>Insp ID: 1545</th>
<th>Group 3 - Tennant Creek, Elliott</th>
<th>Tingkarli</th>
</tr>
</thead>
</table>

**Stormwater Infrastructure:** Swales

**Type of lining:** No Lining

**Are dimensions uniform along drain:** No

**Base Width (m):** 2

**Overall Width (m):** 8

**Swale Depth (m):** 1.5

**Length of Batter 1 (m):**

**Length of Batter 2 (m):**

**Swale Condition:** 3 - Good

**Swale Ponding:** No

**Drain flooded at time of inspection:** No

**Swale Comments:** Approximate dimensions
Northern Territory Town Camps

Civil Infrastructure

Inspection Date  1/12/2016 10:45:13 AM

Insp ID:  1490  Group 3 - Tennant Creek, Elliott  Tingkarli

What Water Asset Are you Capturing:  Water Meter

Water Meter Type:  Lot

Bulk Water Meter Size (mm):

Bulk Water Meter Condition:

Bulk Water Meter Comment:

Lot Number:  18

Lot Water Meter Size:  25

Lot Water Meter Condition:  3 - Good

Lot Water Meter Comment:
Civil Infrastructure

Northern Territory Town Camps

Insp ID: 1495

Group 3 - Tennant Creek, Elliott

Tingkarli

Screen capture:

What Water Asset Are you Capturing: Water Meter

Water Meter Type: Lot

Bulk Water Meter Size (mm): 25

Bulk Water Meter Condition: 3 - Good

Bulk Water Meter Comment: No tap handles

Lot Water Meter Size: 25

Lot Water Meter Condition: 3 - Good

Lot Water Meter Comment: No tap handles
Northern Territory Town Camps

Civil Infrastructure

Inspection Date 1/12/2016 10:55:59 AM

Insp ID: 1505  Group 3 - Tennant Creek, Elliott  Tingkarli

What Water Asset Are you Capturing: Water Meter

Water Meter Type: Lot

Bulk Water Meter Size (mm):

Bulk Water Meter Condition:

Bulk Water Meter Comment:

Lot Number:

Lot Water Meter Size: 25

Lot Water Meter Condition: 1 - Very Poor

Lot Water Meter Comment: No meter, not connected
Northern Territory Town Camps

Civil Infrastructure

Inspection Date 1/12/2016 11:35:11 AM

Insp ID: 1513  Group 3 - Tennant Creek, Elliott  Tingkarli

What Water Asset Are you Capturing: Water Meter

Water Meter Type: Lot

Bulk Water Meter Size (mm):

Bulk Water Meter Condition:

Bulk Water Meter Comment:

Lot Number:

Lot Water Meter Size: 25

Lot Water Meter Condition: 3 - Good

Lot Water Meter Comment: Two meters in one lot
Civil Infrastructure

Northern Territory Town Camps

Inspection Date  1/12/2016 11:46:50 AM

Insp ID:  1525  Group 3 - Tennant Creek, Elliott  Tingkarli

What Water Asset Are you Capturing:  Water Meter

Water Meter Type:  Lot

Bulk Water Meter Size (mm):

Bulk Water Meter Condition:

Bulk Water Meter Comment:

Lot Number:

Lot Water Meter Size:  25

Lot Water Meter Condition:  3 - Good

Lot Water Meter Comment:  No tap handles

Image found and displayed.
What Water Asset Are you Capturing: Water Meter

Water Meter Type: Lot

Bulk Water Meter Size (mm):

Bulk Water Meter Condition:

Bulk Water Meter Comment:

Lot Number: 11
Lot Water Meter Size: 25
Lot Water Meter Condition: 2 - Poor
Lot Water Meter Comment: Leaking
### Northern Territory Town Camps

**Civil Infrastructure**

**Inspection Date**  1/12/2016 12:32:37 PM

<table>
<thead>
<tr>
<th>Insp ID: 1551</th>
<th>Group 3 - Tennant Creek, Elliott</th>
<th>Tingkarli</th>
</tr>
</thead>
</table>

**What Water Asset Are you Capturing:** Water Meter

**Water Meter Type:** Lot

**Bulk Water Meter Size (mm):** 25

**Bulk Water Meter Condition:** 3 - Good

**Lot Number:**

**Lot Water Meter Size:** 25

**Lot Water Meter Condition:** 3 - Good

**Lot Water Meter Comment:**
Electrical inspection reports
Northern Territory Town Camps

Electrical Infrastructure

Inspection Date  1/12/2016 11:23:05 AM

<table>
<thead>
<tr>
<th>Insp ID: 825</th>
<th>Group 3 - Tennant Creek, Elliott</th>
<th>Tingkarli</th>
</tr>
</thead>
</table>

What Comms Category are you capturing: Distribution
What is distribution method to households: Underground

Is it Shared with PWC:

Is there Anti-climb barrier provided for this pole:

What is Pole construction type:

Is street light fitted:

Is there concrete collar around the base of pole:

What is the condition of tap off to house:

What is the condition of pole:

How many Lots are connected to this pole:

Is there access to Pits to take a photo: No

What is Pit Condition: 3

Underground Comments:

![Image](P:\GIS\Projects\253963_NT) Image found and displayed.

![Image](P:\GIS\Projects\253963_NT) Image found and displayed.
**Northern Territory Town Camps**

**Electrical Infrastructure**

**Inspection Date** 1/12/2016 11:18:59 AM

<table>
<thead>
<tr>
<th>Insp ID</th>
<th>Group 3 - Tennant Creek, Elliott</th>
<th>Tingkarli</th>
</tr>
</thead>
<tbody>
<tr>
<td>828</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

What Comms Category are you capturing: Distribution  
What is distribution method to households: Underground

Is it Shared with PWC:

Is there Anti-climb barrier provided for this pole:

What is Pole construction type:

Is street light fitted:

Is there concrete collar around the base of pole:

What is the condition of tap off to house:

What is the condition of pole:

How many Lots are connected to this pole:

Is there access to Pits to take a photo: No

What is Pit Condition: 2

Underground Comments:

![Image of underground electrical infrastructure](image)
Northern Territory Town Camps

Communications Infrastructure

**Inspection Date**  1/12/2016 12:13:00 PM

| Insp ID: 811 | Group 3 - Tennant Creek, Elliott | Tingkarli |

What Comms Category are you capturing:  General

Telstra Comms Drawing Available:  No

Facility upgrade not in drawings:  No

Which telecoms carriers are present in the town camp:  Telstra

How many Communications Pit(s) are allocated in this town camp:
Northern Territory Town Camps
Communications Infrastructure

**Inspection Date** 1/12/2016 11:53:31 AM

<table>
<thead>
<tr>
<th>Insp ID: 816</th>
<th>Group 3 - Tennant Creek, Elliott</th>
<th>Tingkarli</th>
</tr>
</thead>
</table>

What Comms Category are you capturing: General
Telstra Comms Drawing Available: No
Facility upgrade not in drawings: No
Which telecoms carriers are present in the town camp: Telstra
How many Communications Pit(s) are allocated in this town camp:
## Electrical Infrastructure

### Northern Territory Town Camps

**Inspection Date** 7/12/2016 8:57:24 AM

| Insp ID: 3447 | Group 3 - Tennant Creek, Elliott | Tingkarli |

**What Category are you capturing:** Electrical Meters

- **Meter Type:** Prepaid
- **Meter Switchboard Cond:**
- **Meter Condition:** 3
- **Meter Comment:** Condition of CB not assessed.

**Comments:**

![Image of electrical meter](image-url)
**Northern Territory Town Camps**

**Electrical Infrastructure**

**Inspection Date**  5/12/2016  1:50:58 PM

Insp ID:  3534  
Group 3 - Tennant Creek, Elliott  
Tingkarli

What Category are you capturing:  Electrical Meters

Meter Type:  Electrical

Meter Switchboard Cond:

Meter Condition:

Meter Comment:  Indoor SB, Cond 3

Comments:
Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 5/12/2016 1:34:14 PM

Insp ID: 3536  Group 3 - Tennant Creek, Elliott  Tingkarli

What Category are you capturing: Electrical Meters

Meter Type: Prepaid

Meter Switchboard Cond: 3

Meter Condition: 3

Meter Comment: Indoor SB, Cond 3

Comments:
## Electrical Infrastructure

### Northern Territory Town Camps

**Inspection Date** 5/12/2016 1:22:24 PM

<table>
<thead>
<tr>
<th>Insp ID:</th>
<th>3538</th>
<th>Group 3 - Tennant Creek, Elliott</th>
<th>Tingkarli</th>
</tr>
</thead>
</table>

**What Category are you capturing:** Electrical Meters

**Meter Type:** Prepaid

**Meter Switchboard Cond:**

**Meter Condition:** 3

**Meter Comment:** Condition of CB not assessed. Indoor SB, Cond 3

**Comments:**

![Image 1](P:\GIS\Projects\253963_NT Image found and displayed.)

![Image 2](P:\GIS\Projects\253963_NT Image found and displayed.)
### Electrical Infrastructure

**Inspection Date** 5/12/2016 1:05:10 PM

<table>
<thead>
<tr>
<th>Insp ID</th>
<th>Group 3 - Tennant Creek, Elliott</th>
<th>Tingkarli</th>
</tr>
</thead>
<tbody>
<tr>
<td>3541</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**What Category are you capturing:** Electrical Meters

- **Meter Type:** Prepaid
- **Meter Switchboard Cond:**
- **Meter Condition:** 3
- **Meter Comment:** Condition of CB not assessed. Indoor SB, Cond 3

**Comments:**

![Image of Electrical Meters](image1.png)

![Image of Electrical Meters](image2.png)
Inspection Date: 5/12/2016 2:11:50 PM

Insp ID: 3547

Group 3 - Tennant Creek, Elliott Tingkarli

What Category are you capturing: Electrical Meters

Meter Type: Prepaid

Meter Switchboard Cond: 3

Meter Condition: 3

Meter Comment: Indoor SB, Cond 3

Comments:
Northern Territory Town Camps

Electrical Infrastructure

**Inspection Date**  5/12/2016 1:51:33 PM

<table>
<thead>
<tr>
<th>Insp ID:</th>
<th>3548</th>
<th>Group 3 - Tennant Creek, Elliott</th>
<th>Tingkarli</th>
</tr>
</thead>
</table>

What Category are you capturing: **Electrical Meters**

- **Meter Type:** Electrical
- **Meter Switchboard Cond:**
- **Meter Condition:**
- **Meter Comment:** Indoor SB, Cond 3
- **Comments:**
## Northern Territory Town Camps

### Electrical Infrastructure

**Inspection Date** 5/12/2016 1:31:55 PM

<table>
<thead>
<tr>
<th>Insp ID:</th>
<th>3550</th>
<th>Group 3 - Tennant Creek, Elliott</th>
<th>Tingkarli</th>
</tr>
</thead>
</table>

**What Category are you capturing:** Electrical Meters

- **Meter Type:** Prepaid
- **Meter Switchboard Cond:** 3
- **Meter Condition:** 3
- **Meter Comment:** Indoor SB, Cond 3

**Comments:**
What Category are you capturing: Electrical Meters

Meter Type: Prepaid

Meter Switchboard Cond: 3

Meter Condition: 3

Meter Comment: Indoor SB, Cond 3

Comments:
Northern Territory Town Camps

Electrical Infrastructure

Inspection Date  9/01/2017 11:03:31 AM

Insp ID:  3563  Group 3 - Tennant Creek, Elliott  Tingkarli

What Category are you capturing:  Electrical Meters

Meter Type:  Prepaid

Meter Switchboard Cond:

Meter Condition:  3

Meter Comment:  Condition of CB not assessed. Indoor SB, Cond 3

Comments:
Northern Territory Town Camps

Electrical Infrastructure

**Inspection Date**  9/01/2017 10:38:46 AM

<table>
<thead>
<tr>
<th>Insp ID:</th>
<th>3579</th>
<th>Group 3 - Tennant Creek, Elliott</th>
<th>Tingkarli</th>
</tr>
</thead>
</table>

What Category are you capturing: **Electrical Meters**

- **Meter Type:** Prepaid
- **Meter Switchboard Cond:** 2
- **Meter Condition:** 3
- **Meter Comment:** Condition of CB not assessed. Indoor SB, Cond 3

**Comments:**
## Northern Territory Town Camps

### Electrical Infrastructure

**Inspection Date** 1/12/2016 1:00:49 PM

<table>
<thead>
<tr>
<th>Insp ID</th>
<th>Group 3 - Tennant Creek, Elliott</th>
<th>Tingkarli</th>
</tr>
</thead>
</table>

What Category are you capturing: Overhead Poles

<table>
<thead>
<tr>
<th>What is Pole Material type:</th>
<th>Steel</th>
</tr>
</thead>
<tbody>
<tr>
<td>What is the condition of pole:</td>
<td>3</td>
</tr>
<tr>
<td>How is the pole planted:</td>
<td>Concrete</td>
</tr>
<tr>
<td>What is the Condition of plant:</td>
<td>3</td>
</tr>
<tr>
<td>Is street light fitted:</td>
<td>Yes</td>
</tr>
</tbody>
</table>

**Street Light Power Supply:**

<table>
<thead>
<tr>
<th>Street Light Type</th>
<th>Unknown</th>
</tr>
</thead>
<tbody>
<tr>
<td>Street Light Watts</td>
<td></td>
</tr>
<tr>
<td>Street Light Condition</td>
<td>3</td>
</tr>
<tr>
<td>Street Light Height</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>What is the type of service:</th>
<th>Three</th>
</tr>
</thead>
<tbody>
<tr>
<td>What is the HV voltage level:</td>
<td>400</td>
</tr>
<tr>
<td>What is the arrangement of connected cables:</td>
<td>Twisted</td>
</tr>
<tr>
<td>Are there isolators on the pole:</td>
<td>No</td>
</tr>
<tr>
<td>What is the Condition:</td>
<td>3</td>
</tr>
<tr>
<td>How many Lots are connected to this pole:</td>
<td>1</td>
</tr>
</tbody>
</table>

**Overhead Pole Comments:**

- Street Light Power Supply:
  - Street Light Type: Unknown
  - Street Light Watts: 
  - Street Light Condition: 3
  - Street Light Height: 

- What is the type of service: Three
- What is the HV voltage level: 400
- What is the arrangement of connected cables: Twisted
- Are there isolators on the pole: No
- What is the Condition: 3
- How many Lots are connected to this pole: 1
Northern Territory Town Camps

Electrical Infrastructure

**Inspection Date** 1/12/2016 1:00:49 PM
Northern Territory Town Camps

Electrical Infrastructure

Inspection Date  1/12/2016 1:00:49 PM
## Northern Territory Town Camps
### Electrical Infrastructure

**Insp ID:** 803  
**Group 3 - Tennant Creek, Elliott**  
**Tingkarli**

<table>
<thead>
<tr>
<th>What Category are you capturing:</th>
<th>Overhead Poles</th>
</tr>
</thead>
<tbody>
<tr>
<td>What is Pole Material type:</td>
<td>Welded</td>
</tr>
<tr>
<td>What is the condition of pole:</td>
<td>3</td>
</tr>
<tr>
<td>How is the pole planted:</td>
<td>Concrete</td>
</tr>
<tr>
<td>What is the Condition of plant:</td>
<td>3</td>
</tr>
<tr>
<td>Is street light fitted:</td>
<td>Yes</td>
</tr>
</tbody>
</table>

**Street Light Power Supply:**

<table>
<thead>
<tr>
<th>Street Light Type</th>
<th>S70D 11</th>
</tr>
</thead>
<tbody>
<tr>
<td>Street Light Watts</td>
<td>70</td>
</tr>
<tr>
<td>Street Light Condition</td>
<td>3</td>
</tr>
</tbody>
</table>

**Street Light Height**

<table>
<thead>
<tr>
<th>What is the type of service:</th>
<th>Three</th>
</tr>
</thead>
<tbody>
<tr>
<td>What is the HV voltage level:</td>
<td>400</td>
</tr>
<tr>
<td>What is the arrangement of connected cables:</td>
<td>Twisted</td>
</tr>
<tr>
<td>Are there isolators on the pole:</td>
<td>No</td>
</tr>
<tr>
<td>What is the Condition:</td>
<td>3</td>
</tr>
</tbody>
</table>

**How many Lots are connected to this pole:** 1

**Overhead Pole Comments:** Surface rusted
Northern Territory Town Camps

Electrical Infrastructure

Inspection Date  1/12/2016 12:48:51 PM
Northern Territory Town Camps

Electrical Infrastructure

Inspection Date  1/12/2016 12:46:20 PM

Insp ID:  804                  Group 3 - Tennant Creek, Elliott  Tingkarli

What Category are you capturing: Overhead Poles

What is Pole Material type: Welded
What is the condition of pole: 3
How is the pole planted: Concrete
What is the Condition of plant: 3
Is street light fitted: Yes

Street Light Power Supply:
Street Light Type  S70D 13
Street Light Watts  70
Street Light Condition  3

Street Light Height
What is the type of service: Three
What is the HV voltage level: 400
What is the arrangement of connected cables: Twisted
Are there isolators on the pole: No
What is the Condition: 3
How many Lots are connected to this pole: 1

Overhead Pole Comments: Surface rusted
Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 1/12/2016 12:46:20 PM
## Northern Territory Town Camps

### Electrical Infrastructure

**Inspection Date** 1/12/2016 12:43:37 PM

<table>
<thead>
<tr>
<th>Insp ID:</th>
<th>805</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group 3 - Tennant Creek, Elliott</td>
<td>Tingkarli</td>
</tr>
</tbody>
</table>

**What Category are you capturing:** Overhead Poles

- **What is Pole Material type:** Welded
- **What is the condition of pole:** 3
- **How is the pole planted:** Concrete
- **What is the Condition of plant:** 3
- **Is street light fitted:** Yes

**Street Light Power Supply:**

- **Street Light Type:** S70D 10
- **Street Light Watts:** 70
- **Street Light Condition:** 3

**Street Light Height**

- **What is the type of service:** Three
- **What is the HV voltage level:** 400
- **What is the arrangement of connected cables:** Twisted
- **Are there isolators on the pole:** No
- **What is the Condition:** 3
- **How many Lots are connected to this pole:** 0

**Overhead Pole Comments:** Surface rusted
Northern Territory Town Camps

Electrical Infrastructure

Inspection Date  1/12/2016 12:43:37 PM
## Northern Territory Town Camps

### Electrical Infrastructure

**Inspection Date**: 1/12/2016 12:33:57 PM

<table>
<thead>
<tr>
<th>Insp ID</th>
<th>Group 3 - Tennant Creek, Elliott</th>
<th>Tingkarli</th>
</tr>
</thead>
</table>

**What Category are you capturing**: Overhead Poles

- **What is Pole Material type**: Welded
- **What is the condition of pole**: 3
- **How is the pole planted**: Concrete
- **What is the Condition of plant**: 3
- **Is street light fitted**: Yes

**Street Light Power Supply**

- **Street Light Type**: S70D 09
- **Street Light Watts**: 70
- **Street Light Condition**: 2
- **Street Light Height**: 1360

**What is the type of service**: Three

- **What is the HV voltage level**: 400
- **What is the arrangement of connected cables**: Twisted
- **Are there isolators on the pole**: No

**What is the Condition**: 3

**How many Lots are connected to this pole**: 0

**Overhead Pole Comments**: Surface rusted
Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 1/12/2016 12:33:57 PM
### Electrical Infrastructure

**Northern Territory Town Camps**

**Inspection Date** 1/12/2016 12:30:24 PM

<table>
<thead>
<tr>
<th>Insp ID: 807</th>
<th>Group 3 - Tennant Creek, Elliott</th>
<th>Tingkarli</th>
</tr>
</thead>
</table>

**What Category are you capturing:** Overhead Poles

- **What is Pole Material type:** Welded
- **What is the condition of pole:** 3
- **How is the pole planted:** Concrete
- **What is the Condition of plant:** 3
- **Is street light fitted:** Yes

**Street Light Power Supply:**

- **Street Light Type:** M125D 10
- **Street Light Watts:** 125
- **Street Light Condition:** 3

**Street Light Height**

- **What is the type of service:** Three
- **What is the HV voltage level:** 400
- **What is the arrangement of connected cables:** Twisted
- **Are there isolators on the pole:** No
- **What is the Condition:** 3
- **How many Lots are connected to this pole:** 0

**Overhead Pole Comments:** Surface rusted
Northern Territory Town Camps

Electrical Infrastructure

Inspection Date  1/12/2016 12:30:24 PM
Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 1/12/2016 12:25:51 PM

Insp ID: 808  Group 3 - Tennant Creek, Elliott  Tingkarli

What Category are you capturing: Overhead Poles

What is Pole Material type: Welded
What is the condition of pole: 3
How is the pole planted: Concrete
What is the Condition of plant: 3
Is street light fitted: Yes

Street Light Power Supply:
Street Light Type: M125D 10
Street Light Watts: 125
Street Light Condition: 2
Street Light Height: 1364

What is the type of service: Three
What is the HV voltage level: 400
What is the arrangement of connected cables: Twisted
Are there isolators on the pole: No
What is the Condition: 3
How many Lots are connected to this pole: 0

Overhead Pole Comments: Surface rusted
Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 1/12/2016 12:25:51 PM
## Northern Territory Town Camps

### Electrical Infrastructure

**Inspection Date**  1/12/2016 12:18:01 PM

<table>
<thead>
<tr>
<th>Insp ID: 810</th>
<th>Group 3 - Tennant Creek, Elliott</th>
<th>Tingkarli</th>
</tr>
</thead>
</table>

What Category are you capturing: **Overhead Poles**

<table>
<thead>
<tr>
<th>What is Pole Material type:</th>
<th>Welded</th>
</tr>
</thead>
<tbody>
<tr>
<td>What is the condition of pole:</td>
<td>3</td>
</tr>
<tr>
<td>How is the pole planted:</td>
<td>Concrete</td>
</tr>
<tr>
<td>What is the Condition of plant:</td>
<td>3</td>
</tr>
<tr>
<td>Is street light fitted:</td>
<td>Yes</td>
</tr>
</tbody>
</table>

**Street Light Power Supply:**

<table>
<thead>
<tr>
<th>Street Light Type</th>
<th>S70D 12</th>
</tr>
</thead>
<tbody>
<tr>
<td>Street Light Watts</td>
<td>80</td>
</tr>
<tr>
<td>Street Light Condition</td>
<td>3</td>
</tr>
</tbody>
</table>

**Street Light Height**

<table>
<thead>
<tr>
<th>What is the type of service:</th>
<th>Combined</th>
</tr>
</thead>
<tbody>
<tr>
<td>What is the HV voltage level:</td>
<td>11000</td>
</tr>
<tr>
<td>What is the arrangement of connected cables:</td>
<td>Parallel</td>
</tr>
<tr>
<td>Are there isolators on the pole:</td>
<td>Yes</td>
</tr>
<tr>
<td>What is the Condition:</td>
<td>3</td>
</tr>
<tr>
<td>How many Lots are connected to this pole:</td>
<td>2</td>
</tr>
</tbody>
</table>

**Overhead Pole Comments:** Surface rusted
Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 1/12/2016 12:18:01 PM
### Northern Territory Town Camps

#### Electrical Infrastructure

**Inspection Date**: 1/12/2016 12:12:14 PM

<table>
<thead>
<tr>
<th>Insp ID: 812</th>
<th>Group 3 - Tennant Creek, Elliott</th>
<th>Tingkarli</th>
</tr>
</thead>
</table>

**What Category are you capturing**: Overhead Poles

| What is Pole Material type: | Welded |
| What is the condition of pole: | 3 |
| How is the pole planted: | Concrete |
| What is the Condition of plant: | 3 |
| Is street light fitted: | Yes |

**Street Light Power Supply:**

| Street Light Type | S70D 98 |
| Street Light Watts | 70 |
| Street Light Condition | 2 |
| Street Light Height | 1368 |

**What is the type of service**: Three

**What is the HV voltage level**: 400

**What is the arrangement of connected cables**: Twisted

**Are there isolators on the pole**: No

**What is the Condition**: 3

**How many Lots are connected to this pole**: 2

**Overhead Pole Comments**: Surface rusted
Northern Territory Town Camps

Electrical Infrastructure

Inspection Date  1/12/2016 12:12:14 PM
<table>
<thead>
<tr>
<th>What Category are you capturing:</th>
<th>Overhead Poles</th>
</tr>
</thead>
<tbody>
<tr>
<td>What is Pole Material type:</td>
<td>Welded</td>
</tr>
<tr>
<td>What is the condition of pole:</td>
<td>3</td>
</tr>
<tr>
<td>How is the pole planted:</td>
<td>Concrete</td>
</tr>
<tr>
<td>What is the Condition of plant:</td>
<td>3</td>
</tr>
<tr>
<td>Is street light fitted:</td>
<td>Yes</td>
</tr>
<tr>
<td>Street Light Power Supply:</td>
<td></td>
</tr>
<tr>
<td>Street Light Type</td>
<td>S70D 09</td>
</tr>
<tr>
<td>Street Light Watts</td>
<td>70</td>
</tr>
<tr>
<td>Street Light Condition</td>
<td>2</td>
</tr>
<tr>
<td>Street Light Height</td>
<td></td>
</tr>
<tr>
<td>What is the type of service:</td>
<td>Three</td>
</tr>
<tr>
<td>What is the HV voltage level:</td>
<td>400</td>
</tr>
<tr>
<td>What is the arrangement of connected cables:</td>
<td>Twisted</td>
</tr>
<tr>
<td>Are there isolators on the pole:</td>
<td>No</td>
</tr>
<tr>
<td>What is the Condition:</td>
<td>3</td>
</tr>
<tr>
<td>How many Lots are connected to this pole:</td>
<td>2</td>
</tr>
<tr>
<td>Overhead Pole Comments:</td>
<td>Surface rusted</td>
</tr>
</tbody>
</table>

Northern Territory Town Camps

Electrical Infrastructure

**Inspection Date**  1/12/2016 12:07:15 PM

Insp ID: 813  Group 3 - Tennant Creek, Elliott  Tingkarli
Northern Territory Town Camps

Electrical Infrastructure

Inspection Date  1/12/2016 12:07:15 PM
## Northern Territory Town Camps

### Electrical Infrastructure

**Inspection Date** 1/12/2016 12:04:24 PM

<table>
<thead>
<tr>
<th>Insp ID</th>
<th>Group 3 - Tennant Creek, Elliott</th>
<th>Tingkarli</th>
</tr>
</thead>
</table>

What Category are you capturing: **Overhead Poles**

<table>
<thead>
<tr>
<th>Pole Material type:</th>
<th>Welded</th>
</tr>
</thead>
<tbody>
<tr>
<td>What is the condition of pole:</td>
<td>3</td>
</tr>
<tr>
<td>How is the pole planted:</td>
<td>Concrete</td>
</tr>
<tr>
<td>What is the Condition of plant:</td>
<td>3</td>
</tr>
<tr>
<td>Is street light fitted:</td>
<td>Yes</td>
</tr>
</tbody>
</table>

**Street Light Power Supply:**

<table>
<thead>
<tr>
<th>Street Light Type</th>
<th>S70D 11</th>
</tr>
</thead>
<tbody>
<tr>
<td>Street Light Watts</td>
<td>70</td>
</tr>
<tr>
<td>Street Light Condition</td>
<td>2</td>
</tr>
<tr>
<td>Street Light Height</td>
<td>1372</td>
</tr>
</tbody>
</table>

What is the type of service: **Three**

<table>
<thead>
<tr>
<th>HV voltage level:</th>
<th>400</th>
</tr>
</thead>
<tbody>
<tr>
<td>What is the arrangement of connected cables:</td>
<td>Twisted</td>
</tr>
<tr>
<td>Are there isolators on the pole:</td>
<td>No</td>
</tr>
<tr>
<td>What is the Condition:</td>
<td>3</td>
</tr>
<tr>
<td>How many Lots are connected to this pole:</td>
<td>2</td>
</tr>
</tbody>
</table>

**Overhead Pole Comments:** Surface rusted
Northern Territory Town Camps

Electrical Infrastructure

Inspection Date  1/12/2016 12:04:24 PM
## Northern Territory Town Camps

### Electrical Infrastructure

**Inspection Date**  1/12/2016 11:56:08 AM

<table>
<thead>
<tr>
<th>Inspect ID: 815</th>
<th>Group 3 - Tennant Creek, Elliott</th>
<th>Tingkarli</th>
</tr>
</thead>
</table>

**What Category are you capturing:** Overhead Poles

- **What is Pole Material type:** Welded
- **What is the condition of pole:** 3
- **How is the pole planted:** Concrete
- **What is the Condition of plant:** 3
- **Is street light fitted:** Yes

**Street Light Power Supply:**

- **Street Light Type:** S70D 15
- **Street Light Watts:** 70
- **Street Light Condition:** 3

**Street Light Height**

- **What is the type of service:** Three
- **What is the HV voltage level:** 400
- **What is the arrangement of connected cables:** Twisted
- **Are there isolators on the pole:** No
- **What is the Condition:** 3
- **How many Lots are connected to this pole:** 0

**Overhead Pole Comments:** Surface rusted
Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 1/12/2016 11:56:08 AM
<table>
<thead>
<tr>
<th>What Category are you capturing:</th>
<th>Overhead Poles</th>
</tr>
</thead>
<tbody>
<tr>
<td>What is Pole Material type:</td>
<td>Welded</td>
</tr>
<tr>
<td>What is the condition of pole:</td>
<td>3</td>
</tr>
<tr>
<td>How is the pole planted:</td>
<td>Concrete</td>
</tr>
<tr>
<td>What is the Condition of plant:</td>
<td>3</td>
</tr>
<tr>
<td>Is street light fitted:</td>
<td>Yes</td>
</tr>
<tr>
<td>Street Light Power Supply:</td>
<td></td>
</tr>
<tr>
<td>Street Light Type</td>
<td>S70D 10</td>
</tr>
<tr>
<td>Street Light Watts</td>
<td>70</td>
</tr>
<tr>
<td>Street Light Condition</td>
<td>3</td>
</tr>
<tr>
<td>Street Light Height</td>
<td>1376</td>
</tr>
<tr>
<td>What is the type of service:</td>
<td>Three</td>
</tr>
<tr>
<td>What is the HV voltage level:</td>
<td>400</td>
</tr>
<tr>
<td>What is the arrangement of connected cables:</td>
<td>Twisted</td>
</tr>
<tr>
<td>Are there isolators on the pole:</td>
<td>No</td>
</tr>
<tr>
<td>What is the Condition:</td>
<td>3</td>
</tr>
<tr>
<td>How many Lots are connected to this pole:</td>
<td>0</td>
</tr>
<tr>
<td>Overhead Pole Comments:</td>
<td>Surface rusted</td>
</tr>
</tbody>
</table>
# Northern Territory Town Camps

## Electrical Infrastructure

**Insp ID:** 818  
**Group 3 - Tennant Creek, Elliott**  
**Tingkarli**

**Inspection Date:** 1/12/2016 11:49:50 AM

**What Category are you capturing:** Overhead Poles

<table>
<thead>
<tr>
<th>What is Pole Material type:</th>
<th>Welded</th>
</tr>
</thead>
<tbody>
<tr>
<td>What is the condition of pole:</td>
<td>3</td>
</tr>
<tr>
<td>How is the pole planted:</td>
<td>Concrete</td>
</tr>
<tr>
<td>What is the Condition of plant:</td>
<td>3</td>
</tr>
<tr>
<td>Is street light fitted:</td>
<td>Yes</td>
</tr>
</tbody>
</table>

**Street Light Power Supply:**

<table>
<thead>
<tr>
<th>Street Light Type</th>
<th>S70D 13</th>
</tr>
</thead>
<tbody>
<tr>
<td>Street Light Watts</td>
<td>70</td>
</tr>
<tr>
<td>Street Light Condition</td>
<td>2</td>
</tr>
</tbody>
</table>

**Street Light Height**

<table>
<thead>
<tr>
<th>What is the type of service:</th>
<th>Three</th>
</tr>
</thead>
<tbody>
<tr>
<td>What is the HV voltage level:</td>
<td>400</td>
</tr>
<tr>
<td>What is the arrangement of connected cables:</td>
<td>Twisted</td>
</tr>
<tr>
<td>Are there isolators on the pole:</td>
<td>No</td>
</tr>
<tr>
<td>What is the Condition:</td>
<td>3</td>
</tr>
<tr>
<td>How many Lots are connected to this pole:</td>
<td>0</td>
</tr>
</tbody>
</table>

**Overhead Pole Comments:** Surface rusted
Northern Territory Town Camps

Electrical Infrastructure

Inspection Date  1/12/2016 11:49:50 AM
### Northern Territory Town Camps

#### Electrical Infrastructure

**Inspection Date**  1/12/2016 11:41:52 AM

<table>
<thead>
<tr>
<th>Insp ID: 819</th>
<th>Group 3 - Tennant Creek, Elliott</th>
<th>Tingkarli</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>What Category are you capturing:</th>
<th>Overhead Poles</th>
</tr>
</thead>
<tbody>
<tr>
<td>What is Pole Material type:</td>
<td>Welded</td>
</tr>
<tr>
<td>What is the condition of pole:</td>
<td>3</td>
</tr>
<tr>
<td>How is the pole planted:</td>
<td>Concrete</td>
</tr>
<tr>
<td>What is the Condition of plant:</td>
<td>3</td>
</tr>
<tr>
<td>Is street light fitted:</td>
<td>Yes</td>
</tr>
</tbody>
</table>

**Street Light Power Supply:**

<table>
<thead>
<tr>
<th>Street Light Type</th>
<th>M125D 10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Street Light Watts</td>
<td>125</td>
</tr>
<tr>
<td>Street Light Condition</td>
<td>2</td>
</tr>
</tbody>
</table>

**Street Light Height**

<table>
<thead>
<tr>
<th>What is the type of service:</th>
<th>Three</th>
</tr>
</thead>
<tbody>
<tr>
<td>What is the HV voltage level:</td>
<td>400</td>
</tr>
<tr>
<td>What is the arrangement of connected cables:</td>
<td>Twisted</td>
</tr>
<tr>
<td>Are there isolators on the pole:</td>
<td>No</td>
</tr>
<tr>
<td>What is the Condition:</td>
<td>3</td>
</tr>
<tr>
<td>How many Lots are connected to this pole:</td>
<td>1</td>
</tr>
</tbody>
</table>

**Overhead Pole Comments:**

Surface rusted
Northern Territory Town Camps

Electrical Infrastructure

Inspection Date  1/12/2016 11:41:52 AM
### Electrical Infrastructure

**Northern Territory Town Camps**

**Inspection Date** 1/12/2016 11:39:00 AM

<table>
<thead>
<tr>
<th>Insp ID</th>
<th>Group 3 - Tennant Creek, Elliott</th>
<th>Tingkarli</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>What Category are you capturing:</th>
<th>Overhead Poles</th>
</tr>
</thead>
<tbody>
<tr>
<td>What is Pole Material type:</td>
<td>Welded</td>
</tr>
<tr>
<td>What is the condition of pole:</td>
<td>3</td>
</tr>
<tr>
<td>How is the pole planted:</td>
<td>Concrete</td>
</tr>
<tr>
<td>What is the Condition of plant:</td>
<td>3</td>
</tr>
<tr>
<td>Is street light fitted:</td>
<td>Yes</td>
</tr>
</tbody>
</table>

**Street Light Power Supply:**

<table>
<thead>
<tr>
<th>Street Light Type</th>
<th>M125D 09</th>
</tr>
</thead>
<tbody>
<tr>
<td>Street Light Watts</td>
<td>125</td>
</tr>
<tr>
<td>Street Light Condition</td>
<td>2</td>
</tr>
<tr>
<td>Street Light Height</td>
<td>1382</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>What is the type of service:</th>
<th>Three</th>
</tr>
</thead>
<tbody>
<tr>
<td>What is the HV voltage level:</td>
<td>400</td>
</tr>
<tr>
<td>What is the arrangement of connected cables:</td>
<td>Twisted</td>
</tr>
<tr>
<td>Are there isolators on the pole:</td>
<td>No</td>
</tr>
<tr>
<td>What is the Condition:</td>
<td>3</td>
</tr>
<tr>
<td>How many Lots are connected to this pole:</td>
<td>0</td>
</tr>
</tbody>
</table>

**Overhead Pole Comments:** Surface rusted
Northern Territory Town Camps

Electrical Infrastructure

Inspection Date  1/12/2016 11:39:00 AM
## Electrical Infrastructure

**Inspection Date**: 1/12/2016 11:36:12 AM

<table>
<thead>
<tr>
<th>Insp ID</th>
<th>Group 3 - Tennant Creek, Elliott</th>
<th>Tingkarli</th>
</tr>
</thead>
</table>

**What Category are you capturing**: Overhead Poles

- **What is Pole Material type**: Welded
- **What is the condition of pole**: 3
- **How is the pole planted**: Concrete
- **What is the Condition of plant**: 3
- **Is street light fitted**: Yes

**Street Light Power Supply**

- **Street Light Type**: S70D 11
- **Street Light Watts**: 70
- **Street Light Condition**: 3

**Street Light Height**

- **What is the type of service**: Three
- **What is the HV voltage level**: 400
- **What is the arrangement of connected cables**: Twisted
- **Are there isolators on the pole**: No
- **What is the Condition**: 3
- **How many Lots are connected to this pole**: 0

**Overhead Pole Comments**: Surface rusted
Northern Territory Town Camps

Electrical Infrastructure

Inspection Date  1/12/2016 11:36:12 AM
## Northern Territory Town Camps

### Electrical Infrastructure

**Inspection Date**  
1/12/2016 11:33:51 AM

<table>
<thead>
<tr>
<th>Insp ID: 822</th>
<th>Group 3 - Tennant Creek, Elliott</th>
<th>Tingkarli</th>
</tr>
</thead>
</table>

**What Category are you capturing:** Overhead Poles

**What is Pole Material type:** Welded

**What is the condition of pole:** 3

**How is the pole planted:** Concrete

**What is the Condition of plant:** 3

**Is street light fitted:** Yes

**Street Light Power Supply:**

**Street Light Type**

**Street Light Watts**

**Street Light Condition**

**Street Light Height**

**What is the type of service:** Three

**What is the HV voltage level:** 400

**What is the arrangement of connected cables:** Twisted

**Are there isolators on the pole:** No

**What is the Condition:** 3

**How many Lots are connected to this pole:** 1

**Overhead Pole Comments:** Surface rusted
Northern Territory Town Camps

Electrical Infrastructure

Inspection Date  1/12/2016 11:33:51 AM
## Electrical Infrastructure

**Northern Territory Town Camps**

**Inspection Date** 1/12/2016 11:27:46 AM

<table>
<thead>
<tr>
<th>Insp ID: 823</th>
<th>Group 3 - Tennant Creek, Elliott</th>
<th>Tingkarli</th>
</tr>
</thead>
</table>

**What Category are you capturing:** Overhead Poles

**What is Pole Material type:** 
Welded

**What is the condition of pole:** 
3

**How is the pole planted:** 
Concrete

**What is the Condition of plant:** 
3

**Is street light fitted:** 
Yes

**Street Light Power Supply:**

**Street Light Type** 
S70D 06

**Street Light Watts**

**Street Light Condition** 
2

**Street Light Height**

**What is the type of service:** 
Three

**What is the HV voltage level:** 
400

**What is the arrangement of connected cables:** 
Twisted

**Are there isolators on the pole:** 
No

**What is the Condition:** 
3

**How many Lots are connected to this pole:** 
0

**Overhead Pole Comments:** 
Surface rusted
Northern Territory Town Camps

Electrical Infrastructure

Inspection Date  1/12/2016 11:27:46 AM
Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 1/12/2016 11:25:27 AM

Insp ID: 824 Group 3 - Tennant Creek, Elliott Tingkarli

What Category are you capturing: Overhead Poles

What is Pole Material type: Welded
What is the condition of pole: 3
How is the pole planted:
What is the Condition of plant: 3
Is street light fitted: Yes
Street Light Power Supply:
Street Light Type S70D 12
Street Light Watts
Street Light Condition 2
Street Light Height
What is the type of service: Three
What is the HV voltage level: 400
What is the arrangement of connected cables: Twisted
Are there isolators on the pole: No
What is the Condition: 3
How many Lots are connected to this pole: 0
Overhead Pole Comments: Surface rusted
Northern Territory Town Camps

Electrical Infrastructure

**Inspection Date**  1/12/2016 11:25:27 AM

1391