

ELECTRICITY INDUSTRY PARTICIPATION CODE
DISTRIBUTED UNMETERED LOAD AUDIT REPORT



For

WHANGAREI DISTRICT COUNCIL
AND MERIDIAN ENERGY
NZBN: 9429037696863

Prepared by: Tara Gannon

Date audit commenced: 5 July 2023

Date audit report completed: 28 September 2023

Audit report due date: 1 October 2023

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EXECUTIVE SUMMARY

This audit of the **Whangarei District Council (WDC)** DUML database and processes was conducted at the request of **Meridian Energy Limited (Meridian)** in accordance with clause 15.37B. The purpose of this audit is to verify that the volume information is being calculated accurately, and that profiles have been correctly applied.

The audit was conducted in accordance with the audit guidelines for DUML audits version 1.1.

Streetlight load is determined by wattages held within WDC's RAMM database, and a monthly extract is provided to Meridian. Meridian settles the DUML load using the DST profile, and kWh are calculated based on the database extract and data logger on hours by EMS.

This audit found four non-compliances and makes one recommendation, an improvement on the six non-compliances recorded in the last audit.

I have recommended that the 122 "Unmetered Private" lights recorded in the database but not assigned to the WDC DUML ICPs are investigated to determine if they should be assigned to WDC DUML ICPs.

The field audit of 395 items of load could not confirm the database accuracy to be within the acceptable +/-5% accuracy threshold.

Field work is carried out by Currie Electrical, and the database is updated using RAMM Contractor.

The future risk rating of 14 indicates that the next audit be completed in 12 months. I have considered this in conjunction with Meridian's responses and agree with this recommendation. The matters raised are detailed below:

AUDIT SUMMARY

NON-COMPLIANCES

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
Deriving submission information	2.1	11(1) of Schedule 15.3	Database is not confirmed as accurate with a 95% level of confidence as recorded in section 3.1 .	Moderate	Medium	4	Identified
All load recorded in database	2.5	11(2A) and (d) of Schedule 15.3	28 additional items of load found in the field sample.	Moderate	Low	2	Identified
Database accuracy	3.1	15.2 and 15.37B(b)	Database is not confirmed as accurate with a 95% level of confidence.	Moderate	Medium	4	Identified
Volume information accuracy	3.2	15.2 and 15.37B(c)	Database is not confirmed as accurate with a 95% level of confidence as recorded in section 3.1 .	Moderate	Medium	4	Identified
Future Risk Rating						14	

Future risk rating	0	1-4	5-8	9-15	16-18	19+
Indicative audit frequency	36 months	24 months	18 months	12 months	6 months	3 months

RECOMMENDATIONS

Subject	Section	Description	Recommendation
Database accuracy	3.1	Private lights	Investigate the 122 "Unmetered Private" lights recorded in the database to determine if they should be assigned to WDC DUML ICPs and update the database accordingly.

ISSUES

Subject	Section	Description	Issue
		Nil	

1. ADMINISTRATIVE

1.1. Exemptions from Obligations to Comply with Code

Code reference

Section 11 of Electricity Industry Act 2010.

Code related audit information

Section 11 of the Electricity Industry Act provides for the Electricity Authority to exempt any participant from compliance with all or any of the clauses.

Audit observation

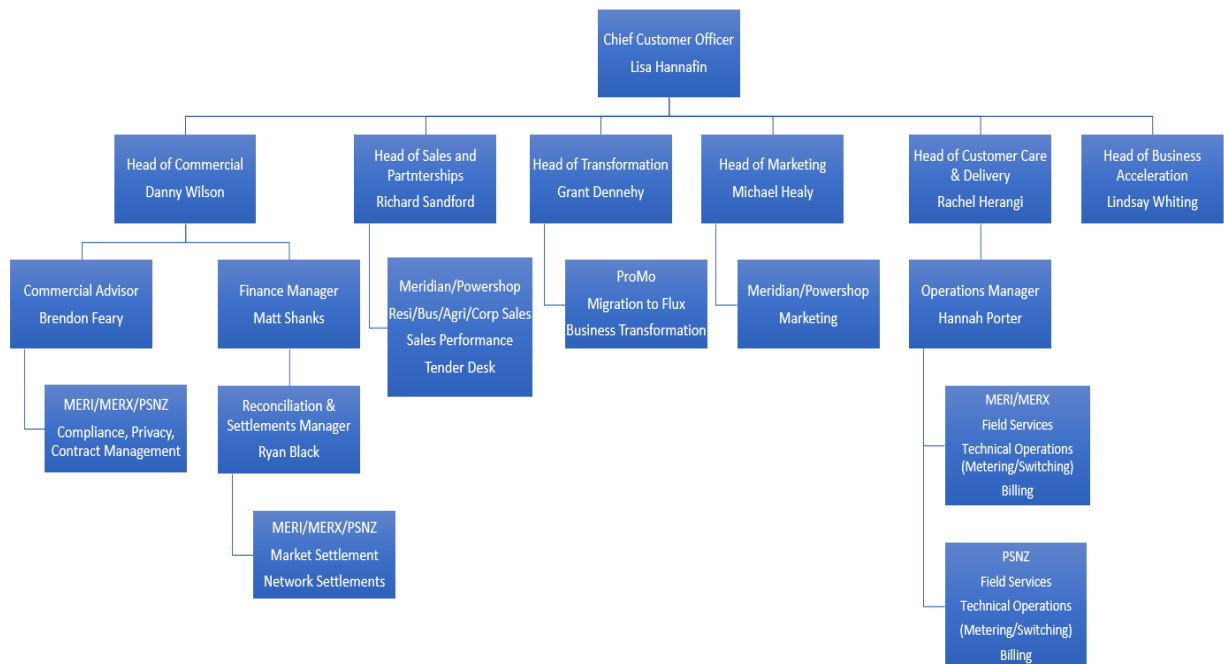
The Electricity Authority's website was reviewed to identify any exemptions relevant to the scope of this audit.

Audit commentary

There are no exemptions in place relevant to the scope of this audit.

1.2. Structure of Organisation

Meridian provided the relevant organisational structure:



1.3. Persons involved in this audit

Auditor:

Tara Gannon

Provera

Electricity Authority Approved Auditor

Supporting Auditor:

Brett Piskulic

Provera

Electricity Authority Approved Auditor

Other personnel assisting in this audit were:

Name	Title	Company
Melanie Matthews	Quality and Compliance Advisor	Meridian Energy
Musheer Ilahi Khan	Regional Operations Lead	Northland Transportation Alliance
Caleb Ngwa	Graduate Engineer	Northland Transportation Alliance

1.4. Hardware and Software

The SQL database used for the management of DUML is remotely hosted by thinkproject New Zealand Limited. The database is commonly known as "RAMM" which stands for "Road Assessment and Maintenance Management". The specific data used for DUML is held in the Streetlight tables. thinkproject New Zealand Limited backs up the database and assists with disaster recovery as part of their hosting service.

Access to the database is secure by way of password protection.

Systems used by the trader and their agent to calculate submissions are assessed as part of their reconciliation participant audits.

1.5. Breaches or Breach Allegations

There are no breach allegations relevant to the scope of this audit.

1.6. ICP Data

ICP Number	Description	NSP	Profile	Number of items of load	Database wattage (watts)
0000545284NRF73	Streetlights; Whangarei DC; BRB0331, RAMA RD, MARSDEN PT, RUAKAKA 0116	BRB0331	DST	826	27,535
0000545289NR028	STREETLIGHTS; Whangarei DC; MPE1101, PUKEATUA ROAD, MAUNGATAPERE 0170	MPE1101	DST	5,077	276,897.5
Total				5,903	304,432.5

The ballast values are included in the wattage totals.

1.7. Authorisation Received

All information was provided directly by Meridian and Whangarei District Council.

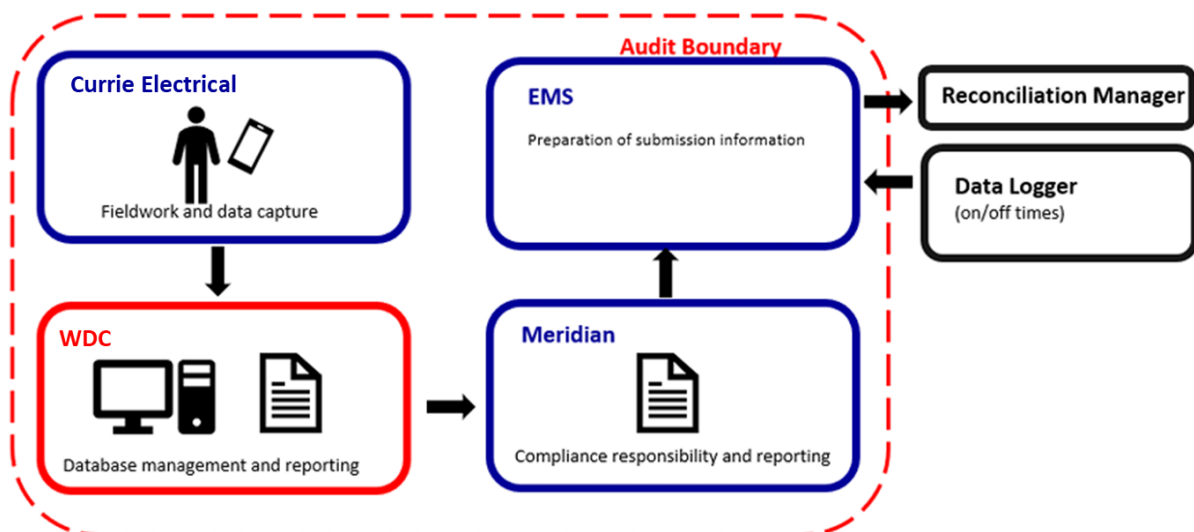
1.8. Scope of Audit

This audit of the **Whangarei District Council (WDC)** DUML database and processes was conducted at the request of **Meridian Energy Limited (Meridian)** in accordance with clause 15.37B. The purpose of this audit is to verify that the volume information is being calculated accurately, and that profiles have been correctly applied.

The audit was conducted in accordance with the audit guidelines for DUML audits version 1.1.

Whangarei District Council Unmetered Streetlights are located on the Northpower network. Meridian settles the DUML load using the DST profile, and kWh are calculated based on the database extract and data logger on hours by EMS.

The scope of the audit encompasses the collection, security and accuracy of the data, including the preparation of submission information based on monthly reporting. The diagram below shows the flow of information and the audit boundary for clarity.



The field audit was undertaken of a statistical sample of 395 items of load from 18th to 27th July 2023.

1.9. Summary of previous audit

The previous audit was completed in September 2022 by Steve Woods of Veritek Limited. The current status of that audit's findings is detailed below:

Table of Non-Compliance

Subject	Section	Clause	Non-compliance	Status
Deriving submission information	2.1	11(1) of Schedule 15.3	Database is not confirmed as accurate with a 95% level of confidence as recorded in section 3.1.	Still existing
			Five items of load have the incorrect wattage applied in the DUML database which would result in over submission of 170.84 kWh per annum.	Cleared
			The data used for submission does not track changes at a daily basis and is provided as a snapshot.	Cleared
ICP identifier	2.2	11(2)(a) and (aa) of Schedule 15.3	64 items of load in the database with no ICP recorded.	Cleared
Description and capacity of load	2.4	11(2)(c) and (d) of Schedule 15.3	113 items of load with no lamp wattage recorded in the database.	Cleared
All load recorded in database	2.5	11(2A) and (d) of Schedule 15.3	21 additional items of load found in the field sample.	Still existing
Database accuracy	3.1	15.2 and 15.37B(b)	Database is not confirmed as accurate with a 95% level of confidence.	Still Existing
			Five items of load have the incorrect wattage applied in the DUML database which would result in over submission of 170.84 kWh per annum.	Cleared
Volume information accuracy	3.2	15.2 and 15.37B(c)	Database is not confirmed as accurate with a 95% level of confidence as recorded in section 3.1.	Still Existing
			Five items of load have the incorrect wattage applied in the DUML database which would result in over submission of 170.84 kWh per annum.	Cleared
			The data used for submission does not track changes at a daily basis and is provided as a snapshot.	Cleared

Table of Recommendations

Subject	Section	Recommendation for Improvement	Status
		Nil	

1.10. Distributed unmetered load audits (Clause 16A.26 and 17.295F)

Code reference

Clause 16A.26 and 17.295F

Code related audit information

Retailers must ensure that DUML database audits are completed:

- 1. by 1 June 2018 (for DUML that existed prior to 1 June 2017)*
- 2. within three months of submission to the reconciliation manager (for new DUML)*
- 3. within the timeframe specified by the Authority for DUML that has been audited since 1 June 2017.*

Audit observation

Meridian have requested Provera to undertake this streetlight audit.

Audit commentary

This audit report confirms that the requirement to conduct an audit has been met for this database.

Audit outcome

Compliant

2. DUML DATABASE REQUIREMENTS

2.1. Deriving submission information (Clause 11(1) of Schedule 15.3)

Code reference

Clause 11(1) of Schedule 15.3

Code related audit information

The retailer must ensure the:

- *DUML database is up to date,*
- *methodology for deriving submission information complies with Schedule 15.5.*

Audit observation

The process for calculation of consumption was examined.

Audit commentary

Submission process and accuracy

Meridian reconciles this DUML load using the DST profile.

I compared the database provided to the capacity information Meridian supplied to EMS for the month of June 2023 and I confirm the submission is accurate.

The on and off times are derived from a data logger read by EMS and are used to create a shape file. Meridian supplies EMS with the capacity information and EMS calculates the kWh figure for each ICP and includes this in the relevant AV080 file. This process was audited during Meridian's reconciliation participant audit and the EMS agent audit. Compliance was confirmed for both parties.

On 18 June 2019, the Electricity Authority issued a memo confirming that the code requirement to calculate the correct monthly load must:

- take into account when each item of load was physically installed or removed, and
- wash up volumes must take into account where historical corrections have been made to the DUML load and volumes.

The monthly report from WDC to Meridian includes the dates of any changes or additions made and Meridian accounts for the changes which have happened in each month on a daily basis.

Database accuracy

The field audit against the database quantities found that the database is not confirmed as accurate with a 95% level of confidence resulting in an estimated over submission of 32,700 kWh p.a. as recorded in **section 3.1**.

Audit outcome

Non-compliant

Non-compliance	Description
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Audit Ref: 2.1 With: Clause 11(1) of Schedule 15.3 From: 01-Oct-22 To: 27-Jul-23	Database is not confirmed as accurate with a 95% level of confidence as recorded in section 3.1 . Potential impact: Medium Actual impact: Medium Audit history: Multiple times Controls: Moderate Breach risk rating: 4	
Audit risk rating	Rationale for audit risk rating	
Medium	Controls are rated as moderate, as they are sufficient to mitigate the risk most of the time, but there is room for improvement. The impact is assessed to be medium due to the estimated kWh volume variances.	
Actions taken to resolve the issue	Completion date	Remedial action status
The database discrepancies identified during this audit have been provided to Whangarei DC to investigate. They have advised that they are currently having field visits performed to confirm the discrepancies and amend the database where required.	30/10/2023	Identified
Preventative actions taken to ensure no further issues will occur	Completion date	
Meridan will continue to follow up with Whangarei District Council to ensure the inaccuracies are corrected.	30/10/2023	

2.2. ICP identifier and items of load (Clause 11(2)(a) and (aa) of Schedule 15.3)

Code reference

Clause 11(2)(a) and (aa) of Schedule 15.3

Code related audit information

The DUML database must contain:

- *each ICP identifier for which the retailer is responsible for the DUML,*
- *the items of load associated with the ICP identifier.*

Audit observation

The database was checked to confirm an ICP was recorded against each item of load.

Audit commentary

All items of load had an ICP recorded.

I have recommended in **section 3.1** that further investigation is done to determine if the 122 “Unmetered Private” lights recorded in the database should be assigned to WDC DUML ICPs, and that the database is updated accordingly.

Audit outcome

Compliant

2.3. Location of each item of load (Clause 11(2)(b) of Schedule 15.3)

Code reference

Clause 11(2)(b) of Schedule 15.3

Code related audit information

The DUMML database must contain the location of each DUMML item.

Audit observation

The database was checked to confirm the location is recorded for all items of load.

Audit commentary

The database contains fields for the road name, location number, pole ID, and GPS coordinates.

GPS coordinates are populated for all except 228 lights; the location information is sufficient to locate all items of load.

Audit outcome

Compliant

2.4. Description and capacity of load (Clause 11(2)(c) and (d) of Schedule 15.3)

Code reference

Clause 11(2)(c) and (d) of Schedule 15.3

Code related audit information

The DUMML database must contain:

- *a description of load type for each item of load and any assumptions regarding the capacity*
- *the capacity of each item in watts.*

Audit observation

The database was checked to confirm that it contained a field for lamp type and wattage capacity and included any ballast or gear wattage.

Audit commentary

There are six fields in the database which record the lamp description information as follows, two "Light Make" fields, "Light Model", "Lamp Make" and two "Lamp Model" fields. The total wattage of each item of load is recorded in the "Lamp Wattage" field and gear wattage is recorded in the "Gear Wattage" field. These fields are populated for all items of load.

Audit outcome

Compliant

2.5. All load recorded in database (Clause 11(2A) of Schedule 15.3)

Code reference

Clause 11(2A) of Schedule 15.3

Code related audit information

The retailer must ensure that each item of DUML for which it is responsible is recorded in this database.

Audit observation

The field audit was undertaken of a statistical sample of 395 items of load between 18th and 27th July 2023.

Audit commentary

The field audit discrepancies found are detailed in the table below.

Street	Database count	Field count	Light count differences	Wattage recorded incorrectly	Comments
OKAIHAU PL	1	4	+3	-	3 x additional 43W LEDs found in the field.
VINEGAR HILL RD CTRL	7	6	-1	-	1 x 21W LED not found in the field.
LAWSON DR	8	6	-2	-	2 x 70W M/H not found in the field.
SP CANOPY BRIDGE (PARKS)	18	42	+24	18	Lights appear to have been replaced with approx. 42 new LED lights in park, possibly metered, unknown wattage, estimated at 30W each.
MEMORIAL DR	20	21	+1	-	1 x additional 21W LED found in field.
TROPICANA DR	2	2	-	2	2 x incorrect wattage – 2 x 21W LEDs recorded in database, 2 x 27W LEDs found in field.
PATAUA SOUTH RD	6	6	-	1	1 x 70W HPS recorded in the database replaced with 27W LED.
PARKS WW TUTUKI WALK	4	3	-1	-	1 x 70W HPS not found in the field.
Grand Total	395	419	32 (+28, -4)	21	

This clause relates to lights in the field that are not recorded in the database. I found an additional 28 lamps in the field that were not recorded in the database. The database accuracy is discussed in **section 3.1**.

Audit outcome

Non-compliant

Non-compliance	Description
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Audit Ref: 2.5 With: Clause 11(2A) and (d) of Schedule 15.3 From: unknown To: 27-Jul-23	28 additional items of load found in the field sample. Potential impact: High Actual impact: Low Audit history: Three times Controls: Moderate Breach risk rating: 2		
Audit risk rating	Rationale for audit risk rating		
Low	The controls are rated as moderate due to the volume of additional lights found in the field. The impact is assessed to be low as there were 28 additional lamps found in the sample checked, leading to potential under submission of 720 W or 3,716 kWh per annum.		
Actions taken to resolve the issue		Completion date	Remedial action status
The database discrepancies identified during this audit have been provided to Whangarei DC to investigate. They have advised that they are currently having field visits performed to confirm the discrepancies and amend the database where required.		30/10/2023	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
Meridan will continue to follow up with Whangarei District Council to ensure the inaccuracies are corrected.		30/10/2023	

2.6. Tracking of load changes (Clause 11(3) of Schedule 15.3)

Code reference

Clause 11(3) of Schedule 15.3

Code related audit information

The DUML database must track additions and removals in a manner that allows the total load (in kW) to be retrospectively derived for any given day.

Audit observation

The process for tracking of changes in the database was examined.

Audit commentary

The RAMM database functionality achieves compliance with the code. The change management process and the compliance of the database reporting provided to Meridan is detailed in **sections 3.1** and **3.2**.

Audit outcome

Compliant

2.7. Audit trail (Clause 11(4) of Schedule 15.3)

Code reference

Clause 11(4) of Schedule 15.3

Code related audit information

The DUML database must incorporate an audit trail of all additions and changes that identify:

- *the before and after values for changes*
- *the date and time of the change or addition*
- *the person who made the addition or change to the database.*

Audit observation

The database was checked for audit trails.

Audit commentary

RAMM contains a complete audit trail of all additions and changes with operator ID to the database information.

Audit outcome

Compliant

3. ACCURACY OF DUML DATABASE

3.1. Database accuracy (Clause 15.2 and 15.37B(b))

Code reference

Clause 15.2 and 15.37B(b)

Code related audit information

Audit must verify that the information recorded in the retailer's DUML database is complete and accurate.

Audit observation

The DUML Statistical Sampling Guideline was used to determine the database accuracy. The table below shows the survey plan.

Plan Item	Comments
Area of interest	Whangarei District Council area
Strata	<p>The database contains items of load in the Whangarei area. The area has two distinct sub regions of Whangarei urban and rural.</p> <p>The processes for the management of all WDC items of load are the same, but I decided to place the items of load into four strata:</p> <ul style="list-style-type: none"> • road names A-H, • road names I-N, • road names O-Ri, and • road names Ro-Z.
Area units	I created a pivot table of the roads, and I used a random number generator in a spreadsheet to select a total of 78 sub-units.
Total items of load	395 items of load were checked.

Wattages were checked for alignment with the published standardised wattage table produced by the Electricity Authority against the DUML database.

The change management process to track changes and timeliness of database updates was evaluated.

Audit commentary

A field audit was conducted of a statistical sample of 395 items of load. The “database auditing tool” was used to analyse the results, which are shown in the table below.

Result	Percentage	Comments
The point estimate of R	97.5%	Wattage from survey is lower than the database wattage by 2.5%
R _L	93.1%	With a 95% level of confidence, it can be concluded that the error could be between -6.9% and +0.4%
R _H	100.4%	

These results were categorised in accordance with the “Distributed Unmetered Load Statistical Sampling Audit Guideline”, effective from 1 February 2019 and the table below shows that Scenario C (detailed below) applies.

The conclusion from Scenario C is that the variability of the sample results across the strata means that the true wattage (installed in the field) could be between 6.9% lower and 0.4% higher than the wattage recorded in the DUMML database. Non-compliance is recorded because the potential error is greater than 5.0%.

In absolute terms the installed capacity is estimated to be 8 kW higher than the database indicates.

There is a 95% level of confidence that the installed capacity is between 21 kW lower and 1 kW higher than the database.

In absolute terms, total annual consumption is estimated to be 32,700 kWh lower than the DUMML database indicates.

There is a 95% level of confidence that the annual consumption is between 89,900 kWh p.a. lower to 4,900 kWh p.a. higher than the database indicates.

Scenario	Description
<p>A - Good accuracy, good precision</p>	<p>This scenario applies if:</p> <ul style="list-style-type: none"> (a) R_H is less than 1.05; and (b) R_L is greater than 0.95 <p>The conclusion from this scenario is that:</p> <ul style="list-style-type: none"> (a) the best available estimate indicates that the database is accurate within +/- 5 %; and (b) this is the best outcome.
<p>B - Poor accuracy, demonstrated with statistical significance</p>	<p>This scenario applies if:</p> <ul style="list-style-type: none"> (a) the point estimate of R is less than 0.95 or greater than 1.05 (b) as a result, either R_L is less than 0.95 or R_H is greater than 1.05. <p>There is evidence to support this finding. In statistical terms, the inaccuracy is statistically significant at the 95% level</p>
<p>C - Poor precision</p>	<p>This scenario applies if:</p> <ul style="list-style-type: none"> (a) the point estimate of R is between 0.95 and 1.05 (b) R_L is less than 0.95 and/or R_H is greater than 1.05 <p>The conclusion from this scenario is that the best available estimate is not precise enough to conclude that the database is accurate within +/- 5 %</p>

Lamp description and capacity accuracy

I checked the wattage being applied in the database and found that the database wattages were aligned to the standardised wattage table.

I reviewed the LED light descriptions to confirm if the wattages applied were correct. The most common LED light used is the AEC I-TRON ZERO OC6 STA 4.49-2M (21w) with 3,278 installed in the field. In previous audits these had been recorded in the database as 19.9 watts. WDC confirmed that the database records for all of these lights were changed to 21 watts in late 2022 to align with all other lights of this type in the Northland region following an investigation and testing carried out which confirmed that the correct wattage for these lamps is 21 watts.

Address accuracy

The field audit did not identify any location discrepancies.

Change management process findings

The RAMM database used for submission is managed by WDC. The streetlight contractor Currie Electrical update the database using RAMM Contractor.

The maintenance contract with Currie Electrical requires quarterly night inspections and 6-monthly day inspections of all lights.

The process for the addition of new lamp connections was examined. WDC checks and approves the submitted lighting plans and requires developers to advise when the lights are connected or ready to be connected. WDC then arranges for its contractor to conduct an inspection to confirm that the installed lighting matches the submitted plan. Once inspection is passed and the “as-built plans” are confirmed as correct the lights are added to RAMM against the relevant ICP from the connection date.

Festive lights

WDC confirmed that there are no unmetered festive lights installed.

Private Lights

The database extract included 122 lights with the “Bulk circuit” field recorded as “Unmetered Private”. None of the lights were assigned to the two WDC DUML ICPs, four had no ICP recorded and the remaining 118 had the ICP recorded as 0000553532NRE6D which has a Property Name of “Streetlights; Private Unmetered” and the street recorded as “KEY WEST DRIVE (PVT)” in the registry. None of these lights are included in the monthly reports to Meridian from WDC DUML. 77 of the lights are part of the La Pointe Estate DUML database which is separate to this audit and is reconciled under ICP 0000553532NRE6D using a spreadsheet managed by Meridian. I was unable to determine if the remaining 41 lights are reconciled elsewhere or should be included in the WDC database. I recommend that these lights are further investigated to determine if they should be assigned to WDC DUML ICPs, and that the database is updated accordingly.

Description	Recommendation	Audited party comment	Remedial action
Database accuracy	Investigate the 122 “Unmetered Private” lights recorded in the database to determine if they should be assigned to WDC DUML ICPs and update the database accordingly.	Whangarei District Council have been advised of the recommendation. They are currently performing field visits to confirm data before correcting the database.	Identified

Audit outcome

Non-compliant

Non-compliance	Description
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Audit Ref: 3.1 With: Clause 15.2 and 15.37B(b) From: 01-Oct-22 To: 27-Jul-23	Database is not confirmed as accurate with a 95% level of confidence. Potential impact: Medium Actual impact: Medium Audit history: Multiple times Controls: Moderate Breach risk rating: 4		
Audit risk rating	Rationale for audit risk rating		
Medium	Controls are rated as moderate, as they are sufficient to mitigate the risk most of the time but there is room for improvement. The impact is assessed to be medium due to the estimated kWh volume variances.		
Actions taken to resolve the issue	Completion date	Remedial action status	
The database discrepancies identified during this audit have been provided to Whangarei DC to investigate. They have advised that they are currently having field visits performed to confirm the discrepancies and amend the database where required.	30/10/2023	Identified	
Preventative actions taken to ensure no further issues will occur	Completion date		
Meridan will continue to follow up with Whangarei District Council to ensure the inaccuracies are corrected.	30/10/2023		

3.2. Volume information accuracy (Clause 15.2 and 15.37B(c))

Code reference

Clause 15.2 and 15.37B(c)

Code related audit information

The audit must verify that:

- volume information for the DUML is being calculated accurately,
- profiles for DUML have been correctly applied.

Audit observation

The submission was checked for accuracy for the month the database extract was supplied. This included:

- checking the registry to confirm that all ICPs have the correct profile and submission flag, and
- checking the database extract combined with the burn hours against the submitted figure to confirm accuracy.

Audit commentary

Submission process and accuracy

Meridian reconciles this DUML load using the DST profile.

I compared the database provided to the capacity information Meridian supplied to EMS for the month of June 2023 and I confirm the submission is accurate.

The on and off times are derived from a data logger read by EMS and are used to create a shape file. Meridian supplies EMS with the capacity information and EMS calculates the kWh figure for each ICP and includes this in the relevant AV080 file. This process was audited during Meridian’s reconciliation participant audit and the EMS agent audit. Compliance was confirmed for both parties.

On 18 June 2019, the Electricity Authority issued a memo confirming that the code requirement to calculate the correct monthly load must:

- take into account when each item of load was physically installed or removed, and
- wash up volumes must take into account where historical corrections have been made to the DUML load and volumes.

The monthly report from WDC to Meridian includes the dates of any changes or additions made and Meridian accounts for the changes which have happened in each month on a daily basis.

Database accuracy

The field audit against the database quantities found that the database is not confirmed as accurate with a 95% level of confidence resulting in an estimated over submission of 32,700 kWh p.a. as recorded in section 3.1.

Audit outcome

Non-compliant

Non-compliance	Description	
Audit Ref: 3.2 With: Clause 15.2 and 15.37B(c) From: 01-Oct-22 To: 27-Jul-23	Database is not confirmed as accurate with a 95% level of confidence as recorded in section 3.1. Potential impact: Medium Actual impact: Medium Audit history: Multiple times Controls: Moderate Breach risk rating: 4	
Audit risk rating	Rationale for audit risk rating	
Medium	Controls are rated as moderate, as they are sufficient to mitigate the risk most of the time but there is room for improvement. The impact is assessed to be medium due to the estimated kWh volume variances.	
Actions taken to resolve the issue	Completion date	Remedial action status
The database discrepancies identified during this audit have been provided to Whangarei DC to investigate. They have advised that they are currently having field visits performed to confirm the discrepancies and amend the database where required.	30/10/2023	Identified

Preventative actions taken to ensure no further issues will occur	Completion date	
Meridan will continue to follow up with Whangarei District Council to ensure the inaccuracies are corrected.	30/10/2023	

CONCLUSION

The audit was conducted in accordance with the audit guidelines for DUML audits version 1.1.

Streetlight load is determined by wattages held within WDC's RAMM database, and a monthly extract is provided to Meridian. Meridian settles the DUML load using the DST profile, and kWh are calculated based on the database extract and data logger on hours by EMS.

This audit found four non-compliances and makes one recommendation, an improvement on the six non-compliances recorded in the last audit.

I have recommended that the 122 "Unmetered Private" lights recorded in the database but not assigned to the WDC DUML ICPs are investigated to determine if they should be assigned to WDC DUML ICPs.

The field audit of 395 items of load could not confirm the database accuracy to be within the acceptable +/-5% accuracy threshold.

Field work is carried out by Currie Electrical, and the database is updated using RAMM Contractor.

The future risk rating of 14 indicates that the next audit be completed in 12 months. I have considered this in conjunction with Meridian's responses and agree with this recommendation.

PARTICIPANT RESPONSE

Meridian have reviewed this audit, and their comments are recorded in the report. No further comments were provided.