



Land Information Ontario

**NRVIS/OLIW Data Management Model For
Municipal Boundary - Upper Tier and District (V.1)**
Published Edition

Issued: November 10, 2008

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Additional Information

For more information about this document, please contact Land Information Ontario at (705) 755-1878 or lio@ontario.ca

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Refer to the *DMM Users-Guide to the Published Edition* for additional details about the context of information collected for a Data Management Model.

This document was generated using *DMM Edition Template Version: 2.5*

Published November, 2008
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Preface

For most of the Ontario Government's geospatial information holdings, successful data management is achieved through the process of documenting data standards. This document summarizes the basic data management requirements for specific Land Information Ontario (LIO) Data Class(es).

Several corporate applications are used by LIO to manage, disseminate, protect and make accessible where available, all of the geospatial holdings that reside within the Ontario Land Information Warehouse (OLIW). The major applications are:

- Data Standards Repository (DSR)
- Land Information Data Subscription System (LIDS)
- Land Information Publishing System (LIPS)
- Land Information Security Administration System (LISA)
- LIO Internet Mapping Framework (IMF - includes View, Web Mapping and Web Feature Services)
- Natural Resources Values Information System (NRVIS) Administration
- Ontario Land Information Directory (OLID)

Clients should consult the official OLID metadata record for any additional information about the Data Class not found in this document (www.ontario.ca/lio). LIO also has a Support Team that can answer additional questions about a Data Class. This Support Team uses a **three-tiered support model** to assist clients, described below.

When a user/client has a question about the dataset, they will initially contact...

Tier	Service Provider	Phone	email
1	Information Access Helpline	(705) 755-1878	lio@ontario.ca

If the Information Access Helpline staff cannot provide assistance, the request will in turn be passed on to...

Tier	Service Provider	Phone	email
2	*NRVIS Support Helpline	<i>Provided by Tier-1</i>	<i>Provided by Tier-1</i>

If NRVIS Support staff cannot provide assistance, they will consult with the Information Owner (IO), and then get back to the client.

Tier	Service Provider	Phone	email
3	Dataset Information Owner	<i>Contacted/provided by Tier-1 or Tier-2</i>	<i>Contacted/provided by Tier-1 or Tier-2</i>

** Please note that Tier-2 support is intended for datasets that are maintained by the NRVIS Application. OLIW-only dataset enquiries will be fielded directly to the Information Owner (IO) if assistance cannot be provided by Tier-1 support staff.*

Data Analysis Projects are supported by staff with the Ontario Land and Resources Cluster (LRC), GIS Business Solutions Section (GISBSS), GIS Data Services (GDS)

Caveat: The information within this document is relevant to the date it was produced, and may become outdated over time. The Information Owner for this Data Class is responsible for updating the OLID metadata record for their information holdings. The reader is encouraged to review the corresponding OLID record to obtain up-to-date information for Data Classes. The reader can access the OLID Metadata record search engine, along with additional information about OLIW itself, through this internet web link www.ontario.ca/lio.

Background and Context

Current Status of Data Class

This section describes the current status of the Data Class/Project

Municipal Boundary - Upper Tier and District (Version 1)

Current Status: Proposed, Timeline: April 2007 to Fall 2008 (expected: 01/11/2008)

Status/Analyst notes: Two Data classes (Municipal Boundary - Lower and Single Tier and Municipal Boundary - Upper Tier and District) will replace Municipal Boundary and Municipal Unit Lower. The reason for this change is that single tier municipalities were not always visible when mapped because they were covered by unorganized area. Geographic unit type 'Single tier municipality' has been moved to the same data class as 'municipal unit lower', Upper tiers and districts remain in same data class. The 'Unorganized Area' GUT is now called 'District'

Target Databases: This is a NRVIS 3.4.1 and an OLIW 2.0 Data Class

IMPSCS Analyst Team: *Lead Analysts are identified by bolded text.*

Christine Phair, Senior Data Analyst

John Ernsting, Senior Data Analyst (Retired)

Data Class Version History

A summary of all Data Class versions. Data Class Complexity is to be interpreted as either being:

Standard: Data Class is modeled using NRVIS/OLIW architecture via Geog Unit or...

Simple: Data Class is modeled without any relationship made to Geog Unit (standalone)

Version	Complexity	Version Description	NRVIS	Release	OLIW	Release	Start	Finish
1	Standard	New Data Class.	X	3.4.1	X	2.0	April 2007	Fall 2008

Contact Roles and Responsibilities

This section identifies the key players and their role association to this Data Class.

Information Owner: Ministry of Municipal Affairs and Housing (MAH)

Status: Established

CONTACTS AND ROLES:

assist in data analysis and project management

Organization: Ministry of Natural Resources (MNR), Science and Information Resources Division (SIRD), Geographic Information Branch (GIB), Information Management, Policy and Standards Coordination Section

Expertise:

Roles: *including status and contribution*

Data Analyst (Established)

Assist with data analysis and project management

Coordinator GIS/IT

Organization: Ministry of Municipal Affairs and Housing (MAH)

Expertise:

Roles: *including status and contribution*

Maintenance (Data) (Established)

Main Contact

Geomatics Analyst - CSC Cluster

Organization: Ministry of Municipal Affairs and Housing (MAH)

Expertise: Geomatics Analyst - CSC Cluster

Roles: *including status and contribution*

Maintenance (Data) (Established)

Data Maintenance

Manager, Information, Integration and Analysis, CSC Cluster

Organization: Ministry of Municipal Affairs and Housing (MAH)

Expertise: Manager, Information, Integration and Analysis, CSC Cluster

Roles: *including status and contribution*

Information Owner - Contact (Established)
Information Owner

Project manager and Lead Data Analyst

Organization: Ministry of Natural Resources (MNR), Science and Information Resources Division (SIRD), Geographic Information Branch (GIB), Information Management, Policy and Standards Coordination Section

Expertise: Data Analysis

Roles: *including status and contribution*

Data Analyst (Established)

Responsible for managing project and associated documentation and development of data model

Metadata

This section describes metadata about the Data Class (a.k.a. Concrete Class in NRVIS).

*Fields prefixed with an asterisk * are required by OLID for the creation of an official metadata record.*

General Information

This section provides general details about the Data Class.

Municipal Boundary - Upper Tier and District (MUNIC)

*Geographic areas that consist of district and upper tier municipalities.

Upper Tier Municipality: geographic areas that consist of two or more Lower Tier Municipality District (also known as Unorganized Area): That part of Ontario without municipal organization, though they will have assessment information under local school boards. These are typically found in northern Ontario.

First Nation Lands will form holes in the municipal boundary coverage, where these areas exist.

***Business Area Acronym(s) for Data Class:**

Data Class Business Area Usage

***Use Purpose:** To allow users access to municipal boundary information for the province of Ontario

***Legislative Req./Authority:** Ontario Municipal Act

Use Cautions: Not for navigation purposes

Business Identifier(s):

Business Identifier (B.I.): Munid

B.I. Database(s):

B.I. Rules:

Analysis Notes:

Data Class Vintage Details

This section provides details about the data's currency¹ within NRVIS/OLIW for this Data Class.

***Collection Start Date:**

***Collection Recent Date:** 01/01/2006

***Dataset Vintage Comments:**

***Update Frequency:** *Please refer to 'Publish Function' of 'Maintenance' Section.*

***Current Collection Status:** Ongoing

Data Class Geospatial Details

Details about the Data Class' geographic extent and topology rules within NRVIS/OLIW

Business Area Spatial Rules:

¹ Vintage as of this document's publishing date. Please refer to the **Caveat** in this document's Preface.

NRVIS/OLIW Abstract Class: SPMNTPOLY

Spatial Multi-Non-Tessellating-Polygon: An object is represented by ONE or MORE polygons. Polygons may NOT overlap. HOLES within and GAPS between polygons ARE allowed.

Example: the St. Lawrence Islands National Park, where the Park itself is made up of many islands.

***Geographic Extent:** Region

***Geographic Completeness:** 100%

Zoom to Name? *If 'Yes', identify the Attribute:* No

Note: the following italicized entries are defaulted for a NRVIS/OLIW spatial Data Class.

***Grid or Coordinate System:** *Geographic (Lat., Long.)*

***Map Projection:** *Not Applicable*

***Horizontal Datum:** *NAD83 CNT*

***Horizontal Positional Accuracy:** Within 50 metres

***Vertical Datum (z-scale):** *Not Applicable*

***Vertical Positional Accuracy:** *Not Applicable*

Interlayer Dependency? No

Nested? No

Consolidation? No

Data Class Sources

This section provides details about the sources used to create/add data to the Data Class in NRVIS/OLIW. Fields prefixed with an asterisk () are required by OLID.*

***Municipal Boundaries**

***Source Type/Medium:** Hard Copy Map

***Acronym(s):**

***Description:** Municipal Boundaries obtained from paper maps

***Vintage/Quality:**

Geographic Extent:

Map Scale(s):

***Owner/Creator:** Various Municipalities

Location:

Contribution (Overall):

Comments:

The following Data Class Geographic Unit Types (GUT) are associated to this source:

District (71)

Source Contribution (to GU Type):

Compilation Rules:

Conversion Rules:

Loading Rules:

Source Comments:

Upper Tier Municipality (70)

Source Contribution (to GU Type):

Compilation Rules:

Conversion Rules:

Loading Rules:

Source Comments:

***Municipal boundaries from digital sources**

***Source Type/Medium:** Digital Map File

***Acronym(s):**

***Description:** Municipal Boundaries provided in digital format

***Vintage/Quality:**

Geographic Extent:

Map Scale(s):

***Owner/Creator:** Various Municipalities

Location:

Contribution (Overall):

Comments:

The following Data Class Geographic Unit Types (GUT) are associated to this source:

District (71)

Source Contribution (to GU Type):

Compilation Rules:

Conversion Rules:

Loading Rules:

Source Comments:

Upper Tier Municipality (70)

Source Contribution (to GU Type):

Compilation Rules:

Conversion Rules:

Loading Rules:

Source Comments:

***Wateredge**

***Source Type/Medium:** Digital Map File

***Acronym(s):**

***Description:** MNR Wateredge Coverage

***Vintage/Quality:**

Geographic Extent:

Map Scale(s):

***Owner/Creator:** MNR

Location:

Contribution (Overall):

Comments:

The following Data Class Geographic Unit Types (GUT) are associated to this source:

District (71)

Source Contribution (to GU Type):

Compilation Rules:

Conversion Rules:

Loading Rules:

Source Comments:

Upper Tier Municipality (70)

Source Contribution (to GU Type):

Compilation Rules:

Conversion Rules:

Loading Rules:

Source Comments:

Data Class Information Products

How the Data Class contributes to the creation of business area information products.

Municipal Boundary - Upper Tier and District does not have any documented products.

Data Class Maintenance Standards

This section provides details about the common data life-cycle functions and standards used to maintain this Data Class. The agency responsible for the entire process is identified in the 'Contacts' section of this document.

Publish function

Performer

Org: Ministry of Municipal Affairs & Housing

Position: Geomatics Analyst

Agency Location(s): 777 Bay St

Toronto ON M5G2E5

Frequency: As Needed

Area of Responsibility

Type: Province

Name: Ontario

Procedures/Standards: Make changes to data layer in NRVIS as required. Updates will occur automatically to LIO.

Training/Expertise:

Tools/Forms/Applications: NRVIS and the Land Information Ontario Warehouse

Q/A Performer

Org:

Position:

Q/A Procedures/Standards:

Additional Notes/Issues:

Maintain function

Performer

Org: Ministry of Municipal Affairs & Housing

Position: Geomatics Analyst

Agency Location(s): 777 Bay St

Toronto ON M5G2E5

Frequency: As Needed

Area of Responsibility

Type: Province

Name: Ontario

Procedures/Standards: Amalgamation and annexation changes are entered on an ongoing basis. Municipalities provide either hard copy maps, digital files, and legal descriptions of the amalgamation and annexation area. Changes are then incorporated in to the layer. Name changes are also entered on an ongoing basis.

Training/Expertise:

Tools/Forms/Applications: NRVIS and the Land Information Ontario Warehouse

Q/A Performer

Org:

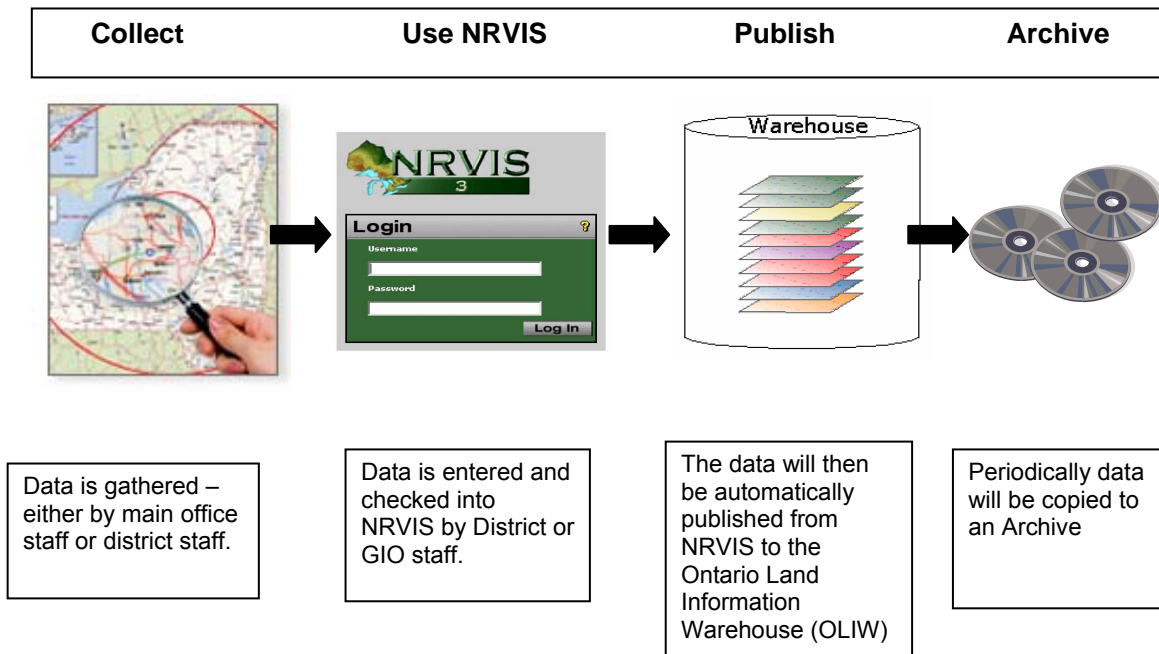
Position:

Q/A Procedures/Standards:

Additional Notes/Issues:

Maintenance Standards Summary

Flowchart summarizing all of the maintenance functions detailed in the previous section.



Data Class Access Standards

This section provides details about the access management to the information stored in this data class.

***OLID Record Audience:** Public

***Use Restrictions/Constraints:** None

Special Edit Rules: All editing performed by data custodian. Ministry of Municipal Affairs and Housing (MMAH)

***Data Class Distribution:**

Sensitivity Classification

The Sensitivity Classification assigned to this Data Class by the Information Owner.

Municipal Boundary - Upper Tier and District is classified as Non-Sensitive

Justification: The Data is public, classified as unrestricted use.

Governance:

Accessibility: Data will available for viewing by general public.

Classification Authority: *Not Identified*

Sensitivity Exceptions:

Geographic Unit Type Exceptions: *None identified*

Entity Exceptions: *None identified*

Geographic Extent Exceptions: *None identified*

Object Exceptions: *None identified*

LIO View (Warehouse interactive internet map browser)

This Section provides general information about this Data Class and its usage in IMF LIMBS Views.

General use of this data class in LIMBS views created by other business areas is permitted. The Custodian is not interested in creating a themed LIMBS View with this Data Class at this time.

LIMBS Use Limitations:

LIMBS Symbology:

Identity String:

Web Mapping Service (WMS)

Municipal Boundary - Upper Tier and District will be available for Web Mapping Services.

Practical WMS Usage:

Web Feature Service (WFS)

Municipal Boundary - Upper Tier and District will not be available for Web Feature Services

Data Class Logical Model

This section describes the Logical Data Model for this Data Class.

Geographic Unit Types

Identifies the Geographic Unit Types (a.k.a.GUTS) associated with this Data Class.

Geographic Unit Type Summary (sorted by status and name)

Geographic Unit Type Name	GUT#	Status	Sensitivity
District	71	To be Added	Non-Sensitive
Upper Tier Municipality	70	To be Added	Non-Sensitive

Geographic Unit Type Details**District** (71)

Description: That part of Ontario without municipal organization, though they will have assessment information under local school boards. These are typically found in northern Ontario.

Restricted Name: Same as Data Type Name

Restricted Description: Same as Data Type Description

Analysis Notes:

Status (Status Date) and Comments: To be Added (date unknown) Formerly known as Unorganized Area

Sensitive? Classification and Rationale: No, classified as Non-Sensitive.

Target Databases: This is a NRVIS (3.4.1) AND an OLIW (April 2008) GU Type

Use Purpose:

Use Restrictions:

Security Rules:

Additional Rules:

Additional Notes:

Upper Tier Municipality (70)

Description: Upper tier municipalities consist of two or more lower tier municipalities. Municipal responsibilities set out under the Municipal Act and other Provincial legislation are split between the upper tier and lower tier municipalities

Restricted Name: Same as Data Type Name

Restricted Description: Same as Data Type Description

Analysis Notes: Analysis Notes

Status (Status Date) and Comments: To be Added (date unknown)

Sensitive? Classification and Rationale: No, classified as Non-Sensitive.

Target Databases: This is a NRVIS (3.4.1) AND an OLIW (April 2008) GU Type

Use Purpose:

Use Restrictions:

Security Rules:

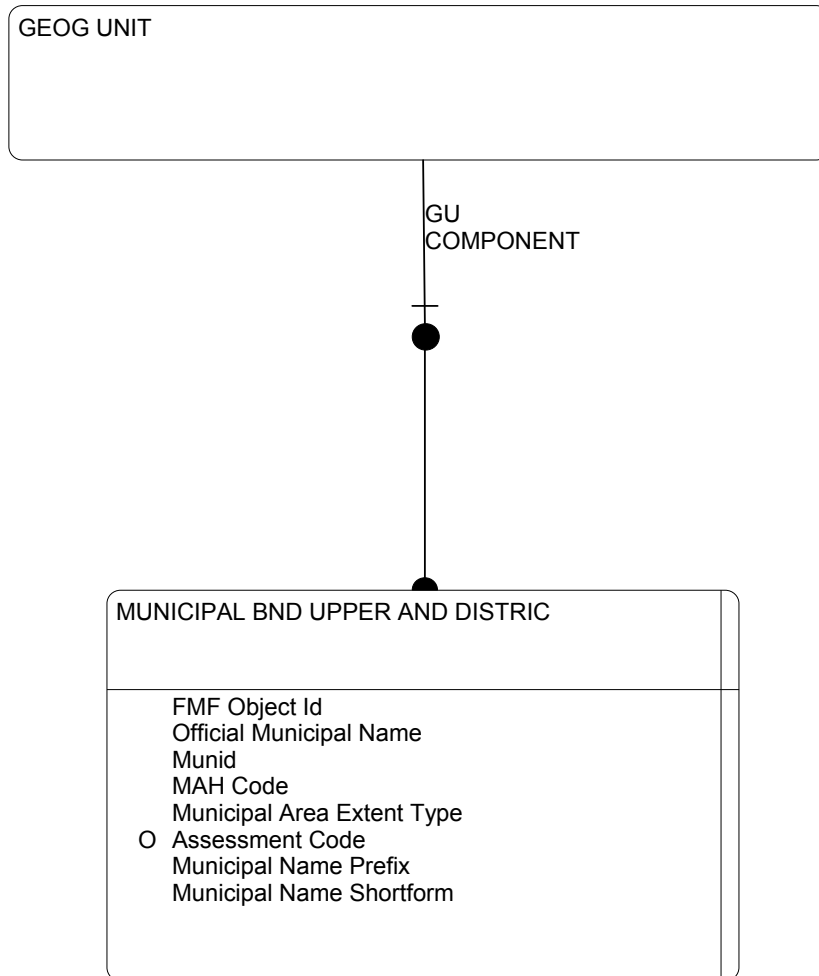
Additional Rules:

Additional Notes:

Logical Data Model

Refer to the Appendix 1 guide on how to read an Entity Relationship Diagram (ERD).

**Municipal Boundary Upper and District
March 2008**



Data Dictionary

Refer to the Appendix 2 for guide on how to interpret a data dictionary.

Entity : GEOG UNIT

Description :

A bounded geographic area of a specified type. A thing of interest to the Ministry that has spatial characteristics (i.e. location represented by a point, line or polygon) and requires supporting evidence (GEOGRAPHIC UNIT SOURCE ITEM) and justification (GEOGRAPHIC UNIT JUSTIFICATION) for its creation and major changes.

FMF Object Id Integer (long) 13 Mandatory
System generated identifier, unique at the application level.

Class : Identifier

CT Verification Status Character (variable length string) 10 Optional
An indication as to whether a qualified employee has verified the existence of the geographic unit.

Class : Flag
Permissible Values :
'Verified', 'Unverified'

Verification Status Date Date Optional
Date that the geographic unit was verified/validated.

Class : Date

Business Effective Date Flag Character (variable length string) 10 Optional
Indication of whether the business effective date is an actual or estimated value.

Class : Flag
Permissible Values :
'Actual', 'Estimated'

Business Effective Date Date Optional
Date that the record becomes effective in relation to the business i.e. the date MNR became aware of its existence.

Class : Date

Business Expiry Date Date Optional
A date indicating when the record was determined to be invalid.

Class : Date

Location Description Character (variable length string) 2000 Optional
Description of the area or directions on how to get to the site.

Class : Description

Data Sensitivity Indicator Character (variable length string) 3 Mandatory
An indication of whether the geographic unit is sensitive.
This attribute will eventually be removed once all application have been modified to the new attributes.

Class : Indicator
Permissible Values :
'Yes','No'

CT Sensitivity Class Character (variable length string) 15 Mandatory
The ranking of the sensitivity of the information embodied in the feature. Often wide-spread knowledge of the location of some rare aspect of our natural heritage will endanger it. On the other hand, this knowledge by some parties is also extremely important for its protection.

High - information that is extremely sensitive and intended for use by named individuals only. Refers to information that could have negative impacts on human life or health if released. Currently no data classes meet this

Medium - information that is sensitive and intended for use only by specified groups of employees and approved agents of the Crown. For OLIV/NRVIS refers to information where the entire data type has been flagged as sensitive (i.e. Stick Nests for Vulnerable Threatened and Endangered (VTE) species)

Low - information generally available to employees and approved agents of the Crown. Refers to sensitive features within a data type not normally sensitive (i.e. specific instances of Pileated Woodpecker)

Non Sensitive - data and information that does not fall into any of the three sensitivity levels. If disclosed will not result in any injury to individuals, government or private sector institutions (i.e. base data)

Class : Type
Permissible Values :
'High','Medium','Low','Non-Sensitive'

Sensitivity Date Date Mandatory
The date that the sensitivity classification was established.

Class : Date

Sensitivity Rationale Character (variable length string) 50 Mandatory
The primary reason for the object's information sensitivity classification.

Examples: "VTE Species", "Data provider agreement", "No restriction needed" (for Not Sensitive data), "Protect feature type", "Protect single feature", "Legislative or legal reqt", "Other", "Cultural Heritage Site"

Class : Description

Permissible Values :

"VTE Species", "Data Provider Agreement", "No Restriction Needed", "Protect Feature type", "Protect Single Feature", "Legislative or Legal Req", "Other", "Cultural Heritage Site"

Sensitivity Rationale Other Desc Character (variable length string) 250 Optional
Description of the reason(s) for the information classification when "Other" is selected as the rationale.

Class : Description

System Calculated Area Decimal 16 3 Optional
The area of a polygon measured in square metres by the system.

Class : Measurement

System Calculated Length Decimal 16 3 Optional
The perimeter of a polygon or length of a line measured in metres.

Class : Measurement

User Calculated Metric Decimal 16 3 Optional
The length, perimeter or area of an object in metres or square metres as measured or provided by the user.

Class : Measurement

Geographic Unit Description Character (variable length string) 2000 Optional
Detailed description of the Geographic Unit.

Class : Description

Entity : MUNICIPAL BND UPPER AND DISTRIC

Description :

A jurisdictional area based upon the assumption of municipal responsibilities set out under the Municipal Act and other Provincial legislation. In this data class there are two types of municipal units (Upper Tier and District (Unorganized Area)).

An Upper Tier Municipality is a geographic area that consists of two or more Lower Tier Municipalities.

A District is considered to be a geographic area without municipal organization. These are typically found in northern Ontario.

First Nation Lands will form holes in the municipal boundary coverage, where these areas exist.

FMF Object Id Integer (long) 13 Mandatory
System generated identifier, unique at the application level.

Class : Identifier

Official Municipal Name Character (variable length string) 100 Mandatory
Official name of a municipality determined by MMAH (Ministry of Municipal Affairs and Housing)

Class : Name

Munid Character (variable length string) 5 Mandatory
An arbitrary 5 digit code used in the Ministry of Municipal Affairs and Housing's Municipal Analysis and Retrieval System (MARS) data base to uniquely identify a Municipal Unit

Class : Business Identifier

MAH Code Character (variable length string) 5 Mandatory
Municipal Affairs and Housing (MAH) municipal code (also known as TEIGA (Treasury Economics and Inter-Governmental Affairs) code).

The code is unique over time. That is, even through status changes and new municipalities come into being as a result of amalgamations, previously used codes are retired, and never re-used.

This code is used for structured sorts. It must be unique within the Ministry of Municipal Affairs and Housing's Municipal Analysis and Retrieval System (MARS) database. Because this code changes when the status of the municipality changes, it is not used as a unique identifier. This code is carried as a historical reference and to link to older data systems.

Class : Code

Municipal Area Extent Type Character (variable length string) 10 Mandatory
The type of geography for a municipal area.

Class : Description

Permissible Values :

'Mainland','Water','Islands'

Assessment Code Character (variable length string) 4 Optional
A municipal code provided by the Municipal Property and Assessment Corporation (MPAC) (formerly Ministry of Revenue). It is also known as the Revenue Code.

The four-digit code made up of two portions: the first two digits describe the geographic Upper Tier in which the municipality is located, the second pair of digits uniquely describe the Lower Tier Municipality within the geographic Upper Tier. Since MPAC maintains assessment data only at the Lower Tier level, this code has been made-up for Upper Tier Municipalities in the Municipal Analysis and Retrieval System (MARS) data base. The code in MARS also had to be made-up for the new City of Toronto after the 1998 amalgamation, since MPAC continued to carry the codes of the former municipalities.

Class : Code

Municipal Name Prefix Character (variable length string) 50 Mandatory
The prefix of the name for a municipality. For example The prefix of "City of Hamilton" would be "City of"

Class : Name

Municipal Name Shortform Character (variable length string) 50 Mandatory
The shortform of the name for a municipality. For example, the shortform of "City of Hamilton" would be "Hamilton"

Class : Name

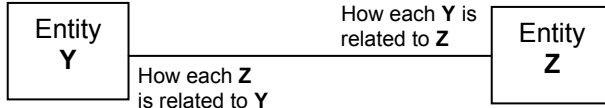
Subtype Of GEOG UNIT

Appendix 1: Reading an Entity-Relationship Diagram

A modeler can define the data needs of a business using an **entity relationship diagram** (ERD). An ERD is a schematic representation showing entities and their relationship to other entities. An **entity** is a data object and a **relationship** is a model of the association between objects of one or more different entities. In an ERD, entities are rectangles connected to other entities by relationship lines. (Official definition excerpt from the *Information Modeling Handbook for the OPS – Ontario Government Management Board Secretariat Corporate Architecture Branch*)

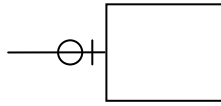
You will encounter the following symbology in an ERD.

General Notation: Text that describes a relationship between entities.

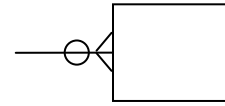


Relationship Cardinality Symbols:

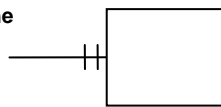
There *may* be **zero or one** occurrence of this entity. This means that the entity is optional.



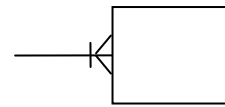
There *may* be **zero or more** occurrences of this entity. The relationship is optional.



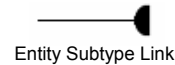
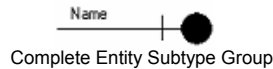
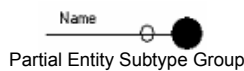
There *must* be **one and only one** occurrence of this entity. This means that the relationship is mandatory.



There *must* be **one or more** occurrences of this entity. The relationship is mandatory.

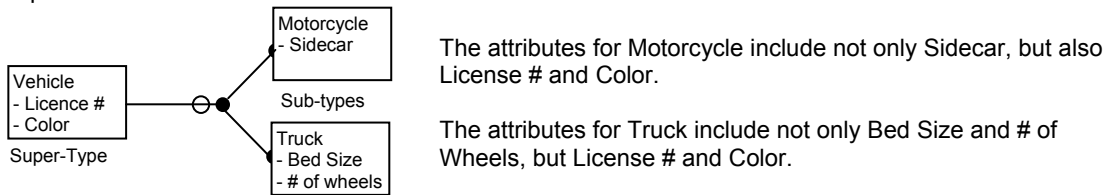


Entity Sub-type Groups: Entity subtype group icons link sub-type entities to the super-type entity. All subtype entities inherit the characteristics of the super-type entity. For example:



Group icons link subtype entities to the super-type entity. All subtype entities inherit the characteristics of the super-type entity. For example:

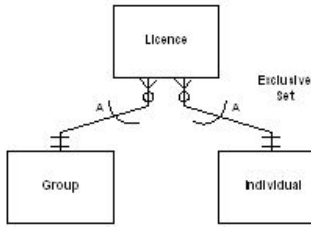
The circle indicates that the definition of subtypes for the super-type Vehicle is only partially complete. A line in this same location would indicate that all possible subtypes have been defined – indicating it as complete.



Types of vehicles that have not be explicitly defined would inherit only the characteristics of the Vehicle entity e.g. Car, ATV.

Exclusive Set:

An Exclusive Set describes a relationship between entities where, at any one time, only one of the relationships can be true. For example:



A Group *may* be the holder of one or more Licences.

An Individual *may* be the holder of one or more Licences.

A License *must* be Issued to one and only one Group **or** One and only one Individual.

One license cannot be issued to both a group and an individual.

Additional Examples:

Interpreted as:

An Instructor *must* be teaching one or more Courses.

A Course *must* be taught by one and only one Instructor.

An Instructor cannot exist unless they teach a course.

A Course cannot exist unless it has an Instructor. Tag-Team teaching by Instructors is not permitted.

A newly hired Instructor, not yet assigned to a course, may therefore not be part of this entity.

If the business rules are breached, the relationship between entities is incorrect. (See next example)

Interpreted as:

An Instructor *may* be teaching one or more Courses.

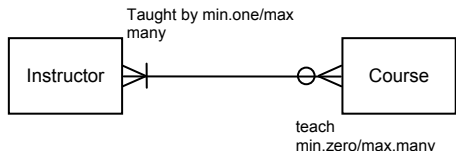
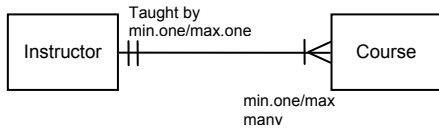
A Course *must* be taught by one or more Instructors.

A newly hired Instructor, not yet assigned to a course, can exist.

A new inexperienced Instructor, can be paired up with an experienced Instructor to teach a course until they are confident to teach solo.

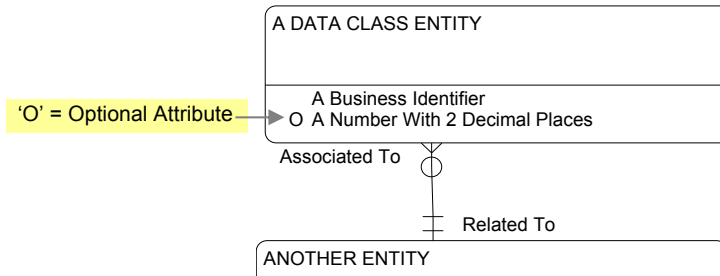
A Course cannot exist unless it has an Instructor.

Once again, if the business rules are breached, the relationship between entities is incorrect.



Appendix 2: Interpreting a Data Dictionary

General guidelines on how to interpret a Logical Model Data Dictionary



Entity : A DATA CLASS ENTITY

2 Description :
This is an example of a Entity Description

4 A Business Identifier
This is the main Business Identifier.

8 Class : Business Identifier

4 A Number With 2 Decimal Places
This is an example of a Data Item description.
This is an example of an Attribute Description.

8 Class : Measurement

9 This is an example of a Business Definition.

10 Each A DATA CLASS ENTITY Must be Associated To One and only one ANOTHER ENTITY(s). Exclusive :

3 Character (variable length string) 25 Mandatory

5 Numeric 3 2

6 Optional

7

1. Entity Block
2. Entity Name and Description
3. Attribute Block
4. Attribute name (underlined) with item description (below). Sometimes, the item is also described at the attribute level to describe its specific usage within an entity.
5. Field Type. E.g.: Character, Numeric, Date etc...
6. Field Length and where applicable – number of decimal places. The maximum capacity for a field’s content is determined by the Item’s set length. With the examples above...
 - The 1st item has been defined as a Character (Variable length string) field, with a maximum length of 25 characters.
 - The 2nd item has been defined as a Numeric field with a width of 3 including 2 decimal places. (9.99)
 Other numeric definition examples: 99.99 would be defined as 4 2, 999.9 as 4 1, 999 as 3 0 etc...
 Whenever numeric data items are defined, it is good practice to include an example in the item’s description.
7. Attribute Optionality within Entity. Optional attributes are prefixed with an ‘O’ within an Entity’s ERD.
8. Logical Class of the Data Item. Examples include:
 - Business Identifier: a field used by a business area as a reference to obtain more information.
 - Code: Where values are stored as a code – with the full value sometimes stored in a corresponding lookup table.
 - Date: For storing date information e.g.: Year, full or partial dates, character dates etc...
 - Description: For storing long descriptions.
 - Flag: Where the field is used to store a condition that may be used by the business area to trigger an event.
 - Identifier: Where field is used to store an identifier e.g.: a Licence Number.
 - Indicator: Usually Boolean e.g. Yes/No
 - Measurement: The unit of measure is also defined e.g.: mm, feet, kilograms etc...
 - Name: Where field is used to store a name. e.g.: Lake Rome
 - Quantity: Where a field stores a value that measures quantity. E.g.: Number of Moose Observed: 12
9. Business Definition. E.g.: *Valid Values in NRVIS_2NUM Lookup Table*
10. Entity Relationship Description