

Land Information Ontario

**NRVIS/OLIW Data Management Model For
Built-Up Area (V.1)
Published Edition**

Version 1.0

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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.

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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.lio.gov.on.ca). 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	<i>info-access@webmail.mnr.gov.on.ca</i>

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 Custodian, and then get back to the client.

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

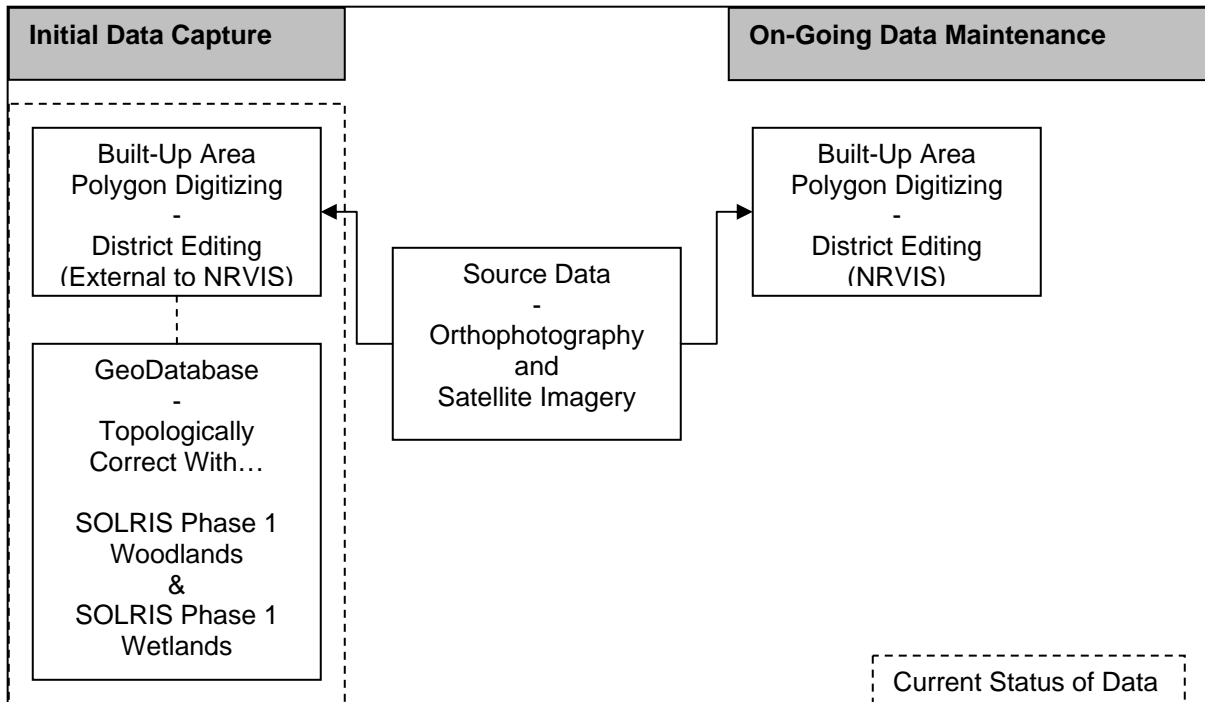
** Please note that Tier-2 support is intended for datasets that are maintained by the NRVIS Application. OLIW-only dataset enquiries will be fielded directly to the Custodian if assistance cannot be provided by Tier-1 support staff.*

Data Analysis Projects are supported by staff with the Ontario Ministry of Natural Resources (OMNR), Geographic Information Branch (GIB), Information Management, Policy and Standards Coordination Section. (IMPSC)

Caveat: The information within this document is relevant to the date it was produced, and may become outdated with the passage of time. The official Data Custodian 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.lio.gov.on.ca.

Background and Context

The Built-up Area data Class is a dynamic data class it will be used to update all built-up areas in the province of Ontario. An extent which delineates a Built-Up Area (alias Urban Area) which is the class of all constructed areas in the province of Ontario. All areas have a Built-Up Area Community Class classification and a Community Series classification. This class will be used to populate the constructed area of the Ecological Land Classification (ELC) community. The figure below shows the maintenance cycle of the class.



1.0: Current Status of Data Class

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

Built-Up Area (Version 1)

Current Status: Proposed, Timeline: Unknown to Unknown

Status/Analyst notes: First load of data will be from SOLRIS. This data Class is a dynamic data class it will be used to update all built-up areas in the province of Ontario.

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

2.0: Data Class Version History

A summary of all Data Class versions.

Version	Complexity	Version Description	NRVIS	Release	OLIW	Release	Start	Finish
1	unknown	New Data Class.	3.3		2006		07/31/2006	Unknown

3.0: Contact Roles and Responsibilities

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

CUSTODIAN: Ministry of Natural Resources (MNR), Science and Information Resources Division (SIRD), Science and Information Branch (SIB), Inventory Monitoring and Assessment (IMA)

Status: Established

CONTACTS AND ROLES:

GSO (Geographic Systems Officer)

Organization: Ministry of Natural Resources (MNR), Science and Information Resources Division (SIRD), Science and Information Branch (SIB), Inventory Monitoring and Assessment (IMA)

Expertise:

Roles: *including status and contribution*

Custodian - Maintenance (Established) Data Maintenance

Project Manager and 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) Project Manager and Data Analyst

Spatial Data Acquisition Specialist

Organization: Ministry of Natural Resources (MNR), Science and Information Resources Division (SIRD), Science and Information Branch (SIB), Inventory Monitoring and Assessment (IMA)

Expertise: Technical: Worked on prototyping the SOLRIS methodology; drawing up requirements for data submissions by Conservation Authorities

Roles: *including status and contribution*

Business Area Expert (Established) Verified process flow for SOLRIS methodology.

Provincial Remote Sensing Specialist

Organization: Ministry of Natural Resources (MNR), Science and Information Resources Division (SIRD), Science and Information Branch (SIB), Inventory Monitoring and Assessment (IMA)

Expertise: Project manager for SOLRIS methodology

Roles: *including status and contribution*

Business Area Expert (Established) Supplied technical material relating the SOLRIS methodology used and the applicability of the data to a wide range of business within MNR.

Remote Sensing Specialist

Organization: Ministry of Natural Resources (MNR), Science and Information Resources Division (SIRD), Science and Information Branch (SIB), Inventory Monitoring and Assessment (IMA)

Expertise: Familiar with the Southern Ontario Land Resource Information System (SOLRIS) methodology and its use of imagery.

Roles: *including status and contribution*

Custodian - Metadata (Established) Responsible for analysis liaison with IMA

4.0: 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.*

4.1: General Information

This section provides general details about the Data Class.

Built-Up Area (BLTUPARE)

*An extent which delineates a Built-Up Area (alias Urban Area) which is the class of all constructed areas in the province of Ontario. All areas have a Built-Up Area Community Class classification and a Community Series classification. This class will be used to populate the constructed area of the Ecological Land Classification (ELC) community.

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

Keywords:

Subject Area: *Name and Status*

Built-Up Area (*Proposed*)

***OLID Keywords:** *No keywords identified.*

***OLID Business Themes:** *No keywords identified.*

This Data Class is associated to the following Information Class(es). Refer to the relevant DMM document for any Data Classes listed under each Information Class.

Information Class: *ELC Community Area (Proposed)*

- ELC Community Area

4.2: Data Class Business Area Usage

***Use Purpose:** To provide an built-up area land classification at a scale between ecosite and ecodistrict which is derivable from image interpretation coupled with spatial analysis of vector data sets.

***Legislative Req./Authority:**

Use Cautions: Area delineation is derived from a number of different sources including Natural Resource Values Information System (NRVIS) base data layers, Natural Heritage Information Center (NHIC) layers, aerial photography and satellite imagery and is created through a comprehensive procedure involving interpretive and automated processes as specified in the Southern Ontario Land Resource Information System (SOLRIS) Methodology Summary Report. The information contained within this layer is made as current as possible within a frequent update cycle (remove reference to update cycle-not confirmed). It is designed as an information resource and is not intended for legal or legislated planning purposes.

Business Identifier(s): *None identified.*

4.3: Data Class Vintage Details

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

***Collection Start Date:** 31/7/2006

***Collection Recent Date:**

***Dataset Vintage Comments:**

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

***Current Collection Status:** UNKNOWN

4.4: Data Class Geospatial Details

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

Business Area Spatial Rules:

NRVIS/OLIW Abstract Class: SPMNTPOLY

Abstract Spatial Multi-Non-Tessellating-Polygon User Object. One or more polygons form a single object. Polygons may NOT overlap. However, holes gaps and islands are allowed. An example of this might be parks if we allow for parks with multiple disjoint pieces (Thousand Islands Park), or if we model a municipal or other jurisdiction as only containing the land (but not major water bodies) within its boundaries then the City of Toronto with the Toronto Islands would fall into this class as would any townships or districts that contained island with major bodies of water (Manitoulin).

***Geographic Extent:** Province

***Geographic Completeness:**

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*

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

*Horizontal Datum: NAD83 CNT
*Horizontal Positional Accuracy:
*Vertical Datum (z-scale): Not Applicable
*Vertical Positional Accuracy: Not Applicable

Interlayer Dependency? No

Nested? No

Consolidation? No

4.5: 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.*

*SOLRIS PROJECT

*Source Type/Medium: Satellite Image

*Acronym(s):

*Description:

*Vintage/Quality:

Geographic Extent:

Map Scale(s):

*Owner/Creator:

Location:

Contribution (Overall):

Comments:

This Source is applicable to all Geographic Unit Types (GUT) for this Data Class.

4.6: Data Class Information Products

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

Built-Up Area does not have any documented products.

5.0: 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.

Collect function

Performer

Org: Ministry of Natural Resources (MNR), Field Services Division (FSD), <ALL MNR DISTRICTS>

Position: GIS/ELC SOLRIS Technician

Agency Location(s): Aurora, Midhurst, Guelph, Peterborough, Aylmer, Kemtville District Offices

Frequency: As Necessary

Area of Responsibility

Type: Province

Name: Ontario

Procedures/Standards: SOLRIS Methodology

Training/Expertise: SOLRIS phase 1 training

Tools/Forms/Applications: ArcGIS

Q/A Performer

Org:

Position:

Q/A Procedures/Standards:

Additional Notes/Issues:

This function is applicable to the following Geographic Unit Type(s)

- Built-Up Area (21)

Compile function**Performer**

Org: Ministry of Natural Resources (MNR), Science and Information Resources Division (SIRD), Science and Information Branch (SIB) Inventory Monitoring and Assessment (IMA), Ecological Land Classification (ELC)

Position: GIS/ELC SOLRIS technician

Agency Location(s): Peterborough

Frequency: As Necessary

Area of Responsibility

Type: Province

Name: Ontario

Procedures/Standards: SOLRIS Methodology

Training/Expertise: SOLRIS phase 1 training

Tools/Forms/Applications: ArcGIS

Q/A Performer

Org: Ministry of Natural Resources (MNR), Science and Information Resources Division (SIRD), Science and Information Branch (SIB) Southern Science and Information Section (SSIS), Ecological Land Classification (ELC)

Position:

Q/A Procedures/Standards: SOLRIS Phase 1 methodology

Additional Notes/Issues:

This function is applicable to the following Geographic Unit Type(s)

- Built-Up Area (21)

Convert function**Performer**

Org: Ministry of Natural Resources (MNR), Science and Information Resources Division (SIRD), Science and Information Branch (SIB) Inventory Monitoring and Assessment (IMA), Ecological Land Classification (ELC)

Position: GIS/ELC SOLRIS technician

Agency Location(s): Peterborough

Frequency: As Necessary

Area of Responsibility

Type: Province

Name: Ontario

Procedures/Standards: SOLRIS Methodology

Training/Expertise: SOLRIS phase 1 training

Tools/Forms/Applications: ArcGIS

Q/A Performer

Org: Ministry of Natural Resources (MNR), Science and Information Resources Division (SIRD), Science and Information Branch (SIB) Southern Science and Information Section (SSIS), Ecological Land Classification (ELC)

Position:

Q/A Procedures/Standards: SOLRIS Phase 1 methodology

Additional Notes/Issues:

This function is applicable to the following Geographic Unit Type(s)

- Built-Up Area (21)

Load function**Performer**

Org: Ministry of Natural Resources (MNR), Science and Information Resources Division (SIRD), Science and Information Branch (SIB)Inventory Monitoring and Assessment (IMA), Ecological Land Classification (ELC)

Position:

Agency Location(s): Peterborough

Frequency: As Necessary

Area of Responsibility

Type: Province

Name: Ontario

Procedures/Standards: SOLRIS Methodology

Training/Expertise: SOLRIS phase 1 training

Tools/Forms/Applications: ArcGIS

Q/A Performer

Org: Ministry of Natural Resources (MNR), Science and Information Resources Division (SIRD), Science and Information Branch (SIB)Southern Science and Information Section (SSIS), Ecological Land Classification (ELC)

Position:

Q/A Procedures/Standards: SOLRIS Phase 1 methodology

Additional Notes/Issues:

This function is applicable to the following Geographic Unit Type(s)

- Built-Up Area (21)

Publish function

Performer

Org: Ministry of Natural Resources (MNR), Science and Information Resources Division (SIRD), Science and Information Branch (SIB)Inventory Monitoring and Assessment (IMA), Ecological Land Classification (ELC)

Position:

Agency Location(s): Peterborough

Frequency: As Necessary

Area of Responsibility

Type: Province

Name: Ontario

Procedures/Standards: SOLRIS Methodology

Training/Expertise: SOLRIS phase 1 training

Tools/Forms/Applications: ArcGIS

Q/A Performer

Org: Ministry of Natural Resources (MNR), Science and Information Resources Division (SIRD), Science and Information Branch (SIB)Southern Science and Information Section (SSIS), Ecological Land Classification (ELC)

Position:

Q/A Procedures/Standards: SOLRIS Phase 1 methodology

Additional Notes/Issues:

This function is applicable to the following Geographic Unit Type(s)

- Built-Up Area (21)

Maintain function

Performer

Org: Ministry of Natural Resources (MNR), Field Services Division (FSD), <ALL MNR DISTRICTS>

Position: GIS/ELC SOLRIS technician

Agency Location(s): Aurora, Midhurst, Guelph, Peterborough, Aylmer, Kemtville District Offices.

Frequency: As Necessary

Area of Responsibility

Type: Province

Name: Ontario

Procedures/Standards: SOLRIS Methodology

Training/Expertise: SOLRIS phase 1 training

Tools/Forms/Applications: ArcGIS

Q/A Performer

Org: Ministry of Natural Resources (MNR), Science and Information Resources Division (SIRD), Science and Information Branch (SIB) Southern Science and Information Section (SSIS), Ecological Land Classification (ELC)

Position:

Q/A Procedures/Standards: SOLRIS Phase 1 methodology

Additional Notes/Issues:

This function is applicable to the following Geographic Unit Type(s)

- Built-Up Area (21)

Archive function

Performer

Org: Ministry of Natural Resources (MNR), Field Services Division (FSD), <ALL MNR DISTRICTS>

Position: GIS/ELC SOLRIS technician

Agency Location(s): Aurora, Midhurst, Guelph, Peterborough, Aylmer, Kemtville District Offices.

Frequency: As Necessary

Area of Responsibility

Type: Province

Name: Ontario

Procedures/Standards: SOLRIS Methodology

Training/Expertise: SOLRIS phase 1 training

Tools/Forms/Applications: ArcGIS

Q/A Performer

Org: Ministry of Natural Resources (MNR), Science and Information Resources Division (SIRD), Science and Information Branch (SIB) Southern Science and Information Section (SSIS), Ecological Land Classification (ELC)

Position:

Q/A Procedures/Standards: SOLRIS Phase 1 methodology

Additional Notes/Issues:

This function is applicable to the following Geographic Unit Type(s)

- Built-Up Area (21)

Destroy function

Performer

Org: Ministry of Natural Resources (MNR), Field Services Division (FSD), <ALL MNR DISTRICTS>

Position: GIS/ELC SOLRIS technician

Agency Location(s): Aurora, Midhurst, Guelph, Peterborough, Aylmer, Kemtville District Offices.

Frequency: As Necessary

Area of Responsibility

Type: Province

Name: Ontario

Procedures/Standards: SOLRIS Methodology

Training/Expertise: SOLRIS phase 1 training

Tools/Forms/Applications: ArcGIS

Q/A Performer

Org: Ministry of Natural Resources (MNR), Science and Information Resources Division (SIRD), Science and Information Branch (SIB) Southern Science and Information Section (SSIS), Ecological Land Classification (ELC)

Position:

Q/A Procedures/Standards: SOLRIS Phase 1 methodology

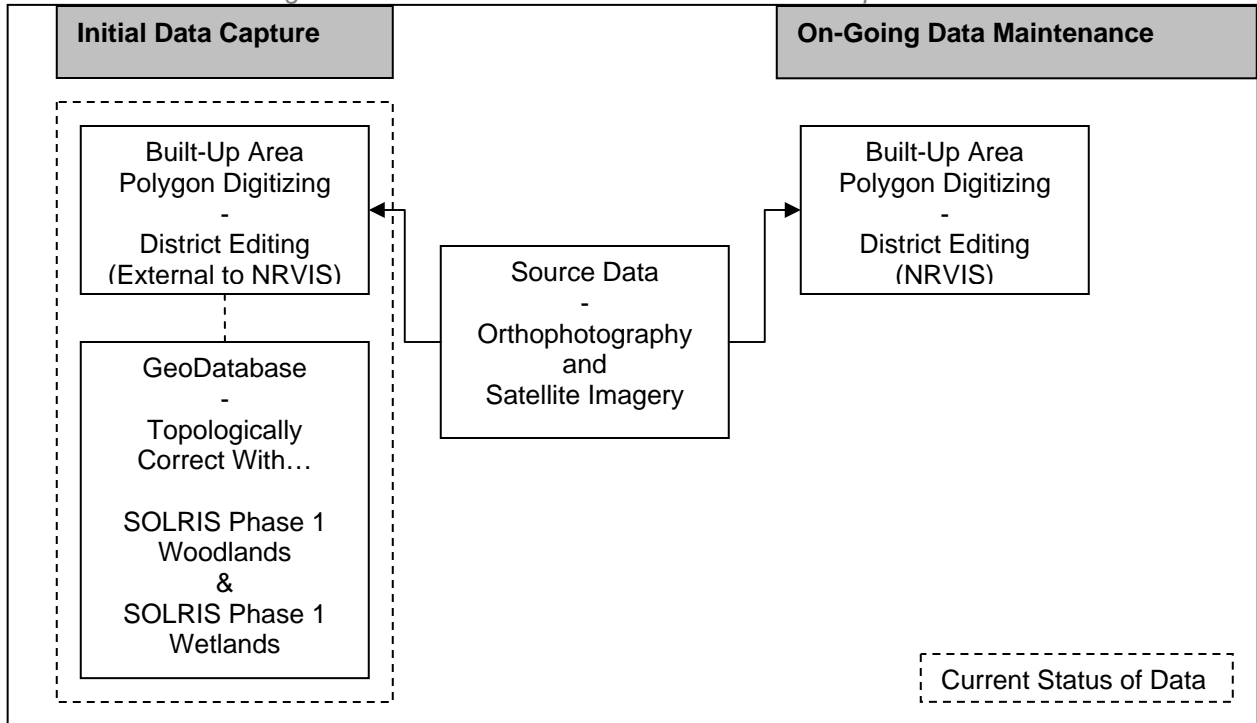
Additional Notes/Issues:

This function is applicable to the following Geographic Unit Type(s)

- Built-Up Area (21)

5.1: Maintenance Standards Summary

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



6.0: 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:**

Special Edit Rules: Southern Ontario Land Resource Information System (SOLRIS) methodology should be used to delineate the polygons. Every area must be described by a Community Class Code. If the area is at the Class level, its Community Series Code will be null. If the area is at the Series level, its Community Series Code must be filled in. It should be a Community Series that logically nests within the Community Class.

***Data Class Distribution:**

6.1: Sensitivity Classification

The Sensitivity Classification assigned to this Data Class by the Custodian.

Built-Up Area is classified as **Non-Sensitive**

Justification:

Governance:

Accessibility: Data will NOT be 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*

6.2: LIMBS 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 by other business areas in LIMBS Views is not permitted. The Custodian is not interested in creating a themed LIMBS View with this Data Class at this time.

6.3: Web Mapping Service (WMS)

Built-Up Area will not be available for Web Mapping Services

6.4: Web Feature Service (WFS)

Built-Up Area will not be available for Web Feature Services

7.0: Data Class Model

This section describes the Business and/or Design View Logical Data Model for this Data Class.

7.1: 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
Built-Up Area	21	To Be Added	Non-Sensitive

Geographic Unit Type Details

Built-Up Area (21)

Description: An extent which delineates a Built-Up Area, which may be a broad class or a more detailed series. All areas have a Built-Up area classification, but not all areas have a Built-Up Series classification.

Restricted Name: Same as Data Type Name

Restricted Description: An extent which delineates a Built-Up Area from ELC, which may be a broad class or a more detailed series.

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 (Unknown) AND an OLIW (?) GU Type

Use Purpose:

Use Restrictions:

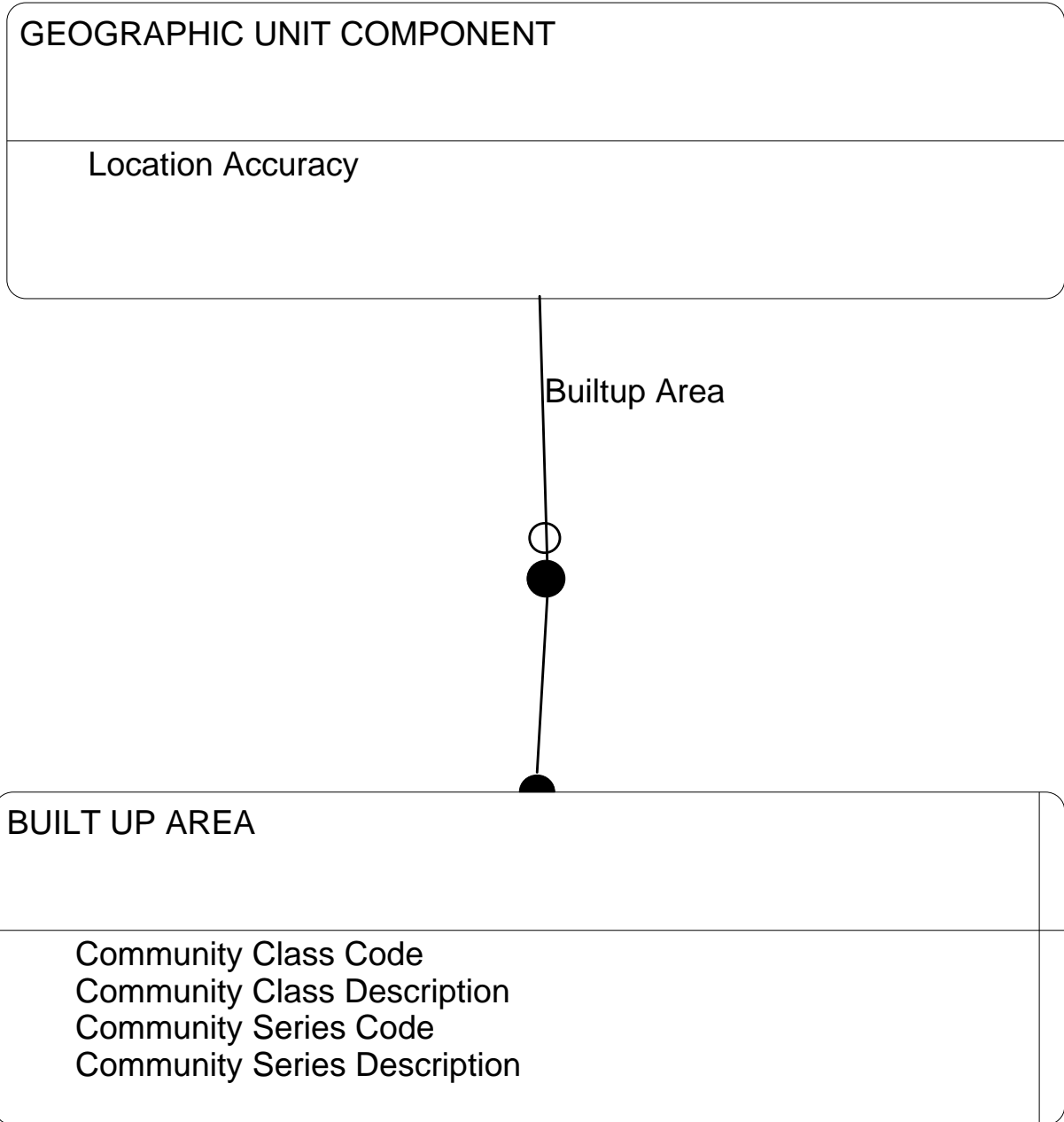
Security Rules:

Additional Rules:

Additional Notes:

7.2: Logical Data Model (Business View)

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



7.3: Data Dictionary

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

Entity : BUILT UP AREA

Description :

An extent which delineates an Ecological Land Classification (ELC) community, which may be a more broad class or a more detailed series. Just as a set of Community Series logically nest within a Community Class, contiguous areas of such a set would spatially dissolve into a single Community Class area.

<u>Community Class Code</u>	Character (variable length string)	2	Mandatory
Standard code for an ecological community class.			

Class : Code

Permissible Values :

'CO'

Valid values found in NRVIS_ELC_COMMUNITY_CLASS.

<u>Community Class Description</u>	Character (variable length string)	40	Mandatory
Most widely accepted definition of an ecological community class.			

Class : Description

Permissible Values :

'Constructed'

<u>Community Series Code</u>	Character (variable length string)	3	Mandatory
The standard code assigned to an ecological community series.			

Class : Code

Permissible Values :

'COI','COP'

Valid values found in NRVIS_ELC_COMMUNITY_SERIES.

<u>Community Series Description</u>	Character (variable length string)	40	Mandatory
Short textual descriptive name assigned to the Community Series.			

Class : Description

Permissible Values :

'Built-up Area Impervious','Built-up Area pervious'

Subtype Of GEOGRAPHIC UNIT COMPONENT

Subtype Of GEOGRAPHIC UNIT COMPONENT

Entity : GEOGRAPHIC UNIT COMPONENT

Description :

A Geographic Unit that may be included in a Geographic Unit Consolidation.

<u>Location Accuracy</u>	Character (variable length string)	2	Mandatory
The degree of conformity or closeness of a measurement within the database to its true value in the world.			

Class : Code

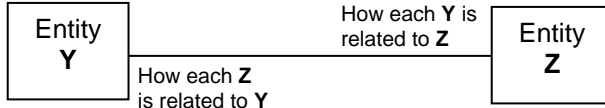
Valid values in NRVIS_LOCATION_ACCURACY.

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*)

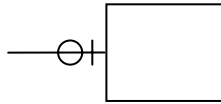
You will encounter the following symbology in an ERD.

General Notation: Text that describes a relationship between entities.

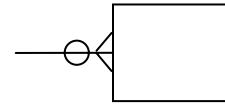


Relationship Cardinality Symbols:

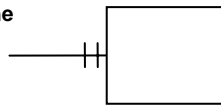
There *may* be **zero or one** occurrence of this entity. This means that the entity is optional.



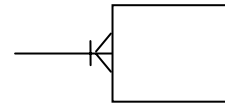
There *may* be **zero or more** occurrences of this entity. The relationship is optional.



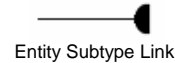
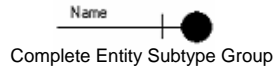
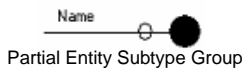
There *must* be **one and only one** occurrence of this entity. This means that the relationship is mandatory.



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

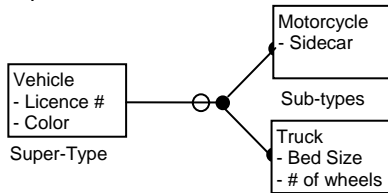


Entity Sub-type Groups: Entity subtype group icons link sub-type entities to the super-type entity. All subtype entities inherit the characteristics of the super-type entity. For example:



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.



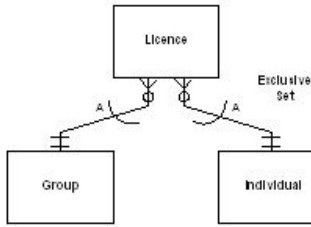
The attributes for Motorcycle include not only Sidecar, but also Licence # and Color.

The attributes for Truck include not only Bed Size and # of Wheels, but Licence # and Color.

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

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

Additional Examples:

Interpreted as :

An Instructor *must* be teaching One or More Courses.

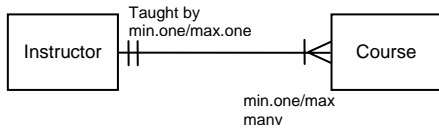
A Course *must* be taught by One and Only One Instructor.

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 dictate that this is not so, the relationship is incorrect. (See next example)



Interpreted as :

An Instructor *may* be teaching One or More Courses.

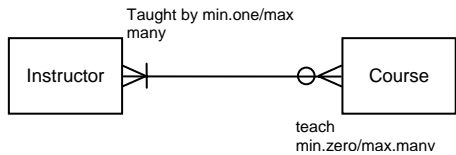
A Course *must* be taught by One or More Instructors.

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.

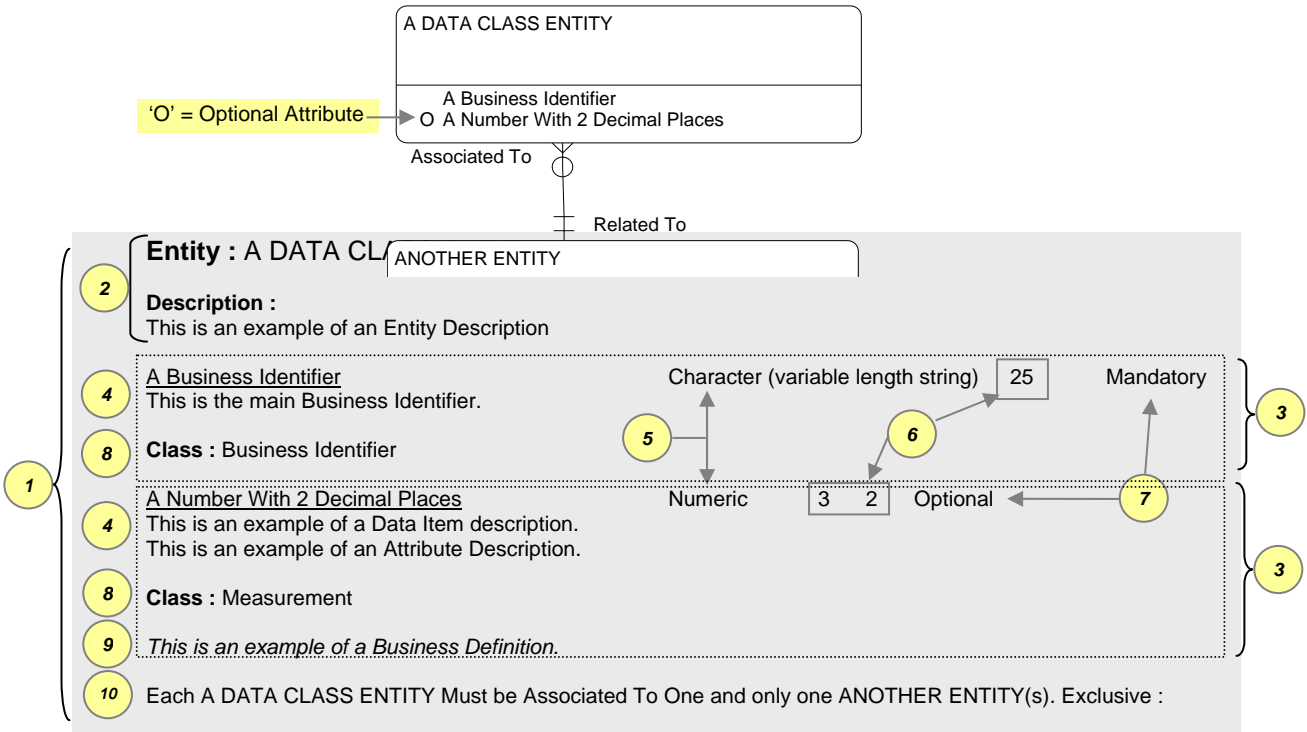
A Course cannot exist unless it has an Instructor.

Once again, if the business rules dictate that this is not so, the relationship is incorrect.



Appendix 2: Interpreting a Data Dictionary

General guidelines on how to interpret a Business View Logical Model Data Dictionary



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 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

Document Control

Version	Date	Author/Editor	Comments
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Contributors

Approvals