

Land Information Ontario

Data Class Fact Sheet:

AGGREGATE INSPECTOR JURISDICTION

Version 1.0

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Additional Information

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1. Introduction

Data modeling involves identifying the things of importance to an organization (entities), the properties of those things (attributes) and how they are related to one another (relationships). This document provides the logical view of the data model. Appendix 1 provides details on understanding data models.

2. Overview

This data class is part an Information Class.

Information Class: **AGGREGATE MANAGEMENT (AGGRMGT)**

Data Classes are:

- i. Aggregate Inspector Jurisdiction*
- ii. Aggregate Designated Area*

Aggregate Inspector Jurisdiction (AGGINSPJ)

Area for which an Aggregate inspector is responsible in matters pertaining to aggregate authorities and their enforcement.

Abstract Class

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 (Mantoulin).

Custodian

Provincial Government, Ministry of Natural Resources, Natural Resources Management Division (NRMD), Lands and Waters Branch (LWB), Aggregates and Petroleum Resources Section.

Geographic Unit Types

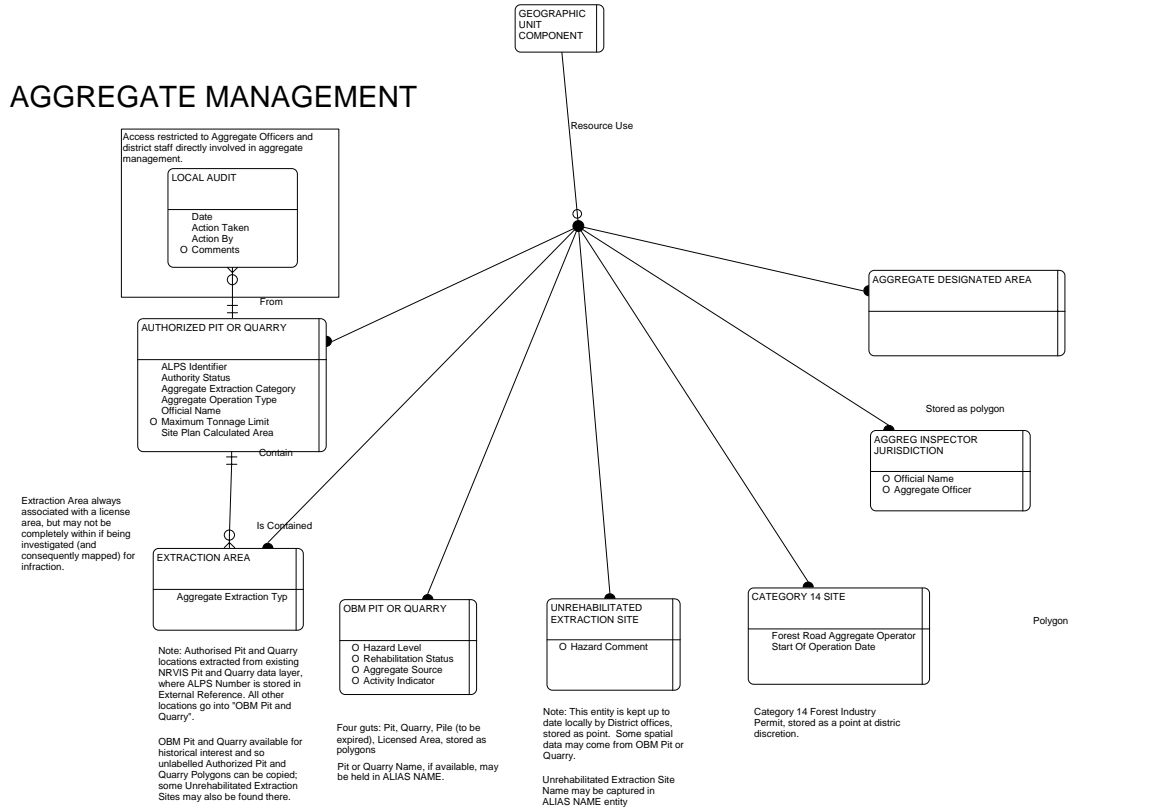
Aggregate Inspector Jurisdiction (2717)

Area for which an Aggregate inspector is responsible in matters pertaining to aggregate authorities and their enforcement.

3. Logical Data Model (Business View)

See appendix 1 for how to read an Entity Relationship Diagram.

AGGREGATE MANAGEMENT



4. Data Dictionary

See Appendix 2 for how to interpret a data dictionary.

Entity : AGGREG INSPECTOR JURISDICTION

Description :

Area for which an Aggregate inspector is responsible in matters pertaining to aggregate authorities and their enforcement.

Official Name Character (variable length string) 100 Optional
MNR's official name or a name defined by an official body.

Class :

Aggregate Officer Character (variable length string) 100 Optional
The name of the aggregate officer

Class : Name

Subtype Of GEOGRAPHIC UNIT COMPONENT

Entity : AGGREGATE DESIGNATED AREA

Description :

The parts of the province as delineated under the Aggregate Resources Act where all aggregate operations must be licensed (on private land) or permitted (on Crown land).

Subtype Of GEOGRAPHIC UNIT COMPONENT

Entity : AUTHORIZED PIT OR QUARRY

Description :

An aggregate operation dependent on a registered authority for it. For aggregates, a licence or permit issued by MNR, or a wayside permit issued by MTO. The authority entails a site plan (map of the site) and a rehabilitation plan.

ALPS Identifier Numeric 8 Mandatory
The business identifier assigned to a proposed or approved aggregate operation. This number is assigned via the Aggregate Licensing and Permitting System (ALPS).

Class : Business Identifier

Authority Status Character (variable length string) 12 Mandatory
The legal status of an aggregate extraction operation's licence or permit.

Class : Description

Permissible Values :

'Active', 'Revoked', 'Surrendered'

Aggregate Extraction Category Character (variable length string) 2 Mandatory
The category code for the type of authorized extraction being done on the site. The categories are set up under the Aggregate Resources of Ontario Provincial Standards (version 1.0). Licences are subdivided into eight categories: Class 'A' or Class 'B' pit or quarry above or below water. (a Class 'A' licence is to remove more than 20,000 tonnes of aggregate annually and a Class 'B' is to remove 20,000 tonnes or less of aggregate annually). Aggregate permits are subdivided into six categories. The last category is for Wayside Permits (issued by the Ministry of Transportation). Examples: "3" is a licenced Class B Pit Above Water on private land, "11" is a permitted Quarry Above Water on crown land.

Class : Code

Valid values found in NRVIS_AGGREGATE_EXTRACTION_CATEGORY.

Aggregate Operation Type Character (variable length string) 10 Mandatory
Indicates what type of extraction activity the aggregate operation allows. Values: Pit, Quarry, Both, Underwater

Class : Description

Permissible Values :

'Pit', 'Quarry', 'Both', 'Underwater'

Official Name Character (variable length string) 100 Mandatory
MNR's official name or a name defined by an official body.

Class :

Maximum Tonnage Limit Numeric 10 Optional
The maximum amount of material (in metric tonnes) allowed for extraction from an aggregate licence. If null, there is no limit to the amount of material that may be extracted.

Class : Quantity

Site Plan Calculated Area Numeric 10 2 Mandatory
The site plan is a legal document describing the spatial extent of an aggregate extraction operation. It is typically filed with the application for an aggregate licence or permit. The calculated area is the total area as provided by the site plan measured in hectares (ha).

Class : Quantity

Subtype Of GEOGRAPHIC UNIT COMPONENT

Each AUTHORIZED PIT OR QUARRY May be Contain One or more EXTRACTION AREA(s). Exclusive :

Each AUTHORIZED PIT OR QUARRY May be From One or more LOCAL AUDIT(s). Exclusive :

Entity : CATEGORY 14 SITE

Description :

A site within a forest road corridor (primary roads, for example, have a 1 km corridor) from which a forest company is allowed to take aggregate without a permit over a two-year span for road construction; after that, they should have a permit. Aggregate Resources of Ontario Provincial Standards outlines the rules for these pits (which are classed as Category 14). Forest companies using these pits are required to submit their locations to the district. Since they do not have a licence or permit, they are not recorded in ALPS.

Forest Road Aggregate Operator Character (variable length string) 200 Mandatory
The name of the company operating an aggregate extraction site for forest road construction.

Class : Name

Start Of Operation Date Date Mandatory
The date the operation started

Class : Date

Subtype Of GEOGRAPHIC UNIT COMPONENT

Entity : EXTRACTION AREA

Description :

The area where aggregate resources are produced or obtained. Typically this area falls within the authorized pit or quarry licence area outline.

Aggregate Extraction Type Character (variable length string) 10 Mandatory
Indicates the type of aggregate extraction operation. Values: Pit, Quarry

Class : Description
Permissible Values :
'Pit','Quarry'

Subtype Of GEOGRAPHIC UNIT COMPONENT

Each EXTRACTION AREA Must be Is Contained One and only one AUTHORIZED PIT OR QUARRY(s). Exclusive :

Entity : GEOGRAPHIC UNIT COMPONENT

Description :

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

Location Accuracy 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*.

Subtype Of GEOGRAPHIC UNIT

Each GEOGRAPHIC UNIT COMPONENT May be One and only one FIRE DETAIL(s). Exclusive :

Each GEOGRAPHIC UNIT COMPONENT May be One and only one GEOGRAPHIC UNIT SENSITIVITY(s). Exclusive :

Each GEOGRAPHIC UNIT COMPONENT May be Defined By One or more DRAWING SCALE(s). Exclusive :

Entity : LOCAL AUDIT

Description :
 An inspection of the an aggregate operation's extraction procedures and records by trained staff from the Ministry of Natural Resources. An aggregate operation is the extraction of aggregate material from the earth via a pit or quarry.

Date Date Mandatory

Class : Date

Action Taken Character (variable length string) 2000 Mandatory
 A brief description for an action performed when auditing an aggregate operation

Class : Description

Action By Character (variable length string) 200 Mandatory
 The party that performed an action

Class : Description

Comments Character (variable length string) 2000 Optional
 Unstructured description, additional notes, or further explanation.

Class : Text

Each LOCAL AUDIT Must be One and only one AUTHORIZED PIT OR QUARRY(s). Exclusive :

Entity : OBM PIT OR QUARRY

Description :
 Photointerpreted pits and piles, often temporary in nature. They can indicate a possible source of aggregate that may be sufficiently large to operate (get a permit or license for). This is data originally loaded from the Pit And Quarry layer. This layer will be expired once all or most pits or quarries shown on this layer have been assigned to the Authorized Pit or Quarry, or Unrehabilitated Extraction Sites

Hazard Level Numeric 3 Optional
 The level of hazard of the site.

Class : Code

Rehabilitation Status Character (variable length string) 3 Optional
 An indication of how the pit or quarry has been rehabilitated. ie. after extraction, the land may have been treated so that it is restored to its former use or condition, or changed to another use or condition. eg. complete, nil, partial, progressive

Class : Code
 Valid values in *NRVIS_REHABILITATION_STATUS*.

Aggregate Source Character (variable length string) 2 Optional
 Source of the aggregate. eg. bedrock, clay, dolostone, earth, gravel, granite, limestone, marble, sand, shale, sandstone, stone

Class : Code
 Valid values in *NRVIS_AGGREGATE_SOURCE*.

Activity Indicator Character (variable length string) 3 Optional
An indication of whether the geographic unit is active, inactive, or abandoned.

Class : Code
Valid values in NRVIS_ACTIVITY.

Subtype Of GEOGRAPHIC UNIT COMPONENT

Entity : UNREHABILITATED EXTRACTION SITE

Description :
A place where aggregate extraction took place; a pit or quarry for which a licence or permit was never in force at any time after December 31, 1989. Over time, nature may rehabilitate it, but often these sites need some treatment to be compatible with the use of adjacent land.

A quarry is land or land under water from which consolidated aggregate is being or has been excavated.

A pit is land or land under water from which unconsolidated aggregate is being or has been excavated.

Hazard Comment Character (variable length string) 2000 Optional
Unstructured description, additional notes, or further explanation regarding sources of danger at a feature.

Class : Description

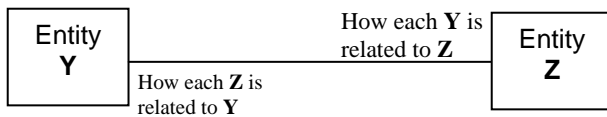
Subtype Of GEOGRAPHIC UNIT COMPONENT

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)

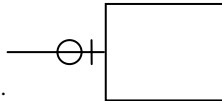
You will encounter the following symbology in an ERD.

General Notation: Text that describes a relationship between entities.

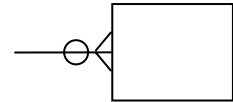


Relationship Cardinality Symbols:

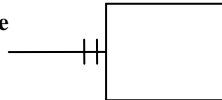
There *may* be **zero or one** occurrence of this entity. This means that the entity is optional.



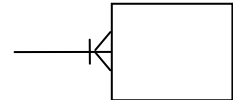
There *may* be **zero or more** occurrences of this entity. The relationship is optional.



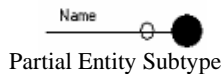
There *must* be **one and only one** occurrence of this entity. This means that the relationship is mandatory.



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

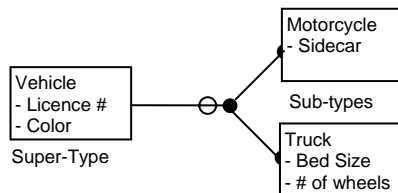


Entity Sub-type Groups: Entity subtype group icons link sub-type entities to the super-



type entity. All subtype entities inherit the characteristics of the super-type entity. For example: Entity subtype 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



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

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

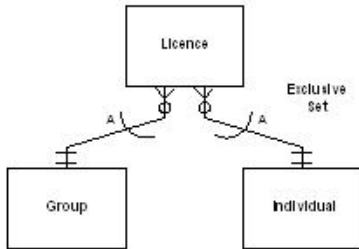
complete.

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 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.

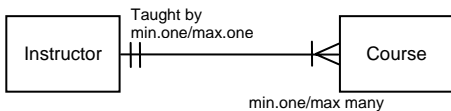
A Course *must* be taught by One and Only One Instructor.

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.

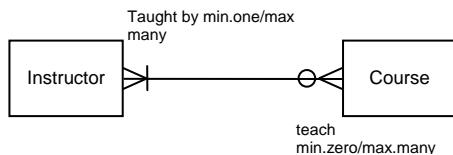
A Course *must* be taught by One or More Instructors.

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.

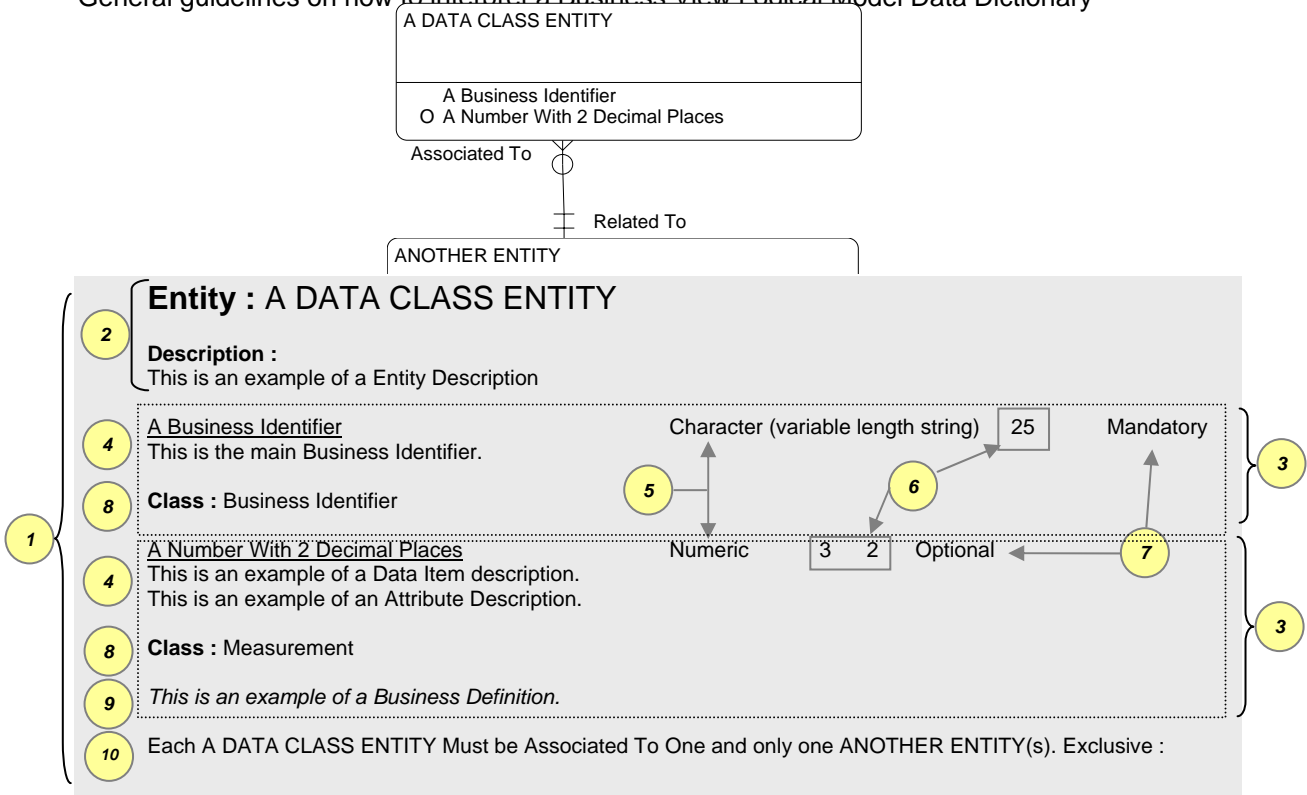
A Course cannot exist unless it has an Instructor.

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
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
1.0	January 5, 2006	Victor AZONDEKON	First draft pending approval

Contributors

Approvals