

Importing Digital Spatial Data Water Activities

Intended User: *Water Act* applicants

Overview

This quick reference guide (QRG) describes how to use and import shapefiles into OneStop for *Water Act* approval applications. For specifics on how each shapefile is used for different types of *Water Act* applications (dam/ pond, reservoir, water, wetland, borrow pit, and other), please see the corresponding QRGs.

To apply for a water approval, applicants **must** upload the proposed *Water Act* activity area shapefile and the applicable proposed dam/pond, reservoir, wetland, or other shapefiles.

All shapefiles submitted to the AER must be submitted as polygon features and must conform to shapefile standards outlined in the ESRI white paper – [ESRI Shapefile Technical Description](#).

All shapefile templates are available from the AER by contacting the Customer Contact Centre. Templates are also available for download on OneStop.

Water Polygon Topology Rules

The *Water Act* activity area polygon data represents the overall **water body disturbance areas** associated with the *Water Act* approval application.

- OneStop uses the activity area polygon to determine quarter sections to be included in the corresponding Public Notice of Application.

Activity that takes place on public land may align with the associated public lands disposition(s), but care should be taken not to include large areas of land in the *Water Act* activity polygon that may not have any impacts/disturbances to water bodies associated with them.

Important

When creating polygon files, ensure the files **do not** intersect or self-overlap before uploading them to OneStop.

Dam and Pond Activity

The additional dam polygon(s) and associated pond polygon represent individual features in dam safety activity.

- The dam polygon represents the berm and associated outside toe of each dam.
- The pond polygon represents the surface area of the pond at full supply level.

See the Business Rules section below to understand the topological relationship between the dam and pond polygons.

Reservoir Activity

The additional reservoir polygon represents the total water area at full supply level and includes all the berms.

- Only one reservoir polygon feature will be accepted in each shapefile activity submission.

Wetland Activity

Important

The AER **does not accept** the shapefile template described in the Government of Alberta's [Wetland Identification and Delineation Directive](#). Use the shapefile template described in this quick reference guide.

The additional wetland polygon submission represents the **same wetland delineation** as described in the *Alberta Wetland Identification and Delineation Directive*.

- Multiple (wetland) polygons are permitted

Borrow Pit Activity

The borrow pit polygon represents the footprint of the borrow pit excavation activity.

- A single borrow pit shapefile is used for the general application and additional borrow pit information.
- Multiple polygons are permitted.

Important

The AER **does not accept** the shapefile template described *Wetland Identification and Delineation Directive*. Use the shapefile template described in this QRG.

Other Activity

There are no additional shapefile requirements for this activity.

Unique ID

Operators or survey companies create the Unique_ID field themselves. It could be any numerical sequence while in draft form.

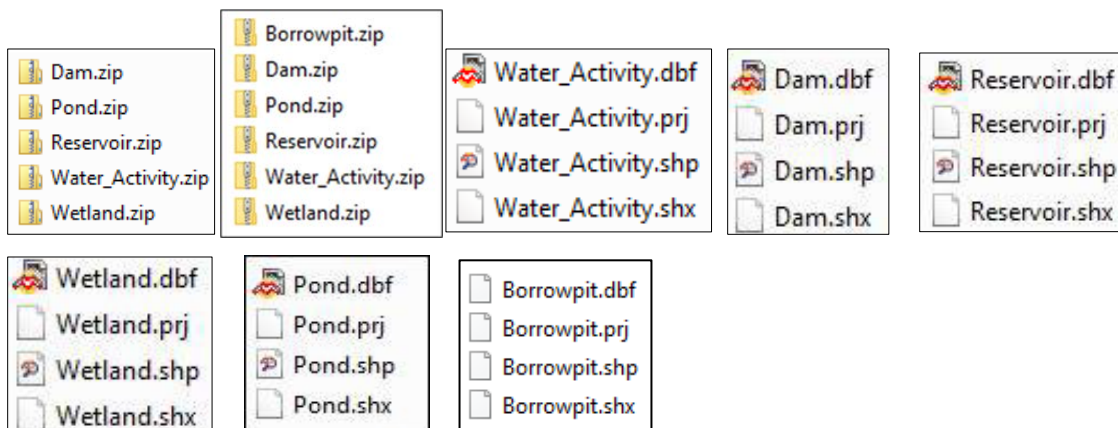
The Unique_ID of the polygon equates to the technical information provided in the application that describes that same polygon.

	FID	Shape	Unique_ID
▶	0	Polygon	1

Digital Spatial Data

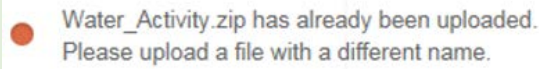
Digital spatial data is uploaded as a shapefile. This file contains spatial location data and consists of several files, collectively uploaded as a zip file.

The name of the shapefiles must conform to the naming convention described in the activity QRG. The title of zip file folders may be named according to your business rules.



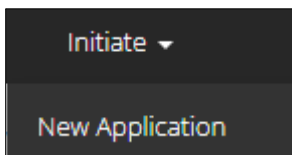
Important:

All zip folders must have a unique name. Ensure the folder name has not been previously attached to the activity. When the name is not unique, an error message will appear.

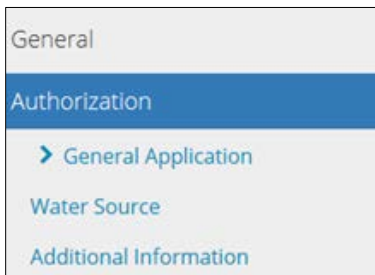


Import Water Activity Area as Digital Spatial Data (Shapefile)

1. Log into OneStop.
2. From the dashboard, search for the required application.
3. On the top navigation bar, click **Initiate** and select **New Application**.



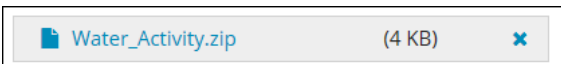
4. From the left navigation bar, select **Authorization**.



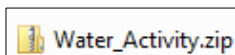
5. Select **General Application**.
6. Click **Attach File**. Shapefiles must be loaded before loading .csv files.



7. Navigate to the stored location of the required file.



8. The shapefile displays in OneStop.



- Click **Submit Shapefile**. OneStop processes the file. This takes 10–30 seconds, depending on the file size.



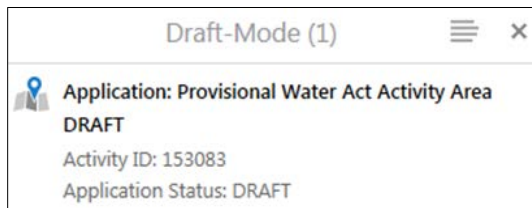
- While the file is being processed, continue with the application.
- Once the file is loaded into Map Viewer, the location information displays in the Activity Details LLD table.

LLD	Quarter	SEC	Township	Range	Meridian
	SW	31	87	7	5

- At the top of the screen, click **View on Map**. The AER logo displays as Map Viewer opens. Once loaded, the shapefile area displays.



- Use Map Viewer tools to zoom in or out as required.



Important:

To change a shapefile that is currently attached to a draft authorization, upload the **new** file required. OneStop overwrites the old file and enters the new file into Map Viewer.

Resources

For more details on where to upload shapefiles for each type of *Water Act* application, see the corresponding quick reference guide for that activity.

OneStop Automated Shapefile Validations

For all shapefiles submitted, OneStop automatically confirms the following information is correct and displays the appropriate error message when these checks fail:

- Shapefile features fall within the geographic extents of the Province of Alberta.
- All attributes described in this QRG, including the order of the attribute fields, are included in the shapefile submission.
- All mandatory fields, as described in this QRG, are included in the shapefile submission.
- Shapefile coordinate system has the same parameters as described later in this QRG.
- Reservoir shapefile contains one polygon feature.

Glossary of Terms

Key Term	Description
Shapefiles	<p>A shapefile is an ESRI vector data storage format for storing the location, shape, and attributes of geographic features. Data in a shapefile is stored as a set of related files and describes one set of data.</p> <p>The shapefile is an industry standard spatial data format that can be created using most Geographic Information System (GIS) or Computer Aided Design (CAD) software packages. The shapefile is a collection of separate files submitted to the AER in a single zip file.</p> <p>The IDA system requires, as a minimum, the following shapefile components the: .shp, .shx, .dbf, and .prj files. These files follow the standard naming conventions described in this document and are submitted as a single zip file.</p>
.csv	<p>The comma-separated value standard or .csv is a simple data format for representing numeric and textual values. It is an example of a "Flat File" format. These files are often created in Excel or any text editing software.</p> <p>The columns of data in each row of the file are delimited (separated) by a comma. Individual rows are separated by a new line (character used to represent the end of a line of text).</p> <p>The .csv files can be used to create numerous rows of data that can then be uploaded as a single file.</p>

OneStop Spatial Data

The AER requires all spatial data submissions to reference to the NAD83 datum and projected to the following:

NAD 1983 10TM AEP Forest	NAD 1983 CSRS 10TM AEP Forest
<p>NAD_1983_10TM_AE P_Forest WKID: 3400 Authority: EPSG Projection: Transverse Mercator False Easting: 500000.0 False Northing: 0.0 Central Meridian: -115.0 Scale Factor: 0.9992 Latitude Of Origin: 0.0 Linear Unit: Meter (1.0) Geographic Coordinate System: GCS_North_American _1983 Angular Unit: Degree (0.0174532925199433) Prime Meridian: Greenwich (0.0) Datum: D_North_American _1983 Spheroid: GRS_1980 Semi-major Axis: 6378137.0 Semi-minor Axis: 6356752.314140356 Inverse Flattening: 298.257222101</p>	<p>NAD_1983_CSRS_10TM_ AEP_Forest WKID: 3402 Authority: EPSG Projection: Transverse Mercator False Easting: 500000.0 False Northing: 0.0 Central Meridian: -115.0 Scale Factor: 0.9992 Latitude Of Origin: 0.0 Linear Unit: Meter (1.0) Geographic Coordinate System: GCS_North_American_1983_CSRS Angular Unit: Degree (0.0174532925199433) Prime Meridian: Greenwich (0.0) Datum: D_North_American_198 3_CSRS Spheroid: GRS_1980 Semi-major Axis: 6378137.0 Semi-minor Axis: 6356752.314140356 Inverse Flattening: 298.257222101</p>

Water Act Authorization Data

Feature Name: *Water Act* Activity Area

Description: The *Water Act* activity area polygon data represents the overall area of individual activities associated with the *Water Act* approval application.

- OneStop uses the activity area polygon to determine the quarter sections to be included in the corresponding Public Notice of Application.
- When the activity takes place on public land, it should align with the associated public lands disposition.

Geometry: Polygon

Pipeline Segment Attributes:

Field name	Type	Allowable values	Length	Mandatory or optional	Definition
FID	Object ID	System Defined		Mandatory	Unique identifier
Shape	Geometry	System Defined		Mandatory	The spatial feature
Unique_ID	Long			Mandatory	A unique number to represent the activity area, values must be greater than zero

Business Rules

The water activity shapefile should contain all associated water approval shapefiles. The individual water approvals associated with the shapefile should not intersect or fall outside of the associated activity area polygon.

Packaging

Water Act activity area shapefiles must be provided and named as described below:

- Water_Activity.shp (required)
- Water_Activity.shx (required)
- Water_Activity.dbf (required)
- Water_Activity.prj (required)
- Water_Activity.sbn (optional)
- Water_Activity.sbx (optional)
- Water_Activity.shp.xml (optional)

Important:

The Unique_ID or ID must be greater than zero (e.g., 1 for all water shapefile uploads).

Dam Data

Feature Name: Dam

Description: The dam polygon(s) represents individual features in a dam safety approval application.

The dam polygon represents the berm and associated outside toe of the dam. It is aligned with the associated pond polygon feature as described in the business rules.

Geometry: Polygon

Dam Attributes:

Field name	Type	Allowable values	Length	Mandatory or optional	Definition
FID	Object ID	System Defined		Mandatory	Unique identifier
Shape	Geometry	System Defined		Mandatory	The spatial feature
ID	Long			Mandatory	Required user generated dam identification number must be numeric and unique
Name	Text		40	Mandatory	Required user generated name must be unique and can be up to 40 characters long

Business Rules

1. The dam feature should share the same vertices as the associated pond shapefile feature.
2. The dam feature should intersect (touch) the pond feature boundary.
3. The dam feature should not cross within the boundary of the pond feature boundary.

Packaging

Dam shapefiles must be provided and named as described below.

- Dam.shp (required)
- Dam.shx (required)
- Dam.dbf (required)
- Dam.prj (required)
- Dam.sbn (optional)
- Dam.sbx (optional)
- Dam.shp.xml (optional)

Pond Data

Feature Name: Pond

Description: The pond polygon represents the individual pond feature in a dam safety approval application. It is aligned with the associated dam polygon feature as described in the business rules.

Geometry: Polygon

Dam Attributes:

Field name	Type	Allowable values	Length	Mandatory or optional	Definition
FID	Object ID	System Defined		Mandatory	Unique identifier
Shape	Geometry	System Defined		Mandatory	The spatial feature
ID	Long			Mandatory	Required user generated pond identification number must be numeric and unique
Name	Text		40	Mandatory	Required user generated name must be unique and can be up to 40 characters long

Business Rules

1. The pond feature should represent the area of the pond at full supply level.
2. The pond feature should share the same vertices as the associated dam shapefile feature.
3. The pond feature should intersect (touch) the dam feature boundary.
4. The pond feature should not cross within the boundary of the dam feature boundary.

Packaging

Dam shapefiles must be provided and named as described below:

- Pond.shp (required)
- Pond.shx (required)
- Pond.dbf (required)
- Pond.prj (required)
- Pond.sbn (optional)
- Pond.sbx (optional)
- Pond.shp.xml (optional)

Reservoir Data

Feature Name: Reservoir

Description: The reservoir polygon represents the individual feature in a reservoir approval application. When present, it includes all berms in the polygon.

Geometry: Polygon

Dam Attributes:

Field name	Type	Allowable values	Length	Mandatory or optional	Definition
FID	Object ID	System Defined		Mandatory	Unique identifier
Shape	Geometry	System Defined		Mandatory	The spatial feature
ID	Long			Mandatory	Required user generated reservoir identification number must be numeric and unique
Name	Text		40	Mandatory	Required user generated name must be unique and can be up to 40 characters long

Business Rules

1. The reservoir polygon represents the total area of the water at full supply level and the berms.
2. Only one reservoir polygon feature will be accepted in each shapefile activity submission.

Packaging

Dam shapefiles must be provided and named as described below:

- Reservoir.shp (required)
- Reservoir.shx (required)
- Reservoir.dbf (required)
- Reservoir.prj (required)
- Reservoir.sbn (optional)
- Reservoir.sbx (optional)
- Reservoir.shp.xml (optional)

Wetland Data

Feature Name: Wetland

Description: The wetland polygon submission represents the same wetland delineation as described in the *Alberta Wetland Identification and Delineation Directive*.

Note: The AER will not accept the shapefile template described in the directive. The shapefile template described in this QRG is required.

Geometry: Polygon

Dam Attributes:

Field name	Type	Allowable values	Value description	Mandatory or optional	Definition
FID	Object ID	System Defined		Mandatory	Unique identifier
Shape	Geometry	System Defined		Mandatory	The spatial feature
ID	Long			Mandatory	Required user generated wetland identification number must be numeric and unique
Name	Text		40	Mandatory	Required user generated name must be unique and can be up to 40 characters long

Business Rules

1. See the *Alberta Wetland Identification and Delineation Directive*.
2. The Name field matches the technical information, included in the .csv file, or typed into the application, that describes the individual wetland.

Packaging

Dam shapefiles must be provided and named as described below:

- Wetland.shp (required)
- Wetland.shx (required)
- Wetland.dbf (required)
- Wetland.prj (required)
- Wetland.sbn (optional)
- Wetland.sbx (optional)
- Wetland.shp.xml (optional)

Borrow Pit

Feature Name: Borrow Pit

Description: The borrow pit polygon(s) submission represents the individual feature in a borrow pit approval application.

Geometry: Polygon

Borrow Pit Attributes:

Field name	Type	Allowable values	Length	Mandatory or optional	Definition
FID	Object ID	System Defined		Mandatory	Unique identifier
Shape	Geometry	System Defined		Mandatory	Spatial feature
ID	Long			Mandatory	Required user generated identification number must be numeric and unique
Name	Text		40	Mandatory	Required user generated name must be unique and can be up to 40 characters long
Total_Vol	Double	Greater than 0, 1 Decimal, No negative values		Optional	Total storage capacity (cubic metres) design storage capacity at FSL (cubic metres)
Depth	Double	Greater than 0, 1 Decimal, No negative values		Optional	Maximum water depth (metres) from lowest level to level of top of berm/excavation
Area_Sq M	Double	Greater than 0, 1 Decimal, No negative values		Optional	Maximum surface area (square metres) at top of excavation
Pit_Cont	Text	Groundwater; Surface Water; Both	2	Optional	Pit contents groundwater (GW), surface water (SW), both (BO) must be one from a list of allowable values
Collect_RO	Text	Y; N	2	Optional	Capture surface runoff (Y/N) must be one from a list of allowable values
Intcp_GW	Text	Y; N	2	Optional	Intercepts groundwater (Y/N) must be one from a list of allowable values

Business Rules

1. Only one shapefile is required for borrow pit applications, a separate water activity shapefile is not required.
2. Multiple polygons are allowed.

Packaging

Borrow pit shapefiles must be provided and named as described below:

- borrowpit.shp (required)
- borrowpit.shx (required)
- borrowpit.dbf (required)
- borrowpit.prj (required)
- borrowpit.sbn (optional)
- borrowpit.sbx (optional)
- borrowpit.shp.xml (optional)

Important

Please submit **separate** zip files for OneStop spatial information. Submitting multiple shapefiles as one zip file will **not** be managed by OneStop. Only one file is processed at a time. Applicants must submit each file separately.