

## CALGARY 2023 ORTHOPHOTO MOSAIC

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### Calgary 2023 Orthophoto Metadata

The orthophoto is a seamless mosaic of accurately positioned aerial images. These aerial images are geometrically corrected for camera perspective and terrain relief so that they have a consistent scale and can be used for direct positional measurements of ground features like a map.

The aerial photo was captured using a fixed wing aircraft equipped with a special aerial camera sensor and high accuracy GNSS/INS positioning systems to gather thousands of overlapping images in a grid pattern across the entire city. These stereo images were accurately geo-referenced and tied together using the airborne and ground control data in a photogrammetric aerial triangulation. The imagery was then orthorectified using the Calgary 2022 LIDAR bare-Earth DEM.

Orthophoto is considered a core geospatial dataset. It is commonly used for many applications such as geospatial analysis, engineering designs, asset management and as a base GIS dataset providing rich contextual information for anywhere in the city. The Calgary orthophoto is updated annually with a city-wide aerial survey flown each spring.

- Photo Date: Jun 26, 29, Aug 14 & Sep 16, 2023
- Pixel Size: 10 cm
- Bands: RGB Colour & NIR
- Airborne Sensor: Vexcel UltraCam Eagle M3
- Horizontal Accuracy: +/- 15 cm at 95% confidence level on flat ground surfaces (Confirmed with 70+ surveyed ground control points)

### The City of Calgary Geospatial Coordinate System

- Name: 3TM NAD83 Alberta 114W
- EPSG Code: 3776
- Projection: Transverse Mercator – 3TM (3 degree zone width)
- Horizontal Datum: NAD83 (Adopted/Original)
- Ellipsoid: GRS80
- Central Meridian: 114°00'00.0" W
- Scale Factor: 0.9999
- Origin Latitude: 0°00'00.0" N
- False Easting: 0 m
- False Northing: 0 m
- Positive Axes: North and East
- Planar Units: Meters

- Vertical Datum: CGVD28
- Geoid Model: GSD95 (ITRF version)
- Elevations: Orthometric (above mean sea level)
- Vertical Units: Meters

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2023 Orthophoto snapshot: The Glenmore Reservoir and Glenmore Water Treatment Plant, providing Calgary with a good supply of high quality drinking water, even during years of drought.