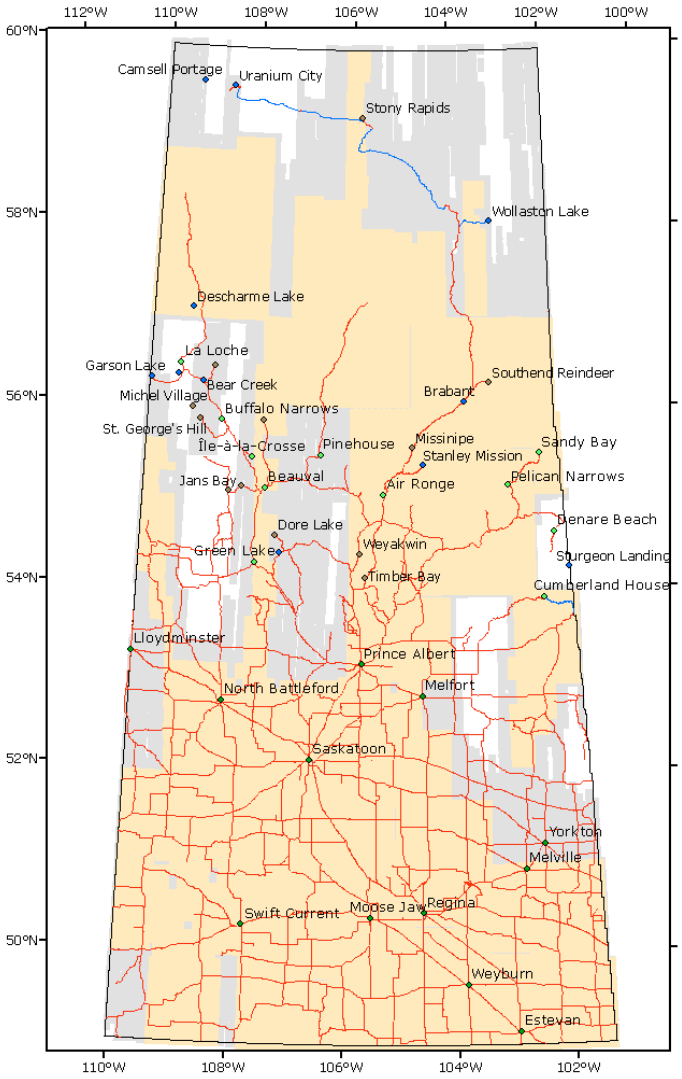
AIRPHOTO ACQUIRED / AVAILABLE
(November 2011)



Notes:

1. Beige colored areas are those where fully processed Ortho-photos and Digital Elevation Models are available by Township. Imagery from 2008, 2009 and 2010 is available now.
2. Grey areas are where aerial photography has been acquired and is being processed. Expected availability is April 2012.
3. White areas are those which remain to be photographed in spring and fall of 2012.
4. Primary roads are shown for referencing purposes only.
5. Approximately 590,000 sq. km. or 90% of the province has been flown to date.

Contact Information:

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Saskatchewan Ortho-Photography Project

November 2011

PRODUCT SPECIFICATIONS AND DELIVERABLES

The Saskatchewan Ortho-photography Project is producing seamless, accurate province wide vertical aerial photography and elevation data of the earth's surface for use in geographic information systems (GIS). This high resolution imagery is designed to meet the diverse needs of the numerous project partners.

An ortho-photo is an aerial photograph that is geometrically correct with inaccuracies due to displacement, distortion, aircraft movement, and camera tilt removed. This process of ortho-rectification, renders surface features with great accuracy and enables accurate measurements to be made from the image.

Digital Orthophotography Products

- Black and White ortho-photography by township tile
- Color Ortho-photography by township tile
- Color Infrared Images by photo frame; untiled and unmosaiced
- Digital Elevation model by township tile
- Overlapping aerial photography by photo frame for stereo viewing
- Metadata specifications for all data products

The aerial imagery has a pixel resolution of 0.625 metres.

Digital Elevation Model

The Digital Elevation Model (DEM) is produced with elevation mass points on a 100 meter grid as well as elevation lines, (break lines) collected along any significant sharp change in terrain, such as road edges, top and bottom of bank, crown of road, and ridge lines. The Digital Elevation Model of mass points and break-lines is then stored as vector data in SHP format. It is also available in "usgs.dem" raster format in 30 meter pixel resolution, interpolated from the initial elevation data collection. The Elevation Model is suitable for use in a wide variety of geographic information systems and terrain analysis systems

Metadata *(Text information about the imagery)*

Structured metadata is produced for Ortho-photo program products in xml and html format, compliant with the Federal Geographic Data Committee metadata standard (FGDC).

ORTHO-PHOTO ACCESS

Ownership

All aerial photography program products are owned by the Saskatchewan Geospatial Imagery Collaborative (SGIC) and licensed to public users.

Product Availability

- Imagery products are made available to all partners through a secure member access interactive viewing and download web-site (www.flysask.ca). Many other mapping layers can be overlaid to the ortho-imagery on the site such as land location, roads, municipal boundaries, first nations lands, parks and more.
- Internet viewing of the color orthophoto imagery is also available to the public through a public access window at www.flysask.ca.
- Web-Mapping Services (WMS) are available to members and industry for direct integration to corporate geographic information systems. User guides and WMS access locations are defined on the flysask web-site.
- Custom hard-copy photo quality prints or digital data is available to the public through the SGIC distributor. Email contact address is saskmaps@isc.ca.

Funding Partners:

A list of funding partners as of November 2011 is shown below.

1. Ministry of Agriculture
2. Ministry of Corrections, Public Safety & Policing
3. Ministry of Energy and Resources
4. Ministry of Environment
5. Ministry of Highways and Infrastructure
6. Information Technology Office
7. Ministry of Municipal Affairs
8. Ministry of Tourism, Parks, Culture, & Sport
9. Information Services Corporation
10. Saskatchewan Power Corporation
11. Saskatchewan Research Council
12. SaskEnergy Incorporated / TransGas Limited
13. Saskatchewan Watershed Authority
14. Prince Albert Development Corporation
15. Indian and Northern Affairs Canada
16. Saskatchewan Telecommunications Corporation
17. City of Regina
18. City of Saskatoon
19. Saskatchewan Association of Rural Municipalities
20. Saskatchewan Urban Municipalities Association
21. Saskatchewan Assessment Management Agency
22. Ducks Unlimited Canada
23. University of Regina
24. University of Saskatchewan
25. Agriculture Canada
26. Meewasin Valley Authority
27. Indian & Northern Affairs Canada
28. Cameco Corporation
29. Elections Saskatchewan
30. Environment Canada

PRODUCT ACQUISITION DETAILS

Dates of Acquisition:	Four Year program: Beginning spring 2008 and continuing through spring and fall “leaf-off” seasons until 2012. Annual refresh thereafter.
Coverage:	Geographic landmass of the Province of Saskatchewan, Canada; approximately 652,000 sq km.
Type of photography:	Digital vertical (nadir) aerial photography in Black & White (panchromatic), Color (RGB), and Color Infra-red.
Aerial Camera:	Intergraph Z/I Imaging® DMC® (Digital Mapping Camera). The Digital Mapping Camera (DMC) system manufactured by the Intergraph Corporation (Zeiss/Intergraph) has successfully completed the Manufacturer Certification process of the USGS Quality Assurance of Digital Aerial Imagery Plan. The camera has been proven capable of providing quality, consistent image data to support civil government mapping and ortho photography product development.
Acquisition Sequence:	A preferred area sequence acquisition schema which reflects partner priorities guides the aerial photography production program. However, this is subject to changes according to weather conditions and other program factors.
Project Specifications:	• Flying Height: 6200 meters (Above Ground Level) • Photo Scale: 1:40,000 (equivalent) 1:52,000 DMC flight • Mapping scale: 1:5,000 • Projection: UTM extended zone 13, north • Horizontal datum: NAD83 • Vertical datum: CGVD28 • Units: Metres
Flight:	• Solar altitude minimum 30 degrees in Spring and 20 degrees in Fall • Atmosphere containing less than 10% total obscurity by cloud, fog, haze, mist or other atmospheric distortions • Photography acquired in Spring and/or fall with Leaf off conditions, snow free on ground, ice-free in lakes • 60% forward overlap, 30% side overlap (within ICAS tolerances)
Ortho-photo Tiles:	The final processed ortho-photography is cut into township size tiles. A 100 metre buffer zone extends beyond the provincial boundary.
Data Format:	Geotif with tfw world file.
Pixel Resolution:	0.625 metres
Horizontal and Vertical Accuracy:	3 metres at 90% confidence level
Control	Coordinate positional control for the project is provided by the aircraft onboard Global Positioning System (GPS) and Inertial Measuring Unit (IMU). Existing partner ground survey control is used for checking and quality assurance purposes.
www.flysask.ca	The imagery web-site is available for public and member users. Performance enhancements are ongoing (Fall 2011) to meet growing demand.