



AERIUM Analytics

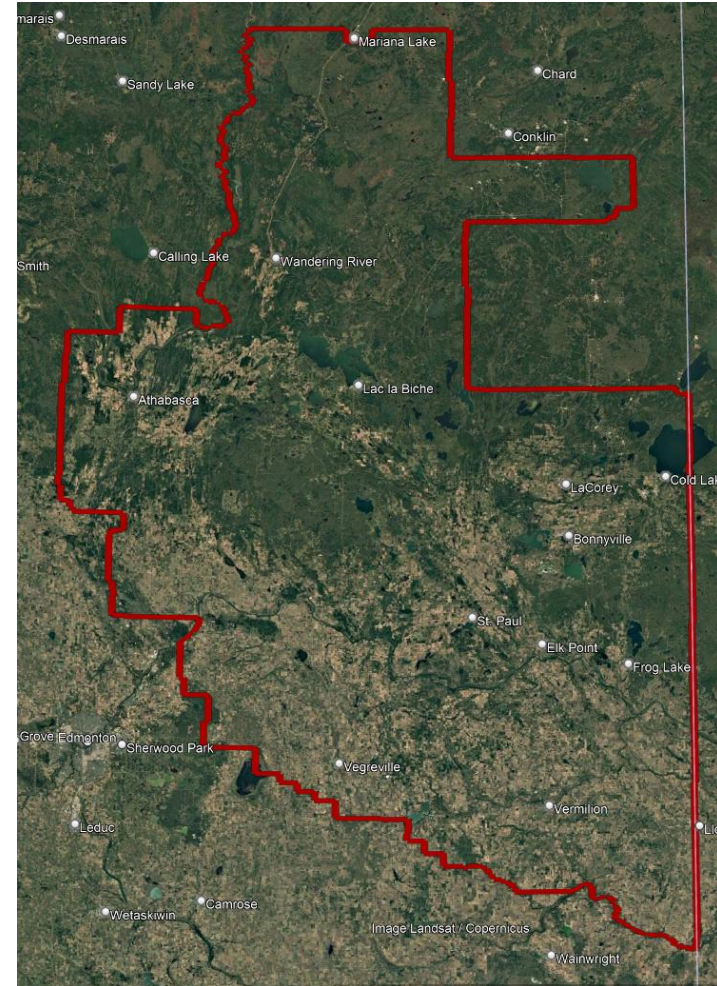
Alberta HUB Skyways Project Update

February 22, 2025

Two Hills, Alberta

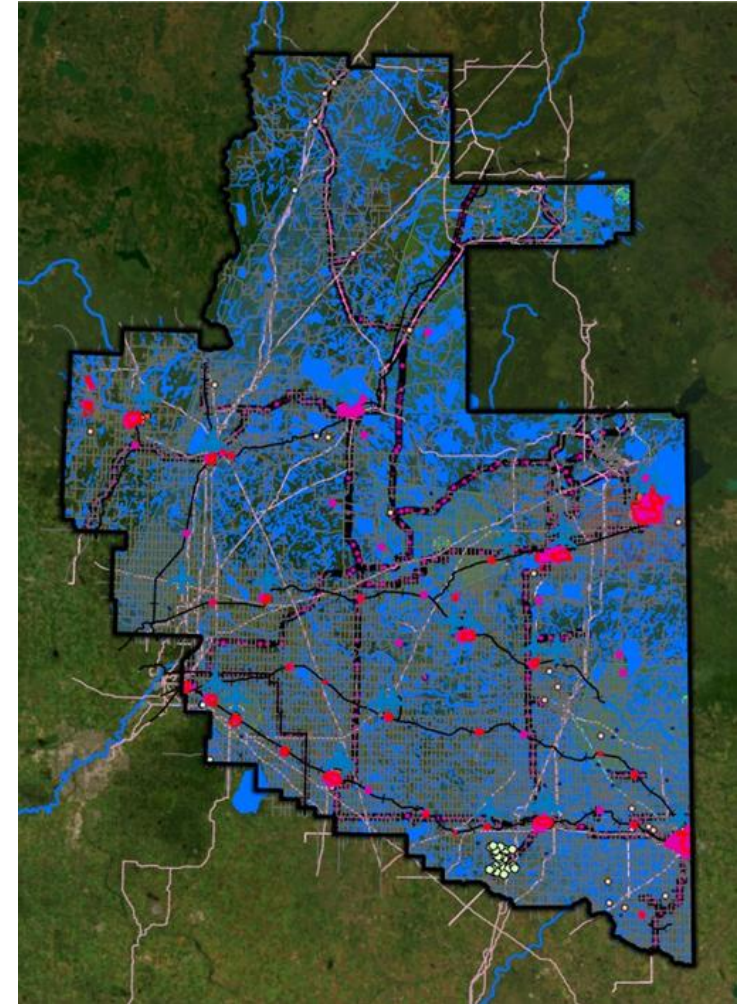
Skyways Project Overview

- To identify the opportunities and impact of implementation of an Advanced Air Mobility Ecosystem for the Alberta Hub region. This ecosystem will consist of the following:
- Vertiport design recommendations, configurations and locations
- Routes for point-to-point drone deliveries
- Recommendations for infrastructure and other requirements to support a universal traffic management (UTM) system.
- Impact study for the Alberta Hub region
- Digitalization of the JARUS SORA process to facilitate Beyond Visual Line of Sight drone operation.



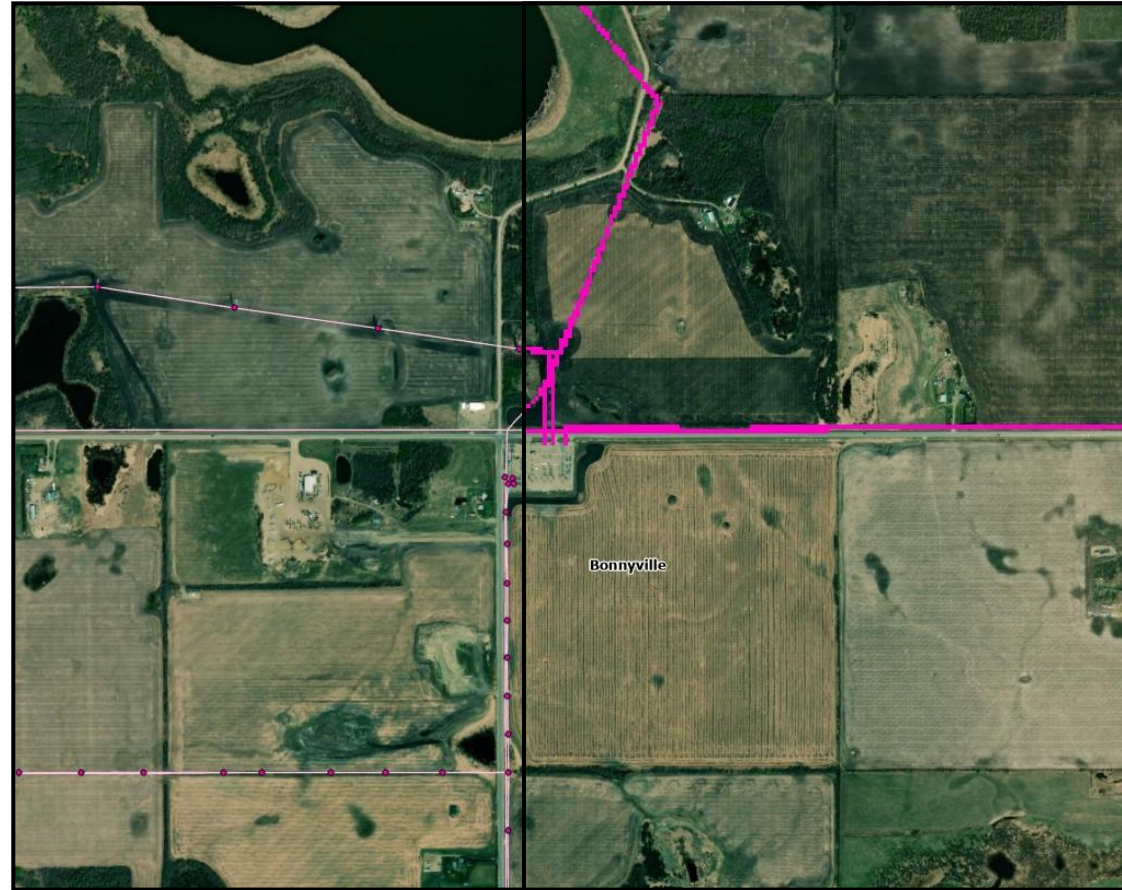
GIS Analysis for creation of 'Skyways'

- Designing to mimic how traditional Transportation Networks operate
 - Hub and Spoke model
 - Major highways
 - Secondary highways
 - Tertiary highways
 - Local roads
 - Some hubs are natural fits, others may represent something new
 - Towns over pop. 1000
 - Strategic locations



Rasterization

Points, lines and polygons are converted to pixels



How it Works



Layers of things we want to avoid.

Examples include:

- Houses / Farms (homesteads)
- Towns
- Towers
- Etc...

These layers are given a high cost



Layers of things we prefer to fly over.

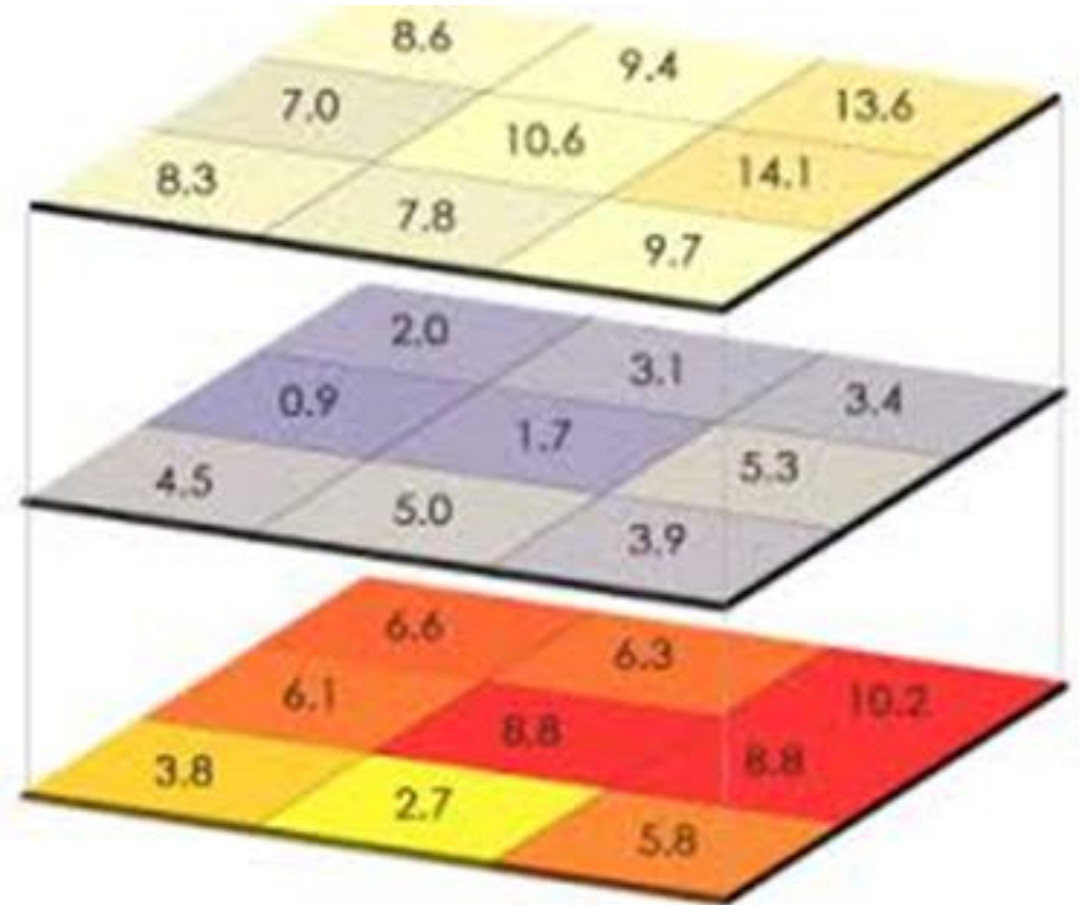
Examples Include:

- Pipelines
- Waterbodies
- Train tracks
- Etc...

These layers are given a low cost

Raster Math and Cost Pathing

- All the layers are overlaid
- Calculate cost for the drone to fly over any given spot (pixel)
- Then select start and end points for each segment
- GIS solves for lowest-cost route



Impact Assessment



Looking at how many vehicles can be taken off the road

Carbon reduction

Decreased shipping times



Local boost to economy



Saving rural airports



Retention of young tech-focused community members



Ancillary benefits

Final Report



- Will include:
 - Impact Study on the Hub region
 - Recommendations for Advanced Air Mobility (AAM) infrastructure
 - Outlook on the AAM industry
 - Recommendations for Vertiport design