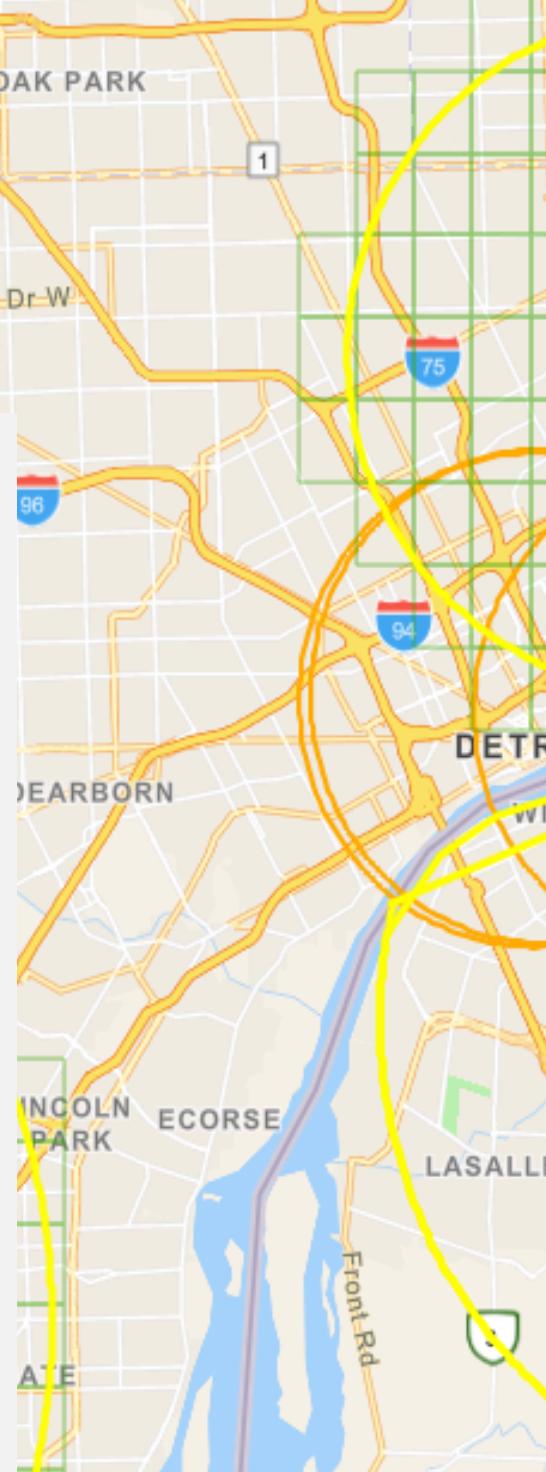# Detroit Region Aerotropolis

Establishes Low Altitude Drone Transportation Infrastructure

Airspace Link, Inc

CONTACT

1250 Library Street
Suite 61
Detroit, MI 48226

+! 800 783 3712
sales@airspacelink.com
airspacelink.com

INTRODUCTION

"The Aerotropolis Board has directed me to actively pursue enabling technologies that build on our region's multimodal transportation network.

Christopher Girdwood
Detroit Aerotropolis Executive Director

The **Detroit Region Aerotropolis** is a four-community, two-county, public-private economic development partnership driving corporate expansion and new investment around Detroit Metro and Willow Run Airports. The Aerotropolis is the premiere location for greenfield expansion in Southeast Michigan, offering 6,000 acres of development-ready land centered in a world-class network of transportation infrastructure. With two world class airports, access to three major interstates and five Class-A rail lines, the Detroit Region Aerotropolis is a prime location for global companies to build, expand, or develop.

To stay competitive, the Aerotropolis region recently deployed the Airspace Link low altitude drone infrastructure to its local communities and airports to support the safe use of recreational and commercial drone use in the region. These capabilities provide a new type of Smart City mobility infrastructure supporting the growth of drone operations, drone service providers, drone manufacturing, package delivery and air taxi in the future.

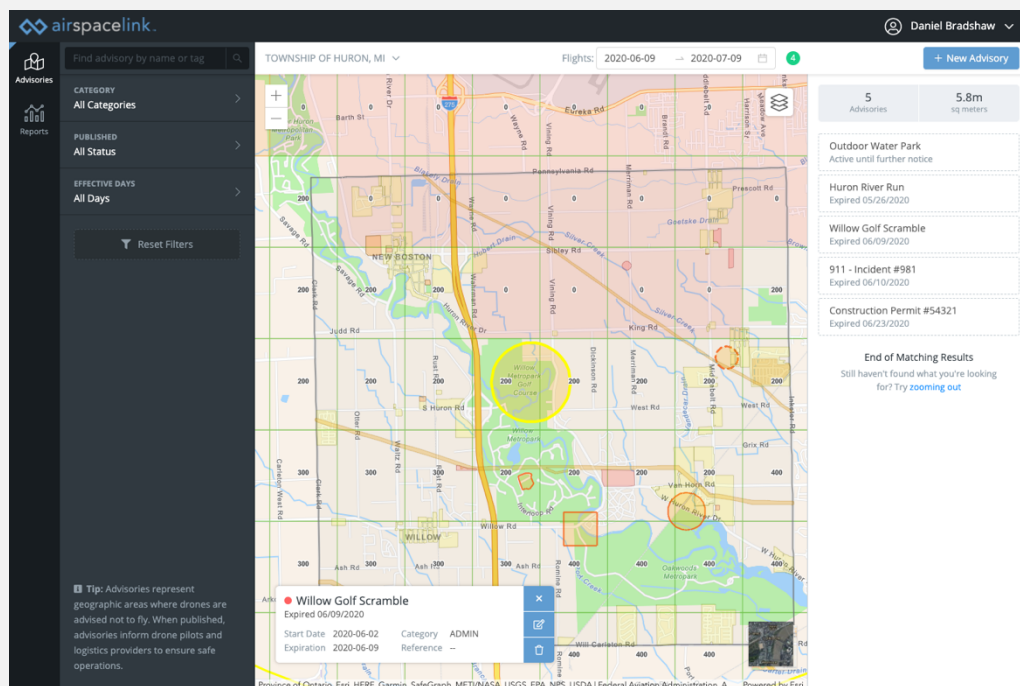*"A means to safely open low altitude airspace for commercial activity"*

Christopher Girdwood

Detroit Region Aerotropolis

Figure 1

AirHub for Government empowers communities to participate in the advisement of local airspace.

Mobility has become as much about bits and bytes as it is about physical infrastructure. In smart cities, integrated mobility systems that include shared mobility services and autonomous vehicles, the Internet of Things, and advanced analytics enable people and goods to move faster, safer, cheaper and cleaner. Drones, also referred to as unmanned aircraft systems (UAS), encompass both the unmanned vehicle itself along with the ground-based controller and the system connecting the two.

Today, the uses and applications of UAS are increasing and diversifying. This expansion is enabled by technological advances, policy changes, and significant cost reduction in parts and manufacturing. In addition to recreational drone use, UAS and UAV are used across our Nation to support firefighting and search and rescue operations, to monitor and assess critical infrastructure, to provide disaster relief by transporting emergency medical supplies to remote locations and to aid efforts to secure our borders.
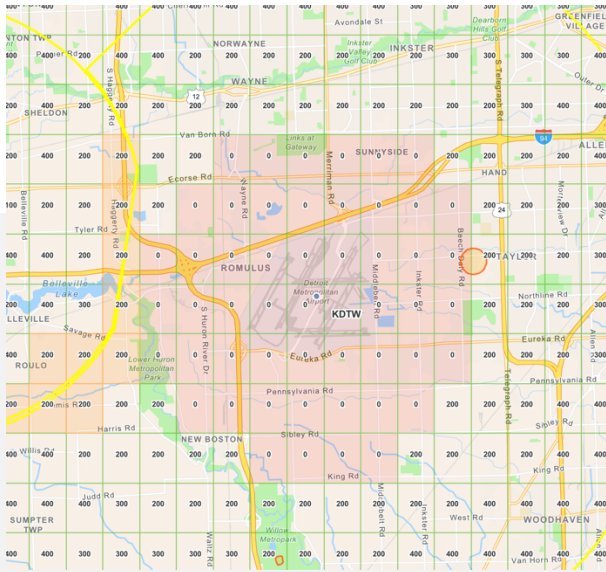
OVERVIEW

In late December 2018, Gatwick Airport suspended all flights due to drone activity. The drone disrupted pre-Christmas flights in and out of London's Gatwick airport for 33 hours costing airlines an estimated $64.5 million. The reports caused major disruption, affecting approximately 140,000 passengers and 1,000 flights. This was a major wake-up call for airports and surrounding communities. Detroit Aerotropolis Region wanted to take action to better understand the risk of drones near the airport while supporting the growth of the industry.

The region is also seeking to promote economic growth and a high standard of living for its citizens by staying competitive and truly offering something that other communities can't offer today. The Detroit Aerotropolis implemented a strategic plan to support the establishment of a low altitude drone infrastructure in its region.

CHALLENGE

The challenge was how to integrate Federal Aviation Administration (FAA), local Air Traffic Control (ATC), state, local governments and the drone industry into one centralized and standardized system, to ensure the safest possible conditions for vehicles in the air and people on the ground. With the growth of drone activity, a new system of traffic control is needed in the skies above. Although entities, such as the FAA in the United States, have long had protocols for maximizing safety for manned aircraft, managing millions of drones in low altitude is a new challenge.

RESULT

The data will build a synergetic relationship by developing an automated system to inform operators about avoiding high risk areas and allow communities to understand the underlying demand of local commercial UAS activity.
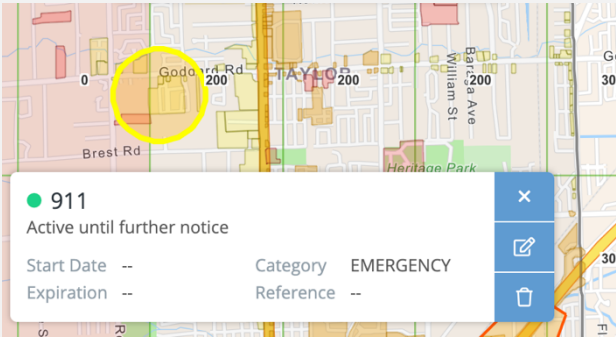
Creating UAS Solutions

To help meet the demands of drones in local airspace, the FAA has introduced the UAS Data Exchange, a partnership between government and Airspace Link facilitating the sharing of airspace data between the two parties. Under this umbrella of cooperation, the first program available to drone pilots today is known as the Low Altitude Authorization and Notification Capability (LAANC). In the United States, the LAANC program is intended to directly support the integration of UAS vehicles into national airspace. Regulators are interested in supporting technology innovation while still providing air traffic professionals with visibility into where and when drones are operating.

Local governments play an important role in supporting this industry and remain the strongest resource for the most up-to-date, on-the-ground information and local operational awareness capabilities. The Geographic Information Systems (GIS) data already being maintained by the Detroit Region Aerotropolis communities is paving the way for the construction of a new UAV infrastructure.

In January 2020, Detroit Aerotropolis licensed the Airspace Link AirHub platform in partnership with Michigan PlanetM (Mobility) and Michigan Unmanned Aerial Systems Consortium (MUASC) to establish and test a new low altitude drone infrastructure in the region.
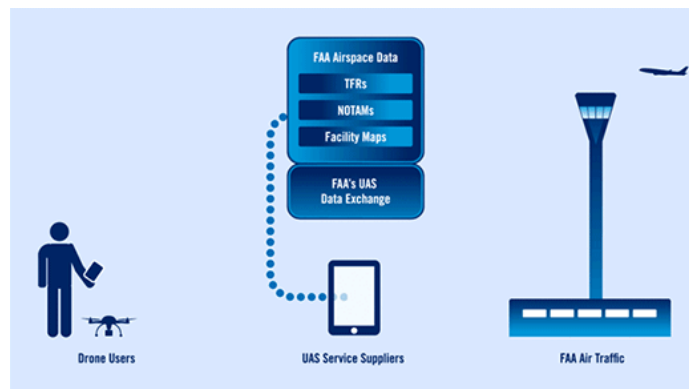
AirHub
For Government

The AirHub platform provides a near real-time data exchange between the FAA, state, local government and the drone pilots enabling the sharing of FAA UAS, local government and drone flight authorization data. For example, the FAA provides UAS facility maps, special use airspace, airspace classes, Temporary Flight Restrictions (TFRs) and Notices to Airmen (NOTAMs).

State & local government share authoritative ground base risk data, events and emergency locations. Local GIS data such as schools, hospitals, government buildings, helicopter pads, airports, stadiums, land use, zoning, population density (different times of the day), road rights-of-way, rules, regulations, and ordinances. Drone pilots in return provide locations of where and when they will be flying in controlled airspace.

1 Realtime Aviation Data

Airspace Link provides federal aviation data in realtime and ensures pilots meet piloting requirements before authorizing operations.

2 State & Local Authoritative Data

Enriched with local data, Airspace Link provides the most accurate operational data to pilots using the AirHub Platform.
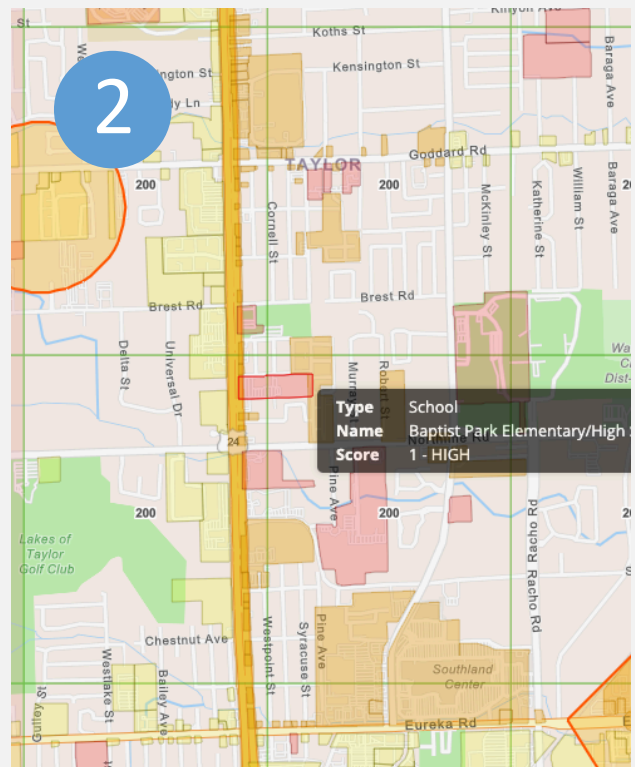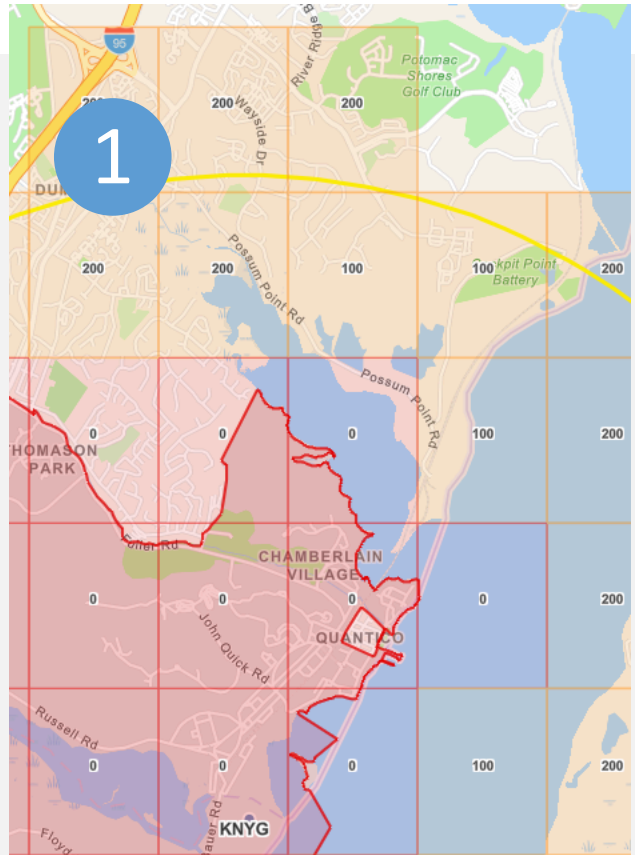
Benefits Today and in the Future

Detroit Region Aerotropolis was the first ever local government that has gone live with AirHub for Government system providing communication tools from its communities to the drone industry. Drone pilots get free access to this data and FAA (ATC) flight authorization through AirHub for Pilots app.

Detroit Region Aerotropolis has enhanced its ability of the communities to compete in an international economy, to serve as a catalyst for economic growth of the state and to improve the quality of life in the region. They are taking steps to ensure their part in facilitating smart cities and technology supporting how and where drones can and will operate in their community. "Our partnership with Airspace Link sent a strong message to inventors, investors and innovators to come to Aerotropolis to fly these new highways in the sky". Said Christopher Girdwood, Detroit Aerotropolis Executive Director. Many stakeholders are benefiting in many ways from AirHub for Government, Pilots & Business. For example:

1 Drone Industry

Providing free apps to safely and legally fly drones in controlled airspace and in the communities. Supporting use of recreational and part 107 commercial pilots in the region. Providing software, data and infrastructure, enabling the communities to promote and invite drone service providers and manufacturing companies a location for testing.

2 Residents

Tools for protecting safety, privacy and security. Enabling clear guidance on where and when to safely fly drones near the airport. Apps for communicating drone operational risk maps to its residents. Supporting the safe use of drones within the neighborhoods.

3 Transporatation / Infrastructure

Clearly map drone highways in the sky, safely move goods from one location to another with drones. Aids the development and maintenance of managing drone transportation infrastructure of the public, ensures efficient, safe and accessible use of drones, use drones to conduct transportation tasks.

4 Economic Development

Attract and expand the growing drone industry (Industry diversification), reduce economic loss from drone interference near airports and venues, increase revenue through authorizing complex business drone flights (toll road), create a path for revenue/ROI for drone infrastructure, future proof the community (fortification).

Benefits, Continued

5 Public Safety

Protect the general public from drone related accidents by knowing where and when a flight will occur. Clearly understand drone rules and regulations, situational awareness, by faster response, saving time & lives, in support of humanitarian aid & disaster relief using public safety drones.

6 Planning & Zoning

Clearly map drone friendly areas, easily publish recommended drone boundaries and appropriate regulations ensuring ground-based risk data for safe drone flights, measure present and future movement of drone traffic, measure safety of persons and property.

7 GIS / IT

Centralize, standardize, publish and authorize data and flights. Simple installation and maintenance system ensure smooth integration with existing community systems, data capturing, managing, analyzing, and displaying all forms of geographically referenced drone information.

8 Local Gov Administration

Promote citizen safety by understanding and identifying drone "hot spots" or high activity areas within your community. Help increase staff productivity and safety. The community can limit liability and risk by having a management system that provides an on-going heighten awareness of drone activity.
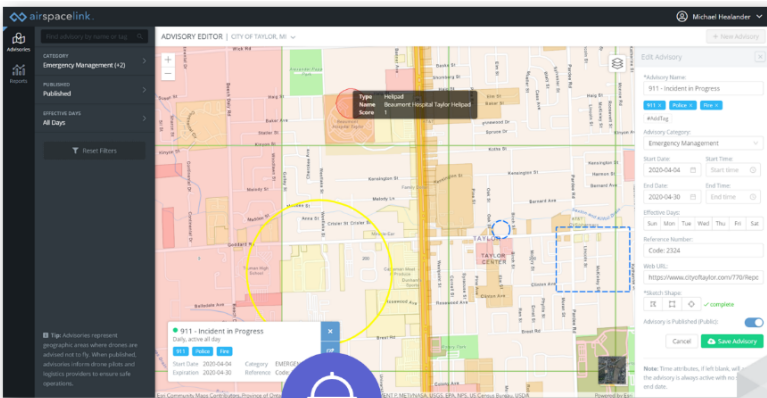
State & Local Gov
AirHub for Government

FAA-Approved
Low Altitude Authorization &
Notification Capabilities
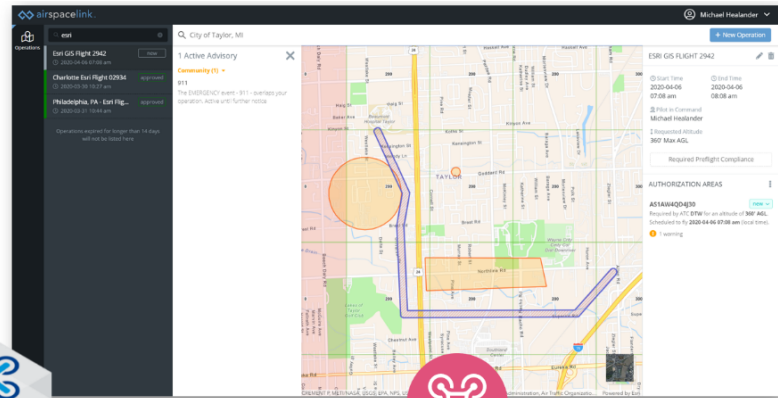
Drone Industry
AirHub for Pilots

Conclusion

The responsibility of analyzing and mitigating risks for this deployment extended beyond a single agency or entity, it required an ecosystem approach.

A collective effort was necessary to support the adoption of this new technology, taking into account emerging and future UAS regulations, applications, implications, and risks. Considering the proliferation of UAS operations and advances in technology, both the risk and the opportunities from UAS will continue to grow.

> " Michigan Unmanned Aerial Systems Consortium is excited to be part of the cast of organizations providing direct support to Airspace Link on a project with the likelihood of influencing national and local policies and processes. The Detroit Region Aerotropolis project provides real time information to current commercial UAS flight operators. The data will build a synergetic relationship by developing an automated system to inform operators about avoiding high risk areas and allow communities to understand the underlying demand of local commercial UAS activity."
>
> *-Jim Makowske MUASC CEO.*

As technology advancements push innovation into the skies, transportation managers can lean on GIS data already being generated within their communities to prepare themselves for the Jetsonian future. Now is the time to be part of the solution. Don't wait until unmanned vehicles begin operating before considerations are made on how to participate in drone integration and innovation. For more information on how Airspace Link can help you integrate drones into your community safely, visit ***www.airspacelink.com.***