Safeguarding airport infrastructure through web-based GIS

Wellington Airport is an important part of New Zealand's transport infrastructure. It contributes significantly to the economy with more than 8 million passengers and visitors passing through each year. Safety is the key focus of Wellington International Airport Limited (WIAL). Paramount to keeping passengers and workers safe is the maintenance of the airport's infrastructure. The runway, taxiways and sea protection walls require constant attention to ensure they're maintained in a safe operating condition.

The Challenge

Reducing operational risks through geospatial technology

Runway safety is critically important. Risks include pavement (runway) defects, foreign object debris (FOD) and wildlife. However, WIAL's defect reporting was managed through a time-consuming and inefficient paper-based system.

WIAL's operations manager had identified the benefits of a geospatial solution, but the airport had no GIS infrastructure, and lacked the knowledge and resources to effect change.

WIAL realised it needed to:
- **Decrease operational risks** associated with defective pavement
- **Increase safety**
- **Streamline and digitise** the complex and inefficient paper-based system
- Give **management visibility** and control over issues

The Solution

Cloud-based geospatial platform

AAM developed a cloud-based geospatial solution to spatially-enable maintenance work processes. This includes:
- **Web mapping** – to provide a spatially-dynamic view of the airport's captured past and present data, with the ability to track risks and defects
- **Dashboard** – Esri's ArcGIS Dashboard app displays analytics and visual reports that allow management to easily view and report on defects and safety issues
- **Notifications** – email notifications sent directly to management enable them to track the status of new and logged issues
- **Mobile collection app** – utilising the ArcGIS Collector app, airport operators are able to capture defects and safety risks in real time, and report issues with a spatial location
- **GEOCIRRUS** – this GIS platform provides secure user access, data and software hosting, as well as web mapping, editing and reporting tools through Geocortex Essentials and ArcGIS Online

The Results

Improved safety and reduced operational risk

The Wellington Airport Runway Defect system developed by AAM provides WIAL with full GIS operations capability, without the need for costly infrastructure.

This fully responsive solution streamlines workflows and improves airport safety.
- **Improves** management control and issues resolution through ongoing tracking
- **Reduces** operational risk through analytics to review past trends, and predict and address future issues
- **Captures** spatially-enabled pavement, wildlife and FOD issues in real time
- **Provides** managers and operators with a visual interface through web mapping that allows full data management
- **Delivers** a real time picture of operational issues across the airport

To find out more - email info@aamgroup.com
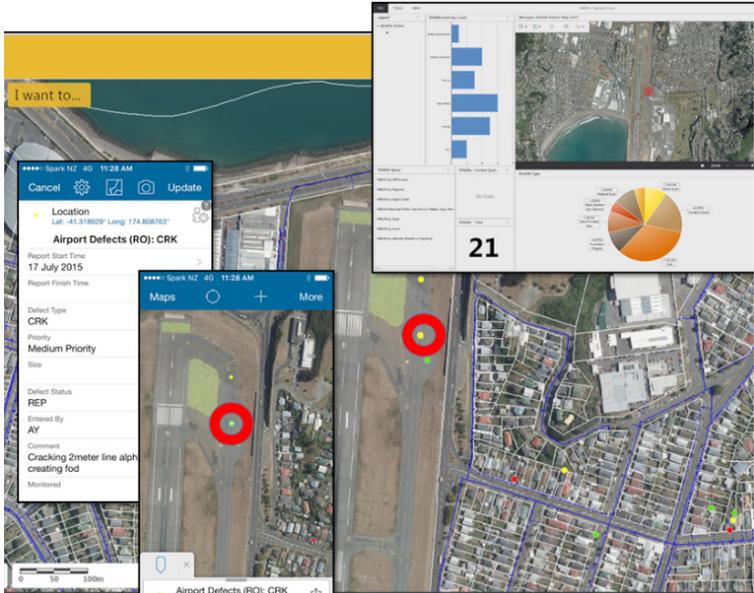
The Wellington Airport Runway Defect system enables real-time defect capture and management tracking and reporting.