

Memorandum



CITY OF DALLAS

DATE December 4, 2017

TO Honorable Members of the Mobility Solutions, Infrastructure and Sustainability Committee

SUBJECT **Wildlife Hazard Management Plan**

On Monday, December 11, you will be briefed on the Wildlife Hazard Management Plan at Dallas Love Field. The briefing materials are attached for your review.

Please feel free to contact me if you have any questions or concerns.

A handwritten signature in blue ink, appearing to read 'Majed A. Al-Ghafry'.

Majed A. Al-Ghafry
Assistant City Manager

[Attachment]

c: Honorable Mayor and Members of the City Council
T.C. Broadnax, City Manager
Larry Casto, City Attorney
Craig D. Kinton, City Auditor
Billierae Johnson, City Secretary (Interim)
Daniel F. Solis, Administrative Judge
Kimberly Bizer Tolbert, Chief of Staff to the City Manager
Jo M. (Jody) Puckett, Assistant City Manager (Interim)

Jon Fortune, Assistant City Manager
Joey Zapata, Assistant City Manager
M. Elizabeth Reich, Chief Financial Officer
Nadia Chandler Hardy, Chief of Community Services
Raquel Favela, Chief of Economic Development & Neighborhood Services
Theresa O'Donnell, Chief of Resilience
Directors and Assistant Directors

Wildlife Hazard Management Plan

Mobility Solutions,
Infrastructure &
Sustainability Committee
December 11, 2017

Mark Duebner, Director
Department of Aviation



Background

- Federal Aviation Administration (FAA) mandates all Part 139 air carrier airports to conduct a Wildlife Hazard Assessment (WHA)
- Based on the results of the WHA for Dallas Love Field, along with its aeronautical activity, the FAA determined a Wildlife Hazard Management Plan (WHMP) was required for the airport
- WHMP was approved by the FAA on Feb. 7, 2014

WHMP Goal and Methods

- Goal: To minimize the risk to aviation safety, airport structures/equipment, or human health posed by populations of hazardous wildlife on and around Dallas Love Field
- Methods:
 - Identification of hazardous wildlife and their attractants
 - Conducting suitable proactive and reactive management techniques
 - Providing the necessary resources to successfully implement the WHMP
 - Fulfilling all certification and training requirements

Wildlife

- Left uncontrolled, wildlife at or near an airport can jeopardize the safe operation of any aircraft
- Bird strikes pose one of the greatest wildlife threats to aircraft operations



Aircraft

- Modern jets are designed to take the impact of a 5-lb. bird
- However, even small birds such as starlings or pigeons can cause severe damage if multiple birds are ingested



Miracle on the Hudson

- US Airways Flight 1549
- The aircraft struck a flock of Canada geese three minutes into flight
- The aircraft lost both engines and made a forced landing in the Hudson River
- No fatalities
- Total aircraft loss estimated at \$31 million



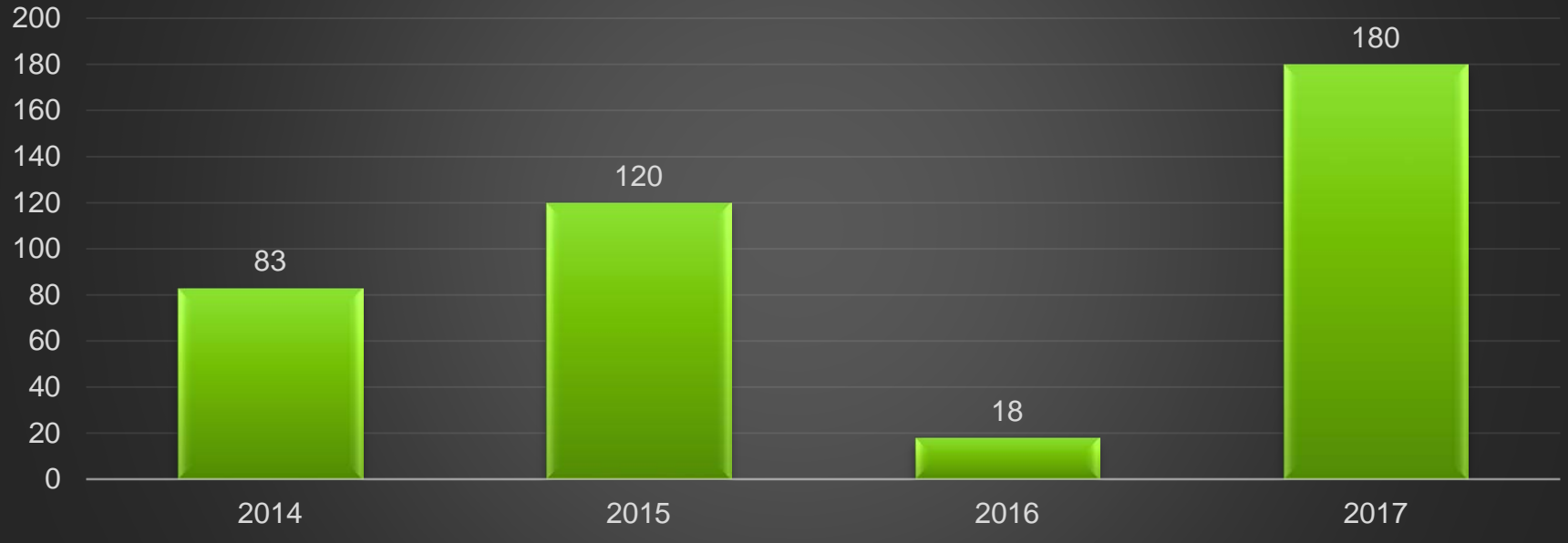
Costly Bird Strike at Love Field

- April 26, 2016
- Virgin America Airlines aircraft reported seeing two-four pigeons flying left to right during takeoff
- Immediately afterward, the pilot reported a continuous loud noise from his number two engine and decided to make a precautionary landing
- On inspection, remains of a pigeon were found to have been ingested, resulting in damage to three of the engine's blades
- Cost of repairs: \$407,918



Dallas Love Field

Confirmed Bird Strikes



Birds at Love Field

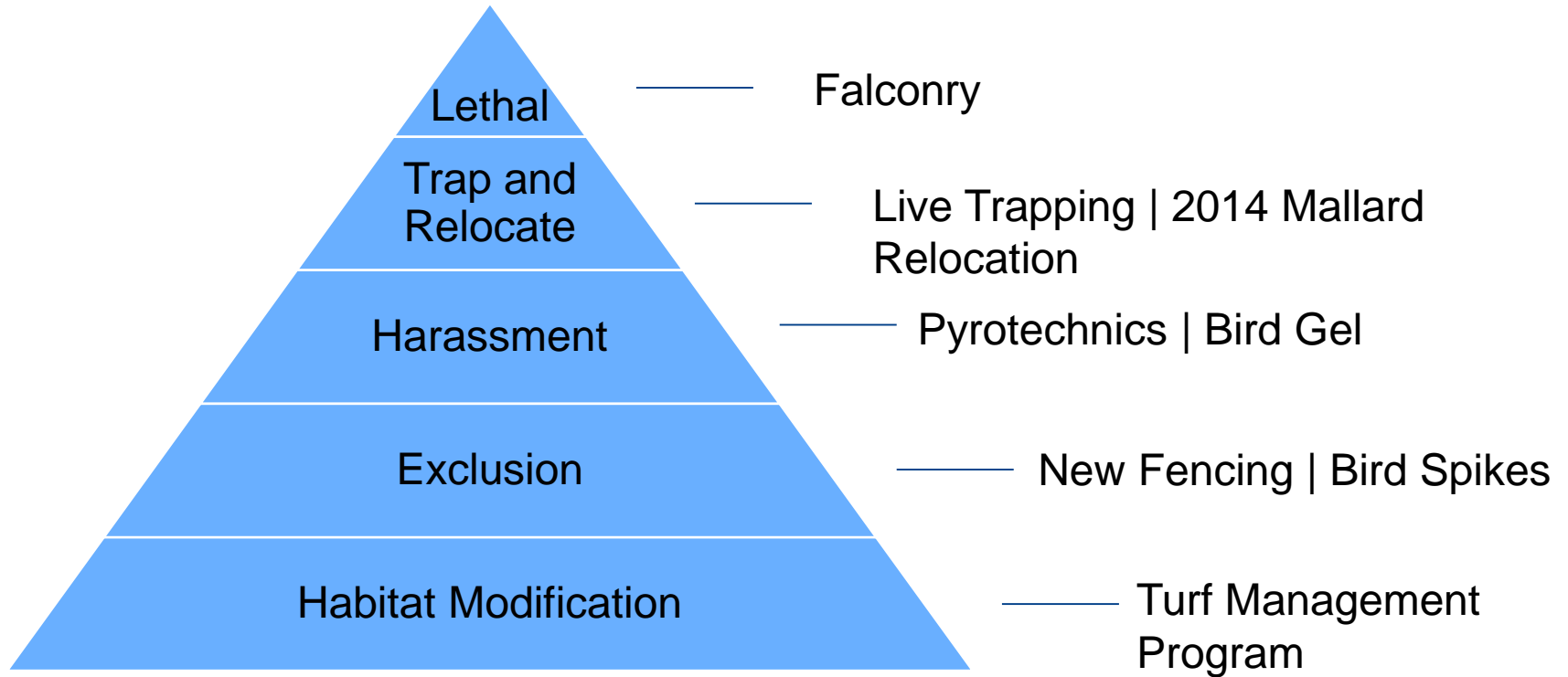
- Great Blue Heron
- Black Headed Vultures
- Ring Billed Gulls
- Red Tailed Hawks
- Double Crested Cormorants
- White Egrets
- Mallards
- Coots
- Rock Doves
- Great Tailed Grackles
- Brown Headed Cow Birds
- American Crows



Bachman Lake



Wildlife Control Methods



WHMP Status

- Proactive management methods
 - Annual training of airport personnel actively involved in overseeing or implementing the WHMP
 - AVI, PKR and DWU have removed hazardous wildlife habitat from their associated properties
 - Installed signs at Bachman Lake park requesting patrons not feed the wildlife
 - Increased community awareness
- Proposed proactive management methods
 - Implement PharoVision Wildlife Detection camera system

Pharovision

- “SENTINAL” infrared/electro-optical system will significantly contribute to the WHMP’s goal by providing early detection of birds and drones in flight that pose a hazard to aircraft approaching or departing Love Field



Pharovision (cont.)

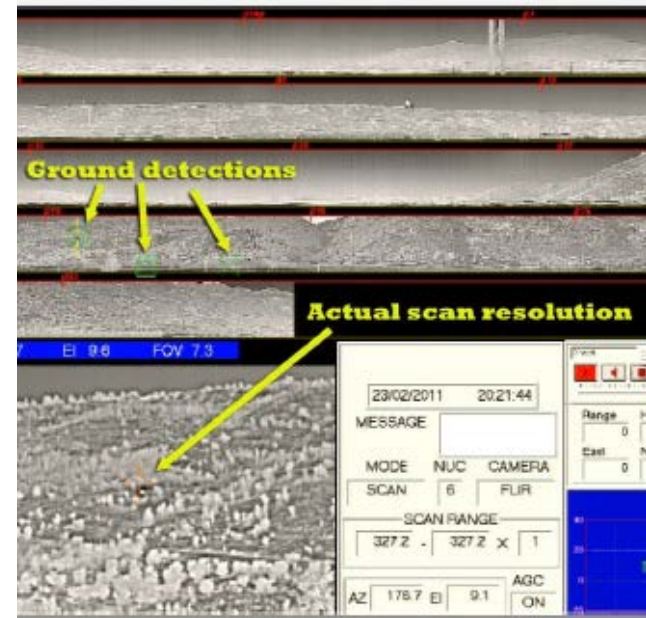
- Infrared and electro-optical scanning
- Auto detection
- Target tracking
- Real-time
- 5-mile radius
- Accessible remotely with mobile devices
- Track wildlife or drones



Thermal imaging detector close-up of hawk at 15x zoom at a range of approximately 4.5 miles

Pharovision's Additional Enhancements

- Greater situational awareness responding to on-airport incidents
- Enhance air traffic controller's ability to see aircraft during periods of reduced visibility
- Manually track human intruders and wildlife on the ground
- Future opportunity to detect Foreign Object Debris on the runway



SENTINAL can also be used in automated scan mode to automatically detect birds and other animals on the ground

Drone Detection

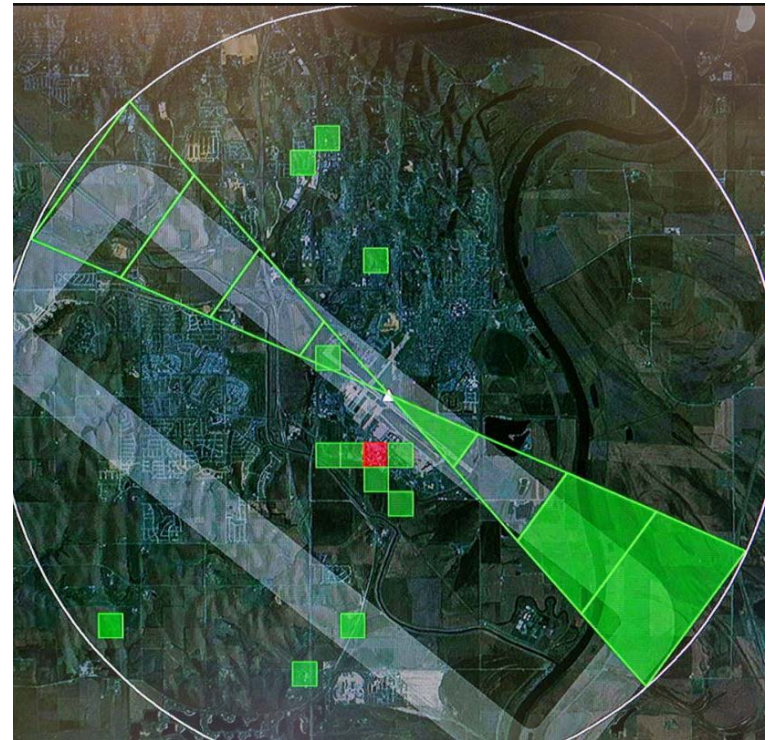
- Unauthorized drone operations pose a new challenge for the FAA and a significant hazard to aircraft, particularly near airports
- Very little is currently in place to allow airport traffic controllers to detect drones in time to prevent possible strikes
- Pharovision “SENTINAL” system will provide advance warning to the controllers and track the drone to the location of the operator



Other Detection Systems

Merlin

- Avian Radar System
- Estimated \$500,000 for single runway
- Cons
 - Unable to track drones
 - 2D tracking visual
 - Requires individual in field to perform identification
 - Unable to track wildlife on the ground
 - Alerts only when large amounts of birds are in a specific area



Other Detection Systems, cont.

Accipiter

- Avian Radar System
- Tracks heading, altitude, and speed
- Quoted \$762,000 for two runways
- Cons
 - Requires responder in the field to use a tablet radar display to identify birds visually
 - Issue during low light or low visibility
 - Appears as a blip on screen; does not provide level of detail desired
 - Unable to determine bird type outside of small, medium, large or flock
 - Inability to track target in real time
 - Additional equipment required to track drones
 - Radar potentially can conflict with Air Traffic Control signals



Recommendation

- City Council approval of purchase of Pharovision Wildlife Detection camera system on December 13, 2017 Council Agenda
 - \$1,158,600 for camera system
 - \$552,400 for five-year extended warranty and maintenance

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