

# Talking to the General Public About Obstructions

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**McFarland Johnson**



# Agenda

- Intro to Morristown Municipal Airport (MMU)
- Obstruction Removal at MMU
- MMU's Process for Coordinating with Property Owners
- Obstruction Visualization Tool
- Q&A



# Background

## Airport Overview

- Opened in 1942
- Owned by the Town of Morristown, Operated by DM AIRPORTS, LTD
- “National Airport” in FAA Asset study
- Two Runways
  - Runway 5-23      5998' x 150'
  - Runway 13-31    4000' x 150'
- 203 Based Aircraft; Nearly Half are Corporate Jets
- 77,156 Operations in 2018
- ARFF Index B, Customs User Fee Service On Airport
- ≈ 1,800 People Employed on the Airport
- Contributes over \$13 million in Tax Benefits/Year



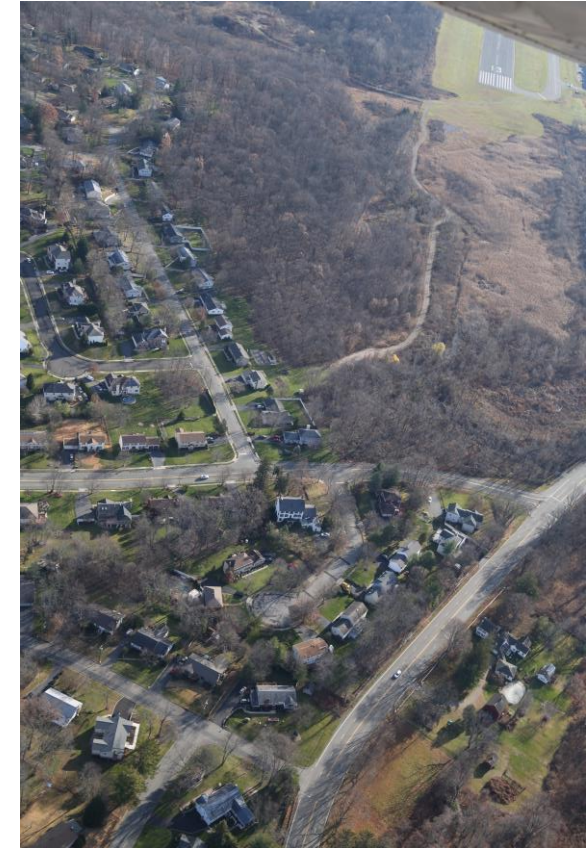






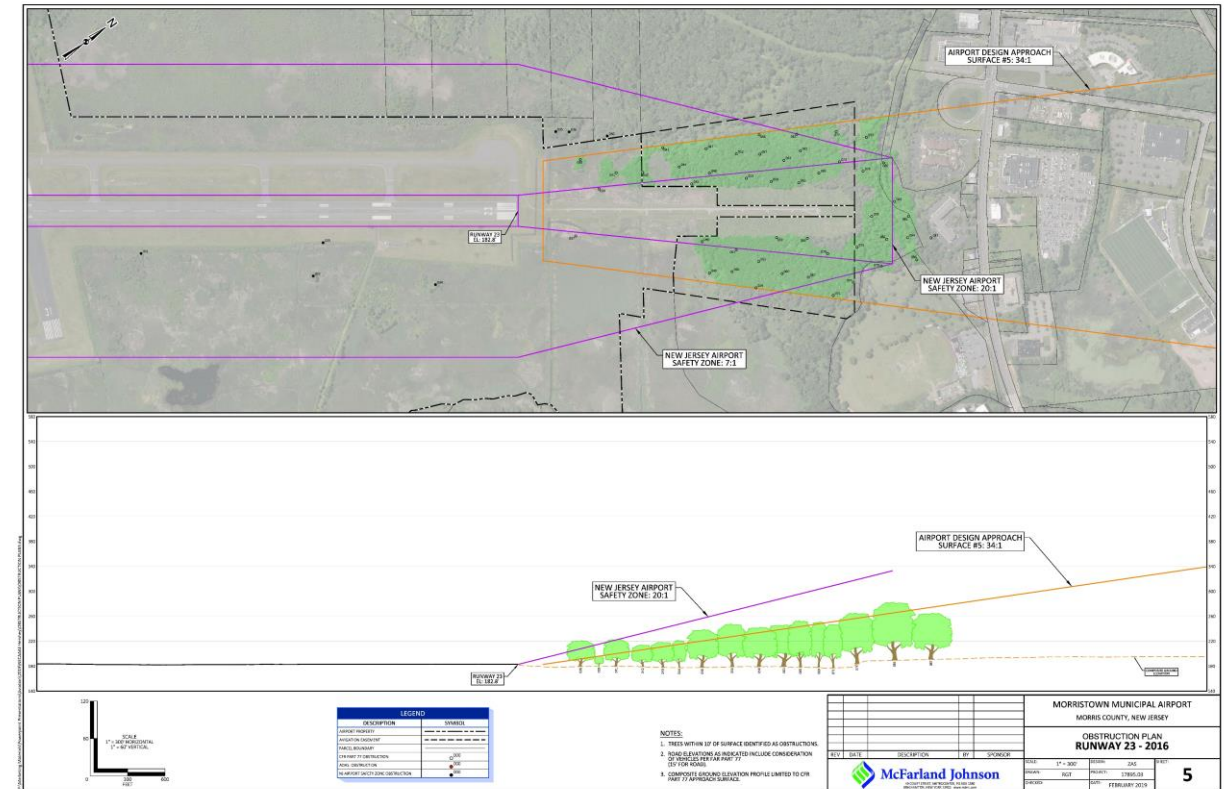
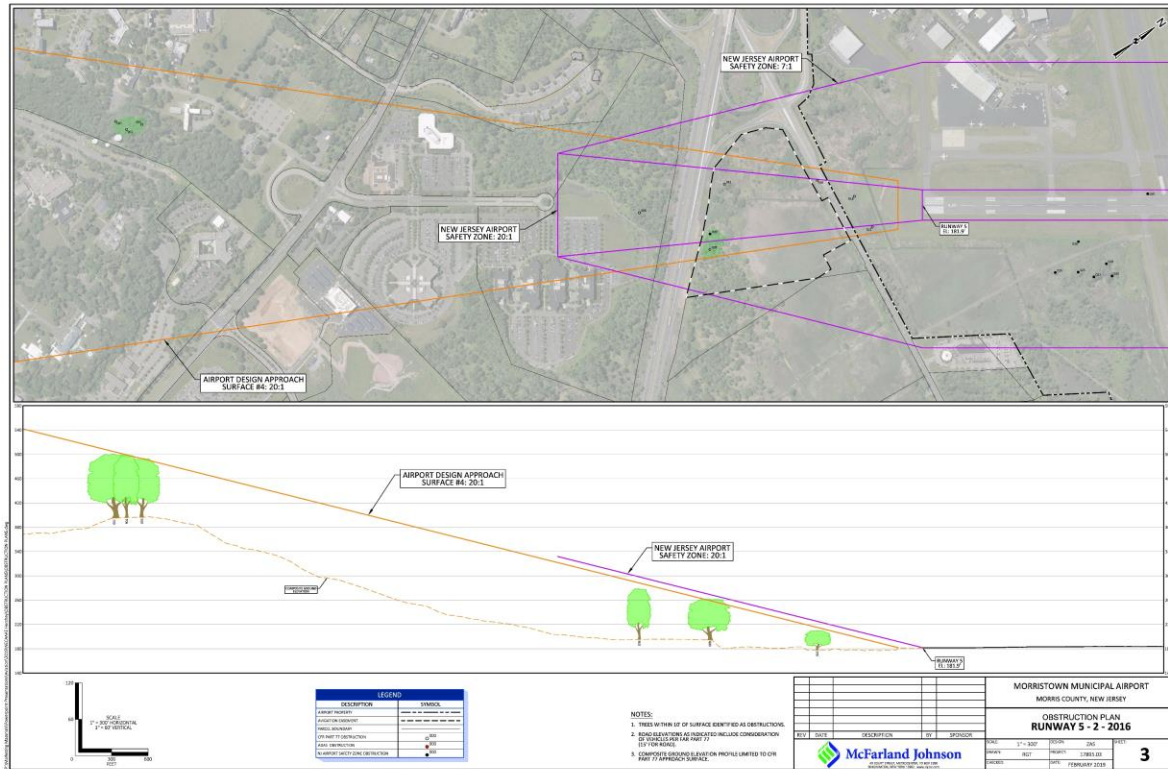
# Obstruction Study

- Woolpert Conducts AGIS Aeronautical Survey in 2016
- McFarland Johnson Develops Obstruction Drawings for Both Runways
- The Data and Drawings Identify Issues With:
  - 20:1
  - FAR PART 77
  - TERPS
  - Missed Approach Surfaces
  - Departure Surfaces
- Some Obstructions Required Immediate Action
- Multi-year Plan Developed to Facilitate the Removal or Lowering of the Obstructions





# Drawings





# Permits




- Most On-Airport and Nearby Tree Obstructions Located in Regulated Wetlands and Transition Areas
- Obtained NJDEP GP-9 Airport Site Line Clearing for All Identified Obstructions (On and Off Airport)
- The Permit Imposes Conditions on How/When Work Can be Completed
  - No Clearing/Grubbing in Regulated Areas
  - Time Of Year Restrictions Due to Bat Species (Nov 15-April 1)
  - NJDEP Has Been Slightly Flexible On Dates in Certain “Urgent” Circumstances
  - Wildlife Enclosures (Wood Turtle and Bog Turtle)





# Permits



 <div>STATE OF NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION DIVISION OF LAND USE REGULATION Mail Code 501-02A, P.O. Box 420, Trenton, New Jersey 08625-0420 Telephone: (609) 777-0454 or Fax: (609) 777-3656 www.state.nj.us/dep/landuse</div> 	
<b>PERMIT</b>	
In accordance with the laws and regulations of the State of New Jersey, the Department of Environmental Protection hereby grants this permit to perform the activities described below. This permit is revocable with due cause and is subject to the limitations, terms and conditions listed below and on the attached pages. For the purpose of this document, "permit" means "approval, certification, registration, authorization, waiver, etc." Violation of any term, condition or limitation of this permit is a violation of the implementing rules and may subject the permittee to enforcement action.	
Permit Number(s): 1412-06-0010.2, FWW 140001	Type of Approval(s): Freshwater Wetlands General Permit No. 19 - Airport Sightline Clearing
Approval Date: JUN 23 2015	Expiration Date: JUN 22 2020
Enabling Statute(s): NISA 13:9B FWPA	
Permittee: DM Airports, LTD 8 Airport Road Morristown, NJ 07960	Site Location: Block(s): 401; Lot(s): 1 <b>Municipality:</b> Borough of Florham Park Block(s): 5101; Lot(s): 2 & 4 Block(s): 6202; Lot(s): 1.01 & 1.02 Block(s): 6301; Lot(s): 1, 1.01, 4, 5, 7-11, 13.01, 15.01, 16.01 & 17.02 Block(s): 6401; Lot(s): 2 Block(s): 6501; Lot(s): 1, 1.01 & 3 <b>Municipality:</b> Hanover Township <b>County:</b> Morris
Description of Authorized Activities:  This permit authorizes the maintenance of vegetation, the topping of specific trees and other vegetation within the freshwater wetlands and/or transition areas of the subject airport property and runway approach easements via mechanical and Department approved chemical measures to establish proper sight and height clearance in and around the Morristown Airport to comply with FAA standards.	
Prepared by:  Christopher Scuzzo	Received and/or Recorded by County Clerk:
THIS PERMIT IS NOT EFFECTIVE AND NO CONSTRUCTION APPROVED BY THIS PERMIT, OR OTHER REGULATED ACTIVITY, MAY BE UNDERTAKEN UNTIL THE APPLICANT HAS SATISFIED ALL PRE-CONSTRUCTION CONDITIONS AS SET FORTH HEREIN.	
This permit is not valid unless authorizing signature appears on the last page.	





# Who Was Affected?

- Obstruction Data Collected Within Approximately 2 Miles from RW Ends
- 90% of the Obstructions Are Off Airport
- Property Owners Affected Included:
  - Religious Institutions
  - Corporations
  - Colleges
  - Health Care Facility
  - State of New Jersey DOT
  - State of New Jersey Department of Environmental Protection (NJ Natural Lands Trust)
  - Hotels
  - Private Residential Property (Both Historical and Non-Historical)





# NJDOT Support

- NJ Zoning Law Establishes Minimum Standards for the Control of Airport and Aeronautical hazards, and Standards for Land Use Adjacent to Airports

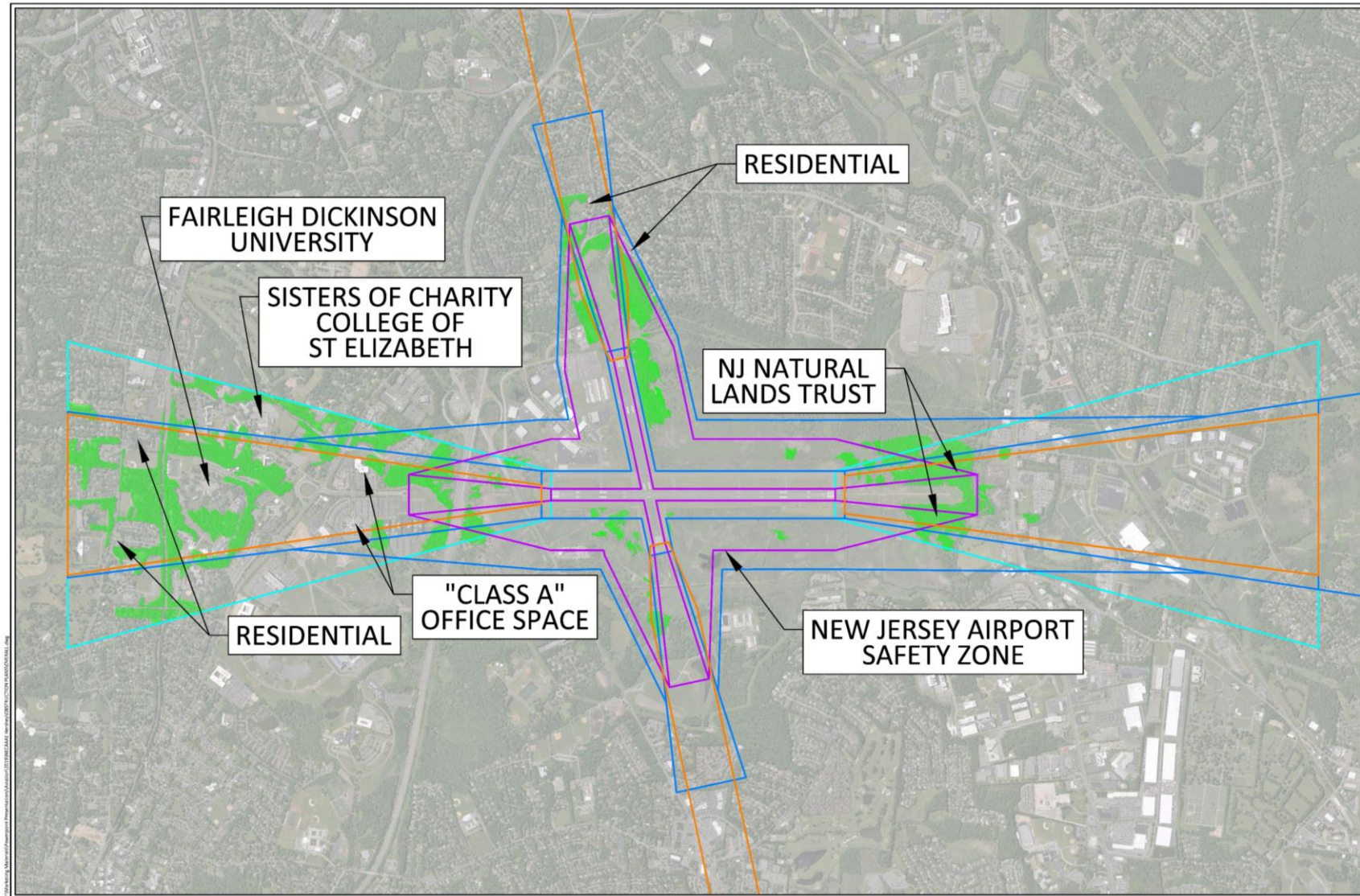
“No person shall build, rebuild, create or cause to be built any object or structure, or plant, or cause to be planted or permit to grow any tree or vegetation, which will interfere with, diminish, change or obstruct the airspace or landing and takeoff area available for the landing or takeoff of airports.”

- This Law is Very Helpful when Dealing with Properties that Lie Directly Beneath the NJ Air Safety Zone
- Many Obstructions Were Located Well Outside the NJ Air Safety Zone
- The NJDOT has been Supportive in Providing Letters to Property Owners Explaining the Safety and Liability Issues
- These Letters Provide the Support Needed to Address the Obstructions





# NJ Air Safety Zone





# Grant Funded Process

- Normal AIP Funded Process
  - Complete NEPA Process
    - Possible CATEX if < 3 Acres Off Airport
    - EA or EIS if > 3 Acres Off Airport
  - Acquire Easements/Access Agreements
  - Design Obstruction Removal
  - Construction
- AIP Pays 90%
- Time From Initial Identification of the Obstruction to Removal Measured in Years
- AIP Pays for Tree Topping Once



# Grant Funded Process

## Sponsor Considerations

- Urgency
- Scale of the Problem
- Cost/Bang For the Buck
- Political
- Creative Solutions for Getting the Property Owner to “Yes”
- Is the Solution AIP Eligible?





# Property Owner Coordination Process

## Landowner Coordination Process

- Contact Property Owner in Person or By Letter
- Initial Meeting with Property Owner
  - Site Walk
  - Review Obstruction Drawings
  - Establish Access Agreement
  - Utilize Nearby Neighbors as “References”
- Separate Visit with Contractor to Establish the Work Parameters and Costs Associated with the Project
- Coordinate with the Property Owner to Determine Preferred Mitigation
  - Plantings
  - Landscaping
  - Tree Removal
  - Airport Tour





# Property Owner Coordination Process

- All Work is Completed with Minimum Possible Disturbance
- Airport Representative On Site During All Work Activities
- Property Owner Conducts Walk-Through and Signs off that Work is to Their Satisfaction
- Property Owner is Asked to be a Reference





# Why a Process?

- Property Owners Do Not Want Others Coming on to Their Property and Conducting Work That Does Not Directly Benefit Them
  - Many Are Defensive
  - Some Don't Like the Airport
- Allows the Airport to Build Trust and a Relationship with the Property Owner
- Goal is to Provide a Good Experience in the End.
- Different Steps Required For Unwilling Participants
- We Have no Ability to Condemn: Everything has to be Negotiated
- All Work is Funded by the Airport





# The Outcome

- Goals
  - Protect the Airspace Around the Airport
  - Effectively Manage the Obstructions as Efficiently as Possible
  - Build Relationships With Neighbors
- Results
  - Significant Progress Addressing Obstructions in a Timely Manner
  - Property Owners Have Given References
  - Property Owners Are Now Engaged with the Airport on a Variety of Issues
  - Lines of Communication are Open
- Cost Control is an Essential Part of the Process.





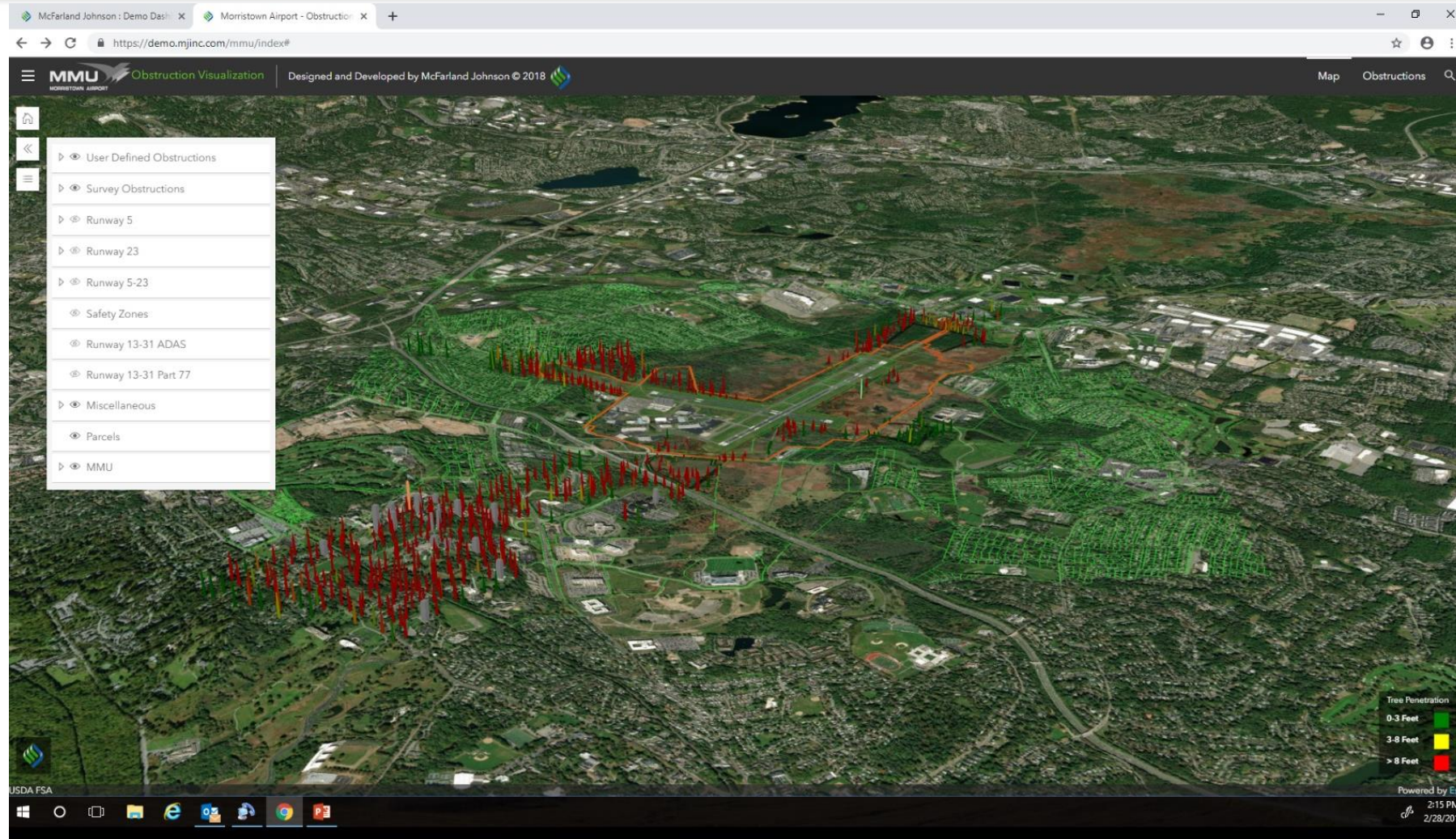
# Obstruction Visualization Tool

## Background

- FAA Funded Environmental Assessment for RW 13-31 Off Airport Obstruction Removal
- Sponsor Funded Obstruction Removal In Close Proximity
- Numerous Property Owner Interactions
  - One on One Discussions
  - Public Meetings
  - Who? What? Why? When?
- Obstruction Management Program Seems Chaotic, Unpredictable, and Hard to Explain



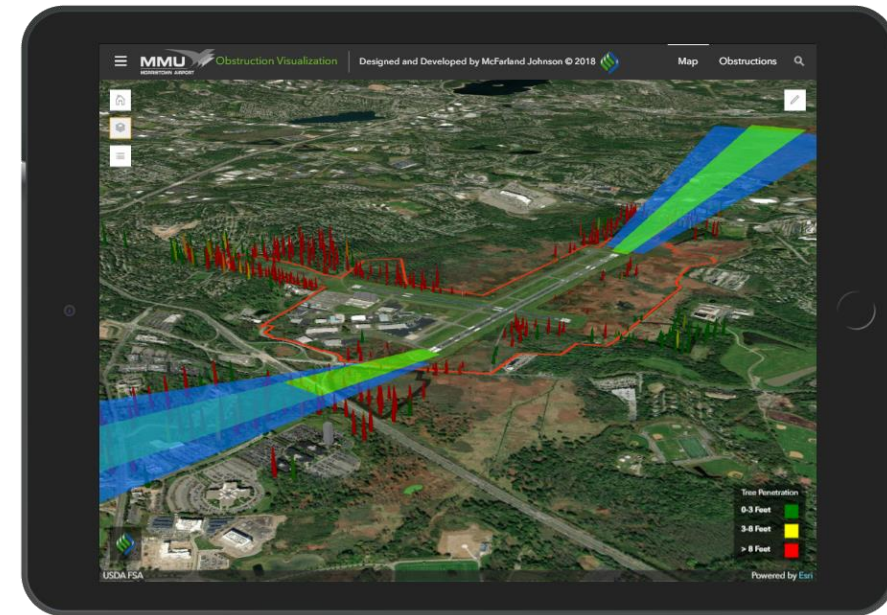
# Obstruction Visualization Tool





# Obstruction Visualization Tool

- Hosted Secure Web Based Application
  - Mobile Friendly
- Custom Developed Using a Variety of Programming Languages
- Database Driven
  - AGIS Obstruction Data
  - Local Property Records
  - ArcGIS Online Provides Underlying Base Map (Imagery) and Frame Work





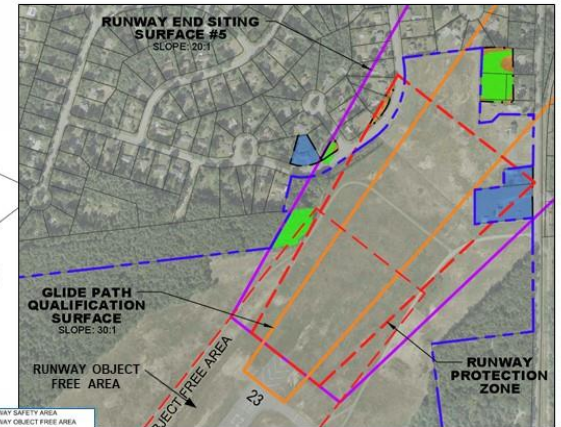
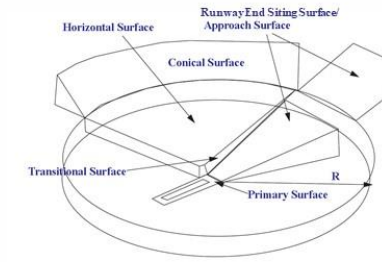
# Obstruction Visualization Tool

- Off Airport Obstruction Removal Requires Interactions with Non–Expert Stakeholders
  - Property Owners
  - Regulatory Agencies
  - Public Meetings
- Explaining 3D Surfaces in 2D is Ripe for Misunderstanding

## Runway Surfaces

Environmental Assessment

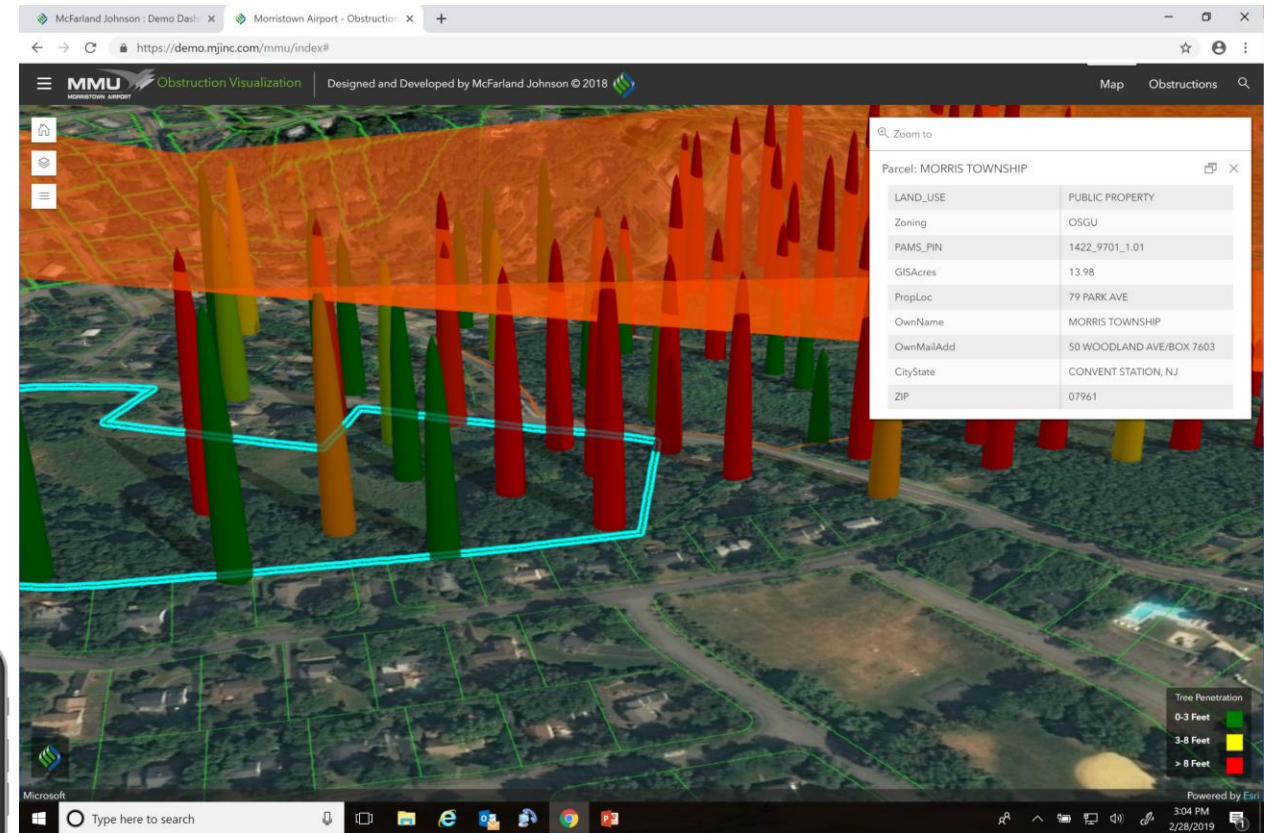
### Runway End Siting Surface



McFarland Johnson

# Obstruction Visualization Tool

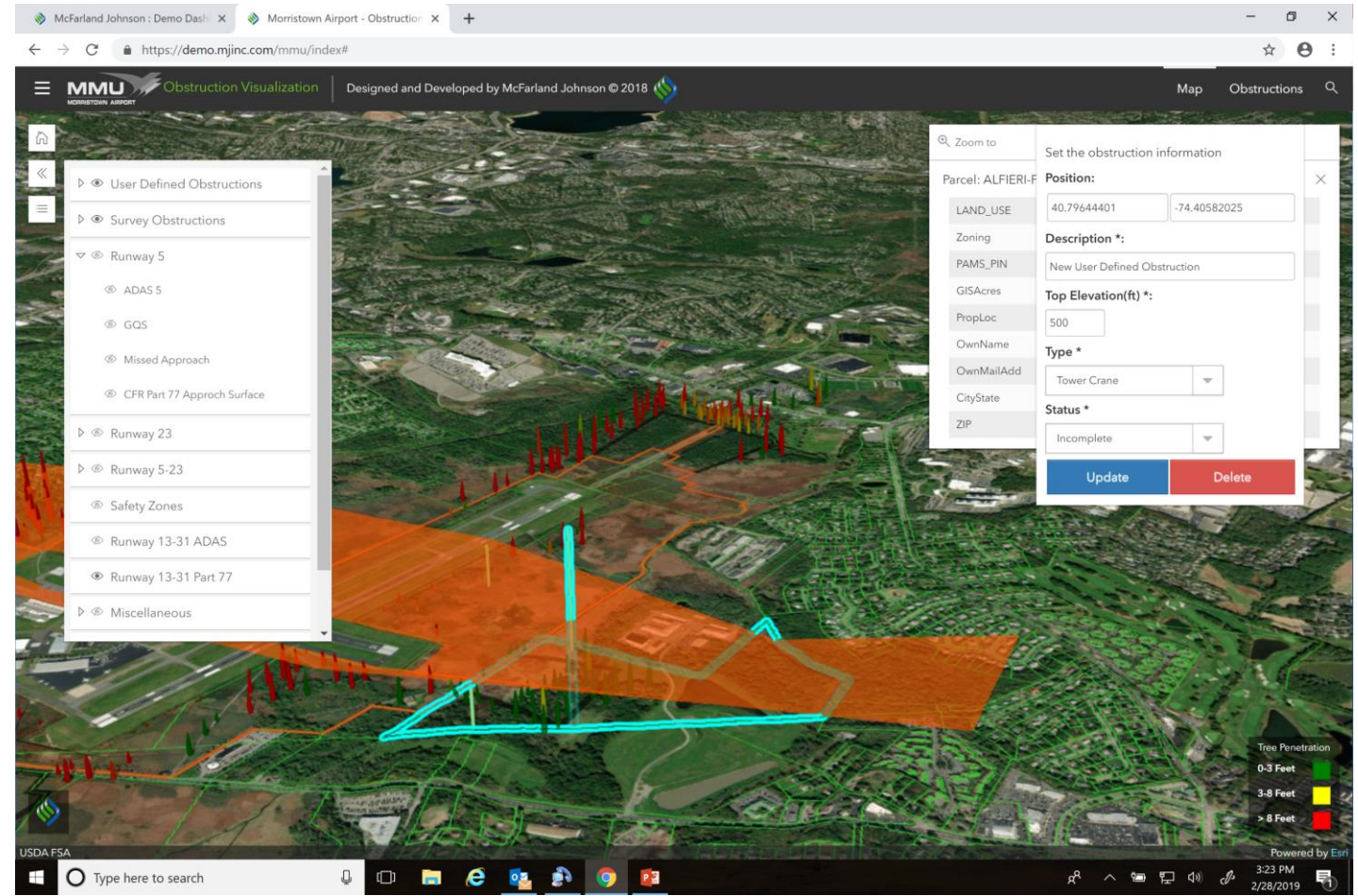
- Obstruction Visualization Tool
  - Provides 3D Display of Obstructions and Surfaces
  - Obstructions are Color Coded by Severity
  - Clearly Presents Spatial Relationship Between Parcel and
  - Mobile Friendly





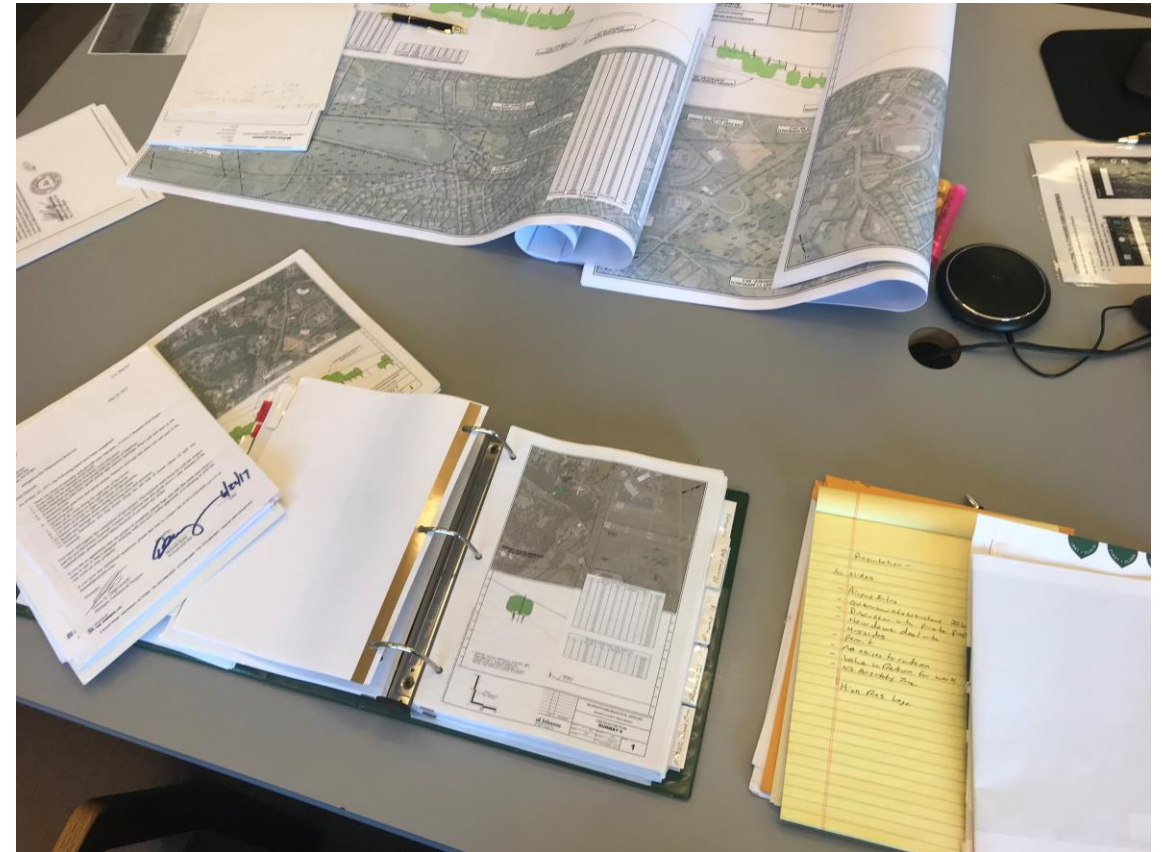
# Obstruction Visualization Tool

- User Defined Obstructions
  - Input Location and Height
  - Graphically Depicted on Map Interface
- Sponsor Can Rapidly Evaluate Airspace Questions
  - Address Outside Inquiries
  - “Pop Ups”



# Obstruction Visualization Tool

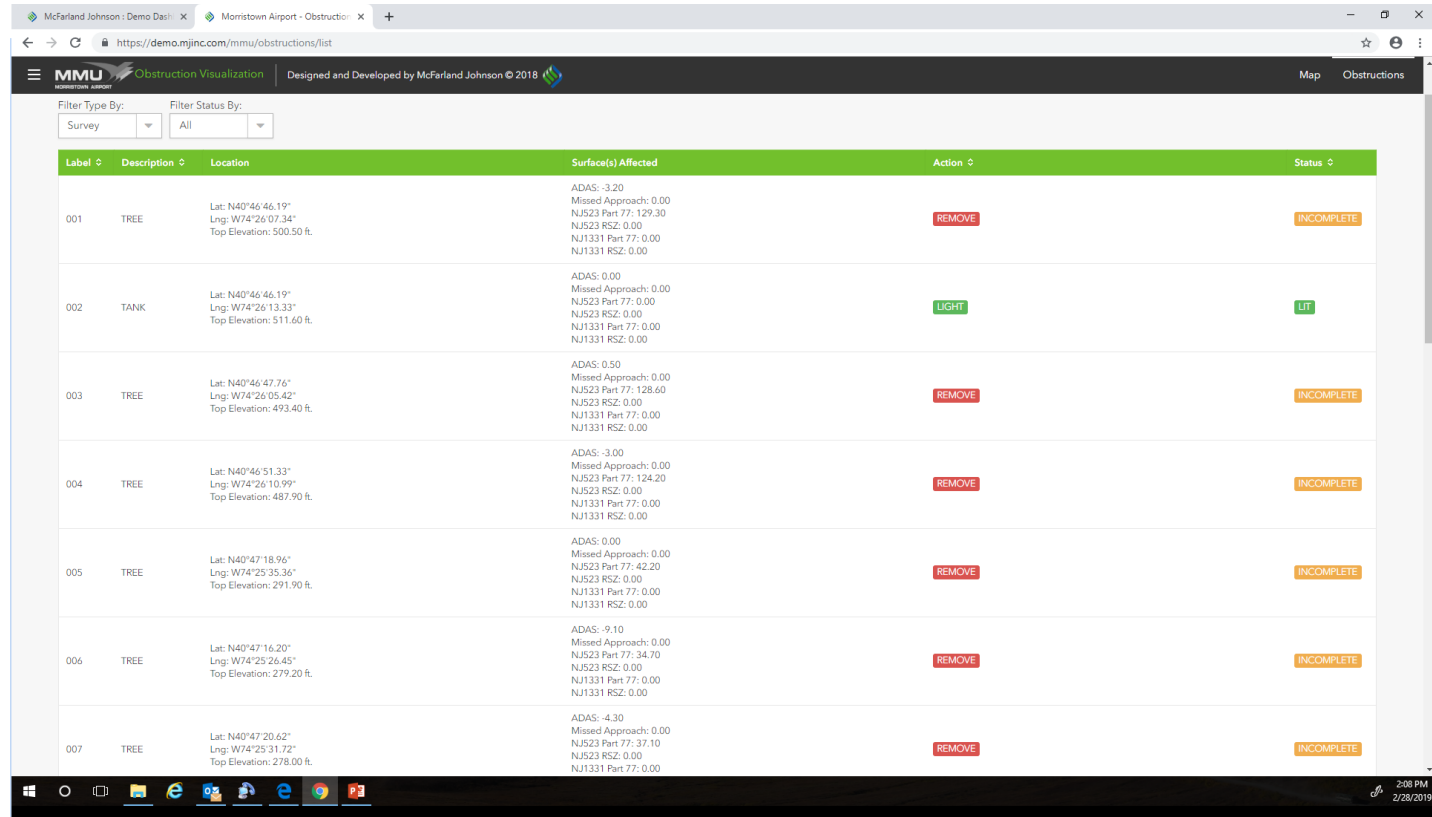
- Document Management
  - Obstruction Data
  - Airspace
  - Property Information
  - Agreements and Easements
  - Permits
  - Program History





# Obstruction Visualization Tool

- Editable Database of Obstructions
  - Type
  - Parcel/Owner
  - Affected Surface
  - Treatment Recommendation
  - Status
- Modifications are Depicted Graphically
- “One Click” Obstruction Action Plan Updates
- Role Based User Access



The screenshot displays the MMU Obstruction Visualization tool interface. The browser address bar shows the URL <https://demo.mjinc.com/mmu/obstructions/list>. The page header includes the MMU logo and the text "Obstruction Visualization" and "Designed and Developed by McFarland Johnson © 2018". The interface features a filter section with "Filter Type By:" set to "Survey" and "Filter Status By:" set to "All". The main table lists obstructions with columns for Label, Description, Location, Surface(s) Affected, Action, and Status. The table contains 7 rows of data, each representing an obstruction with its specific details and recommended actions.

Label	Description	Location	Surface(s) Affected	Action	Status
001	TREE	Lat: N40°46'46.19" Lng: W74°26'07.34" Top Elevation: 500.50 ft.	ADAS: -3.20 Missed Approach: 0.00 NJ523 Part 77: 129.30 NJ523 RSZ: 0.00 NJ1331 Part 77: 0.00 NJ1331 RSZ: 0.00	REMOVE	INCOMPLETE
002	TANK	Lat: N40°46'46.19" Lng: W74°26'13.33" Top Elevation: 511.60 ft.	ADAS: 0.00 Missed Approach: 0.00 NJ523 Part 77: 0.00 NJ523 RSZ: 0.00 NJ1331 Part 77: 0.00 NJ1331 RSZ: 0.00	LIGHT	LIT
003	TREE	Lat: N40°46'47.76" Lng: W74°26'05.42" Top Elevation: 493.40 ft.	ADAS: 0.50 Missed Approach: 0.00 NJ523 Part 77: 128.60 NJ523 RSZ: 0.00 NJ1331 Part 77: 0.00 NJ1331 RSZ: 0.00	REMOVE	INCOMPLETE
004	TREE	Lat: N40°46'51.33" Lng: W74°26'10.99" Top Elevation: 487.90 ft.	ADAS: -3.00 Missed Approach: 0.00 NJ523 Part 77: 124.20 NJ523 RSZ: 0.00 NJ1331 Part 77: 0.00 NJ1331 RSZ: 0.00	REMOVE	INCOMPLETE
005	TREE	Lat: N40°47'18.96" Lng: W74°25'35.36" Top Elevation: 291.90 ft.	ADAS: 0.00 Missed Approach: 0.00 NJ523 Part 77: 42.20 NJ523 RSZ: 0.00 NJ1331 Part 77: 0.00 NJ1331 RSZ: 0.00	REMOVE	INCOMPLETE
006	TREE	Lat: N40°47'16.20" Lng: W74°25'26.45" Top Elevation: 279.20 ft.	ADAS: -9.10 Missed Approach: 0.00 NJ523 Part 77: 34.70 NJ523 RSZ: 0.00 NJ1331 Part 77: 0.00 NJ1331 RSZ: 0.00	REMOVE	INCOMPLETE
007	TREE	Lat: N40°47'20.62" Lng: W74°25'31.72" Top Elevation: 278.00 ft.	ADAS: -4.30 Missed Approach: 0.00 NJ523 Part 77: 37.10 NJ523 RSZ: 0.00 NJ1331 Part 77: 0.00 NJ1331 RSZ: 0.00	REMOVE	INCOMPLETE



# Predictive Tool

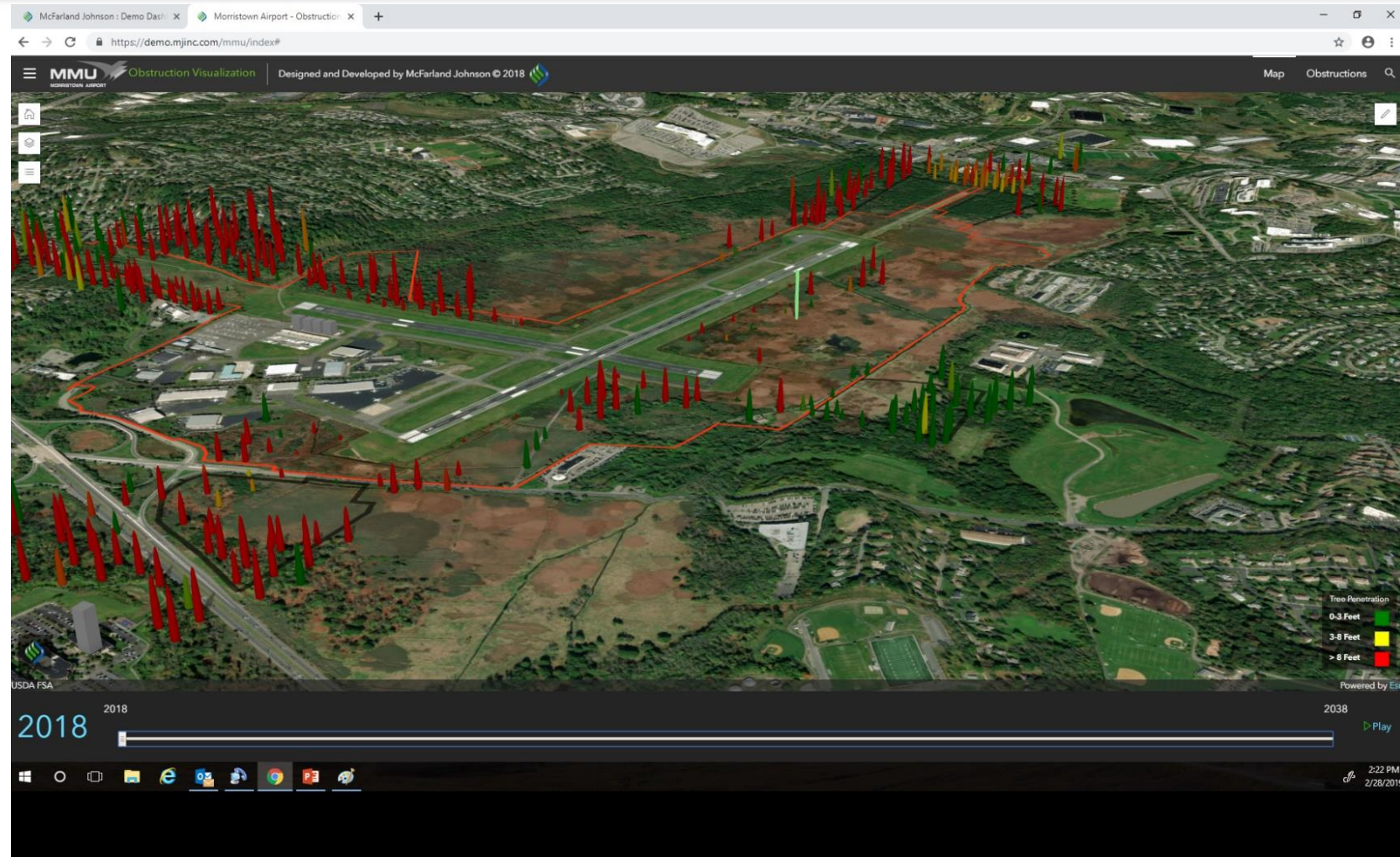
- Why a Predictive Tool?
  - Trees Grow
  - Topped Trees Grow Really Fast
  - Allows Airport to Plan for Future
    - Landowner Coordination
    - Capital Planning (AIP or Sponsor Funded)
    - Secure Necessary Approvals (Permits, NEPA)





# Predictive Tool

- Predicts When Trees will Become Obstructions
- Calculated Based on Site Conditions
- Graphically Depicted

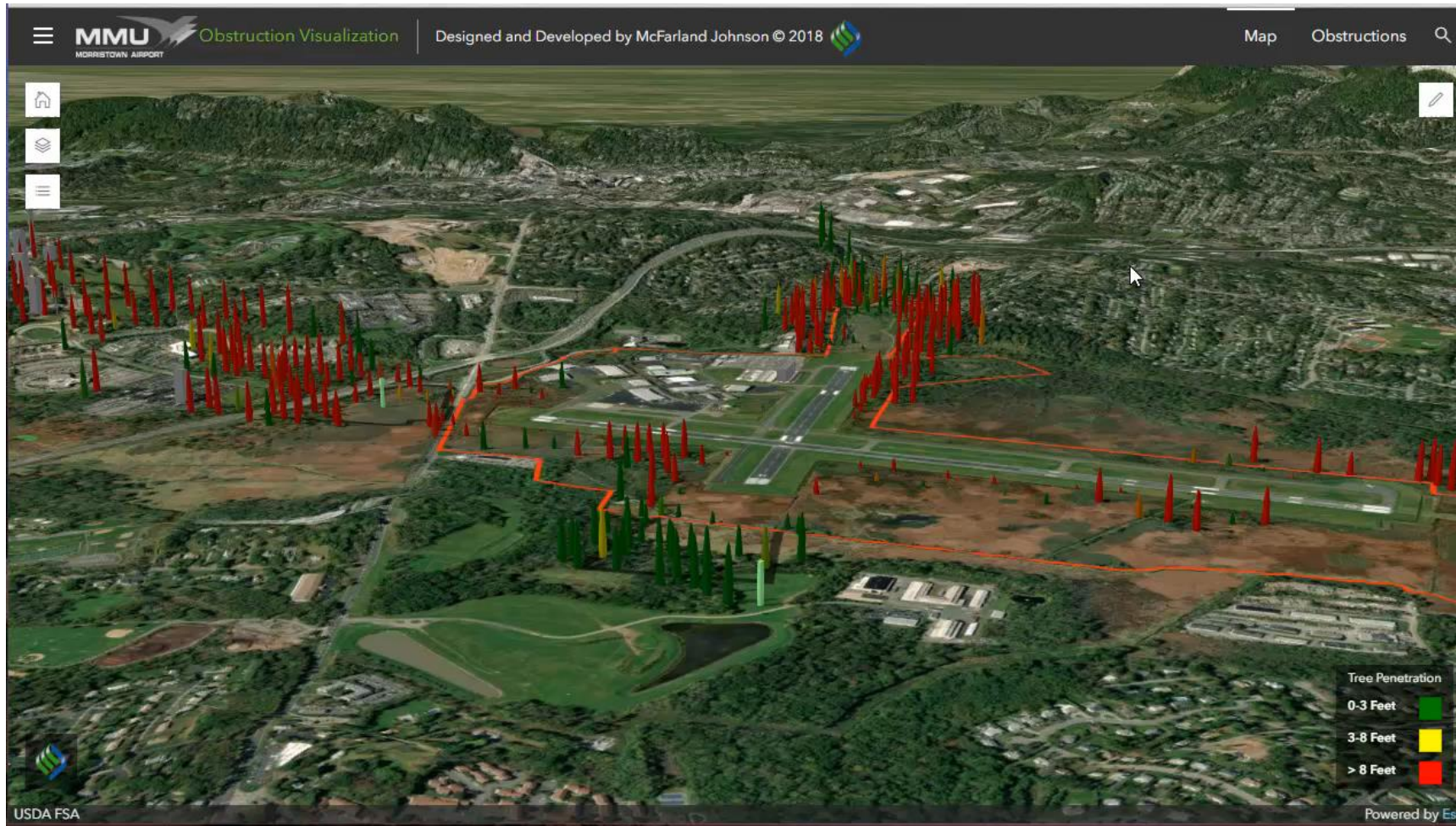


# Lessons Learned

- Maintenance Requirements
  - ArcGIS Server Updates
  - Parcel Data
  - Obstruction Data
- GIGO
- Bells and Whistles



# Demonstration



# Questions?

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