

Empirical Analysis of Runway 23 Departure Climb Profiles *Straight-Out versus Right Turn*



Presentation to:

Noise Compatibility Committee

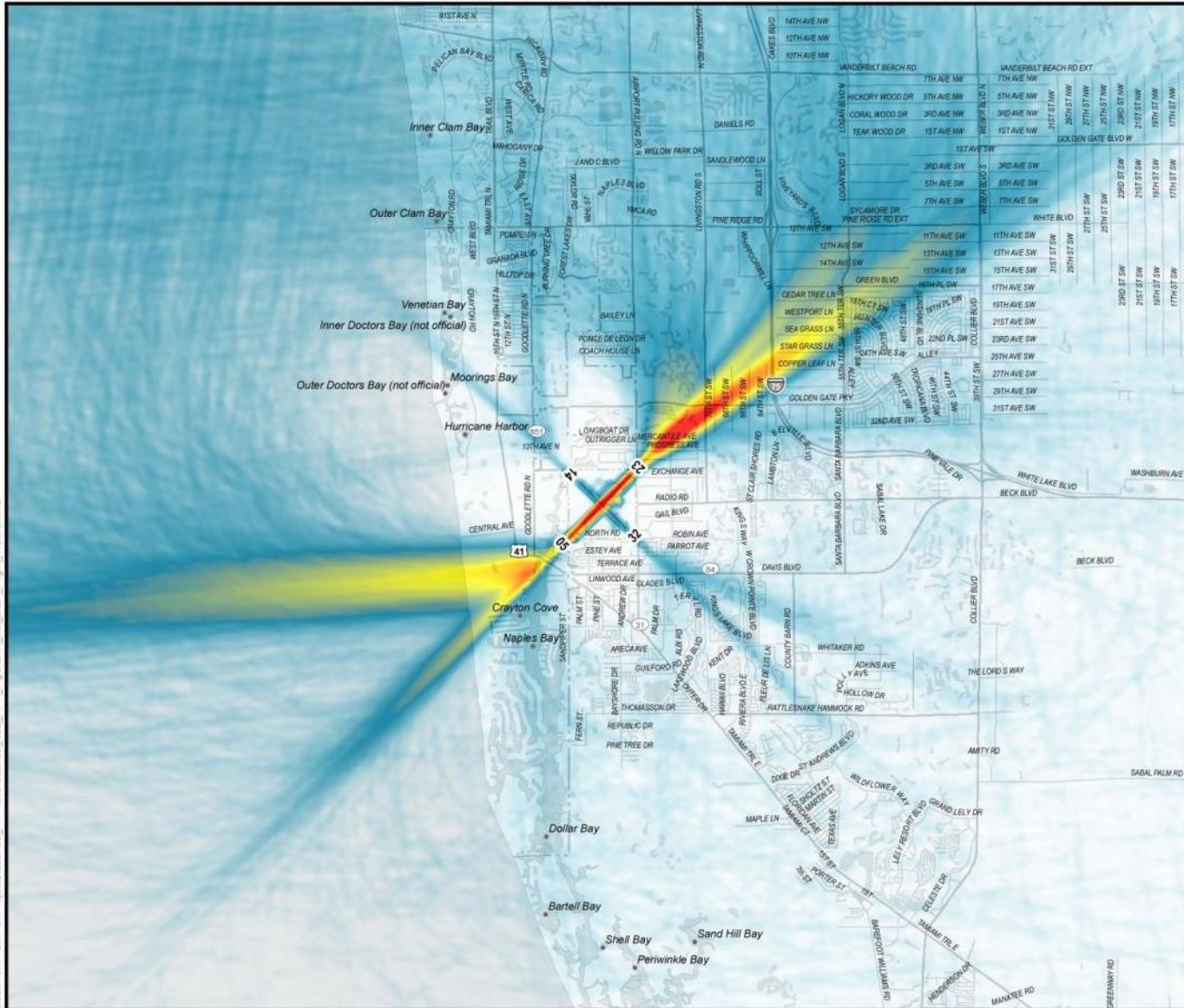
January 28, 2016

Ted Baldwin



Jet Departure Density Plot October 2014 – September 2015

www.hmmh.com



Naples Municipal Airport Jet Departure Flight Track Density October 2014 – September 2015

Low Medium High

- Airport Property
- Naples City Boundary
- Water

Data Source: Collier County GIS, United States Department of Agriculture (USDA) Geospatial Data gateway, Environmental Systems Research Institute (ESRI)

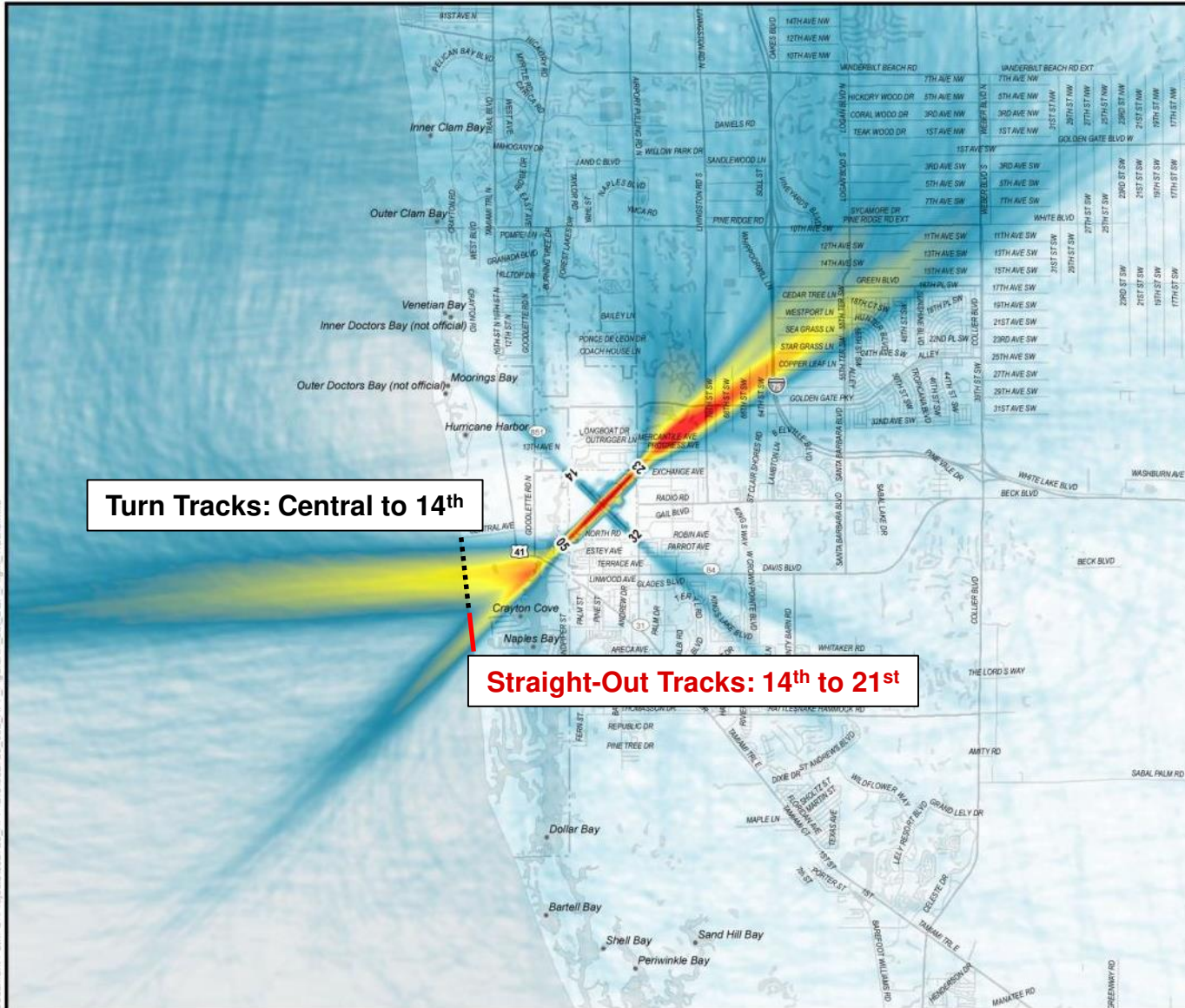
Printed Date: 11/16/2015

0 7,500 15,000 Feet



Selection of Runway 23 Straight-Out and Turn Tracks

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Turn Tracks: Central to 14th

Straight-Out Tracks: 14th to 21st



Naples Municipal Airport
Jet Departure Flight Track Density
October 2014 – September 2015



- Airport Property
- Naples City Boundary
- Water

Data Source: Collier County GIS, United States Department of Agriculture (USDA) Geospatial Data gateway, Environmental Systems Research Institute (ESRI)
Printed Date: 11/16/2015



Document Path: G:\Projects\007223_APF\GIS\0302723_002_APF_Figures\Xcel_DGP_Flight_Tracks.mxd

We were requested to consider several “averages”

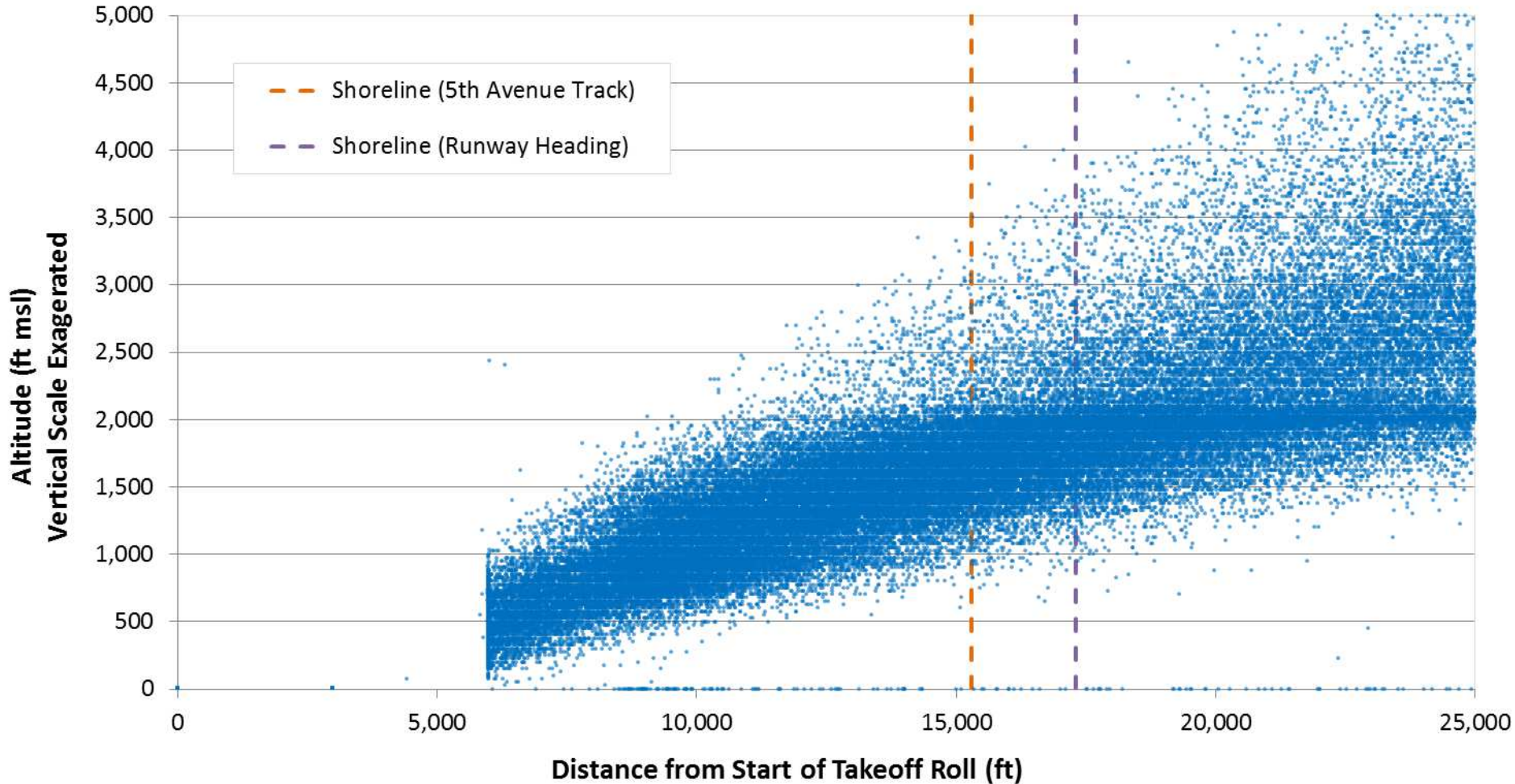
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- **Three types:**
 - “Mean” is the “arithmetic average” we are most familiar with
 - “Median” is the value where half the data are above and half are below
 - “Mode” is the most common value
- **Averages were calculated every 500’ along the track lengths**
 - To calculate the mode we grouped altitudes into 50’ high increments
- **For a simple example, let’s consider a distance from start-of-takeoff-roll where the altitudes of seven planes are:**
 - 1,050’, 1,100’, 1,100’, 1,300’, 1,550’, 1,650’, and 1,700’
 - Mean is 1,350’
 - Median is 1,300’
 - Mode is 1,100’

Altitude Profiles for: All Runway 23 Jet Departures

www.hmmh.com

Radar Hits for All Runway 23 Jet Departures
October 2014 - September 2015

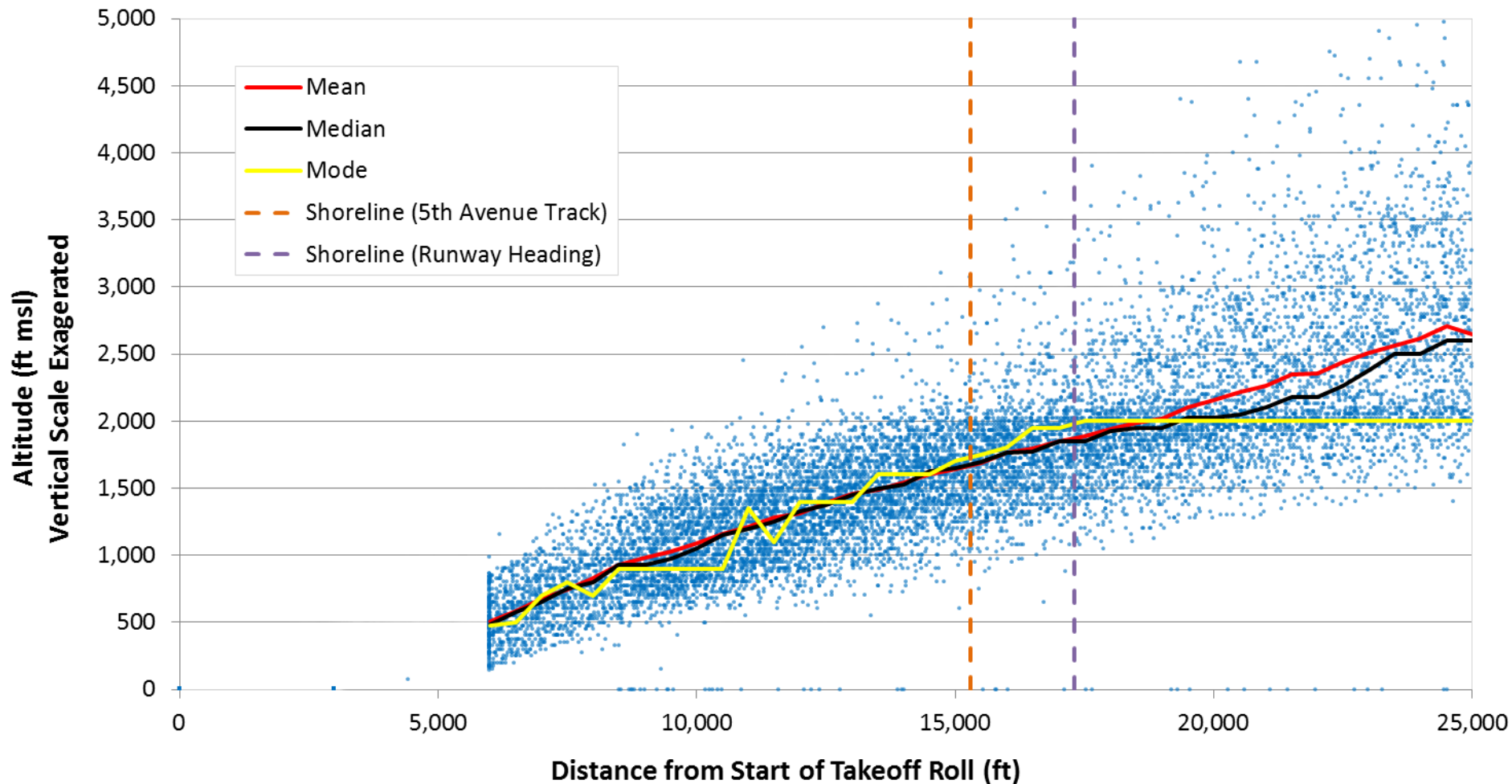


Altitude Profiles for: Runway 23 Straight-Out Jet Departures

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Radar Hits for Runway 23 Centerline Jet Departures

October 2014 - September 2015

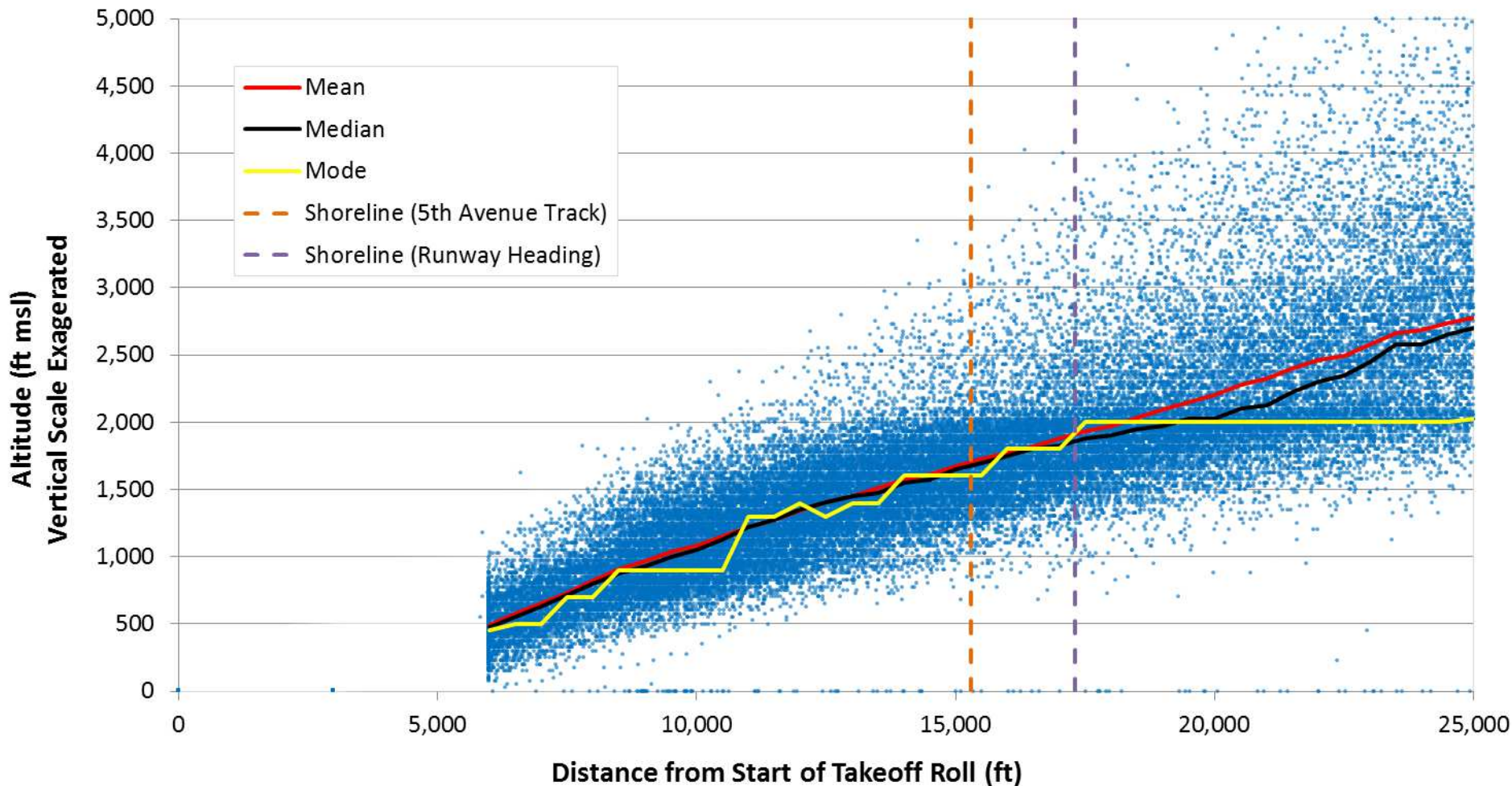


Altitude Profiles for: Runway 23 Right-Turn Jet Departures

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Radar Hits for Right Turning Runway 23 Jet Departures

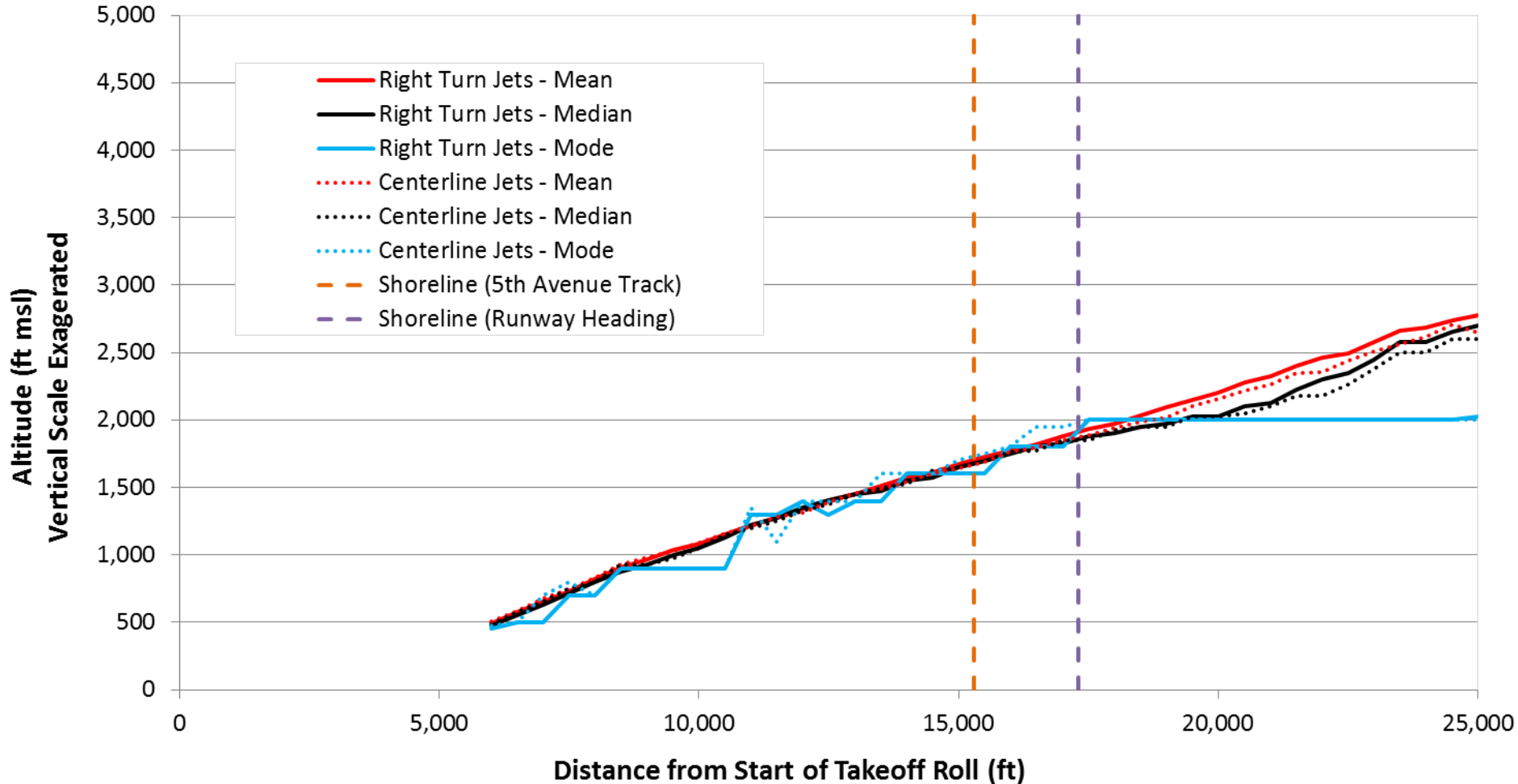
October 2014 - September 2015



Mean, Median, and Mode Comparisons

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Runway 23 Jet Departure Altitudes October 2014 - September 2015



Zoomed-In Mean, Median, and Mode Comparisons

www.hmmh.com

Runway 23 Jet Departure Altitudes October 2014 - September 2015

