

April 7, 2015: Problem Statement

- Noise from aircraft operating at East Hampton Airport disturbs many residents of the East End of Long Island.
- Residents find helicopters more disturbing than any category of fixed-wing aircraft.
- Disturbance caused by all types of aircraft is most significant when operations are (1) most frequent and (2) in evening, night, and early morning hours.

Status

Three restrictions enacted in April 2015

- Nighttime Curfew. All aircraft, all year from 11 PM 7 AM
- Extended Curfew. "Noisy" aircraft, all year from 8 PM 9 AM
- One-Trip-Per-Week Limit. "Noisy" aircraft during the summer season (May – September)
- Restrictions not immediately implemented due to litigation.

Two curfews implemented on July 2, 2015

- This is the basis for analysis of the "Implementation Period", from the Thursday before July 4 weekend to the end of the summer season on September 30.
- All restrictions enjoined by federal appellate court in November 2016

30,000 Foot View of this Presentation

Introductory information

- Definitions
- Focus on "implementation period" (Thursday before July 4 Sept. 30)

Review of 2016 Operations

- Presentation of data
 - Comparisons of operations, by aircraft categories: 2014 (no restrictions),
 2015, and 2016

Review of 2016 Complaints

- Introduction of new database for complaints in 2016: Air Noise Report
- Presentation of data
 - High-level tabular summaries of complaints received in 2016, compared to 2014 and 2015
 - Plots of complaints per household
 - Maps of geographic distributions of complaints by aircraft type and data source

Some Helpful Definitions

- "Noisy aircraft"
 - Aircraft with 91.0 EPNdB or higher published approach level
- "Implementation period"
 - Thursday before July 4 September 30
 - This date range is based on initial implementation of curfews in 2015
 - July 3 September 30, 2014 [Note: Curfews not in effect in 2014]
 - July 2 September 30, 2015
 - June 30 September 30, 2016
- "Nighttime curfew"
 - Prohibit all aircraft operations year-round 11 pm 7 am
- "Extended curfew"
 - Prohibit noisy aircraft year-round 8 pm 9 am (adds 8 11 pm and 7 9 am evening and morning hours to nighttime curfew hours)
- "Land planes"
 - Fixed-wing aircraft that land on runways and cannot land on water
- "Seaplanes"
 - Fixed-wing aircraft that can land on water and also (in most cases) on land

Top-level observations: Operations

Comparison between 2016 and 2015 Implementation Periods:

- Overall activity increased by 71 operations (+0%)
- Helicopter activity decreased by 146 operations (- 4%)
- Land Plane activity increased by 214 operations (+2%)
- Seaplane activity increased by 273 operations (+15%)
- Undefined activity decreased by 270 operations (-31%)

Operations were consistent with the intent of the rules

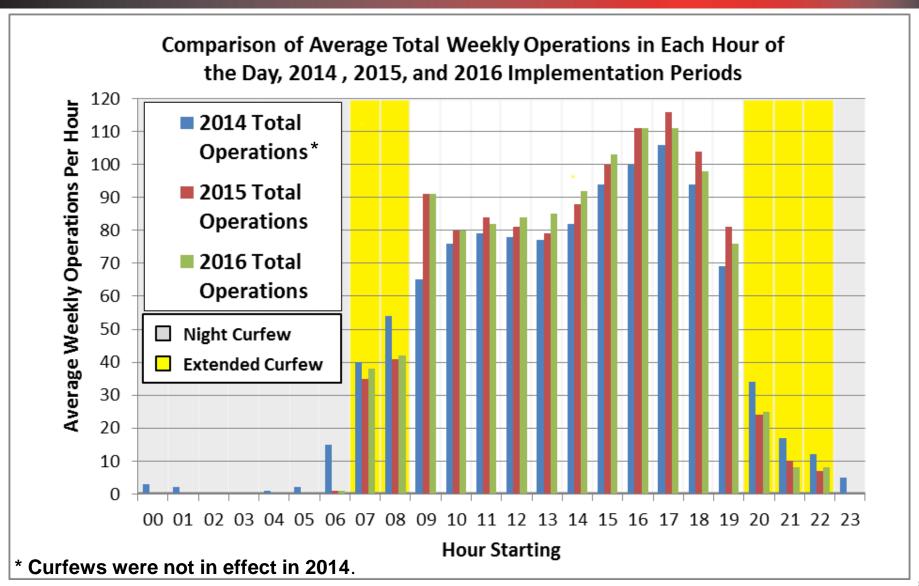
- Operators complied with the nighttime curfew and extended curfew
- "Noisy" aircraft operations shifted out of the restricted hours into unrestricted daytime hours

Operations Data: 2014 - 2016 Implementation Periods

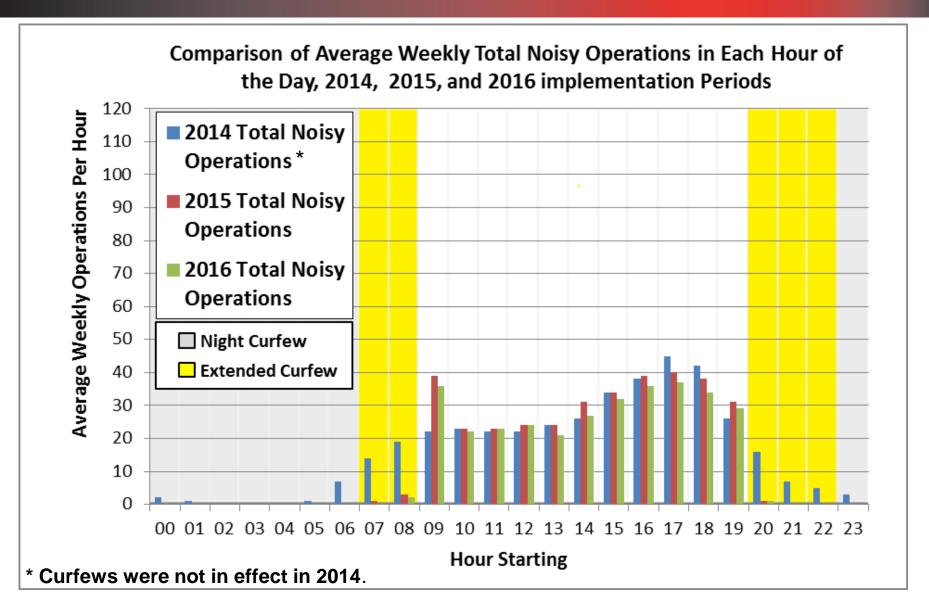
		Implementation Period Operations Comparisons						
Aircraft Category	2014 Operations*	2015 Operations	2016 Operations	2014- 2015 Numerical Change	2014-2015 Percentage Change	2015-2016 Numerical Change	2015-2016 Percentage Change	
Helicopters	4,179	3,916	3,770	-263	-6%	-146	-4%	
Land Planes	8,841	8,959	9,173	118	1%	214	2%	
Seaplanes	1,220	1,882	2,155	662	54%	273	15%	
Multiple	0	0	0	0	0%	0	0%	
Undefined	59	863	593	804	1363%	-270	-31%	
Grand Total	14,299	15,620	15,691	1,321	9%	71	0%	

^{*} Curfews were not in effect in 2014.

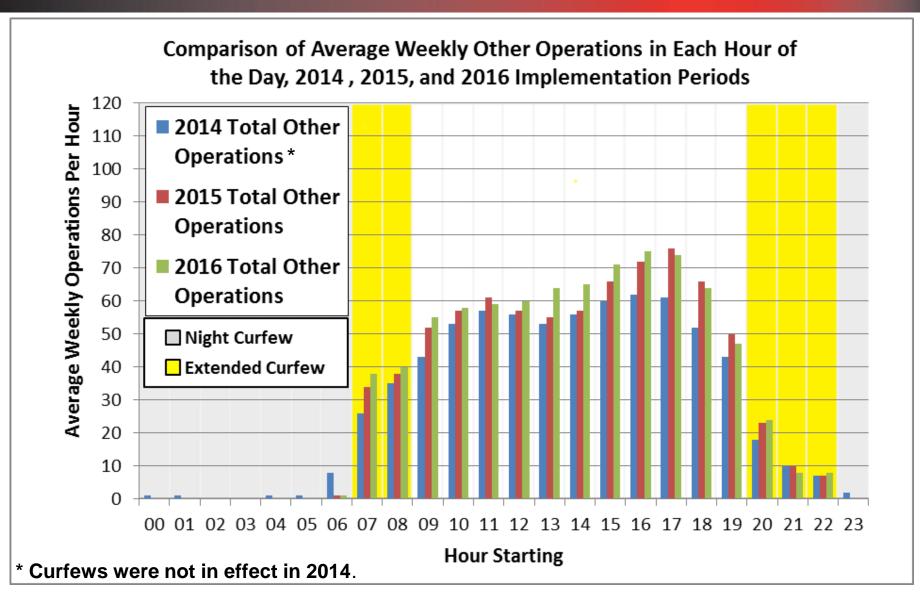
Operations in all aircraft types during the nighttime curfew remained at essentially zero



"Noisy" aircraft operations during the extended curfew hours remained at essentially zero



"Other" aircraft operations were generally up during the extended curfew hours compared to 2015, as in other hours



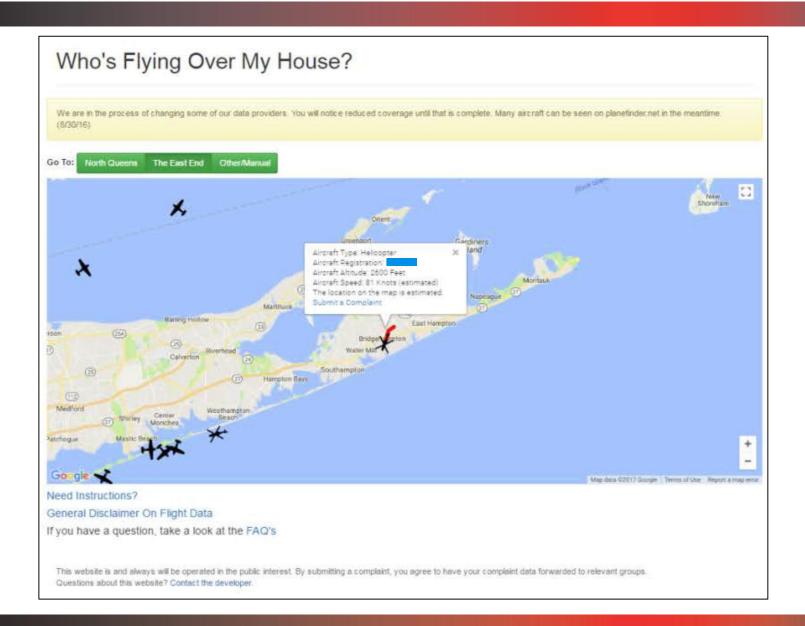
Complaints: Changes in Data Collection

- Since 2012, the Town has contracted with PlaneNoise to collect complaint information.
- Beginning in late June 2016, a new complaint entry utility, Air Noise Report, came online.
- During the 2016 implementation period, complaints were filed on both systems.
- This analysis takes into account both methods of reporting.

PlaneNoise versus Air Noise Report: Differences in Data Collection

- Address-based complaints (complaints are associated with addresses supplied by the complainant)
- Represented 59% of all complaints (14,432 out of 24,309)
 collected June 30 September 30, 2016
- Came from:
 - All PlaneNoise complaints
 - Air Noise Report "manual" complaints
- Aircraft-based complaints (complaints are associated with aircraft position at that point in time)
- Represented 41% of all complaints (9,877 out of 24,309) collected
 June 30 September 30, 2016
- Came from:
 - Air Noise Report "mapped" complaints

Air Noise Report Complaint Engine: "Mapped" Complaints



Air Noise Report Data Filtering

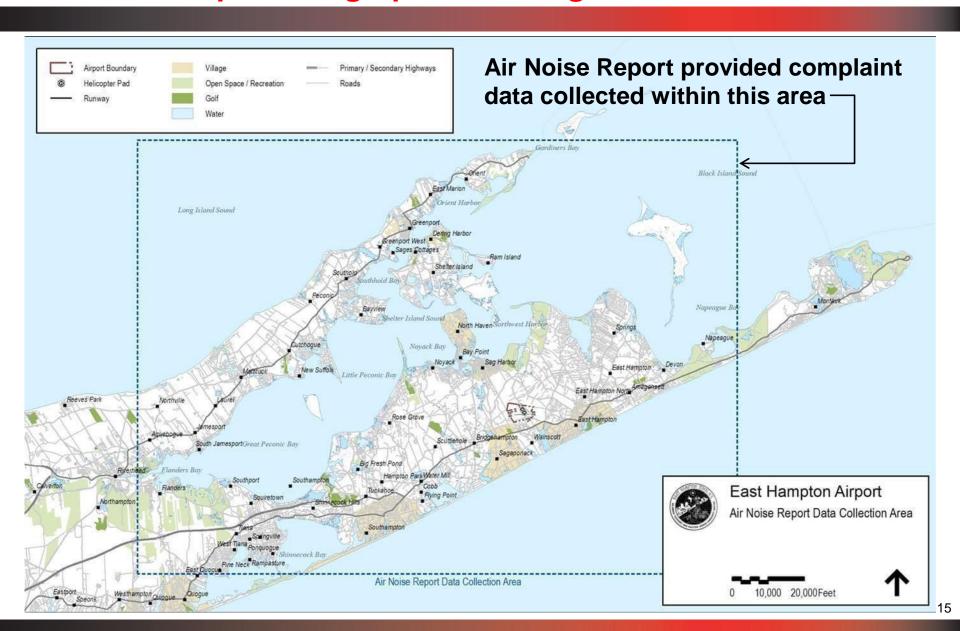
Coverage is not "perfect"

- "...There are a few reasons an aircraft won't appear on the map. We filter aircraft that are below 200 feet and above 3600 feet. In addition, some aircraft (mostly seaplanes) don't use the technology we rely on to track movements; this should change in the future. Finally, most jets are filtered from the map." (Air Noise Report FAQs)
- **Note:** Air Noise Report filter's out jets with maximum gross takeoff weights over 12,500 pounds.

Coverage is geographically limited

 Air Noise Report provides data only from a specific geographic area, as shown on the next slide

Air Noise Report Geographic Coverage Provided to HTO



Categorizing Operations Responsible for Complaints

- The PlaneNoise and Air Noise Report complaint entry methods do not provide consistent bases for categorizing fixed-wing aircraft
- Air Noise Report does not support a multiple aircraft complaint

Aircraft Type	PlaneNoise	Air Nois	se Report Complaints
Category	Complaints	Manual	Mapped
Helicopter	Helicopter	Helicopter	ANR mapped complaints
Fixed-Wing	Jet		require complainant to identify
	Prop		a specific aircraft operation, which permits identification of
		Small Airplane	the <u>exact</u> aircraft type,
		Large Airplane	including "noisy" and "other"
	Seaplane	Seaplane	types
Undefined Type	Unknown	Unsure	Applies when tail number not listed in any source
Multiple Aircraft	Multiple	Not supported	Not supported

Each complaint reporting method has value. It would be appropriate for the Town to continue using all methods for at least the next year.

	Impleme	ntation Perio	d Complaints	by Method	of Reporting		
Complaint System	Method of Reporting	2014 Complaints*	2015 Complaints	2016 Complaints	2014 Complaint Percentage*	2015 Complaint Percentage	2016 Complaint Percentage
	Hotline	10,327	4,753	3,190	59%	25%	13%
	Fax	0	0	1	0%	0%	0%
DlamaNaisa	Manual**	808	1,121	1,247	5%	6%	5%
PlaneNoise	Email	562	2,171	514	3%	11%	2%
	Webform	5,740	11,054	4,802	33%	58%	20%
	PlaneNoise Total	17,437	19,099	9,754	100%	100%	40%
	Mapped	0	0	9,877	0%	0%	41%
Air Noise	Manual**	0	0	4,678	0%	0%	19%
Report Air Noise Report Total		0	0	14,555	0%	0%	60%
Grai	nd Total	17,437	19,099	24,309	100%	100%	100%

^{*} Curfews were not in effect in 2014

^{* *} PlaneNoise "manual" complaints are multiple listed dates/times from hotline and webform complaints that PlaneNoise manually enters into the system. Air Noise Report "manual" complaints are those that complainants manually enter via the (mobile-friendly) webform.

HTO Complaint History 2014, 2015, and 2016 Implementation Periods

- PlaneNoise complaints dropped from 2015 to 2016
- However, <u>total</u> HTO complaints *increased*, when <u>Air Noise Report</u> complaints are included
- Pattern held true across aircraft categories

	PlaneNoise Complaints			Air Noise Report Complaints	Total HTO Complaints	Percentage of HTO Complaints
Aircraft Category	2014	2015	2016	2016	2016	2016
Helicopters	11,846	11,182	5,449	7,765	13,214	54%
Land Planes	4,377	4,810	2,885	4,175	7,060	29%
Seaplanes	690	1,529	718	1,898	2,616	11%
Multiple	148	361	257	n.a.	257	1%
Undefined	376	1,217	445	717	1,162	5%
Grand Total	17,437	19,099	9,754	14,555	24,309	100%

Note: 39 "Montauk" complaints submitted via PlaneNoise during the 2016 implementation period are *not* included.

Top-Level Observations: Complaints

Comparison of 2016 and 2015 Implementation Periods

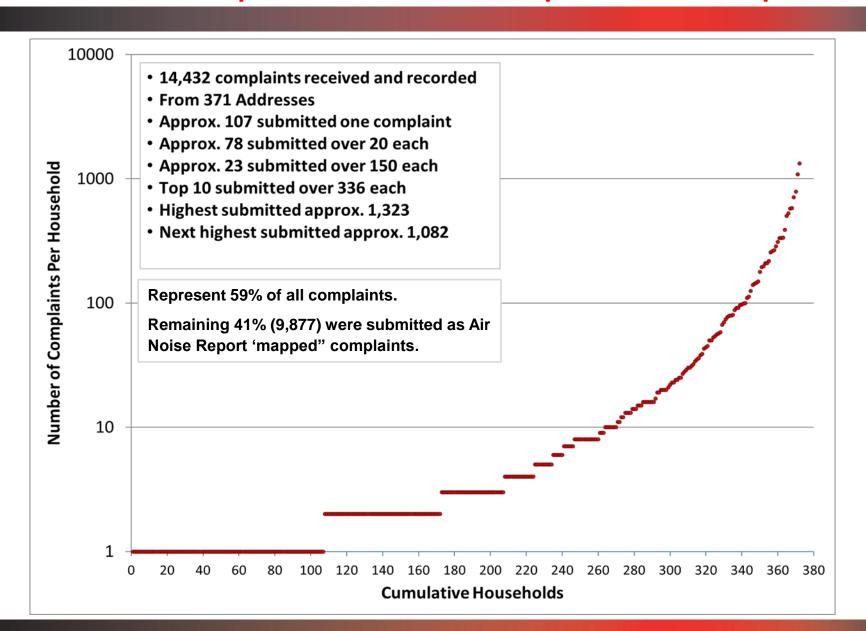
- Overall complaints increased by 5,210 (+27%)
- Helicopter complaints increased by 2,032 (+18%)
- Land Plane complaints increased by 2,250 (+47%)
- Seaplane complaints increased by 1,087 (+71%)

Operations and Complaint Data 2014, 2015, and 2016 Implementation Periods

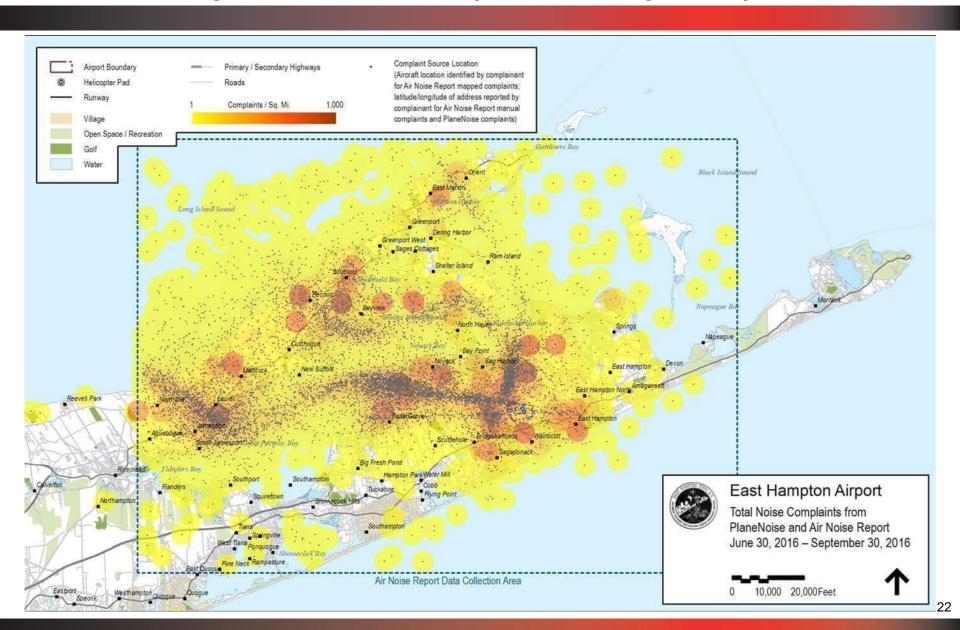
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Grand Total	14,299	15,620	15,691	1,321	9%	71	0%

		Implementation Period Complaint Comparisons					
Aircraft Category	2014 Complaints	2015 Complaints	2016 Complaints	2014-2015 Numerical Change	2014-2015 Percentage Change	2015-2016 Numerical Change	2015-2016 Percentage Change
Helicopters	11,846	11,182	13,214	-664	-6%	2,032	18%
Land Planes	4,377	4,810	7,060	433	10%	2,250	47%
Seaplanes	690	1,529	2,616	839	122%	1,087	71%
Multiple	148	361	257	213	144%	-104	-29%
Undefined	376	1,217	1,162	841	224%	-55	-5%
Grand Total	17,437	19,099	24,309	1,662	10%	5,210	27%

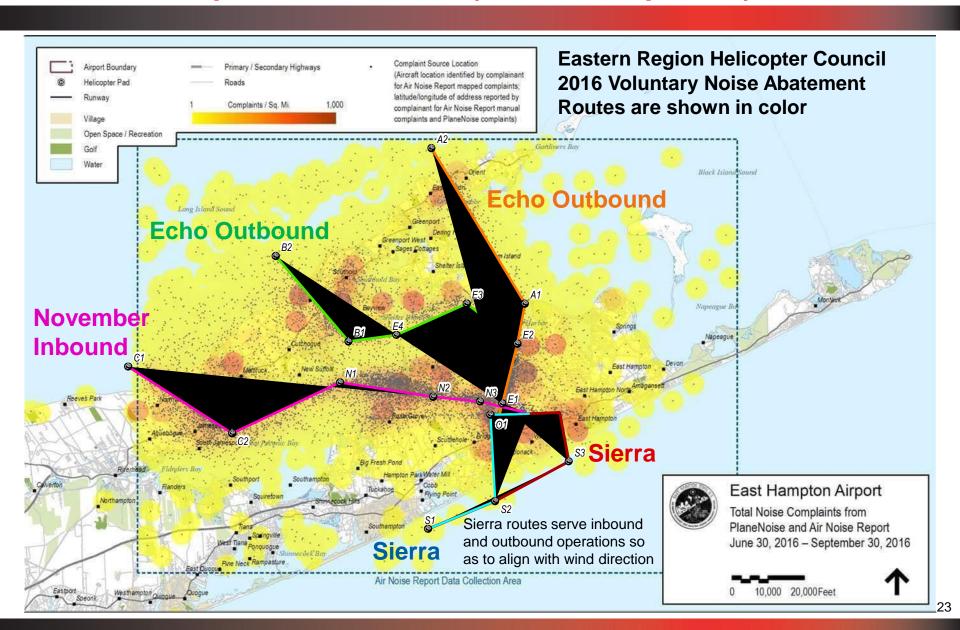
Complaints Per Household: June 30 - September 30, 2016 <u>All PlaneNoise Complaints and Air Noise Report Manual</u> Complaints



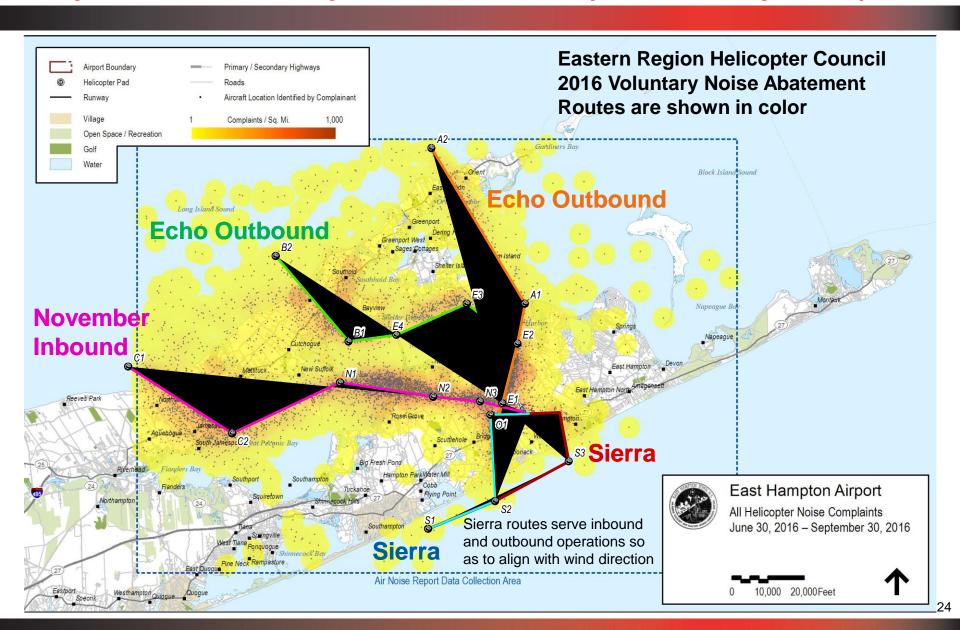
All complaints from PlaneNoise and Air Noise Report June 30 - September 30, 2016 (24,309 complaints)



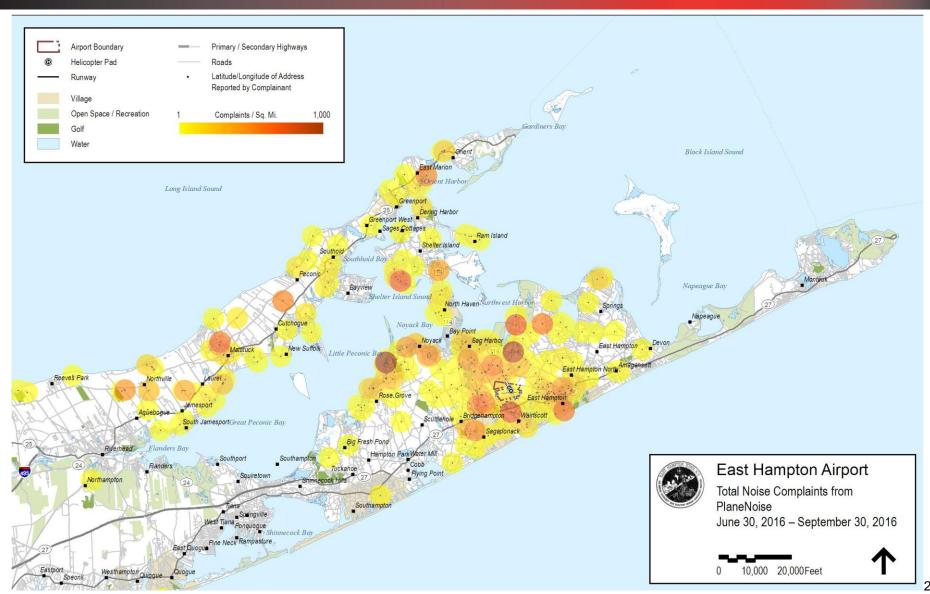
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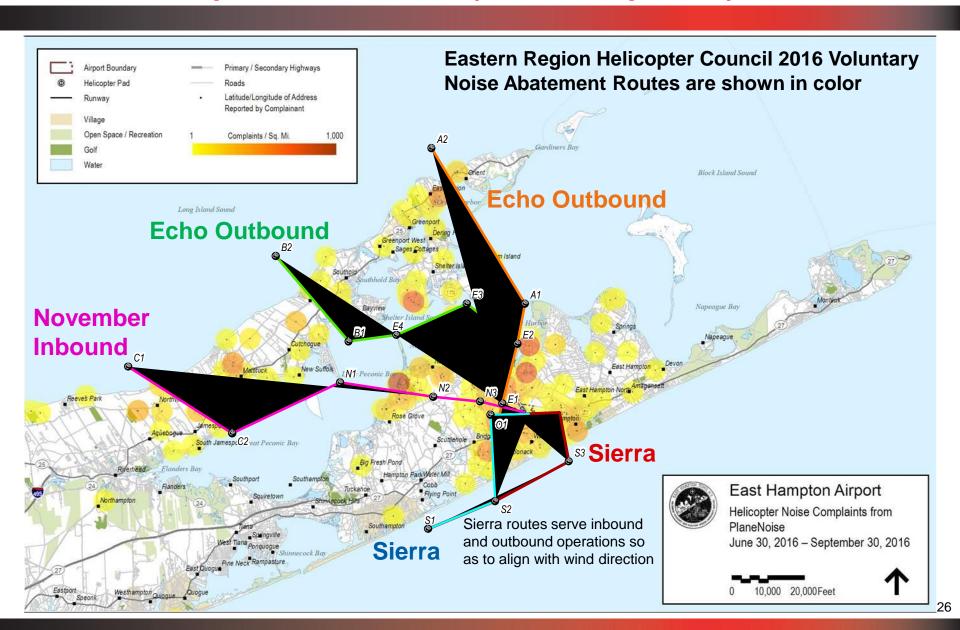
All helicopter complaints from PlaneNoise and Air Noise Report, June 30 - September 30, 2016 (13,214 complaints)



All complaints from PlaneNoise June 30 - September 30, 2016 (9,754 complaints)



Helicopter complaints from PlaneNoise June 30 - September 30, 2016 (5,449 complaints)



Top-Level Observations Drawn from Air Noise Report Mapped Complaints Regarding Specific Aircraft Types and Individual Aircraft

- Observations take advantage of specific aircraft type and registration data available from Air Noise Report Mapped Complaints
- Please note that these top-level observations are based on:
 - 100% of aircraft operations
 - 41% of all complaints (9,877 out of 24,309) collected as Air Noise Report "mapped" complaints

Top-Level Observations Drawn from Air Noise Report Mapped Complaints Regarding Specific Aircraft Types and Individual Aircraft

- The Sikorsky S76 (a "noisy" helicopter) was the aircraft model that led to the most complaints
 - S76s performed the most operations of any aircraft model
- The Cessna Caravan C208 seaplane (not in the "noisy" category) was the aircraft model that led to the second most complaints
 - C208s performed the second most operations
- The Bell B407 helicopter (not in the "noisy" category) was the aircraft type that led to the third most complaint
 - B407s performed the third most operations
 - This is demonstrative of a general shift from "noisy" to "other" helicopters

The 2016 data reconfirm that complaints are a function of aircraft noisiness and frequency of operation.

Operations and complaints associated with specific aircraft types and specific individual aircraft, June 30 – September 30, 2016

- The following slides provide background detail on operations and complaints in:
 - Specific aircraft types
 - Specific individual aircraft
 - Only this complaint collection method provides information on specific aircraft type and unique registration

Top 20 Helicopter Types Associated with Air Noise Report Mapped Complaints, June 30 through September 30, 2016

Helicopter Category	Helicopter Type	Air Noise Report Mapped Complaints Filed for Helicopter Type (41% of Total Complaints)	HTO Operations Associated with Helicopter Type, from Vector (100% of Operations)
Noisy Helicopter	S76	1,898	1,453
Other Helicopter	B407	1,352	648
Noisy Helicopter	AS50	1,171	257
Noisy Helicopter	AS55	501	314
Noisy Helicopter	B430	373	273
Noisy Helicopter	S92	194	123
Other Helicopter	A119	139	69
Noisy Helicopter	A139	139	113
Other Helicopter	B06	125	94
Noisy Helicopter	A109	124	139
Other Helicopter	R66	94	41
Other Helicopter	R44	91	37
Noisy Helicopter	EC55	74	28
Noisy Helicopter	B427	59	36
Noisy Helicopter	B429	29	7
Noisy Helicopter	EC35	14	13
Other Helicopter	В06Т	12	13
Noisy Helicopter	BK17	8	21
Other Helicopter	EC20	2	Note
Noisy Helicopter	EXPL	1	3
Tota	1	6,400	3,682

Note: Vector data did not include any HTO operations associated with this helicopter type.

Top 20 Fixed-Wing Aircraft Types Associated with Air Noise Report Mapped Complaints, June 30 through September 30, 2016

Aircraft Category	Aircraft Type	Air Noise Report Mapped Complaints Filed for Aircraft Type (41% of Total Complaints)	HTO Operations Associated with Aircraft Type, from Vector (100% of Operations)
Seaplane	C208	1,526	2,134
Prop	SR22	219	654
Prop	PA34	173	345
Prop	PC12	163	623
Prop	C172	140	582
Prop	C182	121	278
Prop	BE36	99	322
Prop	C402	96	24
Prop	BE58	61	358
Prop	SR20	55	82
Prop	PA31	51	191
Prop	C206	44	66
Prop	PA32	40	198
Noisy Jet (Note)	BE40	39	176
Other Jet (Note)	E55P	34	301
Prop	ТВМ7	34	79
Prop	BE9L	30	132
Prop	BE35	28	17
Prop	GLST	26	24
Other Jet	C750	24	8
Total		3,003	6,594

Note: Air Noise Report does not display most jet operations.

Top 20 Individual Helicopters Associated with Air Noise Report Mapped Complaints, June 30 through September 30, 2016

Helicopter Category	Helicopter Type	Aircraft # (Note)	Air Noise Report Mapped Complaints Filed Against an Individual Helicopter (41% of Total Complaints)	HTO Operations Associated with That individual Helicopter, from Vector (100% of Operations)
Noisy Helicopter	S76	1	279	144
Noisy Helicopter	S76	2	261	131
Other Helicopter	B407	3	257	104
Noisy Helicopter	S76	4	241	146
Noisy Helicopter	S76	5	215	114
Other Helicopter	B407	6	197	84
Noisy Helicopter	S92	7	194	122
Noisy Helicopter	AS50	8	188	33
Noisy Helicopter	S76	9	183	141
Noisy Helicopter	AS50	10	181	46
Other Helicopter	B407	11	168	66
Noisy Helicopter	AS50	12	165	38
Noisy Helicopter	B430	13	162	122
Noisy Helicopter	AS50	14	161	30
Noisy Helicopter	AS50	15	157	36
Noisy Helicopter	B430	16	155	97
Other Helicopter	B407	17	155	90
Noisy Helicopter	AS50	18	153	29
Noisy Helicopter	S76	19	151	93
Other Helicopter	B407	20	142	86
	Total		3,765	1,752

Note: Each row is for a specific aircraft. Registration numbers are not listed for privacy purposes.

Top 20 Individual Fixed-Wing Aircraft Associated with Air Noise Report Mapped Complaints, June 30 through September 30, 2016

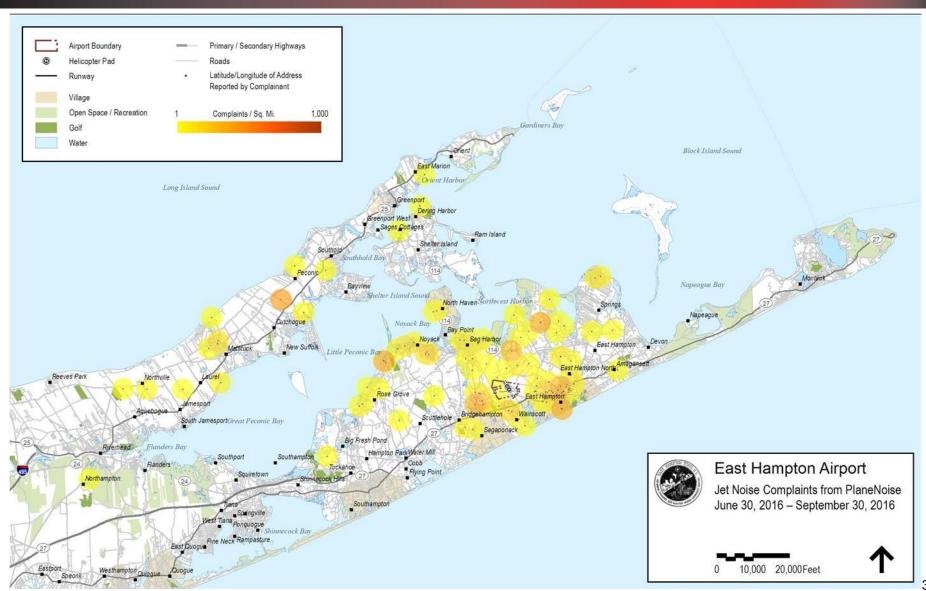
Aircraft Category	Aircraft Type	Aircraft # (Note 1)	Air Noise Report Mapped Complaints Filed Against and individual Aircraft (41% of Total Complaints)	HTO Operations Associated with that Individual Aircraft, from Vector (100% of Operations)
Seaplane	C208	1	380	306
Seaplane	C208	2	286	290
Seaplane	C208	3	224	217
Seaplane	C208	4	189	116
Seaplane	C208	5	143	190
Seaplane	C208	6	136	115
Seaplane	C208	7	115	219
Prop	SR22	8	37	82
Prop	C206	9	28	Note 2
Prop	PA34	10	26	54
Prop	SR22	11	25	28
Prop	BE9L	12	24	31
Prop	PA34	13	22	31
Prop	SR22	14	22	2
Prop	PA31	15	21	79
Prop	BE36	16	20	Note 2
Prop	PA34	17	19	45
Prop	GLST	18	19	15
Prop	PA32	19	19	26
Prop	PA34	20	19	127
	Total		1,774	1,973

Note 1: Each row is for an individual aircraft. Registration numbers are not listed for privacy purposes.

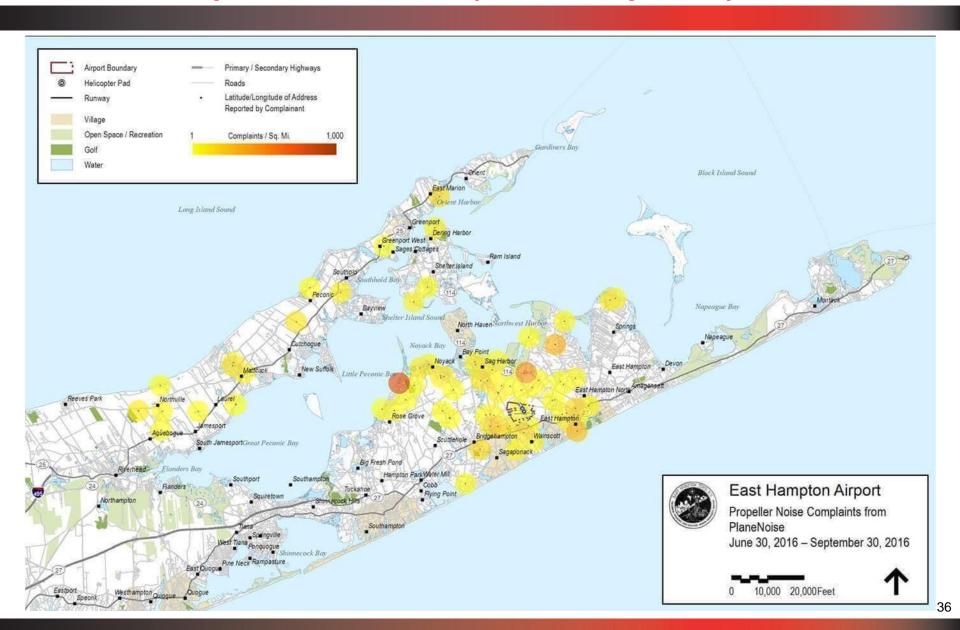
Note 2: Vector data set did not include any HTO aircraft operations associated with these aircraft.

Additional Complaint Graphics June 30 - September 30, 2016

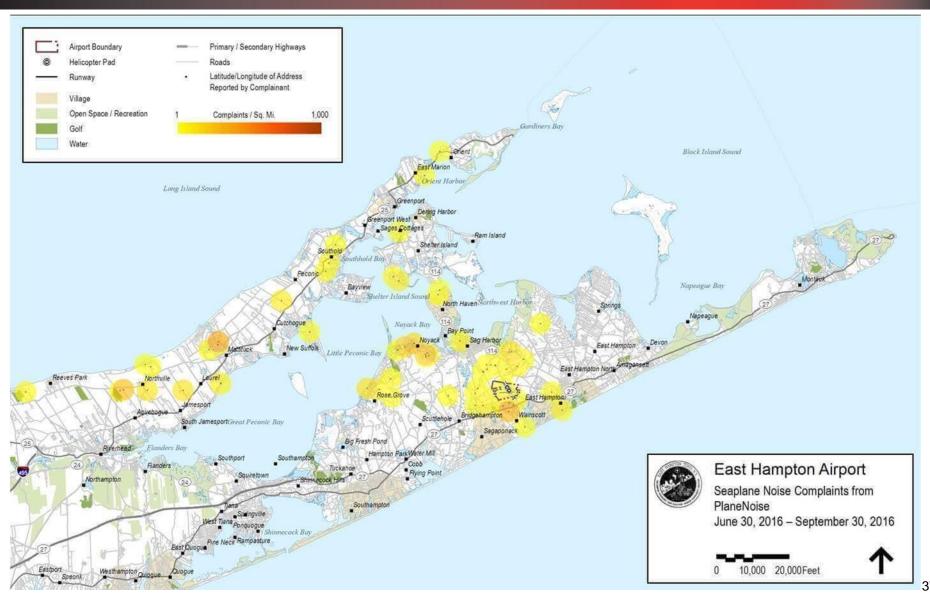
Jet complaints from PlaneNoise June 30 - September 30, 2016 (1,321 complaints)



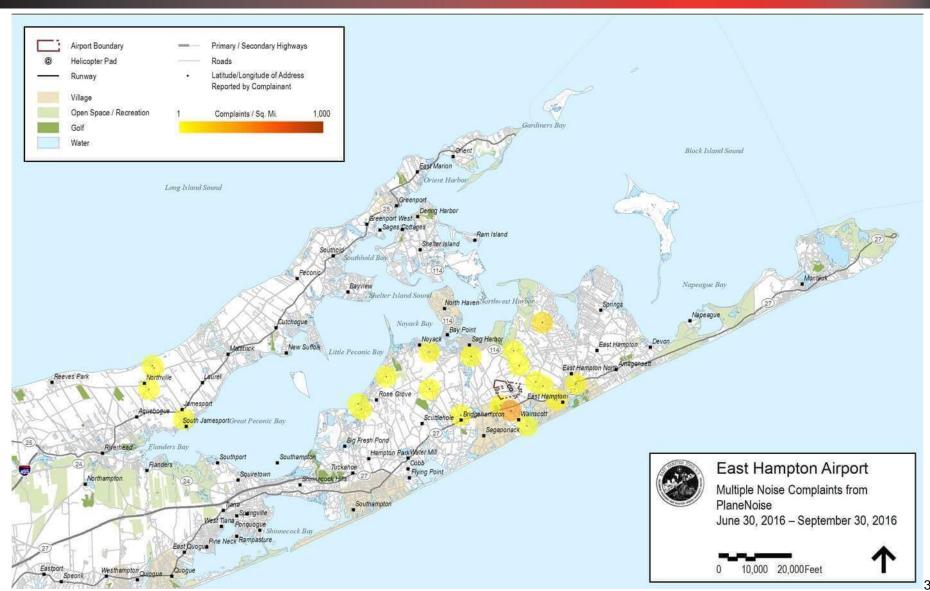
Propeller complaints from PlaneNoise June 30 - September 30, 2016 (1,564 complaints)



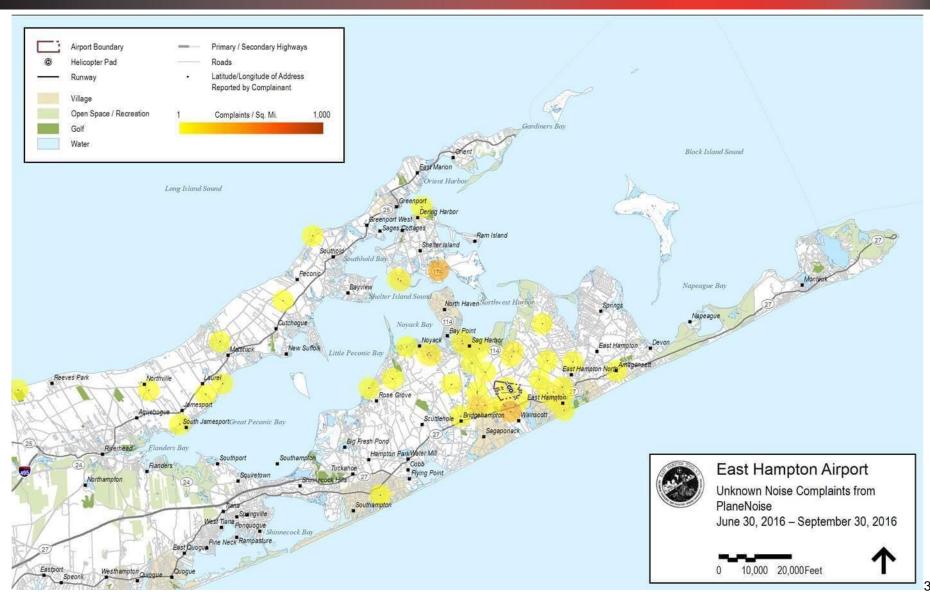
Seaplane complaints from PlaneNoise June 30 - September 30, 2016 (718 complaints)



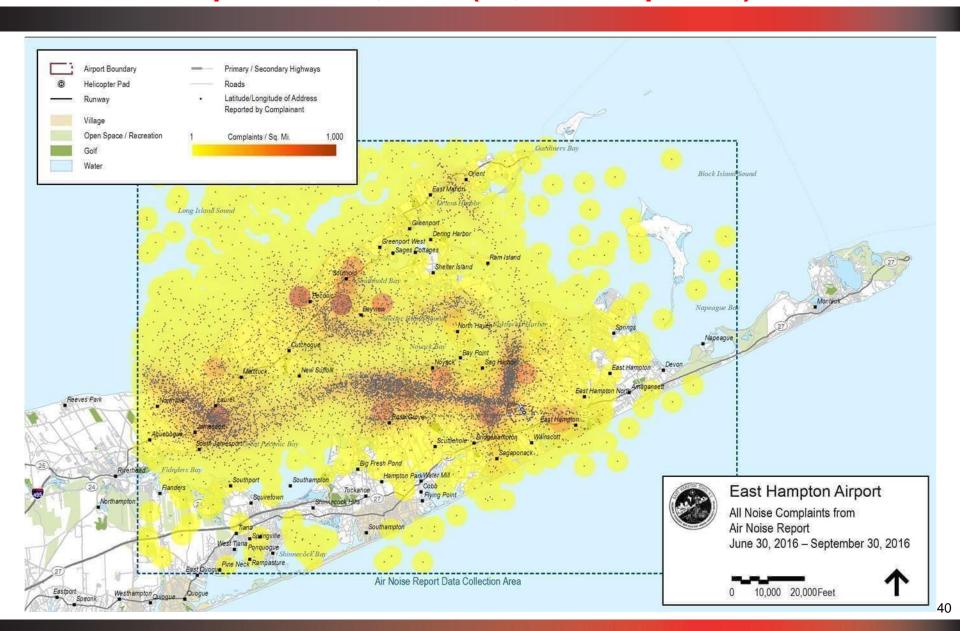
Multiple aircraft complaints from PlaneNoise June 30 - September 30, 2016 (257 complaints)



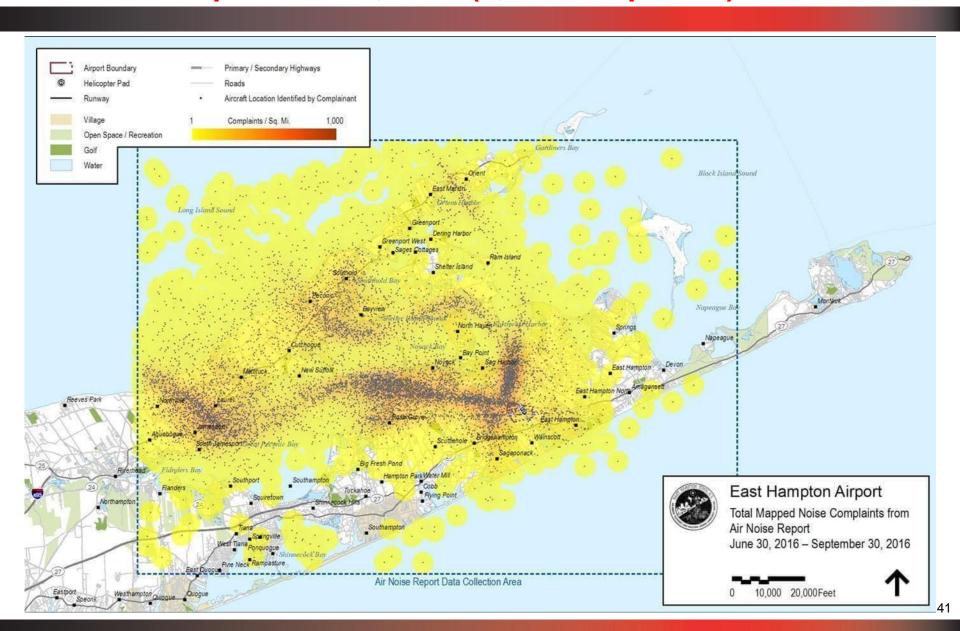
Unknown aircraft complaints from PlaneNoise June 30 - September 30, 2016 (445 complaints)



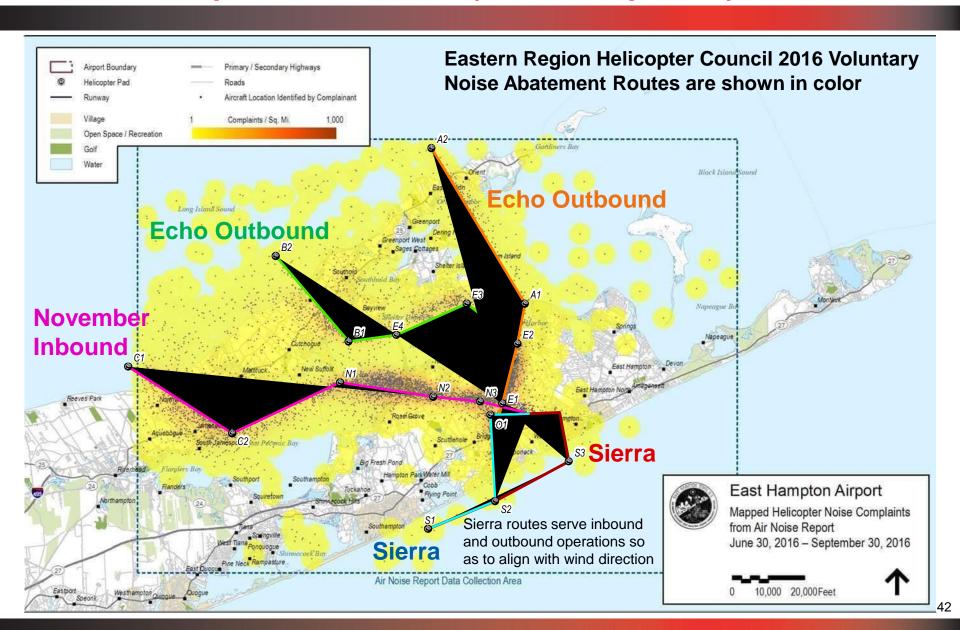
Mapped *and* manual complaints from Air Noise Report June 30 - September 30, 2016 (14,555 complaints)



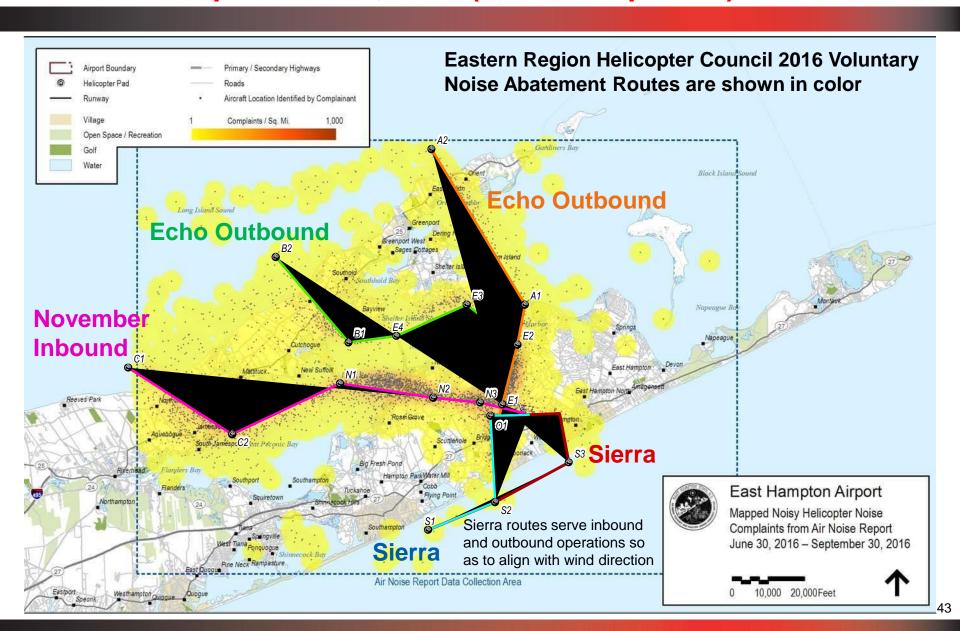
All "mapped" complaints from Air Noise Report June 30 - September 30, 2016 (9,877 complaints)



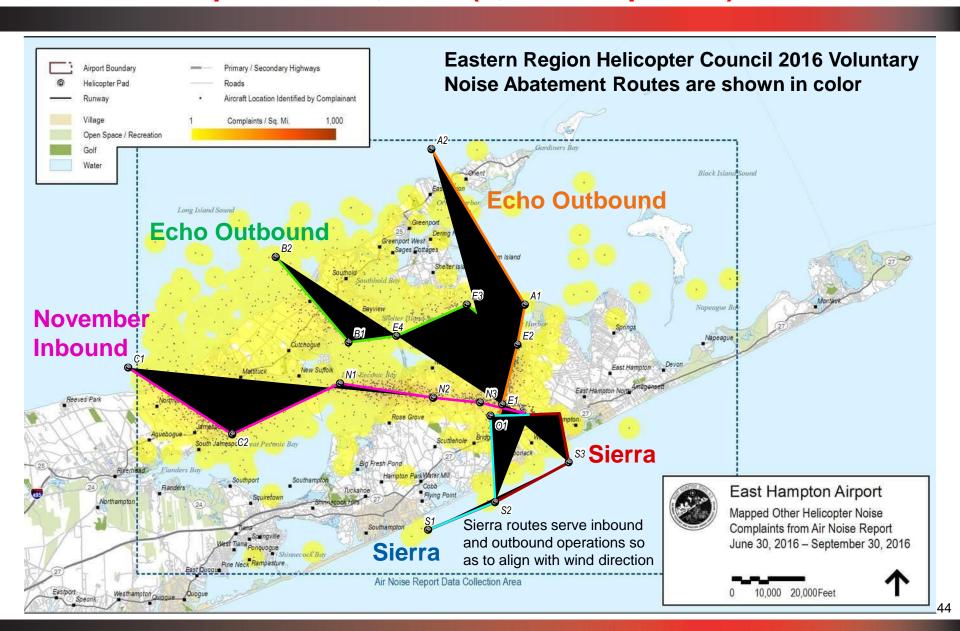
Mapped helicopter complaints from Air Noise Report June 30 - September 30, 2016 (6,400 complaints)



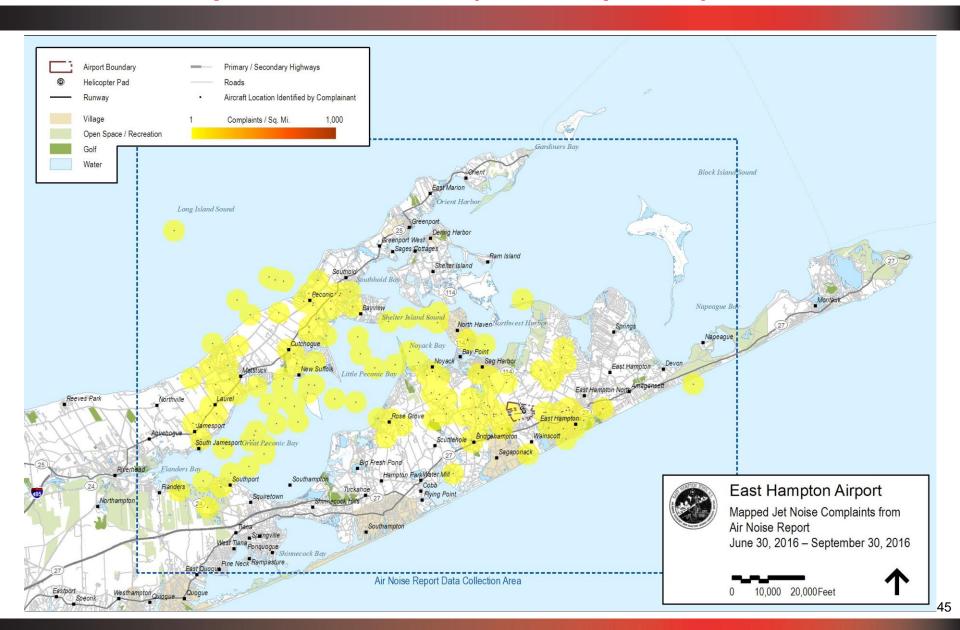
Mapped noisy helicopter complaints from Air Noise Report June 30 - September 30, 2016 (4,585 complaints)



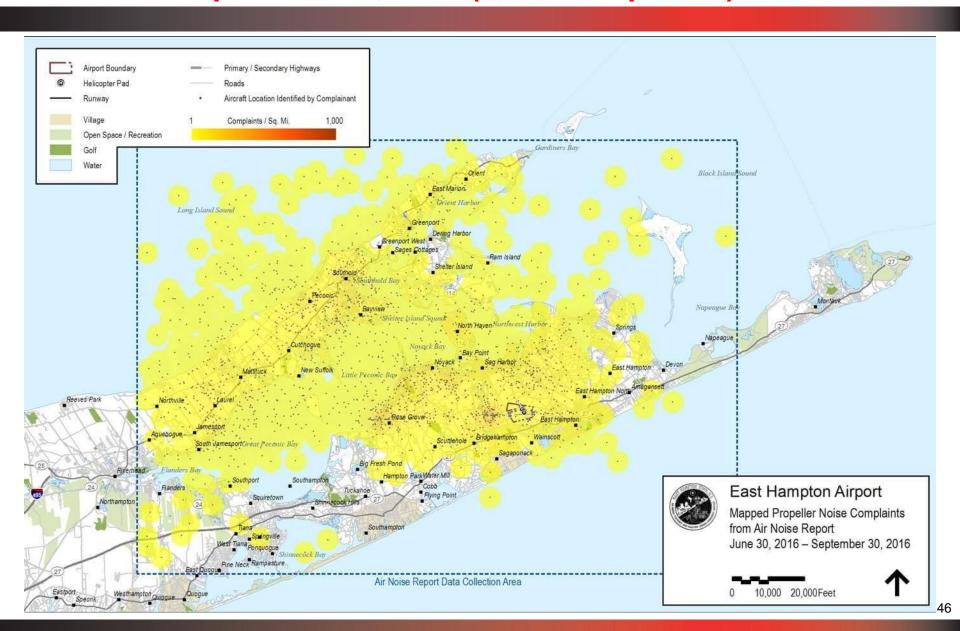
Mapped other helicopter complaints from Air Noise Report June 30 - September 30, 2016 (1,815 complaints)



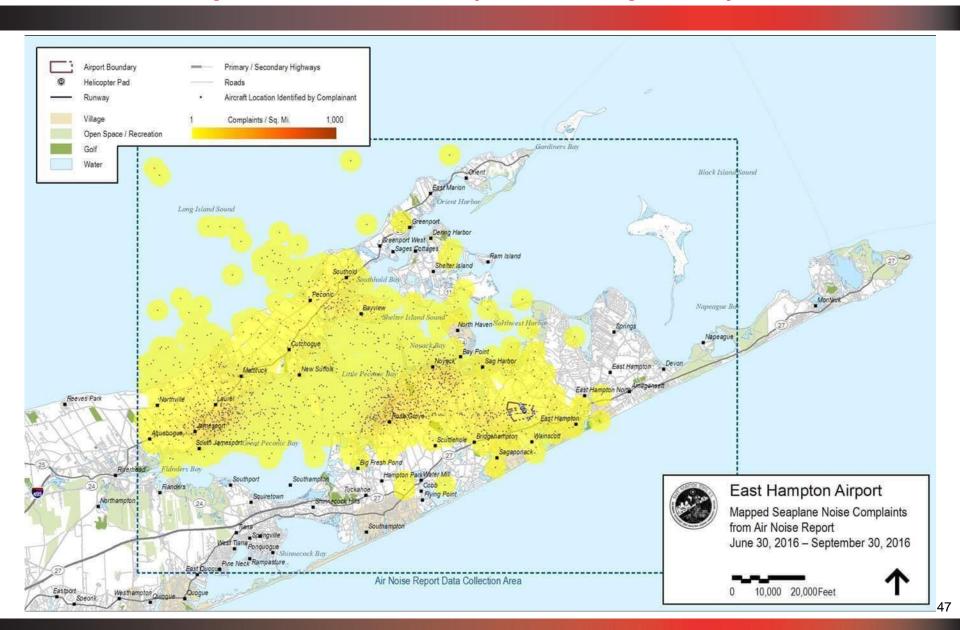
Mapped jet complaints from Air Noise Report June 30 - September 30, 2016 (149 complaints)



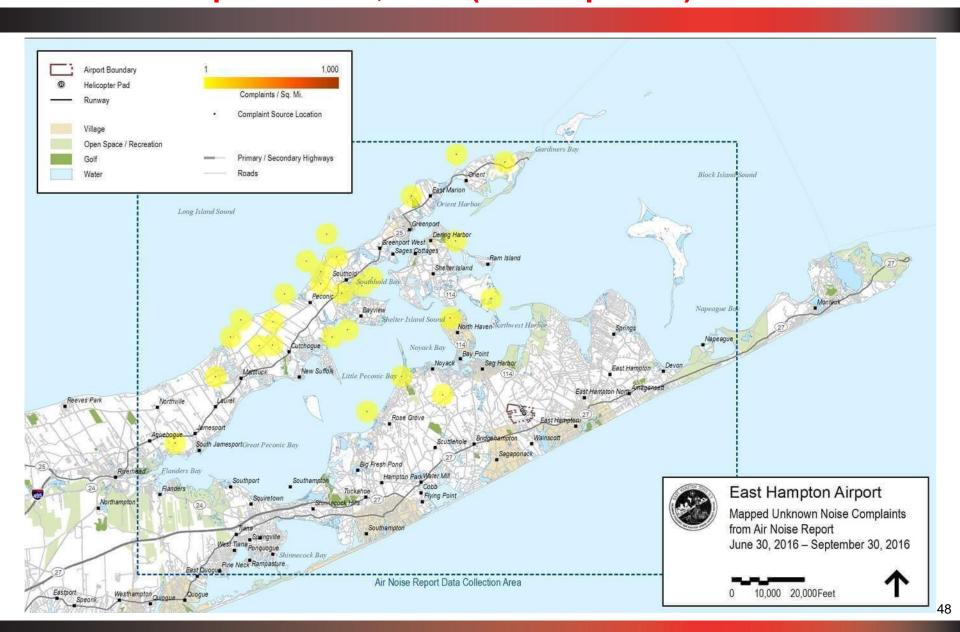
Mapped propeller aircraft complaints from Air Noise Report June 30 - September 30, 2016 (1,774 complaints)



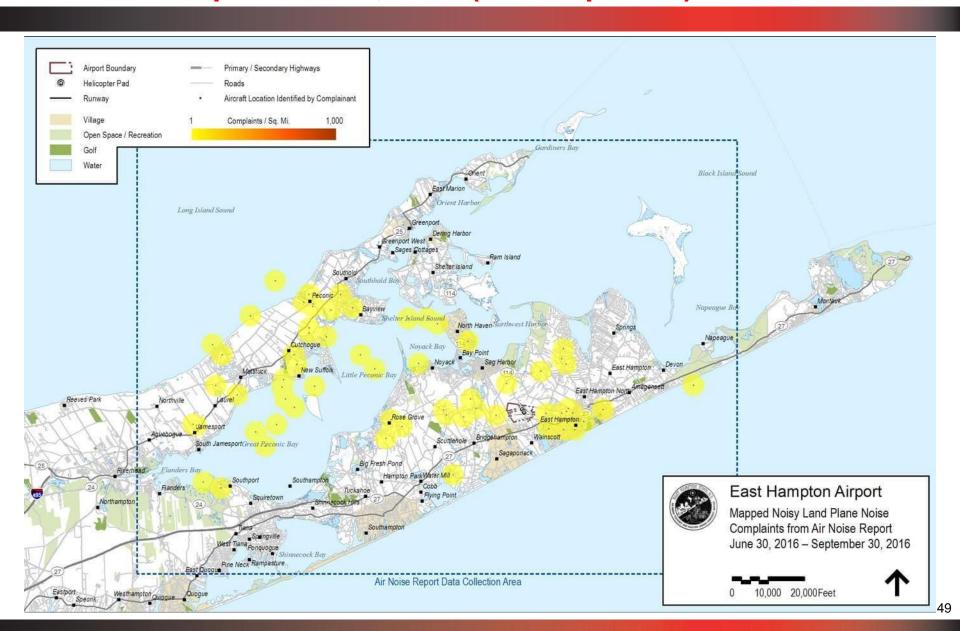
Mapped seaplane complaints from Air Noise Report June 30 - September 30, 2016 (1,526 complaints)



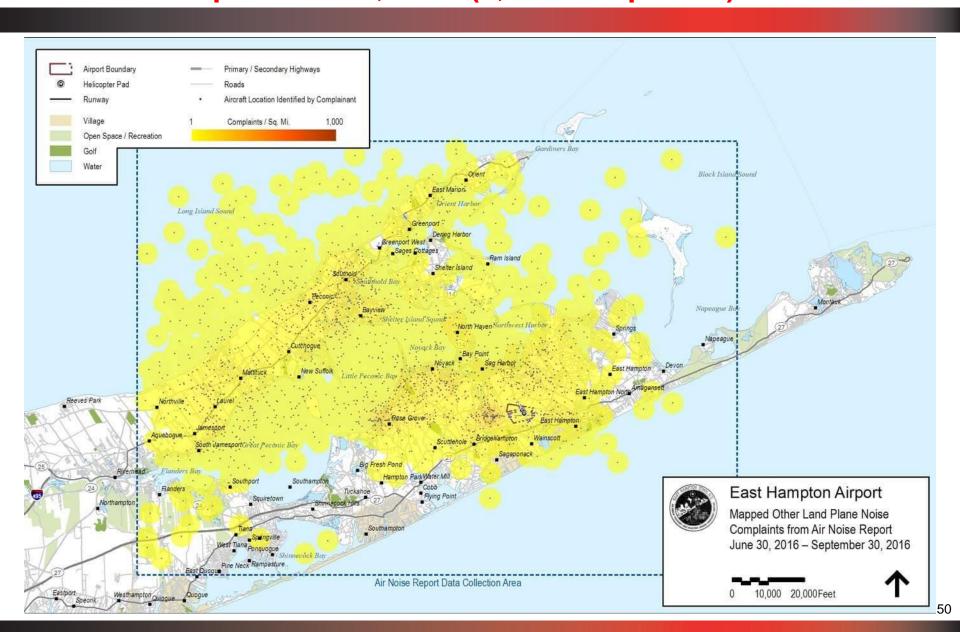
Mapped unknown aircraft complaints from Air Noise Report June 30 - September 30, 2016 (28 complaints)



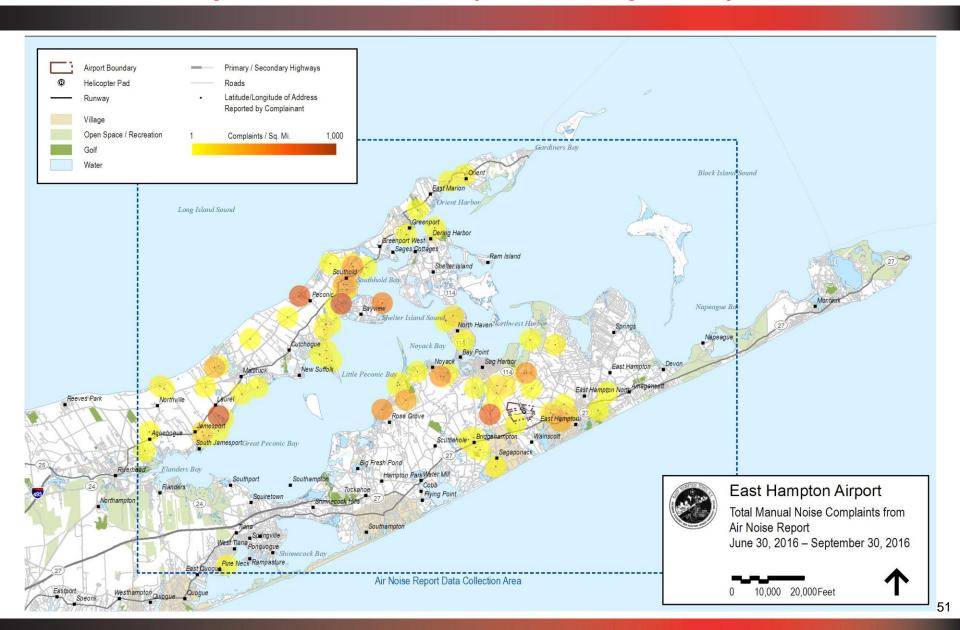
Mapped noisy land plane complaints from Air Noise Report June 30 - September 30, 2016 (63 complaints)



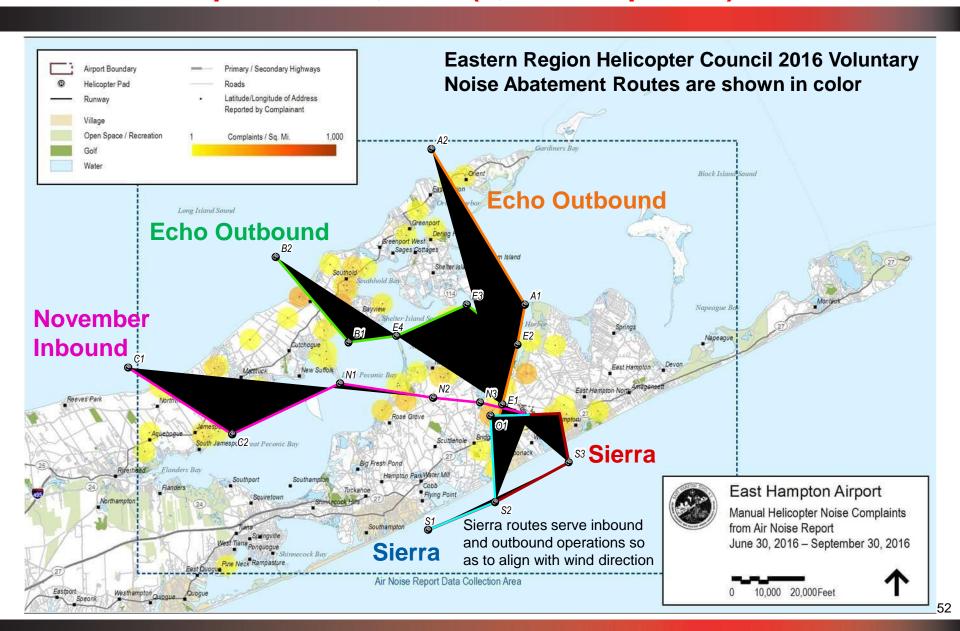
Mapped other land plane complaints from Air Noise Report June 30 - September 30, 2016 (1,888 complaints)



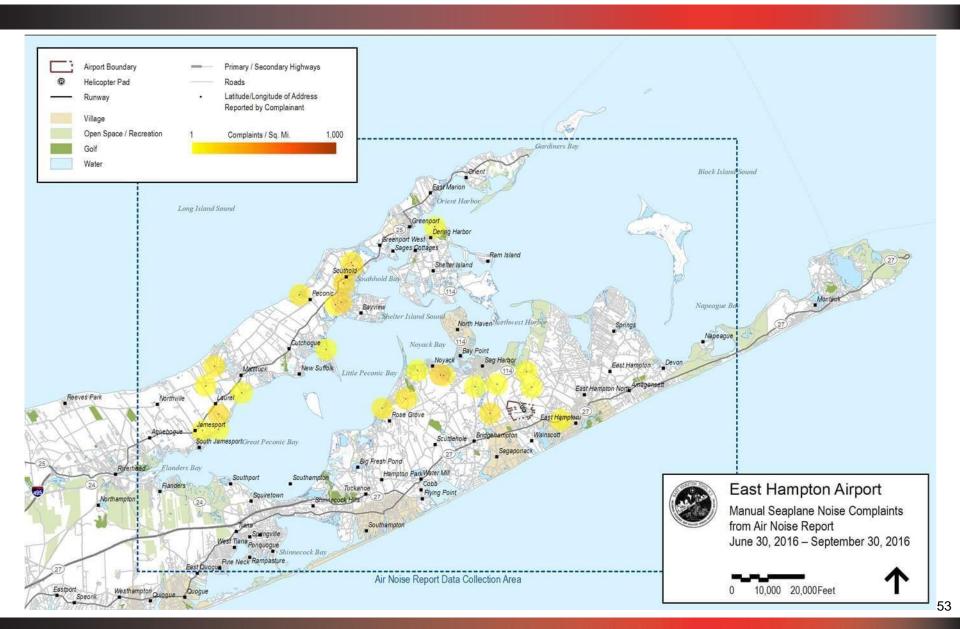
All "manual" complaints from Air Noise Report June 30 - September 30, 2016 (4,678 complaints)



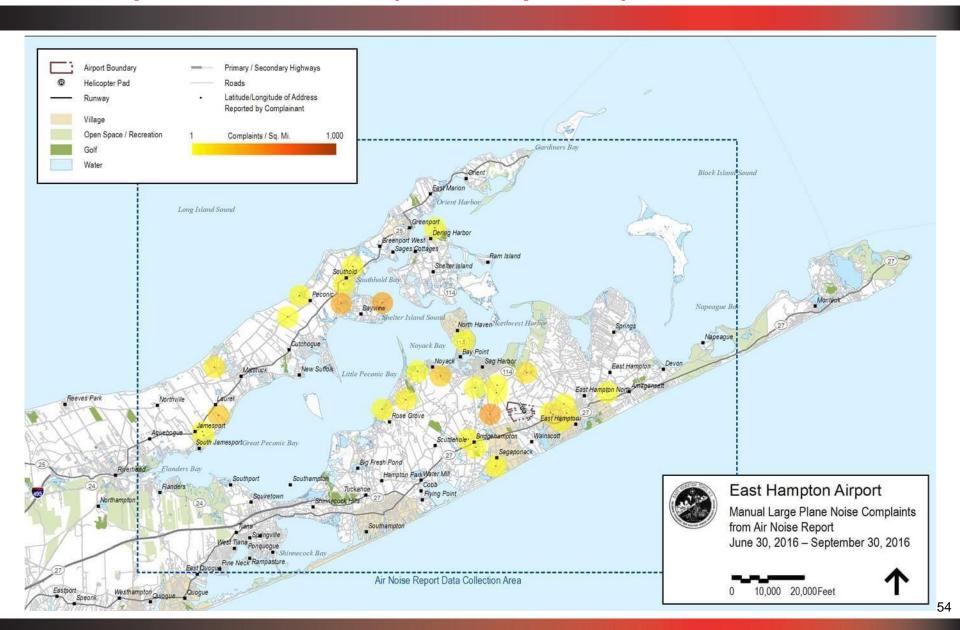
Manual helicopter complaints from Air Noise Report June 30 - September 30, 2016 (1,365 complaints)



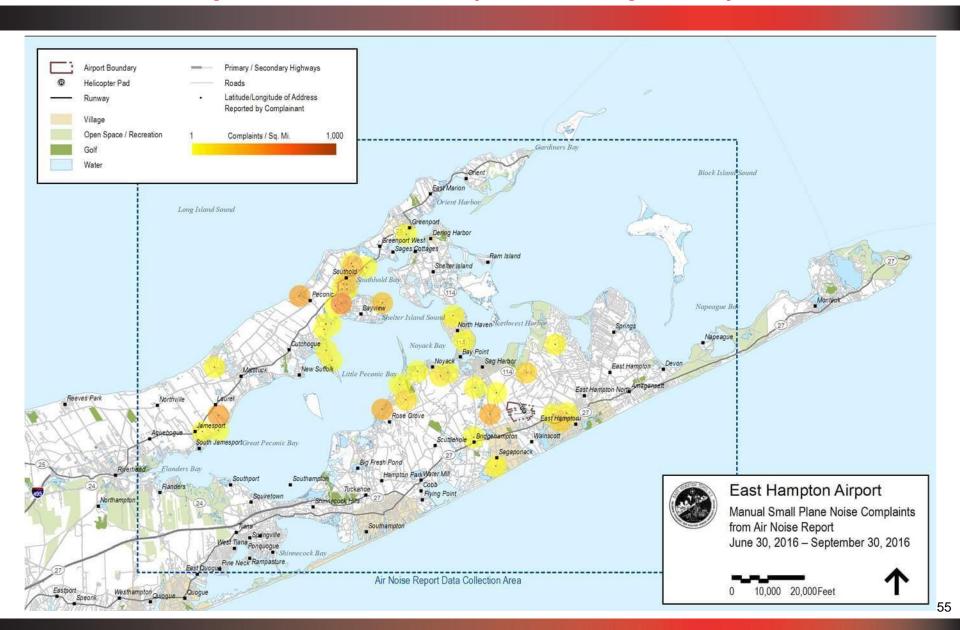
Manual seaplane complaints from Air Noise Report June 30 - September 30, 2016 (372 complaints)



Manual large plane complaints from Air Noise Report June 30 - September 30, 2016 (797 complaints)



Manual small plane complaints from Air Noise Report June 30 - September 30, 2016 (1,455 complaints)



Manual unknown aircraft complaints from Air Noise Report June 30 - September 30, 2016 (689 complaints)

