COST-EFFECTIVENESS OF THE YEAR-ROUND USE OF THE ‘TENNIS CLIMB’ IN QUEENS, NY, USA.

PRESENTED BY BRIAN WILL & DR. ZAFAR ZAFARI
Historical Airspace Flows
DNL Contours
QUEENS
QUEENS
Total Combined Movements: 784,123
Air Controllers Union President, Jonathan S. Carr in testimony to Congress in December, 2000: "With intersecting runways, the distance a departing aircraft must travel from the point of takeoff to the crossing intersection is a major factor in establishing an airport's capacity. At LaGuardia, when departures are run southeast, aircraft only have to travel 1,500 feet to the point of crossing thus allowing more arriving and departing aircraft to be sequenced by air traffic control."
2011 LGA Standard Operating Procedure

Maspeth Climb
5000

LGA
2.5

Coney Climb
1500

Flushing Climb

Whitestone Climb

040°

050°

340°

223°
Flushed Meadows: Noise Compatible Area

Maspeth Climb 5000

Flushing Climb

Whitestone Climb

Coney Climb 1500
**Noise Abatement Procedures**

1. Avoid clearing aircraft arriving LGA from the northeast for visual approaches unless the aircraft is within 10nm of LGA airport.
2. Clear LGA arrivals to the southwest using right traffic patterns to runway 22 to visually follow the Hudson River.
3. Allow at least a visual approach when vectoring LGA arrivals for uncharted visual approaches.
4. Use the LDA-A/DME-G approach to LGA runway 22 in preference to visual approaches.
5. Approach vector for landing LGA runway 31 shall be Expressway Visual, VOR-F, ILS/NDB 4 circle, VOR 4 circle.
7. Clear visual approaches making left turns to LGA runway 31 to follow the Long Island Expressway to Flushing Meadow Park.
8. Allow runway 13 departures to overfly Flushing Meadow Park and achieve at least 1,500' before issuing turns.
9. Allow runway 31 departures to follow the initially assigned heading for 5 miles, with the exception of eastbound departures and props. Runway 31 noise abatement dispersal headings are 340 degrees, 350 degrees, 360 degrees. Assigned heading of 010 degrees may be used by coordination with LGA tower when weather conditions or runway used make it preferable.
10. HPN runway 34 – Large and all turbine powered aircraft conducting uncharted visual approaches, shall maintain 3,000' (or 2,000' in the case of LGA landing runway 22) until turning base leg south of the shoreline.
11. HPN runway 16 – Large and all turbine powered aircraft conducting uncharted visual approaches shall intercept the final approach course outside the outer marker.
The Port Authority of NY & NJ, Benefit Cost Analysis of Runway 4L/22R RSA Compliance. (July, 2011):

“...when LGA uses Coney climbs, JFK will not have Runway 31L for departures.”
“...the Flushing Climb is used only in a few specified Circumstances:

• By agreement with the City of New York during the US Tennis Open.
• When JFK uses ILS 13L/R approach [rare]
• When strong winds make use of Whitestone Climb inadvisable.”
The National Academies Press. *NextGen for Airports, Volume 2: Engaging Airport Stakeholders*; 2017:

“When FAA designed the initial versions of the tennis overlay, the Flushing Climb and TNNIS departure procedures were only used when winds were from the southeast and only during the 2-week period when the U.S. Open tennis matches were being played.”
NextGen
Implemented at LGA in 2012

Diagram:
- LGA
- TNNIS Climb
- Whitestone Climb
- Directions
  - 040°
  - 050°
Flushing Climb (limited Use) becomes TNNIS Climb (year round use)
MAR 01 2016

Mr. Brian Will
Queens Quiet Skies
47-23A 169th Street
Flushing, New York 11358

RE: Freedom of Information Act (FOIA) Control No. 2016-001861(ES)

<table>
<thead>
<tr>
<th>FY-2014</th>
<th>Total Departures</th>
<th>TN4 Departures</th>
<th>% OF TN4 USE</th>
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<tbody>
<tr>
<td>Oct 2013</td>
<td>14,527</td>
<td>2,311</td>
<td>16%</td>
</tr>
<tr>
<td>Nov 2013</td>
<td>13,977</td>
<td>1,256</td>
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<tr>
<td>Dec 2013</td>
<td>13,802</td>
<td>1,004</td>
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<tr>
<td>Jan 2014</td>
<td>12,657</td>
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<tr>
<td>Feb 2014</td>
<td>11,443</td>
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<tr>
<td>Mar 2014</td>
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<td>925</td>
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<td>Apr 2014</td>
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<td>May 2014</td>
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<tr>
<td>June 2014</td>
<td>14,615</td>
<td>3,198</td>
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<td>Jul 2014</td>
<td>14,681</td>
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<tr>
<td>Aug 2014</td>
<td>15,367</td>
<td>2,776</td>
<td>18%</td>
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<tr>
<td>Sep 2014</td>
<td>14,144</td>
<td>2,789</td>
<td>18%</td>
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<tr>
<td><strong>FY-2014 TOTAL</strong></td>
<td><strong>168,496</strong></td>
<td><strong>22,953</strong></td>
<td><strong>14%</strong></td>
</tr>
</tbody>
</table>
So...how did we derive population affected by TNNIS?
Northeast Queens Census Tracts
Population (Census Tracts) Based On the 2010 Census
83,807 Persons Within 60 DNL