September 26, 2018

Planning Commission
and
Board of County Commissioners
Manatee County
1112 Manatee Avenue West
Bradenton, Florida 34205

RE: LDCT-17-02/Ordinance No. 17-03
Airport Impact Overlay Text and Map Amendment

Dear Commissioners:

On April 13, 2017, the Planning Commission recommended approval of the Airport Impact Overlay Text and Map Amendment, LDCT-17-02. On January 11, 2018, the Board of County Commissioners conducted the first of two required public hearings on the Amendment, at the conclusion of which, the Board directed planning staff, in concert with the assistant county attorney, to bring back revisions to Section 403.2.C., providing specific, numerical, height restrictions in the SRQ-Special Area of Consideration (Map 4-1).

The Amendment had proposed that, within that area, which corresponds to the inner approach zone at the end of each runway, applications for approval of structures exceeding the underlying zoning district height limits, e.g. 35 feet in residential districts, would have been required to undergo review as a Planned Development. This would afford Commissioners discretion to determine the appropriate height on a case-by-case basis, taking into account compatibility and public safety considerations. However, at the January 11 hearing, the Board expressed concern that such process might introduce too much subjectivity into the approval process, whereas they preferred more objective metrics for determining maximum building heights within the inner approach zone.

In formulating our response to the Board’s directive, we considered, but rejected, height limits that only gradually slope upward as one moves away from the airport, on an incline parallel to, but slightly below, FAA’s imaginary approach surfaces. Our preference, instead, is a combination of heights that step up in a series of tiers, much like a wedding cake, with each successive tier being higher than the previous one as one moves away from the airport.

The imaginary surfaces established under 14 C.F.R. Part 77 must always be regarded as the critical threshold because empirical flight operations data has recorded occasional aircraft operations at our airport whose profiles actually pass beneath those imaginary surfaces. These low-flying aircraft, typically smaller and flown by recreational pilots, represent an aberration, but they nevertheless make a compelling argument for an extra margin of safety. Incorporating this extra margin of safety into the airport zoning...
regulations is specifically authorized by Section 333.03(5), Florida Statutes, which provides that: "This section does not prohibit...a political subdivision... from establishing airport zoning regulations more restrictive than prescribed in this section in order to protect the health, safety, and welfare of the public in the air and on the ground." Moreover, for lands that happen to be eligible for increased heights under the recently-enacted Urban Corridor Design Standards, the owners are on notice that: "...Airport Impact Overlay District regulations stated in Section 403.2 may render some sites ineligible for the maximum permitted height."

With all these factors in mind, we recommend that Manatee County adopt maximum heights ranging from 35 to 55 feet within the airport's inner approach zones. It is important to note that these heights would be measured from the airport elevation, which is 30.0 feet MSL, meaning that a structure in an area restricted to 45 feet above airport elevation, could in fact rise to 75 feet (45 + 30) above mean sea level, assuming this does not cause it to exceed the standard height restriction of its underlying zoning district.

The SRQ-Special Area of Consideration consists of the trapezoidal-shaped areas at the end of each runway, which coincide with the runways’ inner approach zone. These areas are depicted in revised Map 4-1. For the northwest runway (14/32), it extends out about 1.42 miles (7,500 feet). For the northeast runway (4/22), it extends out about 0.97 miles (5,100 feet). However, we propose subdividing each inner approach area into three segments or “subareas.” Within Subarea A, the segment closest to the end of each runway, a 35-foot maximum height would apply. In Subarea C, the segment most remote from the end of each runway, a 55-foot height would apply. In Subarea B, the segment in the middle, a 45-foot height would apply. In each case, maximum height would be measured from the airport elevation of 30 feet MSL. If those heights happen to exceed the heights allowed in the underlying district, the more stringent restriction would apply. If the Board prefers, the inner approach area could be broken down into a larger number of tiers, say, six instead of three; but we would be comfortable with three.

Lands within Subareas A, B and C of Runway 14/32 are presently restricted to 35 feet above average grade or minimum flood elevation, whichever is higher; unless they happen to be in a planned district that sanctions a higher height. Lands within Subarea A of Runway 4/22 include some parcels zoned LM that are subject to a maximum height of 45 feet plus one foot in height for every 1 foot added to all required yards; and some parcels are zoned HM, having a maximum height of 55 feet. Under the proposed regulations, lands within Subareas B and C would be allowed to pursue heights greater than 45 and 55 feet through a rezoning under Section 402, -- Planned Development (PD) Districts; or by application of Section 902 -- Urban Corridor Design Standards; provided the resulting heights do not exceed the maximum heights of 45 and 55 feet respectively, above the airport elevation of 30 feet MSL.

Maximum heights within these subareas would be measured in the usual manner, i.e. the vertical distance above the average grade or, in a flood zone, above the minimum floor elevation; except that structures above the roof, e.g. mechanical equipment, chimneys, cupolas, antennae, etc. are also included in the measurement. However, for purposes of this special area, the structures would be given a boost of 30 additional feet above mean sea level to account for the airport elevation from which the federal imaginary surfaces are also measured.

Attached is a graphic entitled “Runway 14/32 Profile,” demonstrating the typical effect in each subarea of Runway 14/32 northwest of the airport. Because the average ground
elevation is lower near the shoreline, and higher near the airport, it is necessary to correlate these differences in the chart. The chart consists of lines representing the (1) average ground elevation in each subarea; (2) the height limit above airport elevation in each subarea; (3) the airport elevation (30 feet MSL); (4) the minimum aircraft arrival path (i.e. the occasional low-flying aircraft); (4) the federal imaginary approach surface; and (5) the average aircraft arrival path. Applying this graphic to properties within Subarea C that have an average ground elevation of 5 feet MSL, and a flood protection elevation of, say, 13 feet MSL (base flood elevation of 12 feet plus 1 foot of freeboard), a structure could rise to a height of 72 feet above the base flood elevation, calculated as 30 feet (airport elevation) minus 13 feet (flood protection elevation), plus 55 feet (maximum height in Subarea C), equals 72 feet above flood protection elevation. On the other hand, a structure closer to the airport, in Subarea A, where the average ground elevation is 20 feet MSL, and the maximum height above airport elevation is 35 feet, a structure could rise to 45 feet above the flood protection elevation (30 – 20 + 35 = 45).

The second graphic attached hereto, entitled “Runway 4/22 Profile,” depicts the same type of information pertaining to each sub-area of Runway 4/22, northeast of the airport, except that it does not include the minimum aircraft arrival path. Applying this graphic to properties within Subarea C, which have an average ground elevation of 24 feet MSL, a structure within flood zone A, which would have a flood protection elevation of 28 feet, could rise to a height of 57 feet above the flood protection elevation, calculated as 30 feet (airport elevation) minus 28 feet (flood protection elevation), plus 55 feet (maximum height in Subarea C), equals 57 feet above flood protection elevation. On the other hand, a structure closer to the airport, in Subarea A, where the average ground elevation is 25 feet MSL, assuming it is in flood zone X where the flood protection elevation is the same as the existing grade, i.e. 25 feet, the maximum height above airport elevation is 35 feet, so the structure could rise to 40 feet above the flood protection elevation (30 – 25 + 35 = 40).

The following charts illustrate the necessity for establishing maximum building and structure heights below the imaginary surface of FAR Part 77. They depict the profile of aircraft operations over the previous six months for each runway in Manatee County (arrivals on Runway 14 and departures on Runway 32). Flight track data is derived from the radar, which is calibrated to the airport elevation, 30 feet above mean sea level.

It may be observed, for example, that at the outer edge of the Runway 14 Subarea A, the average elevation of an aircraft arrival was 217 feet, but the lowest aircraft approach recorded at that point during that six-month period was only 25 feet—a full 25 feet beneath the Part 77 imaginary surface at that same point, which is 50 feet.

Similarly, at the outer edge of the Runway 32 Subarea B (near the Blu Harbor site), the average elevation of an aircraft arrival was 412 feet, but the lowest aircraft departure recorded in that period was only 63 feet—a full 37 feet beneath the Part 77 imaginary surface at that point, which is 100 feet.
### Runway 14 Arrivals

<table>
<thead>
<tr>
<th>Subarea</th>
<th>Max Structure Height Proposed Over Airport Elevation (ft)</th>
<th>Actual Flight Tracks Average Altitude (ft)</th>
<th>Actual Flight Tracks Minimum Altitude (ft)</th>
<th>14 C.F.R., Part 77 Approach Surface Heights above Airport Elevation (ft)</th>
</tr>
</thead>
<tbody>
<tr>
<td>RY End</td>
<td>35</td>
<td>166</td>
<td>19</td>
<td>0</td>
</tr>
<tr>
<td>A (outer edge)</td>
<td>35</td>
<td>217</td>
<td>25</td>
<td>50</td>
</tr>
<tr>
<td>B (outer edge)</td>
<td>45</td>
<td>345</td>
<td>77</td>
<td>100</td>
</tr>
<tr>
<td>C (outer edge)</td>
<td>55</td>
<td>437</td>
<td>137</td>
<td>150</td>
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</table>

### Runway 32 Departures

<table>
<thead>
<tr>
<th>Subarea</th>
<th>Max Structure Height Proposed Over Airport Elevation (ft)</th>
<th>Actual Flight Tracks Average Altitude (ft)</th>
<th>Actual Flight Tracks Minimum Altitude (ft)</th>
<th>14 C.F.R. Part 77 Approach Surface Heights above Airport Elevation (ft)</th>
</tr>
</thead>
<tbody>
<tr>
<td>RY End</td>
<td>35</td>
<td>371</td>
<td>48</td>
<td>0</td>
</tr>
<tr>
<td>A (outer edge)</td>
<td>35</td>
<td>375</td>
<td>53</td>
<td>50</td>
</tr>
<tr>
<td>B (outer edge)</td>
<td>45</td>
<td>412</td>
<td>63</td>
<td>100</td>
</tr>
<tr>
<td>C (outer edge)</td>
<td>55</td>
<td>413</td>
<td>73</td>
<td>150</td>
</tr>
</tbody>
</table>
In closing, we earnestly believe that the foregoing recommendations are supported by the data we have provided, and we respectfully request that they be incorporated into Airport Impact Overlay Text and Map Amendment, LDCT-17-02. We will be prepared to answer any questions you might have in the course of your deliberations.

Respectfully submitted,

[Signature]

Fredrick J. Piccolo, A.A.E.
President, Chief Executive Officer

cc:
Lisa Barrett, Planning Manager
Sarah Schenk, Esq., Assistant County Attorney
John Barnott, Director, Building & Development Services
Kelley Klepper, AICP, Kimley-Horn
Property 1
7402 NORTH TAMIAI
Flood Zone AE-11
Plus 1’ MC requirement:
Maximum building height:
(30-12)+35 = 53’

Property 2
7106 WESTMORELAND DR
Flood Zone AE-12
Plus 1’ MC requirement:
Maximum building height:
(30-13)+45 = 62’

Property 3
NO ASSIGNED ADDRESS
Flood Zone AE-13
Plus 1’ MC requirement:
Maximum building height:
(30-14)+35 = 71’

*based on data collected from January to December 2017
Average Aircraft Arrival Path

FAA Part 77 34:1 Approach Slope

Property 3
7246 21st ST E
Flood Zone A: 4'
Ground Elevation: 24'
Maximum building height: 

\[(30-28)+55= 57'\]

Property 2
7550 19th ST E
Flood Zone X
Ground Elevation: 24'
Maximum building height: 

\[(30-24)+45= 51'\]

Property 1
7628 16th STREET CT E
Flood Zone X
Ground elevation: 25'
Maximum building height: 

\[(30-25)+35= 40'\]

Airport Elevation
30'

Sea Level

Sub Area A
Average Elevation 25'

Sub Area B
Average Elevation 24'

Sub Area C
Average Elevation 24'