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Back in May of 2015, the Town Council directed me to conduct an RFP for Wireless Communication Tower companies to provide proposals for determining the wireless needs of our community. The RFP resulted in the Town hiring Datapath Towers.

Datapath obtained a number of radio frequency (RF) propagation studies and looked into available sites. During that process, I also had them look into other alternatives to an elevated structure (tower) such as Small Cell technology and Distributed Antenna Systems (DAS).

Datapath stated that there is still a need for an elevated structure due to the distance of the surrounding towers outside of the Town's limits. Datapath then recommended that a 130' tower be installed at the West end of Fred Tuerk Drive (sub-station) area. Based on that information, I made arrangements to have a crane extended as close as possible to the West end of Fred Tuerk Drive (sub-station) and near the Town Hall complex to provide our residents with a visual sample of the height and location.

In January of 2016, a group of residents strongly recommended that the Town Council consider hiring an independent wireless consultant to verify or refute what Datapath had recommended. CityScape Consulting was hired based on their track record and because they exclusively serve the needs of municipal governments only, not the private sector. I instructed CityScape to research the future wireless communication needs of the Town, and then provide any and all potential solutions (elevated and small-cell/DAS) and any potential locations that would provide the level of service required under the law.

CityScape conducted its original study during the months of February and March. They made it clear that the solution to the gaps in service could not be solved without an elevated structure (tower) and that eventually, a small-cell system or distributed antenna system (DAS) would also be needed, within the next 10 – 15 years. The initial report resulted in the following recommendation:

“It is CityScape’s opinion that a single concealed facility with the top antenna array elevation of 110 feet with subsequent antenna array elevations of 100 feet, 90 feet and 80 feet be constructed behind Town Hall.”

At the following Council meeting in February, after some very robust comments from the residents, the Town Council recommended that CityScape conduct further studies to include the additional potential location of the West end of Fred Tuerk Drive (sub-station) and the Ocean Colony neighborhood.

To date, CityScape has produced over 29 propagation maps, spent over 60 man-hours in office time, and over 28 hours in assessment and travel to complete these studies. They state that this project has been every bit as involved as any full County wireless master plan project they have done to date. The Town Council and our residents can rest assured that absolutely nothing has been left to chance or is based on opinion.

CityScape conducted the requested additional studies and the results presented today are summarized:

- A search of the **Ocean Colony** location was conducted at 110' and at 130'. This resulted in **large gaps** (no service available) within the Town.
- A search of the area of the **5th hole on the John's Island South** golf course was conducted (100' "monopine"). This resulted in a **large gap** in service within the Town.
- A number of searches of the **West end of Fred Tuerk Drive** "Bee Gum Point" area were conducted at 100', 130', 150' and 194'. This still resulted in **gap's in service** within the Town.
- They also, at 130' at the West end of Fred Tuerk Drive, **added the existing SBA tower on 69th Street** with assistance from one alternative location as a possible solution. However, the gap within the northern portion of the Town would leave a **substantial service gap**, leaving the Town in a position to be challenged to allow additional facilities or additional height at an existing structure. The Town would not meet its obligation without the addition of another facility in the North or the use of smart cells.
- They also, at 130' at the **West end of Fred Tuerk Drive**, added **additional height** to the existing SBA tower on **69th Street** (150') to see if that would remedy the shortfall in the northern section of the Town. While the additional height did improve the service, **a gap in service remained on both sides of A1A in the Northern section of Town**. Therefore, alternative locations will be required for sufficient service by all existing carriers.
- They also, at 130' at the **West end of Fred Tuerk Drive**, added additional height to the existing SBA tower on **69th Street** (150') **and** added an additional carrier on the **Sea Oaks tower** to understand if this was an available alternative. The results with the sub-station at 130' are similar to the Town Hall facility at 110', and will offer an alternative which can be defensible as meeting the Town's obligation. However, *the Town cannot force the carriers to make the required changes outside the Town*.
- **Several additional searches were conducted on the Town Hall complex site. It is CityScape's recommendation that a minimum of a 110' elevated structure on the Town Hall site is the optimum elevation that would provide a single facility with the lowest elevation and would best meet all of the Town's obligations.**

- The only other alternative would be a **130' structure at the Bee Gum Point** location. This would **only be a suitable option** if the carriers are willing to also increase their facilities at the **69th Street tower** *and* the addition of a **second carrier at the Sea Oaks** site. However, again, the Town cannot force the carriers to do so.

Based on the entirety of CityScape's studies, it is my recommendation that the Council decide on one of the following options:

- Construct a **110' Monopine** tower in the wooded area North of the Town Hall Complex and ensure that the branches of the pine are set below the tree canopy surrounding the tower so that the "trunk" pole cannot be seen above the tree line. This is the **quickest, most cost effective option**. (Approximately **\$150,000** in additional costs).

Possible Motion: The Town Council directs the Town Manager to instruct Datapath Tower Company to install a 110' tall Monopine cellular tower in the wooded area to the North of the Town Hall complex between the Town Garage and the Town Manager's Office and the Council authorizes the Town Manager to spend up to \$150,000 for the incremental costs associated with the upgrade of the tower to a densely branched Monopine with the branches low enough on the tower to hide the pole "Trunk" from sight above the existing tree canopy.

- Construct a **110' to 115' "Clock Tower"** type structure to look like part of the original two story Public Safety building either to the rear of the existing building between the building and the water tank or at the East end of the existing bays. This is the **most expensive option** costing the Town up to **\$700,000** in additional costs.

Possible Motion: The Town Council directs the Town Manager to instruct Datapath Tower Company to install a 115' tall "Clock Tower" type structure either behind the existing Public Safety building or on the East end of the existing Public Safety building. The structure is to be constructed to match and blend in with the architecture of the existing building to minimize the visual impact. The Town Council authorizes the Town Manager to spend up to \$700,000 for the incremental costs associated with the camouflage option of a "Clock Tower" type structure.