

TRANSFERS:

1.) Fund: General Amount: \$ 47,475.00

Explanation: Budget transfer in the General Fund for a Wireless Telecommunications Master Plan.

Support: Tab 1 Page A

Tab 1
Page A

Budget Transfer Request

Requesting Dept: OMB Fund: General Transfer #

Requested By: Cindy Wood *CW* Date: 5/3/2017

Purpose: Budget needed for a Wireless Telecommunications Master Plan. A proposal for a comprehensive approach to address existing & future wireless infrastructure deployments in & around Nassau County & the City of Fernandina Beach.

				Fin. Serv. Use Only
Acct. Number	Acct. Description	Amount	Available Budget	Verified Available
Transfer:				
From: <u>01999599-599001</u>	<u>Reserves for Contingencies</u>	<u>\$ (47,475.00)</u>	<u>\$ 911,849.00</u>	
To: <u>01001515-531000</u>	<u>Professional Services</u>	<u>\$ 47,475.00</u>	<u>\$ -</u>	
To: <u></u>	<u></u>	<u></u>	<u></u>	
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Approved By: BOCC: Clerk of Courts:
 Date: Date:

Financial Services Use Only
 Action Completed:
 Signature/Date

Wireless Telecommunications Master Plan



Nassau County and City of Fernandina Beach, FL

CityScape Consultants, Inc.
March 22, 2017

www.CityScapeGov.com

SCOPE OF SERVICES

This proposal is a comprehensive approach to address existing and future wireless infrastructure deployments in and around Nassau County (County) and the City of Fernandina Beach (City or COFB).

CityScape Consultants, Inc. (CityScape) works **exclusively** for local governments. CityScape's staff include a Florida registered Professional Engineer (PE), a federally licensed Radio Frequency (RF) Engineer, a telecommunication attorney, a land use planner and experts experienced in wireless facility design, development and operations.

Wireless Telecommunications Facilities Master Plan: Producing a County and City-wide Wireless Telecommunications Facilities Master Plan, including an assessment of existing wireless facilities, determination of eligible and non-eligible facilities, mapping of existing facility locations and presentation of coverage gap analysis, network gap closure recommendations and revising or amending the wireless facilities ordinance based on gap analysis.

The Wireless Telecommunications Facilities Master Plan (Wireless Master Plan) is intended to facilitate the creation of an optimized wireless telecommunications study and environment that is efficient, capable and will meet the long-term forecasted wireless user requirements in the County and COFB. A comprehensive plan is intended to balance the goals of providing good wireless network service throughout the County and City while minimizing the visual impacts of the telecommunications infrastructure. It is an illustrative planning tool and guide for developing planning policies for future wireless communications infrastructure. The Wireless Master Plan includes a framework for maximizing network coverage while minimizing the future number of new telecommunication facilities; and suggestions for design standards that will guide decisions about the siting of future communication facilities.

The Wireless Master Plan will provide an overview on network deployment practices, an inventory of existing wireless infrastructure throughout the County and City, theoretical propagation mapping for network gap analysis, ten-year projection maps of potential future network deployment patterns and design and siting recommendations for meeting future network deployment objectives over the next ten to fifteen years.

Wireless Telecommunications Facility Master Plan and Ordinance

CityScape will produce a Wireless Telecommunications Facilities Master Plan, including assessments of wireless facilities, definition of eligible and non-eligible facilities, and writing a comprehensive wireless facilities ordinance.

This uniquely customized Wireless Master Plan program includes land use planning and zoning recommendations, assessment and mapping and stakeholder informational workshops. CityScape will develop a Wireless Master Plan cataloging all existing wireless infrastructure while developing a realistic future deployment blueprint that will allow communities to control the growth while maintaining the aesthetics of the community. A comprehensive master plan is a pro-active approach to manage local government's long-range goals and objectives for wireless telecommunications.

CityScape approaches the wireless master planning process similar to goals and objectives of other long-range plans, such as roadway improvements and the extension of water and sewer lines. CityScape's unique master planning process combines land-use planning strategies with the industry-accepted radio frequency (RF) engineering standards to create an illustrative planning tool that complements the need for expanded wireless telecommunications services while meeting local and state zoning regulations and federal guidelines. Recommendations for maximizing collocations on all existing towers (publicly and privately held) and identification of potential public owned property, as future tower locations are the core focus of this process.

CityScape's master planning is organized in 3 phases and tasks for an efficient and streamlined process as follows:

- **Phase 1** - An inventory of all existing towers and antenna facilities within the County and COFB;
- **Phase 2** - An inclusive wireless network model and deployment plan designed for the County and City's wireless future and how the use of certain public-owned properties can be an additional source of revenue; and
- **Phase 3** - Recommendations for updating existing zoning regulations to meet new Federal regulations for streamlined review and permitting process.

The first phase of the plan development includes identification and site visits to all existing wireless communication towers and base stations throughout the County and City. This information is used by engineering to map and study the existing wireless infrastructure deployment patterns. Phase 2 includes mapping the network coverage patterns from the assessed sites to show the gaps in network coverage. The gap analysis and theoretical mapping predictions illustrate complete network coverage with the County and City's zoning jurisdiction. Phase 3 includes zoning solutions to promote complete coverage while minimizing the number of new future sites and maximizing land use authority to maintain aesthetics and land use compatibility.

Ultimately the Wireless Master Plan is a realistic tower placement plan that improves network coverage and minimizes the overall number of new towers built in the County and City with less controversy. The plan minimizes tower proliferation and simplifies the wireless providers' network deployment to enable all technology of wireless services to the citizens in an expedient and efficient manner. Most importantly this process will ensure compliance with new federal legislation requiring local government to provide all wireless providers with equal access for the development of their systems and contemplate what will be emerging technologies for wireless, high-speed broadband, 5G, small cell, ODAS and other technologies.

PHASE 1. Research and Assessment of Existing Wireless Infrastructure

▪ TASK A: Preliminary Research for Data Assessments

Preliminary research and acquisition of tower data for fieldwork for complete assessments of existing antenna, towers, base stations and if applicable, identified public-owned land. CityScape provides assessment of existing antenna locations throughout the County and COFB by visiting all structures and facilities. The beginning database for the assessments comes from a number of sources including actual data and permits obtained from the County and COFB for wireless infrastructure, research of FCC registered site locations, direct information from existing service providers and tower owners active in the County and City, the County and City's GIS, and through actual site visits to each location.

DELIVERABLES:

- 1) Scheduled date for Kick-Off Meeting (Public Workshop #1) and Assessments (to be within three weeks after all data is attained from County and COFB.)

▪ TASK B: Project Kickoff Meeting and Assessments

CityScape will review state statutes, local ordinances, development standards unique to the County and COFB, wireless concealment techniques and specific concerns of wireless infrastructure deployments on public-owned and private lands. CityScape will facilitate meetings with staff and any other stakeholders to discuss wireless telecommunication deployment issues and strategies to improve deployment practices within the County and COFB. The *Kick-off Meeting* will specifically address, but is not limited to the following:

- Introduction to the CityScape program and explanation of the Scope of Services and the goals and objectives of the program. CityScape will present the impact the Telecommunications Act of 1996 and subsequent federal regulations will have on the process.
- CityScape will establish goals and expectations of the County and COFB that will facilitate workflow and meet final objectives and timeline requirements of the CityScape program.

- CityScope will provide information on the history of wireless telecommunications and explain network design and deployment practices utilized by the wireless telecommunications industry.
- CityScope will present an overview of concepts behind wireless facilities planning and zoning. The purpose of the overview will be to familiarize the County and COFB with the Ordinance and Master Planning process and to introduce a working vocabulary. A basic but thorough understanding of the technical aspects of the project will provide decision-makers with the background necessary to ensure the development of an effective and legally defensible Ordinance.
- CityScope will gather information from staff concerning local wireless issues, policies, priorities, agency interactions, opportunities and plan recommendations relating to wireless and begin to establish County and COFB goals for the Wireless Master Plan with assistance from staff and stakeholders.
- CityScope will provide questionnaire for concealment options for the County's consideration for future wireless infrastructure to aid in developing appropriate development standards in the draft Ordinance. *[At County's discretion, questionnaires may be applied through PowerPoint distribution or new up to date interactive polling software and advancing technologies to view instant displayed results of responses and data for additional rental fee of devices at cost if applicable.]*
- CityScope will assess all antenna, tower and base stations by visiting each site to take pictures and record observation.
- *Optional - CityScope will receive from the staff a list of public-owned properties to assess as potential locations for new wireless telecommunications infrastructure.*

DELIVERABLES:

- 1) Project Kickoff Meeting and Presentation (**Public Workshop #1**) to staff and stakeholders;
 - Site visits and assessment of all antenna, towers and base stations.
- 2) Questionnaire responses from:
 - Elected and appointed officials, staff, and wireless and citizenry stakeholders.

PHASE 2. Inventory Catalog and Propagation Mapping

The staff and CityScope will conduct a Community Meeting/Presentation (Public Workshop #2) to present to the stakeholders mapping based on the responses to the various preference surveys that fill in the gaps in coverage. CityScope will analyze the information received from the Kick-off meeting, discuss with planning staff, agree on wireless facility scenarios to be studied and prepare more detailed propagation maps in the following order:

- Review all infrastructures, and other relevant information provided by the client's staff to ascertain the current deployment environment.
- Review variables such as population density, terrain profile data, RF blanketing and saturation, and intermodulation studies to create coverage and gap analysis maps for the Wireless Master Plan.
- Provide recommendations on filling in identified coverage gaps.
- Provide recommendations on strategies to develop revenue from certain public-owned property locations.

DELIVERABLES:

- 1) **Public Workshop #2.**
- 2) Draft inventory catalog to include: *Inventory of existing antenna sites*: including photograph, identification by latitude and longitude and street address; tower ownership, type of infrastructure and wireless services provided at each location; observation of site conditions; and *Inventory of public-owned lands*: including photograph, identification by latitude and longitude and street address, and recommendation for future potential use for property for wireless communication purposes.
- 3) CityScope will prepare and present propagation maps based on the fieldwork and site assessment process. Theoretical and propagation map scenarios for discussion and planning purposes will include.
 - Theoretical Root Mean Square (RMS) and theoretical propagation mapping at propagation mapping at "X" feet with and **without** consideration of population density or vegetation for low and high MHz

frequencies

- Theoretical propagation mapping at “X” feet **with** consideration of existing antenna locations population density or vegetation for low and high MHz frequencies
- Propagation gap analysis maps with 10-year anticipated population density and network and capacity increases from strategic antenna locations and if applicable, including use of public-owned land analysis.

PHASE 3. Development of Wireless Master Plan and Ordinance Amendment Recommendations

▪ TASK A: Ordinance Review and Amendment Recommendations

CityScape will review existing land use development standards in the County and COFB zoning regulations and processes. The review will be comprehensive and not limited to review of specific guidelines to remain consistent with current deployment practices and current federal and state guidelines. Cross-referenced review of wireless facility regulations to other zoning standards, permitted use charts, definitions, and other underlying zoning and land use development standards will be used to uncover inconsistencies and loopholes. CityScape will review the materials provided by the County and COFB with particular attention to:

- Strengths and weaknesses of the existing zoning regulations and process;
- Strategies to improve visual aesthetics of new facilities and examine possibilities for concealed facilities;
- Compliances with federal and state mandated guidelines; and
- Effectiveness of the intent of the zoning regulations and process.

Upon completion of the zoning review, CityScape will provide a redline of the existing ordinance with comments to the County and COFB. The draft recommendations will implement the policies articulated by the County and COFB stakeholders at the previous meetings. At County and COFB discretion, CityScape will draft a new model ordinance for adoption based on the studies of the Wireless Master Plan. The Ordinance will include detailed diagrams/graphics related to specific tower/antenna types for implementation in context sensitive applications.

CityScape will address leasing public-owned lands based on the land assessments and the engineering data of the Wireless Master Plan and make recommendations on which public-owned lands could provide the best opportunity to the County, COFB and wireless industry in future deployments. CityScape will also recommend possible public policy changes that could improve the process to meet the goals and potential opportunities of the County and COFB to market public-owned property and achieve optimal revenues from this project.

DELIVERABLES:

- 1) Written commentary pertaining to CityScape’s Ordinance review or a new model ordinance for the County and COFB.

▪ TASK B: Draft of Master Wireless Plan

CityScape will provide a Public Workshop #3 meeting to present to the stakeholders revised propagation maps based on the feedback/concerns from Public Workshop #2 and input from the Planning and Zoning Board (if applicable). A preliminary review draft of the Wireless Master Plan will be provided to staff for review and comment and subsequent revision, staff sign off and revised Master Plan and final reviews by CityScape.

DELIVERABLES:

- 1) CityScape will prepare revised propagation maps (if applicable) based on discussions with stakeholders.
- 2) **Public Workshop #3.** CityScape will present the draft Wireless Master Plan including zoning amendment recommendations to the stakeholders.
- 3) The draft Wireless Master Plan document shall, at minimum, include:
 - County and City goals and maps from previous meetings;
 - Analysis of population and population density trends, service providers, and public-owned land locations;

- Diagrams and pictures of specific and preferential towers and antenna types agreed to by the County and COFB stakeholders;
- Engineering analysis illustrating the benefit of utilizing certain public-owned sites on revised propagation maps; Ordinance recommendations based on master planning process and mapping;
- Wherever applicable, all mapping and data included in the Wireless Master Plan will be provided in ESRI ARCmap compatible format.

▪ **TASK C: Project Completion and Submittal of Final Wireless Master Plan**

After securing staff and stakeholder input, CityScape will refine the draft Wireless Master Plan to address the consensus concerns and prepare a revised final document for submission to staff for review, comment and sign off; and then to elected officials for review, public input and approval. It will be CityScape's responsibility to provide all written and presentation materials.

CityScape will submit the final Wireless Telecommunications Facility Master Plan to staff for its final review, approval and print. Project will be completed upon submittal of all project deliverables of the final Wireless Master Plan and Ordinance recommendations to the County and COFB.

DELIVERABLES:

- 1) Final Wireless Master Plan – two (2) bound color books and PDF/digital format.

Wireless Master Plan Cost of Services

Task	Description	Timeline	Fee
PHASE 1: ▪ Task A: Preliminary Research for Data Assessments	Research and assembly of required tower/antenna database of all known existing tower and wireless antenna locations, including any map layers from County for base mapping. A listing of potential public properties to assess for future wireless infrastructure.	Up to 3 weeks	\$3,825.00
▪ Task B: Project Kickoff Meeting and Assessments <i>Kickoff Meeting - Initial Outreach: 1. COFB; 2. South End; 3. Yulee; 4. Westside</i>	Assessment of existing towers and antenna locations and assessment of identified public-owned land. Strategies specific to facilitate orderly wireless network deployment; includes theoretical RMS and propagation coverage maps.	1-2 Weeks	\$10,625.00 \$6,000.00 [^]
PHASE 2: ▪ Inventory Catalog and Propagation Mapping Public Workshop #2 - PZB Meeting: 1. County 2. COFB	Related mapping necessary to present inventory analysis, propagation coverage and engineering analysis including 10-year anticipated growth forecast. Inventory catalogue and site-specific recommendations; workshop(s) to finalize public policy approach for draft ordinance revisions.	3-6 Weeks	\$11,275.00 \$1,500.00 [^]
PHASE 3: ▪ Task A: Ordinance Review and Amendment Recommendations	Draft of complete zoning amendment recommendations for ordinance revisions or new model ordinance for County and COFB;	2-3 Weeks	\$6,500.00
▪ Task B: Draft Wireless Master Plan and Ordinance Public Workshop #3 - Commission Meeting: 1. County 2. COFB	Draft Wireless Master Plan and Ordinance recommendations into draft document for presentation to County Board of Supervisors and staff	3-6 Weeks	\$3,250.00 \$1,500.00 [^]
▪ Task C: Project Completion	Submission of final product materials.	2-4 weeks	\$3,000.00

Total Master Plan and Ordinance (Estimated timeline 14-28 weeks): \$47,475.00***

*Upon execution of a contract, County will be invoiced by CityScape, 1/2 of Phase 1 Task A in the amount of \$1912.50 for commencement of work. All other tasks will be invoiced to County upon completion and submission of each Task.

All travel related expenses are included in the total contracted amount. Master Plan project includes three (3) total presentation meetings and/or workshops.

[^]Additional meetings: Five additional meetings have been contemplated and County will only be billed for the number of actual additional meetings (\$1,500.00 per meeting) provided by CityScape.

**Estimated expedited timeline does not take into consideration required advertisement for public meetings or the clients existing workload or existing public meeting schedules.

Note: Staff will assist CityScape with scheduling any public meetings required with necessary planning and community groups, public notification and arrangements for meeting dates, and times and locations in conjunction with CityScape's calendar. Staff will be responsible for public notification, location, meeting arrangements, and the recording of the sessions.