OCS-03: Extract Utility Data 04/20/2022

1 Introduction:

1.1 Point of Contacts:

Spatial Engineering, Inc.	Effingham County, Georgia
Richard Truluck, P.E. Project Manager rtruluck@spateng.com O: 912-826-6688	Eric Larson, P.E. Asst. County Manager elarson@effinghamcounty.org O: 912-754-8061

1.2 Description

On April 5, 2022, Spatial Engineering, Inc (SPATIAL) met with Effingham County to review the findings and recommendations presented in the *Scan Drawing Archive Assessment, Project ID: 20017-OCS-01*. In the findings document section *4 Recommendations, paragraph 4.1* recommends updating the Scanning Projects layer to the 718 useable scanned projects (14,240 drawing sheets), migrate useable scanned projects to the Projects data layer, update Projects layer to track data extraction, and extract the utility data into the GIS database. During the meeting, it was decided to focus utility extraction on the Priority 1 (as-builts) identified in the assessment. The intent is to hold Priority 2 (construction) and Priority 3 (other) data as this data may be replaced during a second scanning effort.

SPATIAL proposes to extract the utility and easement data from as-built projects executed under SPATIAL's current contract with the County, PID: 21010, On-Call Support.

1.3 Reference:

1. 03/30/2022 *Scan Drawing Archive Assessment, PID: 20017-OCS01.pdf*.
2. 04/05/2022 record of communication for review of Scan Drawing Archive Assessment report.

2 Scope of Work:

SPATIAL proposes to 1) add as-built projects identified in assessment report to the RightSpot™ Projects data layer and 2) extract water, sewer, storm, reuse water, and easements data into GIS.

2.1 Projects Layer:

1. Schema Definition: SPATIAL will modify the Projects layer database schema to add attributes to track the source of the data and whether or not data has been extracted. The UTIL_EXTRACT attribute will be used to track the process using the standard traffic

light approach (Yes = Green, Partial = Amber, No = Red). Projects with no utility data will be gray. Reference Appendix A – Project Layer Attributes.

2. Layer Update: SPATIAL will add the as-built projects to the Projects data layer as follows:

    a. Create a simple (~10'x10' square) polygon feature at the project location. This will serve as the project's extents and serve as the geospatial link to the project as-builts.
    b. Attribute the project data.
    c. Link the project PDF to the project feature.

2.2 Data Extraction

1. Available Data: Extraction is only required on those as-built projects with water, sewer, storm, reuse water, and easement data. A review of the as-builts identified in the assessment report reveals several as-builts do not have the desired data or can be combined to reduce the number of projects resulting in 90 unique projects to extract. Of the 90 unique project, three projects are located north of GA119 and 87 projects are located south of GA119. The following table summarized the number of drawing sheets available for each utility.

Type	Water	Sewer	Stormwater	Reuse Water	Easements
Sheets	227	216	214	98	225

2. Extraction: Extraction is the process of digitizing specific scanned elements to vector features in GIS and attributing those features with the available non-graphic data (size, material, invert elevation). The purpose of this effort is to incorporate the utility data from the project as-built PDF files into the GIS to support various planning and analysis initiatives (done by others). The following data will be extracted from each as-built where available.
    a. General Rules:
        i. Do not snap line vertices where lines cross; do not connect lines.
        ii. Elements shall snap at vertices producing no overshoots and no gaps.
        iii. Lines will break at valve centroid, manhole centroid, and junction points.
        iv. Create network topology for each utility.

b. Feature Group: Water System:
    i. Feature Classes: WCONTROLVALVE_P, WFIREHYDRANT_P, WFITTING_P, WHYDRANT_P, WLINE_L, WMETER_P, WSAMPLINGSTATION_P, WWELL_P
c. Feature Group: Sewer System:
    i. Feature Classes: SFITTING_P, SGREASETRAP_P, SLINES_L, SMANHOLE_P, SMANHOLE_P_PIPECOUNT, SOUTFALL_P, SPUMPSTATION_A, SPUMPSTATION_P, SPUMP_P, STREATMENTPLANT_A, STREATMENTPLANT_P, SCONTROLVALVE_P, SSTORAGERESERVIOR_A
d. Feature Group: Stormwater System:
    i. Feature Classes: DLINES_L, DPOINTS_P, DSTORAGERESERVOIR_A, DSTORAGERESERVOIR_P
e. Feature Group: Reuse Water:
    i. Feature Classes: RCONTROLVALVE_P, RFITTING_P, RLINE_L, RMETER_P, ROUTFALL_P, RPUMPSTATION_A, RPUMPSTATION_P, RSAMPLINGSTATION_P
f. Feature Group: Easement:
    i. Feature Classes: OUTGRANT_A

3 Deliverables:

1. Updated Projects data layer with simple boundary, attributes, and PDF link for as-builts. Data available via RightSpot Project layer.
2. Updated water, sewer, stormwater, reuse water, and easement GIS data layers based on extracted data. Data available via RightSpot Project layer. Extraction progress tracked via RightSpot. Anticipate 90 as-built projects with utility data to extract.
3. Monthly updates for water, sewer, stormwater, reuse water, and easement in GIS data layers in accordance with the current data share agreement.

4 Cost Estimate:

Item	Task	Cost
2.0	Update Projects data layer and extract water, sewer, stormwater, reuse water, and easement to GIS	$101,260.71
	Total	$101,260.71

Notes:

1. This is a Firm Fixed Price (FFP) quote based on SPATIAL's contract rate schedule.
2. The cost quote is valid for 60 days.

5 Schedule:

The total project duration 90 calendar days. Reference the following schedule.

Item	Milestone	Start	End (1)
0	Notice to Proceed (NTP)	NTP	0
1	Kickoff Meeting	NTP	5
2	Update Projects data layer	NTP	15
3	Extract Water, Sewer, Stormwater, Reuse Water, and Easements	NTP	80
4	County review	Item 3	Item 3 + 5
5	Final delivery	Item 4	Item 4 + 5
	Total Project Duration	**NTP**	**90**

Notes:

(1) Duration presented in calendar days.

6 Assumptions:

1. This task is for digitizing/extracting data from scanned as-built images listed in Appendix B.
2. Extracted data will be uploaded monthly in accordance with current data agreement.

7 Task Acceptance

If the tasks, schedule, and cost are acceptable, please sign, date, and return a copy to Spatial Engineering.

For: Spatial Engineering, Inc.	For: Effingham County, GA
Rebecca A. Truluck **Date: 4/20/2022**	**Date:**
Rebecca F. Truluck President O: 912-826-6688 btruluck@spateng.com RightSpot™	**Name:** **Title:**

8 Appendix A – Project Layer Attributes

Add the following attributes to the Project Layer.

Attribute Name	Type	Definition
Source_Type	Domain	Allowable values: • As-Built = Record drawings representing actual construction. • Construction = Drawings ready for construction. Includes design drawings, site development, and demolition as these may represent a stage of construction. • Other = Concept, topo, etc.
Project_Source	Domain	Allowable values: • ScanProject = The scan project contract number. The 718 useable projects from task order 20017-OCS01 will be attributed "20017-OCS01". • PDF = The drawing set was provided in PDF format initially. Scanning was not required.
Water_Avail	Boolean	Allowable values: {Yes, No}
Sewer_Avail	Boolean	Allowable values: {Yes, No}
Storm_Avail	Boolean	Allowable values: {Yes, No}
Reuse_Avail	Boolean	Allowable values: {Yes, No}
Ease_Avail	Boolean	Allowable values: {Yes, No}
Util_Extract	Domain	Allowable values: {Yes, Partial, No}

Layer Update: Update Projects data layer attributes as follows.

1. Update attributes for exiting project records.
    a. Set Util_Extract = appropriate value.
    b. Set ScanProject = NA
2. As-builts from assessment report; and all as-builts going forward.
    a. Create a polygon for the project extents of each project added.
    b. Set Util_Extract = FALSE.
    c. Set ScanProject = Scanning project number. Set to 20017-OCS01 for this effort.
    d. Set utility availability based on the scan report.

9 Appendix B – As-Built Project/File Name

Projects with utility and easement data.

1. Abbey Lane Phase 1
2. Andrews Subdivision
3. Archer Place Subdivision
4. Ardmore Oaky Road Fire Station
5. Auriga Farms 2 Phase 8
6. Auriga Farms 2 Phase 9
7. Autumn Woods Subdivision
8. Azalea Point Subdivision
9. Azalea Point Subdivision Phase 2 and 3
10. Barrister Crossing Subdivision
11. Blandford Crossing Subdivision
12. Bluejay Estates (Across from Emerald Plantation)
13. Bluejay Road From Hodgeville to the end of Greystone Drive
14. Bridgewood Subdivision
15. Brookstone Subdivision
16. Buckfield Plantation
17. Cameron Oaks
18. Candleberry Subdivision
19. Caribbean Village Phase 1
20. Casey's Crossing Subdivision
21. Castle Wood Subdivision
22. Cedar Ridge Subdivision
23. Cobbleton Subdivision
24. Coldbrook Heights Subdivision
25. Cornerstone Subdivision
26. Covered Bridge Subdivision
27. Cypress Cove
28. Cypress Lakes Subdivision Phase 3
29. Division B Hwy 30 Reclaimed Water Main and Force Main
30. Division B Marlow Gravity Sewer
31. Division B Pump Station 3
32. Division B Pump Station 4
33. Division B Wastewater Reclaimed Water Main and Force Main
34. Division C Waste Water Collection and Reclaimed Water Distribution
35. Drake Landing
36. Eagle Point Subdivision Phase 1 and 2
37. Eagle Point Subdivision Phase 4

38. Eagles Landing Subdivision
39. Ebenezer Subdivision/Brookstone
40. Effingham County Industrial Park
41. Effingham County Industrial Park Cold Storage
42. Effingham County Middle School
43. Fairhaven Subdivision
44. Fetzer Place
45. Georgia Plantation
46. Glenwood Subdivision
47. Goshen Commercial Park
48. Goshen Road Utilities Phase 2
49. Gracewood Subdivision
50. Groover Branch Subdivision
51. Guyton Elementary School
52. Hickory Knob Subdivision
53. Honey Ridge Road Bridge Replacement
54. Honey Ridge Subdivision
55. Hwy 21 Water Main
56. I-16 Industrial Tract
57. Jamestown Subdivision
58. Kates Cove Phase 3
59. Kensington Forest
60. Kingsley Plantation Phase 1
61. Kingsley Plantation Phase 2
62. Laurel Grove Development Phase 1
63. Lonesome Oak Subdivision Phase 1, 2, 3 (1, 2 as-built)
64. Long Acres Road Subdivision
65. Lowground Farms Subdivision
66. Megans Bay Subdivision
67. Moon River Movie Studio Entrance Road
68. Park West Subdivision Phase 2
69. Rabun Estates Phase 1 and 2
70. Rahn Station Road
71. Rebel Estates Phase 2
72. Ridgecrest Subdivision
73. River Road Farms Phase 2
74. River Road Farms Phase 3
75. Runs Crossing Subdivision
76. Saddleclub at Belmont Glen Subdivision Phase 1
77. Saddleclub at Belmont Glen Subdivision Phase 2

78. Savannah Cold Storage Port Fresh Logistics Water Main
79. Settler's Point Subdivision
80. Shadowbrook Subdivision Phase 4
81. Shadowbrook Subdivision Phase 5
82. South Bend Subdivision
83. South Effingham Plantation
84. Southbrook Subdivision Phase 1
85. Southern Hills Plantation
86. Staffordshire Estates
87. Staffordshire Estates Phase 3
88. Stonegate Subdivision
89. Wildwood Subdivision
90. Winsor Forest Subdivision Phase 1 and 2