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**TOWN OF NEWBURGH
TOWN ENGINEER**

MEMORANDUM

TO: Gilbert Piaquadio, Town Supervisor and Town Board
FROM: Patrick J. Hines, Representative, Engineers for the Town
DATE: 19 July 2024
RE: Town Justice Court Façade Upgrades

MHE Engineering has prepared design plans for the façade upgrades at the existing Town Court facility. Plans have been prepared in coordination and with input from Judge Clarino. MHE requests authorization to publicly bid on the façade replacement project. We are recommending bids be available on August 2, 2024, and bids being received on August 22, 2024.

Authorization to bid requires Town Board action.

I am available to discuss the project with the Board should you require additional information.

Cc: Judge Clarino
Mark Taylor, Town Attorney
Ronald Clum, Town Accountant
Lisa Ayers, Town Clerk

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**TOWN OF NEWBURGH
TOWN ENGINEER**

MEMORANDUM

TO: Gilbert Piaquadio, Town Supervisor and Town Board
FROM: Patrick J. Hines, Representative, Engineers for the Town
DATE: 19 July 2024
RE: Town of Newburgh GIS Phase 2 Proposal

The Engineering Department has solicited a proposal from MJ Engineers for the Phase 2 GIS Services. MJ Engineers have completed the scope of work within Phase I which included data collection, scanning and GIS System development for existing plans, surveys, as built subdivision mapping and other information maintained by the Town.

Phase 2 will have 3 tasks:

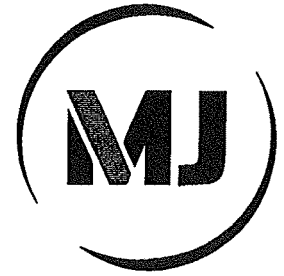
- Task 1 will consist of continued development of the facility infrastructure GIS layers, including digitizing water, sewer, storm sewer and other town infrastructure.
- Task 2 is a parcel analysis of the water and sewer districts, cross-referencing water and sewer permits, sewer and water lateral services, coordination with water billing accounting.
- Task 3 will develop language to be addressed in the Town's road dedication specifications to require digital deliverable information which can stream line the addition of new information into the Town's GIS System.

Phase 2 will be performed on an hourly basis not to exceed \$75,000.00. The Town has a budget line item for GIS work. This \$75,000.00 fee will be paid from the GIS line item.

I am available to discuss this matter with the Town. Authorization of the MJ Engineering and Land Surveying proposal requires Town Board action.

Attached to this memo is a copy of MJ Engineers proposal.

Cc: James Osborne, PE, Town Engineer
Ronald Clum, Town Accountant
Mark Taylor, Town Attorney



July 1, 2024

James W. Osborne, PE
Town Engineer
Town of Newburgh
308 Gardnertown Rd
Newburgh, NY 12550

Re: Town of Newburgh GIS Development – Phase 2
MJ Proposal No. 2024249 for GIS Mapping Services

Dear Mr. Osborne:

M.J. Engineering and Land Surveying, P.C. (MJ) is pleased to provide the Town of Newburgh (Town) this proposal for extended professional services associated with Phase 2 of the development of the Town's Geographic Information System (GIS). MJ's project understanding and associated Scope of Services are included below.

PROJECT UNDERSTANDING

MJ's project understanding is as follows:

- MJ is working with the Town to develop a GIS that can fulfill the need for a central digital repository of Town-owned infrastructure information. The GIS will serve as a digital twin of installed infrastructure assets such as the municipal water and sewer networks.
- MJ has completed Phase 1 of the GIS development through a previous scope of work. Phase 1 consisted of two main tasks. The first task was to scan the Town's paper engineering record plans to create digital file copies. Over 500 record plan sets comprised of thousands of sheets were processed with a large format scanner.
- The second task was to configure a pilot GIS web map in ArcGIS Online for a preview of the utility infrastructure layers that could be created from these record plan sets. The digital sheet images from two record plan sets (one from a recent date, the other from an older date) were georeferenced into their real-world positions and GIS layers created for water, storm sewer, and sanitary sewer utility features.
- Based on discussions with the Town's Engineering Department, the next phase of GIS development (Phase 2) will focus on continuing to add water, storm sewer, and sanitary sewer utility features from the scanned record plans to the GIS layers started in Phase 1.



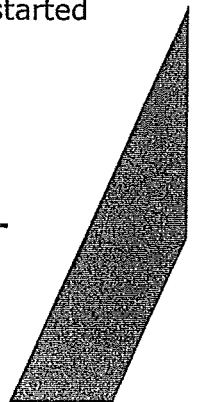
21 Corporate Drive
Clifton Park, NY 12065



518.371.0799
mj@mjteam.com
mjteam.com



Fishkill, NY
Levittown, NY
Picatinny, NJ
Melbourne, FL





PREVIOUS WORK

Phase 1 involved scanning paper record plans to digital copies and setting up a pilot GIS. Previous work completed to develop the pilot GIS is described in detail below:

1. Setup a GIS basemap with publicly available Town-wide GIS layers
 - a. NYS orthoimagery (latest is 2021)
 - b. Orange County layers
 - i. Tax parcels
 - ii. Municipal boundaries
 - iii. Building footprints
 - iv. Topographic contours
 - v. Road centerlines / labels
 - c. Environmental layers
 - i. DEC wetlands
 - ii. Federal wetlands
 - iii. Streams / water bodies
2. Create a GIS database and define layers to hold Town-owned water, sanitary sewer, and storm sewer utility data:
 - a. Storm:
 - i. Culverts
 - ii. Catch basins / manholes
 - iii. Outfalls
 - iv. Facilities (if applicable)
 - b. Sanitary:
 - i. Pipes
 - ii. Manholes
 - iii. Facilities (if applicable)
 - c. Water:
 - i. Pipes
 - ii. Valves
 - iii. Hydrants



iv. Facilities (if applicable)

3. Georeference record plan sheets from two representative record plan sets to their real-world locations by best-fitting to orthoimagery and/or tax parcel base layers.
4. Digitize water, sanitary sewer, storm sewer feature geometry off the georeferenced record plans and into the GIS database layers. Add attribution on the GIS layers for feature attributes (i.e. invert elevations, diameter, and material of a pipe).
5. Share the pilot GIS with the Town by connecting our ArcGIS Online accounts and configuring an interactive web map.

SCOPE OF SERVICES

Task 01: Continue Development of Utility GIS Layers

MJ will continue the process which was started in Phase 1 of georeferencing scanned record plan sheets to their real-world locations (task described as **Previous Work 3**) and then digitizing water, storm sewer, and sanitary sewer utility features from the plans into GIS layers (task described as **Previous Work 4**).

Record plan information will be added to the GIS in reverse chronological order so that the content from the most recent plans is incorporated into the GIS first. The rationale for this ordering is that the more recent the date of the plan is, the more likely there have not been changes to ground conditions since its publication. The Town Engineering Dept will supply MJ with a listing of record plans to prioritize adding to the GIS as well.

As record plan information is added to the GIS we will be able to quantify the geographic extent of where existing information exists, and where there are data gaps that would need to be addressed with fieldwork in future phases of development and scopes of work.

Deliverables:

- Continue adding features to the water, storm sewer, and sanitary sewer GIS layers that were started when creating the pilot GIS

Task 02: Parcel Analysis of Water and Sewer Districts

MJ will conduct a GIS analysis to create a visualization of the tax parcels within the Town's water and sewer districts. The Town will supply MJ with the tax parcel ID listings for current water and sewer district customers. MJ will join the ID lists with the Town tax parcel polygons in GIS to highlight the member parcels of each district. This visualization will show the current spatial extents of the districts, and be a useful layer for identifying data gaps as the water and sewer line layers continue to be developed.



Deliverables:

- Two new GIS layers illustrating the tax parcel polygons within the Town’s water and sewer districts

Task 03: Add Digital Deliverable Requirements to Road Dedication Specifications

MJ will add language to the Town’s road dedication specifications which describes digital deliverable requirements to facilitate efficiently adding information from new projects to the Town GIS. These requirements will outline deliverables which applicants must submit to streamline adding utility information from newly submitted subdivision plans into the Town’s water and sewer GIS layers, such as providing AutoCAD DWG files.

Deliverables:

- Digital Deliverable Requirements document in Microsoft Word format

SCHEDULE

MJ is prepared to begin the work described in the Scope of Services within two weeks of the notice to proceed; with an estimated duration of one year thereafter.

FEE

MJ proposes to complete the requested services on an hourly not-to-exceed basis working within a total initial budget of \$75,000 as determined by the Town. MJ will invoice on a monthly basis in accordance with the contract requirements and attached billing rates.

The fee assumes there are no significant changes resulting from decisions, conditions and/or events beyond MJ’s control.

ASSUMPTIONS

The following assumptions were made in the development of this proposal:

1. Due to the quantity of record plans (over 500 plan sets comprised of thousands of sheets) and MJ’s previous discussion with the Town Engineering Department, the work outlined herein will proceed with this task operating within a predefined annual budget set forth by the Town. It is anticipated that only a portion of the plan sets will be able to be processed and included within the effort associated with this initial budget. MJ will progress with the GIS development in an efficient manner based on the allocated budget. At the completion of the first year or once the budget is exhausted, whichever



comes first, MJ will coordinate with the Town Engineering Department to review the work completed and any apparent areas of data gaps to determine next steps for future phases of work.

2. The Town will provide MJ with listings of water and sewer district customers' tax parcel ID's for use in **Scope of Services Task 02**.
3. The Town will provide MJ with the document describing the current road dedication specifications for use in **Scope of Services Task 03**.

TASKS NOT INCLUDED IN THIS PROPOSAL

The following efforts are excluded from this scope of services:

1. Fieldwork
2. Creation of deliverables not explicitly described within the **Scope of Services**

SUMMARY

We look forward to assisting the Town with this effort to establish this GIS resource. If the above scope of work is acceptable, we can develop Phase 2 contractual documents based on the Phase 1 contract language for signatures. Please do not hesitate to contact Mike Pianka at 518-371-0799 or via email at mpianka@mjteam.com if you have questions or require additional information.

Sincerely,

A handwritten signature in black ink, appearing to read 'Michael D. Panichelli', with a stylized flourish at the end.

Michael D. Panichelli, P.E.
President

Cc: M. Pianka

File