

**STAMP 6 MDG Water
Basis of Design Report**

**For The
Genesee County Economic Development Center**

June 2020



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I. General

A. Background

The Genesee County Industrial Development Agency d/b/a/ the Genesee County Economic Development Center (GCEDC) and its affiliate, the Genesee Gateway Local Development Corporation (GGLDC), have been working for the last several years on the development of the Western New York Science & Technology Advanced Manufacturing Park (STAMP). The Site is planned as an advanced manufacturing campus on approximately 1,262 acres of land in the Town of Alabama, New York located along the west side of New York State Highway 77/63 (north of Judge Road) approximately five miles north of the I-90/New York State Thruway (STAMP Site).

At full build out, STAMP will be a high technology campus with the potential to accommodate over 6 million square feet of advanced technology manufacturing and related uses and to create up to 10,000 jobs. The GCEDC, as lead agency pursuant to the State Environmental Quality Review Act (SEQR), prepared a Generic Environmental Impact Statement (GEIS) and a Smart Growth Impact Statement (“SGIS”) that analyzed the potential impacts of STAMP pursuant to the requirements of the SEQR and the State Smart Growth Public Information Policy Act.

In January 2012, the Final GEIS for STAMP was accepted as complete. The FGEIS identified alternatives for water supply for STAMP and assumed a maximum demand of 3 million gallons per day (MGD) of water. Several phases and projects were considered, including a connection to the Town of Pembroke water system, a connection to the Village and Town of Oakfield water system, and onsite storage tanks.

In August of 2013, a Conceptual Water and Wastewater Alternatives Analysis and Recommendations Report identified potential water supply alternatives for the STAMP project based on a demand of 12.0 MGD. Several alternatives including the Niagara County Water District (NCWD), the City of Lockport, the Erie County Water Authority (ECWA) and Genesee County sources were considered to supply the STAMP project with an adequate water supply. Based on this report, the recommended water supply alternative was a combination of NCWD and Genesee County sources. Approximately 8.0 MGD would be available from NCWD while the remaining 4 MGD would be available from Genesee County.

Over a period of several years, discussions and meetings with the NCWD resulted in an agreement between the GCEDC and the NCWD to reimburse the NCWD for the cost of preparing a facility and infrastructure impact study. The study reviewed several alternatives and required upgrades to supply the STAMP site with 1, 2.4, 4, 8, and 13 MGD. In April of 2018, this study was finalized and detailed the costs and associated infrastructure improvements required to provide STAMP with up to 13 MGD.

In conjunction with developing alternatives for the NCWD water supply, several alternatives were also considered in Genesee County. A Water Supply Agreement was

drafted, approved and executed between Genesee County and the GCEDC, which outlined the process of providing STAMP with up to 200,000 gallons per day (gpd) of water. Additionally, the STAMP Technical Team helped develop a strategy for providing the Town of Alabama with a town-wide water supply plan. Construction for Phase 1 of this project began in August of 2017 and was completed in September of 2018. Phase 2 of this project started construction in April of 2018 and was completed in October of 2019. This Town system, which is connected to the larger Genesee County water supply allows the County to provide STAMP with up to 200,000 gpd. As an additional supply option from Genesee County, construction for the Pembroke Line was started in June of 2020 and is expected to be completed by June of 2021. It is anticipated that construction of this line will supply approximately 700,000 gpd of additional water to the STAMP Site.

The concept of utilizing onsite recycling for the industrial process wastewater was explored in 2017 and 2018. Recycling would significantly decrease the overall potential total volume of water supply from 12 MGD to 6 MGD.

NCWD is currently under contract with the GCEDC for the design and permitting of a 24-inch 6 MGD transmission line from the Robinson Road Pump Station to the Niagara County / Genesee County Line. The Environmental Review for this work will be the completed by NCWD

The GCEDC is currently designing and permitting a 24-inch 6 MGD transmission main from the Niagara County / Genesee County Line to the STAMP site, along with onsite water storage tanks. The Environmental Review of this work will be completed by GCEDC.

B. Purpose

A transmission main will be constructed to provide an additional 6 MGD of water supply capacity to STAMP. Storage for the water will consist of new water tanks constructed on-site. With these additional water infrastructure improvements and the Genesee County water supply of 0.9 MGD, the total water capacity will be 6.9 MGD.

This report will outline the design of the new transmission main and its various appurtenances. All work was designed within the accepted criteria of the Recommended Standards for Water Works (commonly referred to as the “10 States Standards”).

II. Proposed Project Information

A. Alignment

Based on the current anticipated improvements to the NCWD system, a 24-inch transmission main within Niagara County will begin south of the City of Lockport at the existing Robinson Road Pump Station. The proposed alignment extends east along NYS Rt. 93 and Bunkerhill Road until the intersection with Royalton Center Road. The water

main then extends north until the intersection with Ernest Road, then east until the intersection with Lewiston Road. The transmission main will continue along Lewiston Road until the Niagara County / Genesee County Line. At the County line, a meter vault will be installed to separate the ownership between NCWD and GCEDC. The transmission main route including Niagara County is shown in Figure 1.

The transmission main from the Genesee County Line to the STAMP site will be aligned on the southern side of Lewiston Road. The transmission main will maintain this alignment until approximately 500 feet east of Crosby Road, which corresponds with a future roadway entrance to the STAMP site. Inside the STAMP site, the main will be aligned along the western/northern sides of the proposed roadways until the “Utility Parcel”. The transmission main route from the Niagara County / Genesee County Line to STAMP is shown on Figure 2.

The typical offset from the edge of pavement is approximately 8 to 10 feet for open cut installations to prevent undermining of the roadway. At this offset the water line will run along the southern Right of Way line of Lewiston Road for a majority of the alignment length with portions of the water line trench outside of the public space. In areas where horizontal directional drilling is required, or where existing site features (headwalls, culverts, etc.) must be avoided, the offset may be increased.

Approximately 50% of the proposed alignment length will be located adjacent to or within the Tonawanda Wildlife Management Area (TWMA) managed by the New York State Department of Environmental Conservation (NYSDEC). The remaining 50% will be within the Town of Alabama limits and the STAMP site. In order to construct the transmission main, easements will be required from both the NYSDEC and from private property owners.

B. Preliminary Hydraulics

A conceptual level hydraulic analysis is currently underway. Per the 2018 Wendel report, the pressure available at the Niagara County / Genesee County Line varies between 35 to 50 psi. The existing topography between the County line to STAMP is relatively flat, with an elevation difference of approximately 80 feet from the lowest point in the system to the highest. Based on the available pressure, topography and length of the pipeline, it is anticipated that pump stations will be required to convey the water from the transmission main to the storage facility for demands larger than 2 MGD. The pump stations may be located in Niagara County, Genesee County or on the STAMP site and will be located along the transmission main alignment. The pump station locations will be selected during the design process and will avoid wetlands and other sensitive resources areas.

C. Design Capacity

The transmission main booster pumps and storage tanks will be sized to provide a supply capacity of 6 MGD. STAMP water demands are expected to be a combination of a

domestic demand (i.e. water use directly linked to building personnel) and a “Process Water” (PW) demand (i.e. water used for industrial activities such as non-contact cooling).

As agreed by all stakeholders, including an agreement between Genesee County and Monroe County Water Authority (MCWA), this NCWD water supply will only be used on the STAMP site. System water will be conveyed from the NCWD system directly to a water storage facility on the STAMP site. Distribution of on-site water will occur via a separate pipe network connection to the tank(s).

D. Field Work

Field activities consisting of wetland delineations and archeological investigations are currently underway.

The wetland delineations will occur along the south side of Lewiston Road with limits extending approximately 50 feet from the edge of the roadway pavement.

A Section 233 permit for the archeological investigations was received on May 11, 2020 for work within the Tonawanda Wildlife Management Area. The field work for the investigation will commence following coordination with the New York State Historic Preservation Office (SHPO) which will set the limits of the work.

III. Proposed Transmission Main System Design Components

A. On-Site Storage

The type of onsite water storage tanks is currently being evaluated and may consist of either an elevated water towers, ground level tanks, or a combination of the two. The possible tank location(s) are also currently being evaluated. Due to a Town zoning ordinance, the maximum height of structures is limited to 110 feet in Technology District 1, without an additional variance approval. The storage facilities will be sized based on a ratio of 1 gallon of storage volume for every 1 gallon per day of usage/demand.

B. Pipe Selection

The transmission main design will consider ground elevation, surface features, natural resources and allowable pressure within the pipe.

The pipe material for the NCWD portion of the water main will consist predominately of 24-inch precast concrete cylinder pipe (or PCCP). At the Niagara County / Genesee County line, the pipe will transition from PCCP to 24-inch Class 52 DIP pipe. DIP pipe was selected to best accommodate the wide range of flow conditions and associated pressures and reduce pipe friction losses at the future higher flow. DIP also provides additional flexibility during construction if unknown field conditions are encountered.

For sections of alignment that encounter unfavorable soil conditions (moist peat and organics) or are crossing streams, wetland areas, or roads the transmission main will be installed by horizontal directional drilling (HDD) methods using fused high-density polyethylene pipe (HDPE). 24-inch DR-11 HDPE pipe will be used for the carrier pipe. If any crossings also require a casing pipe, 36-inch DR-11 HDPE pipe will be utilized for the casing pipe.

C. Fire Hydrants, Blow-off Hydrants & Air Release Valves

A total of approximately 23 fire hydrants will be installed at 1000-foot intervals along the transmission main route between the STAMP Site and the Niagara/Genesee County line. In addition to providing fire protection along the route, the hydrants can be used during maintenance activities to flush out the main and serve as a blow-off in the system if located near a low-point in the line. Hydrants designated as a “blow-off hydrant” will consist of a tee rotated downward. A minimum flushing velocity of 3 fps is desired at all blow-off hydrant locations.

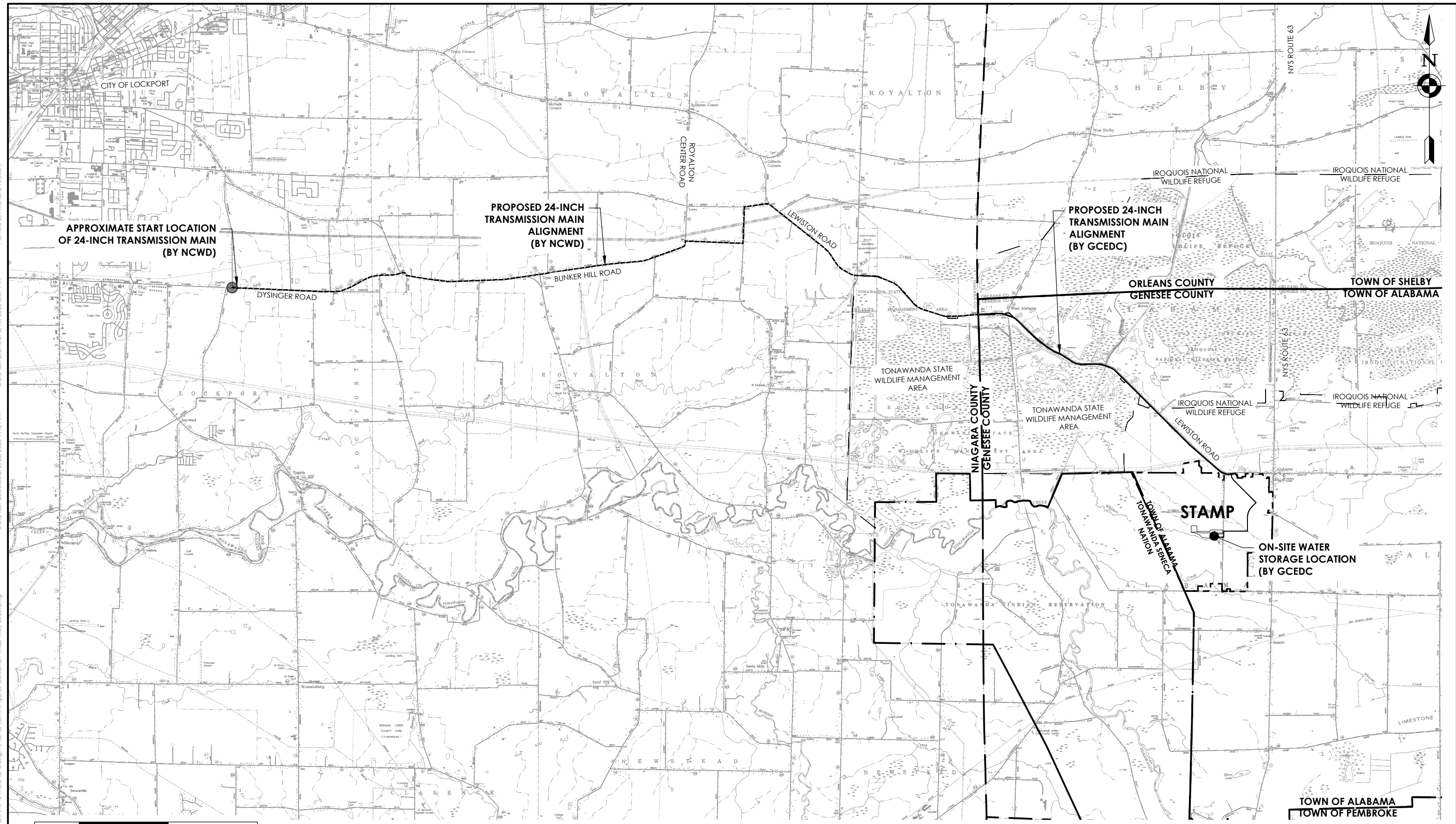
Air release valves will be installed at key high points located along the alignment. Each valve location will consist of the air release valve being placed in a precast manhole with manhole steps, watertight frame and cover and vent piping.

D. Main Line Valves

The transmission main will require main line gate valves along the route from the STAMP site to the Niagara/Genesee County line. The gate valves serve provide a means to isolate sections of the transmission main for testing and maintenance purposes. Valves are located at approximately 2,000-foot spacing intervals.

IV. Conclusion

The STAMP 6 MGD Water project is an integral and critical part of the necessary infrastructure for the STAMP Site. Coordination of the project design with the environmental field work will minimize potential environmental impacts through selection of the alignment route, the use of horizontal directional drilling to avoid sensitive area and the placement of water line appurtenances outside of environmentally critical locations. The GCEDC should proceed with the STAMP Site project as described in this report.



Referenced Drawings: None
 Drawing Name: J:\PROJECTS\GCEDC\STAMP 6 MGD\DWG\Design\ACAD\Civil\Figures\Location Map May 2020.dwg
 Date last accessed: 5/26/2020 9:18 AM
 Date last plotted: 6/10/2020 3:07 PM
 Plotted By: Richard Toussant

3,000 0 6,000 12,000
 1 INCH = 6,000 FEET


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FIGURE 1
OVERALL WATER TRANSMISSION MAIN SYSTEM MAP

DATE:	5/22/20
DRAWN:	RRT
CHECKED:	JF
SCALE:	AS NOTED
PROJ. #:	14822.00

WNY STAMP 6 MGD WATER
 TOWN OF ALABAMA, NEW YORK STATE

