

Appendix E

Water Service Analysis



December 2, 2008

Erie County Health Department
 Rath Building
 95 Franklin Street
 Buffalo, NY 14202

Attn: Ms. Dolores M. Funke, P.E., Senior Public Health Engineer

Re: Buffalo Niagara Medical Campus – North End Development
 Infrastructure – Public Water

Dear Ms. Funke:

We have received your email correspondence dated November 18th for the above referenced project. In response to your concerns regarding the public water system, we would like to offer the following:

As included in the Infrastructure section of the DGEIS, the daily water usages for each of the new buildings are as follows:

	<u>Daily Water Use</u>	<u>Peak Demand</u>
• Medical Office Building:	24,000 gpd	178 gpm
• Skilled Nursing Facility	42,000 gpd	117 gpm
• Global Vascular Institute	54,000 gpd	336 gpm

After further review of the hydrant flow tests performed by the City of Buffalo Water Department, the hydrant flows were calculated at 20 psi which is the standard for fire fighting water pressure. The hydrant water flows at 20 psi are as follows:

<u>Hydrant Location</u>	<u>Size Main</u>	<u>Static Pressure</u>	<u>Residual Pressure</u>	<u>Water Flow in gpm</u>	<u>Water Flow at 20 psi (gpm)</u>
Carlton (Ellicott-Michigan)	6"	46	44	320	1278
North Oak (Carlton-High)	10"	36	35	870	3888
Michigan (Carlton-High)	6"	47	45	500	2039
Ellicott (High-Goodrich)	16"	36	35	850	3799
Goodrich (Ellicott-Elm)	8"	40	38	845	2930
East North (Ellicott-Michigan)	16"	46	44	850	3396

Watermain connection taps for each of the buildings are summarized as follows:

- Global Vascular Institute - water services (domestic and fire) may tap into the existing 16" watermain on Ellicott Street or the 16" watermain on East North.
- Medical Office Building - water services (domestic and fire) may tap into the existing 16" watermain on Ellicott Street or the 12" watermain on High Street.
- Skilled Nursing Facility - water services (domestic and fire) may tap into the existing 10" watermain on Michigan Street or the 16" watermain on East North.

In accordance with Recommended Standards for Water Works (10-States Standards) Section 7.0.1, fire flow requirements will be satisfied by installation of sprinkler systems for each of the three buildings. Due to the elevation losses in multi-story buildings, booster pumps will be required to provide the required water pressure on higher floors.

Considering the hydrant flow information provided above and the large size of the watermains, the amount of water required for domestic and fire fighting services is available for both the existing and proposed hospitals and buildings in the area.

If you have any questions or need additional information, please do not hesitate to contact me.

Respectfully,

C&S ENGINEERS, INC.



Bob Sawmiller, P.E.
Project Engineer

Cc: Mr. Marc Romanowski (Harter, Secrest & Emery LLP) (copy via email)
Ms. Nadine Marrero, AICP (American Consulting Professionals of NY) (copy via email)
Mr. Lowell Dewey (C&S) (copy via email)
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