
WATER SYSTEM ENGINEER'S REPORT

RWJ BARNABAS HEALTH SOUTH BUILDING EXPANSION CITY OF NEW BRUNSWICK MIDDLESEX COUNTY, NEW JERSEY

Applicant:

**RWJ Barnabas Health
One Robert Wood Johnson Place
New Brunswick, NJ 08901**

Prepared By:

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**24 May 2019
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CU-101	Utility Plan

INTRODUCTION

This Engineer's Report has been prepared on behalf of RWJ Barnabas Health by Langan Engineering and Environmental Services, Inc. (Langan) to support the design, permitting, and construction of the proposed RWJ Barnabas Health South Building Expansion project, in New Brunswick, New Jersey. The proposed development includes the construction of approximately 29,000 square feet (sf) of new hospital space and the renovation of approximately 60,000 sf of existing hospital space. The proposed expansion will be serviced by a proposed 8" DIP water pipe.

A summary of the site's existing conditions, proposed development scope, surrounding water infrastructure, and the project's proposed water system are given herein.

EXISTING SITE DESCRIPTION

The property (approximately 8.25 acre per the City tax map) is located in the City of New Brunswick, Middlesex County, New Jersey. Approximately one acre of the property will be developed as part of this project. The project site is bound by the RWJ 1958 and Tower Building to the north, French Street (Middlesex County Road 27) to the south, Core Building and an existing parking garage to the east, and the RWJ Utility Building to the west.

The site is currently occupied by a non-emergency ambulance parking lot.

PROPOSED DEVELOPMENT

The proposed improvements will consist of constructing 29,000 sf of new hospital space and renovating approximately 60,000 sf of existing hospital space. On the ground level, the project will consist of constructing new columns and elevators for the infill building structure above. This will result in the reconfiguration of the existing non-emergency ambulance parking lot.

PROJECTED DOMESTIC WATER DEMANDS

Based on the New Jersey Administrative Code (NJAC) Section 7:10-12.6(b)2, typical medical office space will generate a domestic water service demand at the rate of 0.125 gallons per day (gpd) per square foot. We have estimated the proposed domestic water demand based on the net increase of 29,000 gross square foot of new space. A breakdown of the South Building Expansion project's projected water demand is as follows:

ESTIMATED AVERAGE WATER DEMAND

- Medical Office Space – 29, 000 sf x 0.125 gpd/sf = 3,625 gpd

TOTAL ESTIMATED AVERAGE WATER DEMAND 3,625 gpd

Based on a peaking factor of 3, the peak daily water demand will be approximately 10,875 gallons per day (see breakdown below).

ESTIMATED PEAK DAILY WATER DEMAND

- Medical Office Space – 29,000 sf x 0.125 gpd/sf x 3 = 10,875 gpd

TOTAL ESTIMATED PEAK DAILY WATER DEMAND 10,875 gpd

Based on a peak daily water demand of 10,875 gpd, the estimated hourly water demand for the proposed development will generate a peak hour demand of 1,360 gallons per hour (gph).

ESTIMATED PEAK HOURLY WATER DEMAND

- Estimated Peak Daily Demand – 10,875 gpd x (1 gph/8 gpd)= 1,360 gph

TOTAL ESTIMATED PEAK HOURLY WATER DEMAND 1,360 gph

SURROUNDING WATER INFRASTRUCTURE

A city-owned water main exists below French Street. Existing internal water systems surround the South Building Expansion area. Water systems are present within the existing buildings and within utility plant to the west, and 1958 building to the north.

PROPOSED WATER SERVICE SYSTEM

The proposed project will be serviced through the proposed 8" DIP water pipe – see CU-101.

CONCLUSION

The water demand calculations have been provided for the City's use. Should the City have additional questions regarding the proposed water services, please do not hesitate to contact our office.

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FIGURES



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Langan International LLC
Collectively known as Langan

NJ CERTIFICATE OF AUTHORIZATION No. 24GA27996400

Project

**ROBERT WOOD JOHNSON
BARNABAS HEALTH
SOUTH BUILDING
EXPANSION**

BLOCK No. 24.01, LOT No. 1.01
CITY OF NEW BRUNSWICK

MIDDLESEX COUNTY NEW JERSEY

Drawing Title

**USGS SITE
LOCATION MAP**

Project No.

130089201

Date

5/24/19

Scale

1"=1,000'

Drawn By

ARL

Figure

1

DRAWINGS