

Appendix P

PRELIMINARY WATER REPORT



**WATER REPORT**

**For**

**STATELINE RETAIL CENTER  
Town of Southeast, New York**

**December 11, 2006**

**Revised November 30, 2007**



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## 1.0 INTRODUCTION

The subject project is a 44.03± acre parcel located along U.S. Route 6 in the Town of Southeast, between Interstate 84 and U.S. Route 6. The site is located in the GC-2 zoning district, is designated as Tax Map Number 68-2-48, and is in the East Branch Reservoir Watershed. The ground cover is characterized as a mixture of woods and meadow throughout the majority of the site. The subject parcel is proposed to be developed as a retail center. The retail center will consist of buildings, access roads, parking and landscaping. Access to the site will be provided off of U.S. Route 6. Water will be supplied to the site by drilled wells that will serve as a public water supply for the project. Wastewater will be disposed of with subsurface sewage treatment systems. This report is prepared to address the water systems only.

The water systems will be designed in accordance with all applicable codes and regulations, including the Putnam County Department of Health's *Bulletin CS-31, Program Review and Policies, Sewage Treatment and Water Supply Facilities for Commercial and Multifamily Residential Projects* and the *Recommended Standards for Water Works* (a.k.a. Ten-State Standards).

## 2.0 DESIGN FLOW

The proposed uses of the subject site include a retail center with multiple retail buildings, community space on the second floor of one retail building, and an office building. The retail users for the proposed center are planned to be dry retail users. Dry retail occupants use limited water resources, and the majority of the water use is limited to primarily restroom usage for employees. The use of water saving plumbing fixtures, as required by the building code, would further limit water usage at the site. Please note that irrigation water will be supplied by a separate system that will collect and store roof runoff for that purpose.

The reference design standards for water and wastewater flows provide general design flows covering a broad range of usage categories. The NYSDEC's Design Standards provides two alternatives for establishing design flows: hydraulic loading rate tables or water usage data. In either case, a daily design flow rate must be calculated. The daily design flow rate is a conservatively high estimate of daily flow used by the engineer in the design of the water and sewer infrastructure when actual water usage data is unavailable.

The design flows for the subject project are based on actual water usage of similar facilities for the representative users. The office building design flows are based on 0.08 GPD/ SF (0.1 GPD/ SF with a 20% reduction as allowed by the NYSDEC's Design Standards). The following is a summary of the water design flows generated for the Proposed Retail (with Office and Community Space) Configuration layout and the Alternative Configuration layouts proposed for the subject project broken down by individual buildings. The design flows are categorized by SSTS area.

**PROPOSED ACTION:**

**SSTS AREA 1**

| <b>BUILDING</b>           | <b>PROPOSED USE</b> | <b>BUILDING SQUARE FOOTAGE (SF)</b> | <b>WATER DESIGN FLOWS (GPD)</b> |
|---------------------------|---------------------|-------------------------------------|---------------------------------|
| A                         | DRY RETAIL          | 134,000                             | 1,500                           |
| B                         | DRY RETAIL          | 25,000                              | 500                             |
| C (1 <sup>ST</sup> FLOOR) | DRY RETAIL          | 11,000                              | 400                             |
| C (2 <sup>ND</sup> FLOOR) | COMMUNITY SPACE     | 11,000                              | 600                             |
| D                         | DRY RETAIL          | 14,800                              | 700                             |
|                           |                     | <b>SSTS AREA 1 TOTAL</b>            | <b>3,700</b>                    |

**SSTS AREA 2**

| <b>BUILDING</b> | <b>PROPOSED USE</b> | <b>BUILDING SQUARE FOOTAGE (SF)</b> | <b>UNIT FLOW RATE</b> | <b>WATER DESIGN FLOWS (GPD)</b> |
|-----------------|---------------------|-------------------------------------|-----------------------|---------------------------------|
| E               | OFFICE              | 14,800                              | 0.08 GPD/SF           | 1,184                           |
|                 |                     | <b>SSTS AREA 2 TOTAL</b>            |                       | <b>USE 1,200</b>                |

**TOTAL SITE WASTEWATER DESIGN FLOW = 4,900 GPD**

**ALTERNATIVE CONFIGURATIONS:**

**REDUCED SCALE ALTERNATIVE**

| <b>PROPOSED USE</b>       | <b>WATER DESIGN FLOW</b> |
|---------------------------|--------------------------|
| 135,000 S.F. (DRY RETAIL) | 1,500 GPD                |
| 35,000 S.F. (DRY RETAIL)  | 600 GPD                  |
| <b>TOTAL DESIGN FLOW</b>  | <b>2,100 GPD</b>         |

**ALTERNATE RETAIL CONFIGURATION**

| <b>PROPOSED USE</b>                | <b>WATER DESIGN FLOW</b> |
|------------------------------------|--------------------------|
| 70,000 S.F. (DRY RETAIL)           | 1,000 GPD                |
| 65,000 S.F. (SPECIALTY FOOD STORE) | 4,000 GPD                |
| 35,000 S.F. (DRY RETAIL)           | 600 GPD                  |
| 10,000 S.F. (DRY RETAIL)           | 400 GPD                  |
| 3,000 S.F. (DRY RETAIL)            | 200 GPD                  |
| <b>TOTAL DESIGN FLOW</b>           | <b>6,200 GPD</b>         |

**PERMITTED PRINCIPLE USE ALTERNATIVE – OFFICE**

| <b>PROPOSED USE</b>                              | <b>WATER DESIGN FLOW</b> |
|--|--------------------------|
| 210,000 S.F. (OFFICE)                            |                          |
| ASSUME 4 EMPLOYEES PER 1000 S.F. = 840 EMPLOYEES |                          |
| 840 EMPLOYEES X 12 GPD/EMPLOYEE = 10,080 GPD     |                          |
| <b>TOTAL DESIGN FLOW</b>                         | <b>10,080 GPD</b>        |

**3.0 WATER SYSTEM DESCRIPTION**

3.1 Water Source (Drilled Wells)

The source water for the project will be provided by three 6” diameter drilled bedrock wells. One well will serve the contiguous group of Buildings A, B & C. The second well will serve Building D and the third well will serve Building E. The wells will have to be drilled and tested to prove that they can provide the required quantity and quality of water necessary for the project. The water supply wells will be furnished with submersible pumps and the well casings will be furnished with pitless adaptors. For the proposed action (Retail), a well yield of 5 gpm for each well would be adequate. If the permitted principle use (office) is chosen, a well yield of 15 gpm would be required. Multiple wells may be required depending on the specific needs of the end user.

### 3.2 Water Distribution and Storage Facilities

The water for the domestic potable water system will be pumped from the wells to the buildings through 1" to 1½" polyethylene (PE) water service lines. Water meters will be installed in each building to record total water usage for each building and from each supply well. Captive air water storage tanks will be provided in each building to provide pressure for the potable water distribution within each building, and to cycle the well pumps. The final water system design will be dependent on the pressure and flow requirements of the end users, and also based on the well production yield. At this time, it is not anticipated that the proposed water systems for Buildings A, B, C and D would be classified as a public water supply. It is anticipated that for Building E (office), the water system may be classified as a public water supply. An appropriate disinfection system would then be provided.

### 3.3 Fire Protection System

The fire protection for each building will be provided by the individual building systems. It is anticipated that a stand alone fire protection system consisting of a vented storage tank and fire pumps will be provided. The fire protection system will not place any demand on the domestic potable water system.