

June 12, 2014

Mr. William Walsh  
Traditions Resort & Casino  
4101 Watson Boulevard  
Johnson City, NY 13790

**RE: Water Usage for the Traditions Resort & Casino**  
**Delta Project No.: 2014.181.001**

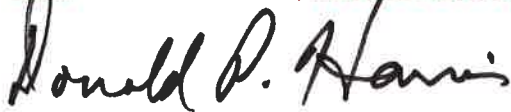
Dear Mr. Walsh:

Attached is our water consumption calculations and water tank capacity study for your use.

Please feel free to contact me, Don Harris directly at 607-231-6609 with any questions or concerns.

Respectfully,

**DELTA ENGINEERS, ARCHITECTS, & LAND SURVEYORS, P.C.**



Donald P. Harris  
Director of MEP Services

*Attachment*

# Estimated Water Consumption

## Phase 1 Casino Addition

This phase incorporates men's and women's toilet rooms as well as kitchen support for a sports bar and second floor restaurant.

Toilet rooms:

First Floor – two groups of men's & women's

Second Floor - one group of men's & women's

Women's water closets = 8 per toilet room x 3 rooms x 1.6 gpf x 4 uses/hr = 154 gph

Women's lavatories = 8 per toilet room x 3 rooms x .5 gpm x 4 uses/hr x 1 min/use = 48 gph

Men's water closets = 4 per toilet room x 3 rooms x 1.6 gpf x 4 uses/hr = 77 gph

Men's urinals = 4 per toilet room x 3 rooms x .5 gpf x 4 uses/hr = 24 gph

Men's lavatories = 8 per toilet room x 3 x .5 x 4 uses/hr x 1min/use = 48 gph

Total Toilet room water use = 351 gph/60 min = 6 gpm

Kitchen support:

### Sports Bar

1- 90 gph 3-bay sink

1- 45 gph 1-bay sink

1- Dishwasher @ 345 gph

Total = 435 gph / 60 min = 8 gpm

### Restaurant

1- 90 gph 3-bay sink

1- 60 gph 2-bay sink

1- 45 gph 1-bay sink

2- 45 gph pre-rinse

1- Dishwasher @ 500 gph

Total = 785 gph/60 min = 13 gpm

Total Water Usage Phase 1 = Total water use load = 6 gpm + 8 gpm + 13 gpm = 27 gpm

## Phase 2 Hotel Addition

### Toilet rooms:

First Floor – one group of men's & women's

Women's water closets = 6 per toilet room x 1.6 gpf x 2 uses/hr = 19 gph

Women's lavatories = 6 per toilet room x .5 gpm x 2 uses/hr x 1 min/use = 6 gph

Men's water closets = 4 per toilet room x 1.6 gpf x 2 uses/hr = 13 gph

Men's urinals = 2 per toilet room x .5 gpf x 2 uses/hr = 2 gph

Men's lavatories = 6 per toilet room x .5 x 2 uses/hr x 1min/use = 6 gph

Total Toilet room water use = 52 gph/60 min = 1 gpm

### Laundry support:

6 commercial HD washers @ 45 gallon/load x 2 loads/hr = 540 gph/60 = 9 gpm

### Hotel Suites:

160 rooms

160 water closets x 1.6 gpf x 2 occupants = 512 gph

160 lavatories x .5 gpm x 2 occupants = 160 gph

160 showers x 1.5 gpm x 10 min/shower x 2 occupants = 4800 gph

Total hotel suites = 5,472 /60 = 91 gpm

Total Water Usage Phase 2 = 1 gpm + 9 gpm + 91 gpm = **101 gpm**

## Traditions Existing 100,000 gal Tank

The existing 100,000 gallon water storage tank on site will have sufficient water supply for the existing building and proposed new casino and hotel. Review the calculations below.

Existing water pressure at the existing building from the storage tank = 75 psi

Existing pipe size = 6" from the tank to the existing building

The size of the pumped supply from the city main to the storage tank is unknown as well as the existing pump capacity.

The proposed new casino addition (Phase 1) will be two stories in height with a two level parking garage below ground under the casino. The proposed fire protection system will be light hazard for the casino area and ordinary hazard for the parking garage levels. Using the ordinary hazard for the parking garage the sprinkler design flow would be approximately 500 gpm.

With the existing storage tank water supply pressure at the building of 75 psi no fire pump will be required. Based on NFPA 13 the flow duration will be for 60 minutes = **30,000 gallons**.

The proposed water consumption average hourly demand would be approximately 27 gpm based on occupant load factor (refer to the Estimated water Consumption Calculation sheet) and estimated fixture count + the restaurant kitchen load factor.

The proposed new hotel (Phase 2) will be a 160 bed hotel with 4 floors. The proposed fire protection will have sprinkler protection throughout the building and will include a standpipe system due to the building height. It is expected that with the existing water pressure from the storage tank of 75 psi and with the hotel bedroom floors as light hazard there will be no requirement for a fire pump. The standpipe system will be a manual wet system in that the fire department apparatus would provide the system pressure as required by NFPA 14.

The largest fire protection demand would be for the standpipe system = 750 gpm for 30 minutes (NFPA 14 section 9.2 for class I standpipes) = **22,500 gallons**.

The proposed water consumption average hourly demand would be approximately 101 gpm based on occupant load factor (refer to the Estimated water Consumption Calculation sheet) and estimated fixture count + the restaurant kitchen load factor.

The existing water storage tank capacity can meet the current and proposed domestic water demands. During a fire system demand for either the existing building or for the Phase 1 casino or Phase 2 hotel, the existing storage tank would be sufficient.