# **Exhibit VIII.C.17.A Estimated Fresh Water and Electricity Demand, Estimated Sanitary Sewer and Storm Water Discharge**

### **Fresh Water Demand**

## Existing water demand

The Resort currently uses approximately 7,000 gallons of water per day. The existing domestic water and fire service for the hotel is provided by a 100,000 gallon below-ground water storage tank on Resort property located north of existing buildings. The water storage tank is filled by an on-site 7.5 horsepower duplex pump station that pumps water from the municipal water supply to the storage tank. The municipal water pressure was noted at 35 psi at an existing fire hydrant located between the main building and the parking lot.

Water supply from the storage tank provides domestic water for the existing hotel, golf shop and the storage building as well as providing a fire service to the hotel and to site fire hydrants. Water pressure from the storage tank to the hotel was noted as 75 psi at a hydrant near the main building. A water supply from the hotel that used to supply water for a golf course irrigation system has been capped and abandoned.

The size of the existing municipal water supply to the hotel is a 6" water service with a water meter/RPZ pit located at Beech Street. The 6" water service follows the entrance road up to the hotel to a valve vault located near the hotel. The piping configuration within the valve vault provides a 4" water supply to the site duplex pump station and a 6" municipal water supply with backflow connection to the 8" water supply from the storage tank. There is also a 4" water by-pass around the valve vault with a valve that connects the water tank supply to the municipal water supply. The by-pass valve is shut off and can be opened as a means to supply water from the storage tank to the municipal water system.

### Projections of estimated demand – base and peak

Estimated design water flow for the Casino in Phase I is 31,917 gal/day, which will be in addition to the Resort's current 7,000 gal/day use. Phase II facilities will further increase water flow by approximately another 19,800 gal/day. Total estimated water flow for the entire Resort and Casino after both Phases are complete would be approximately 58,717 gal/day.

#### Phase I

The estimated average water consumption hourly demand would be approximately 27 gpm based on occupant load factor, estimated fixture count, and the restaurant kitchen load factor.

The proposed fire protection system for the casino will be a separate system from the existing hotel and will be designed in compliance with the New York Fire Code and NFPA 13. The casino area will be classified as a light hazard while the parking garage levels will be ordinary hazard. Using the parking garage as the basis of design, the sprinkler design flow would be approximately 500 gpm.

With the existing storage tank water supply pressure at the building of 75 psi and the casino being two floors high with a parking garage below, the preliminary sprinkler design concept would be that no fire pump will be required.

Based on National Fire Protection Association (NFPA) fire sprinkler system standard NFPA 13, the fire flow duration will be for  $60 \text{ minutes } \times 500 \text{ gpm} = 30,000 \text{ gallons}$ .

#### Phase II

The estimated average water consumption hourly demand would be approximately 101 gpm based on occupant load, estimated fixture count, and laundry support.

The proposed fire protection for the new hotel addition will be a separate system from the casino and existing hotel. The design will be in compliance with the New York Fire Code and NFPA 13. The sprinkler protection system 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 using fire department apparatus to provide 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.

## Assessment of feasibility of any plans to accommodate demand on site

The existing 100,000 water storage tank system is sufficient to address base and peak domestic water demand as well as for the estimated fire flow demand of 30,000 gallons. The system will be upgraded to provide new booster pumps and provide back-up power to these pumps. The capacity of the existing duplex water pump station will be increased to maintain tank water lever at 90% to ensure adequate supply for firefighting.

### **Electricity Demand**

## Existing electricity service

Electric service for the existing Traditions Resort is 4.8-kV service originating at the NYSEG Oakdale substation located in Johnson City, New York. Existing electric service enters the site via overhead distribution lines along Beech Street. The 4.8-kV service to the Resort

travels underground from the utility riser pole on Beech Street to the basement of the existing hotel.

Projections of estimated demand - base and peak

Electricity demand for the new Gaming Facility is estimated to be between 1.5 and 2.1-mVA above current electrical demand, with typical base demand expected to be approximately 1.9 mVA and peak at 2.1 mVA. Figure VIII.C.17.a-1 provides preliminary calculations

Preliminary Electrical Calculations									
Space Type	Area	Lighting	General Power	HVAC	Kitchen	Data	Security	Watts/	Volt-Amps
	(Sq. Ft)							Sq. Ft.	
Hotel	85,230	1.00	1.61	4.0				6.61	563,370.30
Mechanical	29,700	0.50	0.20	2.00				2.70	80,190.00
Restaurant	18,400	1.60	0.20	1.00	1.19			6.99	128,616.00
Retail	1,400	1.50	1.38	4.00				6.88	9,632.00
Administration	23,200	1.00	1.24	1.89				4.13	95,816.00
Public Spaces	7,200	1.50	0.20	6.00				7.70	55,440.00
Casino	48,000	2.00	4.33	5.00		0.42	0.56	12.31	590,880.00
Parking (1st)	90,000	0.25						0.25	22,500.00
Parking (2 <sup>nd</sup> )	90,000	0.25						0.25	22,500.00
Total Area	393,130					Total Load (VA):			1,568,944.30

Figure VIII.C.17.a-1

## Assessment of feasibility of any plans to accommodate demand on site

More than 75% of the new facility's electricity demand will be addressed on site with two new systems: a gas-fired CCHP system and a roof-mounted solar photovoltaic system.

Analysis of the CCHP system indicates it is highly feasible due to the following factors:

- ➤ The nature of the facility's demand for power, heating and cooling meshes well with the system's capacity
- ➤ Nearby supply of natural gas
- Adequate space in the proposed design for all needed components

- ➤ A NYSERDA incentive for distributed generation systems enhances the system's economic feasibility
- Environmental benefits of the highly efficient system support the State's interest in promoting global reduction of greenhouse gases.

Analysis of the solar PV system at 200 kW indicates it is highly feasible due to the following factors:

- ➤ Production above 200 kW would result in reduced CCHP power production, which would result in less thermal production for heating and cooling.
- Availability of a reasonable power purchase agreement with a reputable solar developer
- > Favorable orientation of the project site
- Adequate space on the roof of the new Casino
- > NYSERDA incentives favor solar PV systems under 250 kw

## **Sanitary Sewer Discharge**

#### Existing sanitary system

The existing Resort has a 6-inch sewer line, which exits the existing hotel from the spa area on the rear of the building. The Resort currently discharges approximately 7,000 gal/day.

### Projections of estimated discharge

Estimated discharge for the Casino in Phase I is 31,917 gal/day, which will be in addition to the Resort's current 7,000 gal/day discharge. Phase II facilities will further increase discharge by approximately 19,800 gal/day. Total water demand for the entire Resort and Casino after both Phases are complete would be approximately 58,717 gal/day.

## Assessment of feasibility of any plans to accommodate demand on site

The existing site is served by a new sewer line installed in 2013. This main is adequate to meet the site's Phase I and Phase II needs.

### **Storm Water Discharge**

### Existing storm water system

The existing Traditions Resort has multiple ditched and piped storm water networks on site to convey rooftop, site, and offsite storm water runoff across the site in a controlled fashion. The facility has long been a resort and previously a golf course with a superb drainage system. All storm water flows in a generally southern direction across the site into municipal, county, and state storm sewer systems that ultimately lead to the Susquehanna River.

## Exhibit VIII.C.17.A

## Projections of estimated storm water discharge

Storm water discharge for the proposed Traditions Resort & Casino, in comparison to the existing conditions, has been modeled by Urda Engineering, PLLC. A complete Stormwater Pollution and Prevention Plan has been developed for the project site as required by Town of Union and the NYS Department of Environmental Conservation. Proposed flow rates are to be less than existing as required and are approximately:

1-year rainfall event 113 CFS

10-year rainfall event 483 CFS

100-year rainfall event 1027 CFS

## Assessment of feasibility of any plans to accommodate demand on site

Existing, offsite storm water will be diverted by drainage swales or avoided to the extent possible. Conveyance of the proposed storm water demand on site will be addressed on site by the addition of a new network of storm water piping, catch basins, manholes, and drainage swales. This network will convey the flows to detention and infiltration facilities on site. The initial increase in storm water runoff from the proposed increase in impervious surfaces is mitigated by use of an existing storm water detention pond with excess storage volume, subsurface infiltration and detention systems, dry swales, and use of permeable surfaces to promote infiltration. The resulting runoff rate from the proposed site is reduced from existing conditions, as is required by the Town of Union Town Code and the NYS Department of Environmental Conservation construction storm water permit.