

A. INTRODUCTION

This chapter addresses issues related to the water supply infrastructure serving the Project Site and provides an overview of existing conditions, future conditions without the Proposed Project, and potential impacts from the Proposed Project.

B. COMPREHENSIVE DEVELOPMENT PLAN (DGEIS)**EXISTING CONDITIONS***EXISTING WATER SUPPLY TO THE PROJECT SITE*

Based on the Hydrogeological Assessment¹ prepared by LBG Engineering Services, P.C in May 2012 and provided in Appendix F-3 of this DGEIS, a stratified-drift glacial deposit, known as a kame deposit, has been mapped along the Kiamesha Creek valley. Approximately 18% of the Project Site is underlain by kame deposits. Kame deposits consist of stratified layers of silt, sand, and/or gravel material. Stratified glacial deposits have potential for the development of high-yielding wells depending on the areal extent of the deposit, the saturated thickness of the deposit, and the predominant grain-size within the deposit (i.e., silt versus gravel). Based on information from the New York State Department of Environmental Conservation (NYSDEC) Unconsolidated Aquifers Map (2008), the yield potential for wells drilled in the kame deposit on the Project Site is between 10 to 100 gallons per minute (GPM).

The remaining area of the Project Site, approximately 82%, is covered by glacial till. Glacial till consists of non-sorted, non-stratified sediments deposited by glacial activity. Till is generally not suitable for public supply well development because, as a result of the unsorted character of the material, it does not transmit water in sufficient quantities to support a well. The thickness of the unconsolidated deposits (overburden) above bedrock is variable throughout the Project Site. Bedrock outcrops were observed on the northwest corner of the property, near the intersection of Concord Road and Kiamesha Lake Road and also along the access road from Chalet Road to the existing Chalet Pro Shop and near the temporary modular club house. In the absence of well or boring logs, the thickness of the overburden on the remaining areas of the property cannot be estimated. As future phases of the Proposed Project are developed, investigations will be conducted to assess subsurface conditions.

Based on the New York State Geological Survey, Bedrock Geology Map – Lower Hudson Sheet (1999), two sedimentary bedrock formations underlie the Project Site: the Lower Walton Formation on the eastern region of the Project Site, and the Upper Walton Formation to the west.

¹ LBG Engineering Services, P.C. “Hydrogeologic Assessment – EPT Concord Resort Property – Southeast Region, Town of Thompson, Sullivan County, NY”

The bedrock contact between the two formations runs generally southwest to northeast through the Kiamesha Creek valley in the central region of the Project Site. Both bedrock formations are sedimentary rock types containing layers of shale, sandstone, and conglomerate.

Based on information gathered from available records, three potable water supply systems located in the vicinity of the Project Site may potentially be available to the Proposed Project. They are: private on-site groundwater supply wells, the Village of Monticello Water Department, and the Kiamesha Artesian Spring Water Company (KASWC).

On-site Groundwater Supply Wells

Of the 31 existing groundwater wells located throughout the Project Site, two bedrock wells are currently operational, providing water to the Monster Golf Course Maintenance Building, Modular Building (which replaced the Monster Clubhouse), and the Pro Shop/Chalet Building. The two on-site wells are interconnected and are located to the west of Kiamesha Creek along Chalet Road. These wells are not currently metered.

The two existing wells (Well Nos. 1 and 2) were permitted with an average and maximum water demand of 0.045 million gallons (MG) per 30 days and 0.09 mg/30 days, respectively. Existing Well No.1 was drilled in 1975 in the upper Walton aquifer and has an approximate pump capacity of 80 GPM. Well No. 2 was drilled in 1999 in the sandstone and shale aquifer, and has an approximate pump capacity of 32 GPM. In 2006, PW-4 was drilled to a total depth of 505 feet in the upper Walton formation and produced a yield of 60 GPM.

As future phases of the Proposed Project are developed, the viability of drilling additional on-site water supply wells would be assessed. This effort would comply with all local, County, and State requirements for developing and testing potable water supply wells.

At present, no existing public water service mains are located within or adjacent to the Project Site. Further, there are no active fire hydrants or storage facilities supporting fire protection for these facilities.

Irrigation for the Monster Golf Course is provided from the on-site waterbodies adjacent to the golf course at a rate less than 100,000 gallons per day (GPD).

Village of Monticello Water Department

The Village of Monticello Water Department (Water Department) operates the water supply sources, conveyance, Water Treatment Plant (WTP), and distribution mains within and outside the Village boundary and serves a population of approximately 6,300 to 12,000 depending on seasonal demands. The source of the Village of Monticello's community water system includes Kiamesha Lake surface water (outside the Village limits) and three groundwater wells (commonly referred to as Well Nos. 1, 2, and 3) located at the south end of Park Avenue (inside the Village limits). Well Nos. 1 and 2 were installed in 1979 and have an approximate pump capacity of 225-230 GPM. In 2001, Well No. 3 was added to supplement the existing wells that have diminished in yield, and has an approximate pump capacity of 225 GPM (see **Table 8-1**). Water demand is primarily met through surface water intake on Kiamesha Lake with a permitted allowance of 60 million gallons per 30 days (or 2 million gallons per day (MGD)). The combined withdrawal from Well Nos. 1, 2, and 3 shall not exceed 27 MG/30 days (900,000 GPD) as limited by the NYSDEC water supply permit WSA 7036.

Table 8-1
Village of Monticello Water Department Wells

Well No.	Depth (feet)	Cased Depth/Casing Diameter (feet)	Pump Capacity (GPM)	Year Drilled
1	38	28-36	230	1979
2	39	31-38	225	1979
3	45	36-44	225	1997

Source: Docket No. D-2001-5-CP, Delaware River Basin Commission, December 18, 2001 (Appendix H-1)

The Village of Monticello Water Department's WTP is located at the southwest corner of Kiamesha Lake near the existing surface water intake. The WTP has a design capacity to pull and treat 2 MGD from Kiamesha Lake. This capacity, together with the daily allowable withdrawal of 900,000 GPD from the three wells, provides a total of 2.9 MGD. The actual daily use varies from an average of 1.1 MGD to a maximum of 2.3 MGD¹. Therefore, a surplus water supply of approximately 600,000 GPD exists.

Based on discussions with the Village of Monticello Water Department staff, the water distribution infrastructure within close proximity to the Project Site is:

- An existing 14-inch water main at the intersection of Concord Road and NYS Route 42.
- An existing 12-inch water main at East Broadway, south of NYS Route 17.

The 14-inch diameter water main exits the pump house facility from the Water Department WTP traveling south along Old Route 42 to its intersection with Concord Road. The water main is located to the west of the intersection of the Old Route 42 and Concord Road at which point the water main crosses under NYS Route 42 and continues on Lanahan Road. The water main then conveys potable water southerly to the Village of Monticello. At the intersection of Concord Road and NYS Route 42 the static water pressure is approximately 150 psi.

The 12-inch diameter water main is located in Plaza Drive south of Exit 106 of NYS Route 17. A hydrant flow test was conducted in April 2012 that indicated a static pressure of 135 psi and a residual pressure of 95 psi after flowing the hydrant at 1,300 GPM.

Kiamesha Artesian Spring Water Company (KASWC)

The Kiamesha Artesian Spring Water Company (KASWC) is a privately owned and operated water supply company. The sources of water supply for the KASWC are surface water intakes at Kiamesha Lake and two groundwater wells: one located at the Filtration Plant and the other located at Fraser Road. **Table 8-2** presents current permitted KASWC water sources.

Table 8-2
Kiamesha Artesian Spring Water Company Water Sources

Source	Depth (Feet)	Pump Capacity (GPM)	Year Drilled
Filtration Plant Well	110	90	Prior to 1900
Fraser Road Well	200	67	1988
Intake #1	---	Gravity	1955
Intake #2	---	Gravity	1985

Sources: Delaware River Basin Commission DOCKET NO. D-90-68 CP-3 included in Appendix H-2 and NYSDEC Permit No. WSA 8468-DEC-3-4846-00164/1-0.

¹ Delaware River Basin Commission Docket included in Appendix H-1.

The KASWC is permitted as a community water system, providing water to a population of 500. Water is conveyed to the KASWC Water Treatment Plant (KASWC WTP) located at the northeast corner of Kiamesha Lake, west of the old Concord Resort. The KASWC WTP can handle a maximum daily demand of 1.44 MGD.

During any 30-day period, the withdrawal from the Filtration Plant Well shall not exceed 3.888 MG, the withdrawal from the Fraser Road Well shall not exceed 2.894 MG, the combined withdrawal from Intake Nos. 1 and 2 shall not exceed 21 MG, and the total combined withdrawal from all sources shall not exceed 27.78 MG or 926,000 GPD.

According to the operator, the KASWC WTP has a daily supply capacity of approximately 926,000 GPD.¹ The current daily demand is approximately 60,000 GPD with a peak demand of approximately 200,000 GPD. As such the KASWC currently has excess capacity of 726,000 GPD.

Two water storage tanks providing storage of approximately 1,440,000 gallons are located between Kiamesha Lake Road and NYS Route 42 northeast of Kiamesha Lake. Currently, the nearest KASWC water main is located north of the Project Site, conveying water easterly along Kiamesha Lake Road. At the intersection of Kiamesha Lake Road and Chalet Road there is an existing 10-inch-diameter water main, which is reduced to a 6-inch-diameter water main to the east of the intersection continuing in Kiamesha Lake Road.

A pressure test was conducted on the existing hydrant located on Kiamesha Lake Road east of Chalet Road. The static pressure of the existing fire hydrant located near the Horse Riding Academy was 110 psi.

CURRENT REQUIREMENTS FOR WATER SUPPLY SYSTEMS WITHIN THE PRD

Per §250-27.2.B(4), of the Town of Thompson Zoning Code, “All uses of a PRD shall be served by central water and sewer systems. All water, sewer and gas lines and all other lines providing power and communications service shall be installed underground in the manner prescribed by the state and local agencies having jurisdiction.”

THE FUTURE WITHOUT THE PROPOSED ACTIONS AND PROPOSED PROJECT

Provision of water to the No Build projects located in the Town of Thompson and the Village of Monticello would be via the Village of Monticello Water Company, the KASWC, or from on-site wells on the respective project sites. No Build projects located in the Town of Fallsburg would be served by the Town of Fallsburg Consolidated Water District. The Lost Lake Resort in the Town of Forestburgh would be served by on-site wells. Demand and capacity requirements for the No Build projects would be determined through the SEQRA process for respective projects.

PROBABLE IMPACTS OF THE PROPOSED ACTIONS AND PROPOSED PROJECT

ANTICIPATED DEMAND FROM THE PROPOSED PROJECT

The anticipated water demand for all phases of the Proposed Project is approximately 960,000 GPD with water-saving fixtures. Water demand estimates by project phase is presented in **Table 8-3**. The anticipated water demand based on the proposed uses was calculated using NYSDEC Design Standards for Wastewater Treatment Works – 1988 except where noted.

¹ Meeting with Allan Schachnovsky; March 19, 2012.

**Table 8-3
Water Demand Calculations**

Project Phase	Water (Daily Demand)	Daily Demand with Water Saving Fixtures*
Phase 1 – Casino Resort A	228,719	201,586
Golf	21,800	17,440
Casino Resort B	32,750	26,200
Entertainment Village	118,408	95,991
Residential Village, Hospitality, and Recreation	433,830	391,864
Hospitality, Commercial, and Residential	283,500	226,800
Total	1,119,008	959,880
Note:	* 20 percent reduction, when applicable - in GPD	
Source:	AKRF Engineering, P.C.	

PROPOSED WATER CONVEYANCE SYSTEM TO SERVE THE ENTIRE PROJECT

While sufficient for the current demand of the golf course Chalet Pro Shop and Maintenance Building, the existing potable water supply on the Project Site is not sufficient to support the water supply demand for the Proposed Project. Therefore, a potable water infrastructure system would need to be designed and constructed, in phases, to provide adequate water supply for the respective development phases. The following water supply sources have been identified as possible sources that may be used for the Proposed Project. **Figure 8-1** presents the various supply options.

On-site Groundwater Water Supply Wells

The overall approach for each phase of the Proposed Project would be to design and construct a system of groundwater supply wells located within the vicinity of the particular phase of development.¹ Each proposed conceptual water system would consist of a well field, disinfection equipment, and water storage tanks capable of accommodating both domestic and fire protection water demand. From the water storage tanks, a looped water service distribution system would be established based on the program layout for each phase of development. Once multiple phases of development have been introduced, the different water systems would be consolidated through interconnection. Figure 8-1 presents the proposed well tank and water main locations throughout the Project Site.

Initial steps towards the development of the well fields and water distribution systems would involve coordination with the New York State Department of Health (NYSDOH) and the Town of Thompson to establish well site locations. Testing and development of the well field, treatment equipment, storage tanks and distribution system would be evaluated and completed. The public water supply system would be subject to the rules and regulations of NYSDEC, NYSDOH, Delaware River Basin Commission (DRBC), and the New York State Public Service Commission (NYSPSC).

Off-site Water Supply

As both the Village of Monticello Water Department and the KASWC have water supply infrastructure within close proximity to the Project Site, it may be possible to enter into a

¹ According to previous reports prepared by CA Rich Associates, the Project Site had the potential to pump enough well water to meet the requirements of the previously analyzed CALP development plan, which were estimated at 1.4 MGD. In addition, the DRBC had issued a docket permitting groundwater withdrawal for the CALP project (see Appendix H-4).

contractual agreement with one or both of these providers to meet the required potable water needs of the Project.

Village of Monticello Water Department

As previously noted, the Village of Monticello Water Department has a 600,000 GPD surplus of potable water supply, which is not sufficient to be the sole provider of potable water to the Project Site at full build out. Therefore, additional sources of water will be necessary to augment the water supply to support the 960,000 GPD water demand for the Project Site at full build out. Use of water from the Village's Water Department would require coordination with the Village to allow for water to be provided outside of the current water district. Additionally, new infrastructure will be required to convey water from the existing system to the various elements of the Proposed Project.

Kiamesha Artesian Spring Water Company (KASWC)

As previously stated, the KASWC has approximately 726,000 GPD of excess capacity. Therefore, the KASWC will also not be capable of being the sole provider of potable water for the Proposed Project. The KASWC system will need to be augmented with the design and construction of an additional groundwater supply well, or by increasing the water withdrawal rate from the Kiamesha Lake. The water storage tank and treatment facility will need to be upgraded to address the additional volume of water. Use of water from the KASWC will require coordination with the operator of the company to allow for water to be provided outside of the current area of service. A new conveyance system(s) will need to be designed and constructed to provide water from the KASWC to the various elements of the Proposed Project.

MITIGATION

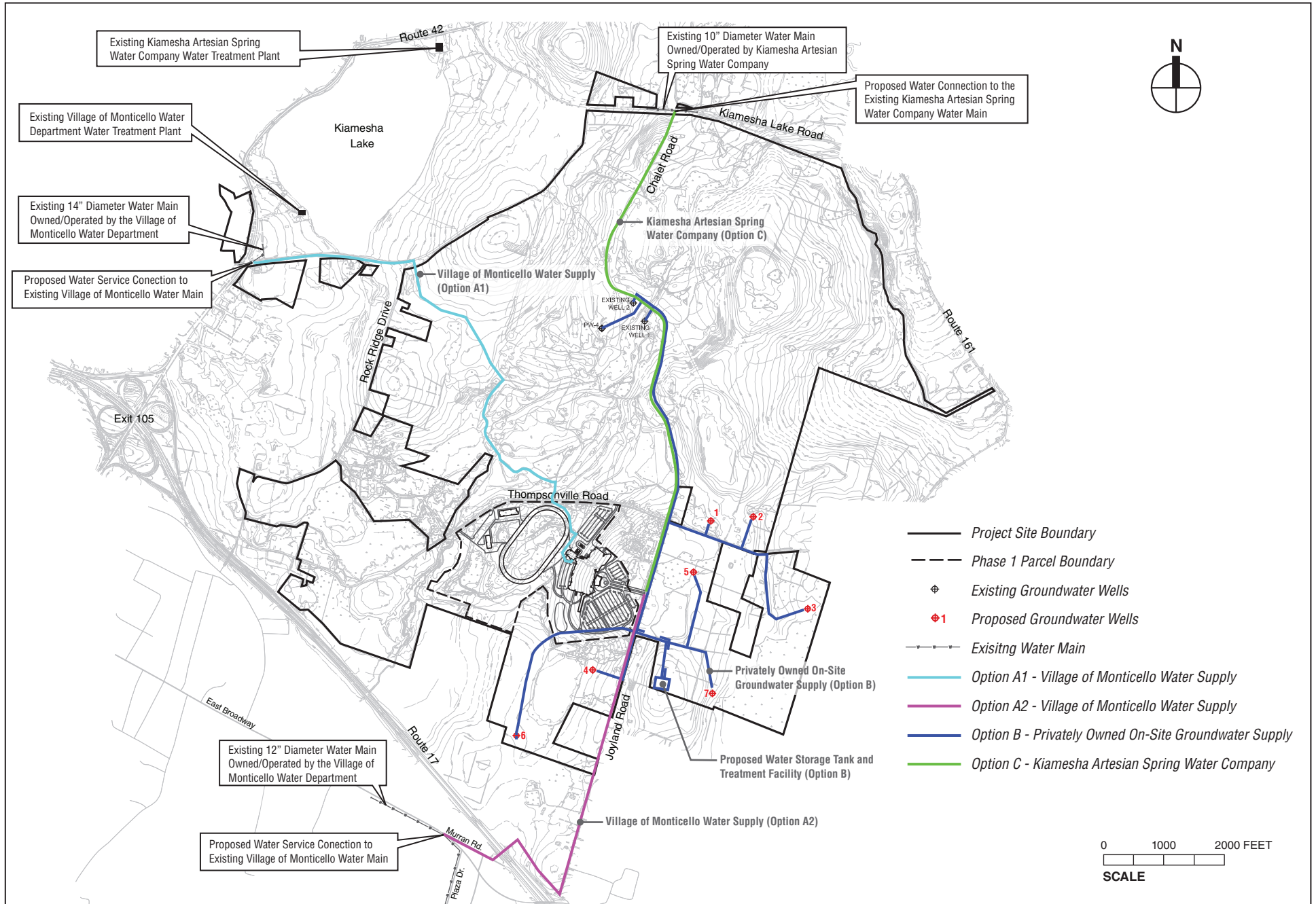
REQUIREMENTS OF LOCAL, STATE, AND REGIONAL REGULATIONS

All water infrastructure proposed by the Applicant will be designed and constructed in conformance with the Recommended Standards for Water Works - 2007 Edition and the NYSDOH Sanitary Code. As the water source(s) for future phases of the Proposed Project are determined, designs for supply, treatment, transmission, and distribution systems will be developed in conformance with all local, regional, and State regulations. The final design of the infrastructure will avoid and minimize, to the extent practicable, impacts on environmentally sensitive features, such as wetlands. Ultimately, the water supply systems for each development phase will be reviewed and approved by all agencies with jurisdiction over water supply in the vicinity of the Proposed Project.

Existing NYSDEC and DRBC permits may need to be modified to address the anticipated increased water withdrawal rates. The associated Drought Management Plan and Non-Point Source Pollution Control Plan (NPSPCP) would also need to be revised to adequately reflect the increase in the water withdrawal rate. NYSDOH permits for community water systems may also have to be modified to reflect the anticipated population served by the Proposed Project for each of the three supply options.

POTENTIAL IMPACTS THAT THE DEVELOPMENT OF THE PROPOSED WATER SYSTEM

According to previous reports prepared by CA Rich Associates, groundwater within the Project Site has the potential to produce enough water to meet the requirements of the previously analyzed 2006 CALP development plan, which was estimated at 1.4 MGD. Therefore, the



potential impacts associated with the increased water withdrawal from the KASWC or Village of Monticello Water Department could be mitigated through an interconnection to existing and proposed on-site wells. Groundwater withdrawals will be monitored to ensure that neighboring properties will not be affected.

C. SITE-SPECIFIC DEVELOPMENT OF PHASE 1 (DEIS)

EXISTING CONDITIONS

EXISTING ON-SITE AND PUBLIC OFF-SITE WATER SUPPLY INCLUDING CAPACITY FOR DOMESTIC, FIRE PROTECTION, AND IRRIGATION

At present, three potable water supply systems are located within the vicinity of the Project Site and may potentially be available to provide water to Phase 1 of the Proposed Project. These supplies are described in detail above.

On-site Groundwater Water Supply Wells

The current on-site well system, existing Well Nos. 1, 2, and 4, are permitted for 200,000 GPD withdrawal by the DRBC. These wells could potentially provide a portion of the required water amount for the Phase 1 development of the Project Site.

Village of Monticello Water Department

As previously mentioned, there is a 600,000 GPD surplus of potable water supply from the Village of Monticello Water Department. Therefore, the system has sufficient capacity to provide water for Phase 1 of the Proposed Project.

Kiamesha Artesian Spring Water Company

The KASWC has approximately 726,000 GPD of excess capacity and is therefore capable of providing water for Phase 1.

THE FUTURE WITHOUT THE DEVELOPMENT OF PHASE 1

In the future without the development of Phase 1, there will be no additional demand for potable water on the Phase 1 Site. The existing Monster Golf Course would continue to be maintained, operated, and used for golfing. There would not be any significant investment in the Project Site.

PROBABLE IMPACTS OF THE DEVELOPMENT OF PHASE 1

WATER SUPPLY REQUIREMENTS FOR PHASE 1

The anticipated water demand of Phase 1 is approximately 202,000 GPD with water-saving fixtures. This demand includes approximately 75,000 GPD that will be used to wet the harness horse racetrack. The finished surface of the track is crushed stone, which requires regular wetting to reduce dust. In addition to the 75,000 GPD required for track wetting, a 4,800 GPD water demand will be used for window washing of the premises.

The use of water at the Phase 1 Site in the volumes calculated is not expected to result in impacts to any of the potential water sources available to the Proposed Project.

PROPOSED CONVEYANCE SYSTEM AND RELATED INFRASTRUCTURE

The water distribution system within the Phase 1 Site will include a looped water main around the Casino Hotel continuing south under the harness horse racetrack, providing water service to the maintenance and paddock buildings. To satisfy fire code requirements if the on-site groundwater well supply option is used, a fire storage tank or booster pump may be located on Site. Preliminary sizing calculations indicate the need for a 60,000-gallon tank. The location of the tank is proposed in the lower level of the grandstand/showroom building. However, if analysis of the water system shows that adequate flow and pressure will be provided to the Phase 1 Site, on-site storage may not be necessary.

MITIGATION

The Phase 1 water supply demand can be met by at least one of, or any combination of, the options outlined in this chapter. Therefore, no potential impacts are anticipated as a result of the Phase 1 water supply demands.

PROVISION OF WATER TO PHASE 1

On-site Groundwater Water Supply Wells

The anticipated water supply is intended to be developed using on-site wells that will be drilled in support of Phase 1. Per NYSDOH requirements, twice the amount of supply is required to be produced from the wells with the highest yield well off-line. Therefore, it is anticipated that up to 10 wells could be required to produce the required yield to serve the Phase 1 Site. The water extracted from the proposed bedrock wells would be connected to an at-grade water storage tank. A treatment facility will be located at the water storage tank to ensure the well water complies with regulatory standards.

Preliminary test well locations have been submitted to NYSDOH and to the Town of Thompson. Permits have been secured from both entities. Locations are presented in “Proposed Well Test Sites – Southeast Section of Project Site – Existing Conditions” included in Appendix H-4.¹ Test well sites 1 through 4 have been selected for initial drilling. An access road will be constructed to the tank site which is proposed to be located at a high point on the east side of Joyland Road south of the existing lake. From the tank and treatment facility, water would be distributed to the Phase 1 Site via a main that would cross Joyland Road to the Phase 1 Site.

Once a test well drilling program has been completed to provide sufficient capacity to meet the water demand for Phase 1, a 72-hour pumping test program will need to be completed to confirm the stabilized yield of the wells. The testing program will include monitoring of existing on-site and off-site wells, if applicable, to determine potential interference under pumping conditions; monitoring of nearby surface water features to determine potential impacts; water quality sample collection for NYSDOH Sanitary Code Part 5, Subpart 5-1 parameters for public water supply wells; and collection of microscopic particulate analysis samples for wells located within 200 feet of a surface waterbody for an assessment of GWUDI (groundwater under the direct influence of surface water). The results of the pumping test, monitoring program, and water quality analyses will be used to support applications to NYSDEC, NYSDOH, and DRBC for approval of the proposed water supply.

¹ March 14, 2012, letter from LBG to Mr. Glen Illing: NYSDOH, included in Appendix H-5.

An application for ground and/or surface water withdrawal in the Delaware River Basin would be required because the projected daily average gross withdrawal from a single or group of wells exceeds 100,000 GPD. A preliminary groundwater withdrawal application has been submitted to the DRBC. As the test well study is completed, more information will be provided to DRBC to continue the permitting process. A Non-point Source Pollution Control Plan (NPSPCP) will be developed and submitted with the full groundwater withdrawal application. This plan would outline the method(s) utilized to protect water quality. The Stormwater Pollution Prevention Plan (SWPPP) that will be developed for NYSDEC General Permit for Construction Activities GP-0-10-001 may be sufficient for DRBC.

A NYSDEC Water Supply Permit will be obtained. Initial coordination with NYSDEC has taken place and a formal application would be submitted after certification of the DGEIS/DEIS. The NYSPSC will also be involved because it has jurisdiction over certain non-municipal water supply corporations. Engineering plans and specifications are also expected to be reviewed by the NYSPSC.

Village of Monticello Water Department

To connect the Village water supply to the Phase 1 Site, a Master Meter and backflow preventer would be installed downstream of the service tap. Figure 8-1 presents the location of the water distribution network option showing the connections to the Water Department water mains and the connection to the Phase 1 system.

If the Village of Monticello Water Department is utilized, CRBC will be consulted and all applicable DRBC requirements will be addressed. An NPSPCP, or SWPPP prepared in conformance with the NYSDEC SPDES General Permit No. 0-10-001, would be submitted to DRBC for review and approval. Additionally, a NYSDOH permit for water main extension and backflow preventer would be required for the proposed water infrastructure. NYSDOT and Town permits or easements will be required for the construction and operation of a private water main within publicly owned streets.

Kiamesha Artesian Spring Water Company

The use of KASWC as a water supply to Phase 1 will require a water distribution network connection to the existing KASWC water main located along Kiamesha Lake Road and the connection to the 10-inch-diameter water main at the intersection of Chalet Road and Kiamesha Lake Road (see Figure 8-1). A Master Meter and backflow preventer would be installed downstream of the connection point. The new water main would continue south along Chalet Road providing water to the Phase 1 Site.

If KASWC is utilized as an option, applicable DRBC requirements will be satisfied. The current system is permitted to serve a population of 500; therefore, it is expected that NYSDOH permits would need to be modified to reflect the anticipated population of Phase 1 if this supply option is utilized.

HYDROGEOLOGICAL ASSESSMENT

Additional detail including the hydrogeological assessment report is included in Appendix F-3. The hydrogeological assessment report documents the results of the study done on the Phase 1 Site to determine existing conditions related to subsurface geological and hydrological conditions. The report includes information on existing on-site wells and potential areas of concern related to the potential for contamination of groundwater. Recommendations for the locations of seven water supply wells that would be in conformance with State and local requirements are also included in this report. *

