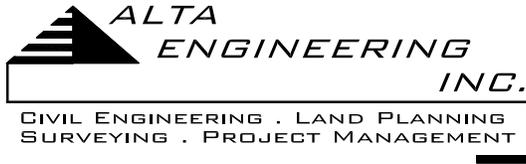


TREASURE

CONSTRUCTABILITY ASSESSMENT REPORT

June 26, 2017

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**RE: Treasure Project
Constructability Assessment**

This Report is an overview study of the constructability of the Treasure Project. The following planned construction methods and mitigation measures are outlined and support related activities defined.

- Excavation
 - Estimated Material Quantities
 - Excavated Material Management and Procedures
- Soils Management & Water Source Protection
 - Soils Protocol
 - Park City Municipal Corporation (PCMC) Water Sources
- Storm Water Management
 - Construction Phase
 - Post Construction
- Service Utilities
 - Existing Facilities
 - Anticipated PCMC Utility Improvements
 - Updated Services Provider Letters
- Construction Phase Activities
 - Employee Transportation
 - Materials Delivery
 - Overview of Construction Methodology
 - General Outline of Project Schedule


Rob McMahon, P.E.

SUMMARY

This report brings together items that are anticipated to be encountered in the construction phase of the Treasure Project. The scope of the following construction items are defined together with mitigation measures. It is expected that the following construction items and mitigation measures will be augmented and further defined in the final design and review processes related to building permit application(s).

The construction related items methodology and design have been defined and evaluated by professional consultants and references to supporting reports and documentation are provided.

PRE-DEVELOPMENT SITE

The existing geology and soil of the Treasure Site is characterized by a series of soil reports prepared for the Treasure Site and are assembled in the Historical Soils Reports (ref. 1) including a geologic reconnaissance study conducted on the subject property dated April 22, 1994, prepared by SHB Agra. The environmental assessment of the subject property is outlined in a comprehensive Phase 1 Environmental Site Assessment dated October 12, 2005, prepared by AGECE P.C. Project No. 1051008 (ref. 2).

The study area is comprised of approximately 63.9 acres vegetated with indigenous aspen, fir, oak, mountain maple and various scrubs and grasses. The site is primarily undeveloped other than the existing ski runs and lift traversing the property, bike & footpaths, and power & PCMC water utilities. There is evidence of prior mining activities and the existing old Silver King mine tram towers traverse the property. Elevation of the site ranges between 7,080 feet above mean sea level at the Northeast corner to 7,760 feet at the Southwest corner.

The site is geologically characterized as consisting of Permian Park City Formation consisting of pale grey weathered fossiliferous and cherty limestone containing a medial phosphatic shale member and Pennsylvanian Weber Quartzite consisting of pale gray tan weathered quartzite and limy sandstone with some inter bedded gray to white limestone and dolomite.

The majority of the excavation materials from the site are expected to be weathered quartzite and white limestone and dolomite. These materials are generally easy to process into compactable and workable fill material through the use of conventional earthmoving equipment.

EXCAVATION

In an effort to reduce the excavation impact of the Treasure Project and to improve efficiency, the project team has developed two refinements referred to as version 17.1 and version 17.2 respectively to the 2009 Treasure Conditional Use Plan packet. The first refinement, version 17.1, is partially the result of further analysis of the geologic structure of the excavation site that allows steeper cut slopes. These modifications to the “cliffscape” cut slopes reduce the disturbed area of the excavation and reduce the anticipated excavation quantities.

Other refinements contained in version 17.1 are shifting commercial and residential back to the Midstation Site at the request of the present PCMC staff and massing adjustments to address what has been previously stated by the Park City Planning Commission.

The second refinement, version 17.2, contains individual refinements to the overall plan and site that reduce and shift the footprint, reduce accessory space, resulting in further reduction of site disturbance and excavation limits and quantities. This plan refinement was developed in response to the comments from the Planning Staff and Planning Commission during the more recent Conditional Use Permit Application meetings taking place in 2016-2017.

Other refinements of version 17.2 include more efficient parking and underground driveways and redistributing building massing in order to achieve the density allowed by the Sweeney Master Plan.

The 2009 plan, refinement 17.1, and refinement 17.2 "neat line" quantities of total material to be excavated are listed below.

Estimated Material Quantities

The overall concept of the excavation operations is to manage and place the excavated materials principally on site and to a lesser extent on the adjacent Park City Mountain (Resort) property. The excess excavation material not used for the restoration of the building sites will be transported to material placement sites higher on the Sweeney Master Plan property and the adjacent Park City Mountain (Resort) property. Three primary material placement zones have been identified on exhibit E-2.0. The concept is to strip the existing topsoil and layback the soils in a berm that is then used in the revegetation and restoration operation. The three placement zones have capacity to accept the estimated excess excavated material that will be generated by the construction of the Treasure buildings including parking garages and landscape features. The purpose of managing the excavated material on site is to reduce construction related trips to and from the Project and thus significantly reduce the impact of the Project on surrounding neighborhoods and streets.

Volumetric analysis of the excavation required for the construction of the Treasure Project was performed and presented to the PCMC Planning Commission in 2008-2009 and is summarized in the Excavation Management Plan, December 15, 2008, prepared by Alta Engineering, (ref. 3). A topographic analysis of the above referenced excavation template with the existing topography was performed in 2016-2017 to verify and confirm the previous volumetric analysis. The estimated excavation quantities listed below are "neat line" template quantities and do not account for material "swell" or expansion. For placement operations and zone capacity a swell factor of 25% was used to estimate the expected quantity of material to be transported and placed in the material placement zones.

The site can be divided into four main excavation sites as shown on exhibits E-1.0 and E-1.1. Listed below are the estimated "neat line" quantities of total material to be excavated.

2009

Entry Level Site	Buildings 3A,3B3C, 4A	240,000 cy
Mid Level Site	Building 4B	270,000 cy
Upper Level Site	Buildings 5A,5B,5C,5D	275,000 cy
Mid Station Site	Buildings 1A,1B,1C	<u>175,000 cy</u>
	Estimated Total	960,000 cy

17.1 Refinement

Entry Level Site	Buildings 3A,3B3C, 4A	240,000 cy
Mid Level Site	Building 4B	270,000 cy
Upper Level Site	Buildings 5A,5B,5C,5D	252,000 cy
Mid Station Site	Buildings 1A,1B,1C	<u>143,000 cy</u>
	Estimated Total	905,000 cy

17.2 Refinement

Entry Level Site	Buildings 3A,3B3C, 4A	232,000 cy
Mid Level Site	Building 4B	265,000 cy
Upper Level Site	Buildings 5A,5B,5C,5D	236,000 cy
Mid Station Site	Buildings 1A,1B,1C	<u>135,500 cy</u>
	Estimated Total	868,500 cy

The four sites can be separate excavation operations or can operate concurrently. The initial phase will most likely be to establish the entry level site adjacent to Lowell and Empire Avenues. This site could then serve as the initial staging area and contain the erosion control and storm water structures necessary for the subsequent phases. This staging area will proactively implement landscaping, sound abatement, and other screening measures to mitigate the excavation impacts on the immediate surrounding neighborhoods. Each subsequent excavation operation can then follow different phasing schemes.

It is likely that lift and ski run improvements and the associated excavation will proceed concurrently. However it is conceivable that lift improvements may occur in advance of, or after other excavation operations. The critical item dictating the schedule of the lift improvements is that the lifts be operational with sufficient skiable terrain each ski season.

Three primary material placement zones are identified on exhibit E-2.0. The primary placement zone is the Creole Gulch which is supplemented with the Kings Crown and Payday placement zones. The grading of the excavated material is designed to improve the existing ski run system into the Old Town service area including improving the beginner/ intermediate experience. Listed below are the placement zones and the estimated capacities.

	<u>Area (Acres)</u>	<u>Capacity (CY)</u>
Creole Zone	16.0	1,040,500
Kings Crown Zone	6.0	117,500
Payday Zone	5.5	86,000

Excavated Material Management and Placement

Applied Geotechnical Engineering Consultants (AGEC), a regional geotechnical consulting firm headquartered in Salt Lake City, Utah, with extensive knowledge of the Treasure Site, has been involved in studying and defining parameters for the current refined Treasure CUP. AGECE has provided a technical review that outlines its confirmation of the viability of the submitted placement and excavation design. (ref. 4)

Robinson Construction Group LLC (Robinson), a large regional excavation and heavy civil construction company headquartered in Provo, Utah, was retained to study the current Treasure CUP application packet items pertaining to excavation and materials placement. Robinson has provided an opinion letter verifying the construction method feasibility and general construction time frame. (ref. 5)

A construction protocol for the excavation operations and materials placement with final geotechnical design will be followed with quality control measures incorporated into the construction process as further defined in the code defined building permit process. The protocol outlining the proposed final design grading and revegetation methods are anticipated to also be further defined in the code required building permit process.

SOIL MANAGEMENT & WATER SOURCE PROTECTION

Soil Management

The Treasure Project is not part of, nor does the Treasure Project intend to become part of the Park City Soil Overlay Zone. The above referenced comprehensive Phase 1 Environmental Site Assessment found “no evidence of recognized environmental conditions” except for four defined historic mine waste areas that contained significant concentrations of arsenic and lead. The above referenced report recommends a protocol of maintaining the soil onsite and capping it to comply with current regulations. The total quantity of the mine waste areas is estimated to be less than 3,500 CY. (ref. 6)

Accordingly, the concentrated material will be encapsulated if necessary, and buried on site in environmentally acceptable areas. The material placement will follow protocol standards of the EPA and State of Utah Department of Environmental Quality (DEQ).

Water Quality

Hansen Allen & Luce Consultants (Hansen), a regional Hydro-Geologic and Hydrology consulting firm headquartered in Salt Lake City, Utah, with prior knowledge of the PCMC Spiro water source, has been retained to study the hydrogeology and storm water hydrology of the Treasure Project. Hansen has provided a technical review that summarizes the evaluation of the hydrogeology of the excavation and material placement sites and concludes that construction of the Treasure Project does not pose a risk to the Park City water sources. (ref. 7)

STORM WATER MANAGEMENT

Storm water management is divided into the construction phase management and post construction operational management.

Construction Phase

It is expected that construction phase storm water management will entail the design of a construction storm water management plan and the procurement of a Storm Water Pollution Prevention Plan (SWPPP) permit for the entire project. The items to be employed will include a storm water detention facility with supportive erosion control fencing and channeling. The development of the construction storm water management plan together with the pollution control best management practices will be a coordinated effort between the Treasure general contractor and the Park City Building Department. It is anticipated that a comprehensive plan will be designed to include the entire construction operations of the Project and that the comprehensive plan will be put in place as part of the initial building permit to be issued for the below grade segment of the project.

Post Construction

The Post Construction Management will rely on a designed internal storm drain collection system that will be maintained by the master condominium management association. Onsite retention will be provided in accordance with the MS-4 requirements through the use of onsite surface features and augmented with subsurface holding structures where required. Onsite detention facilities will be designed to meet the

individual requirements of each of the components of the Project in the final design and building permit phase.

The internal collection system will utilize the existing municipal infrastructure in 8th Street for the outfall connection. The ongoing practices and design facilities of the post construction design will be in accordance and comply with the Park City Storm Water Master Plan and the State of Utah MS-4 Program.

SERVICE UTILITIES

Storm Sewer & Culinary Water Provider: Park City Municipal

The planned internal storm water collection system and planned outfall are shown on the Concept Utilities Plans exhibits E-4.0 and E-4.1. The Project detention system will be designed to keep the post development storm water outflow rates equal to the predevelopment outflow rates. These facilities will be engineered and designed as part of the final design process.

The water service and fire flow requirements of the Treasure Project were discussed with the Park City Public Works Department and it was determined that a 12” dedicated water main is required. Accordingly a 12” water main as per PCMC Public Works requirements will be installed in the Lowell right of way in a PCMC dedicated corridor concurrent with the Treasure Project Construction.

The Treasure Project acknowledges the financial responsibility of the required improvements to offsite infrastructure made necessary by the development of the Project.

Sanitary Sewer

Provider: Snyderville Basin Water Reclamation District (SBWRD)

The Concept Utilities Plan was submitted to SBWRD June 05, 2017, and a service provider letter was received on June 14, 2017. (ref. 8)

Telecommunications

Provider: fiber optics provider of choice

The Concept Utilities Plan was submitted to Comcast May 30, 2017, and a service provider letter was received May 30, 2017. (ref. 9)

Power

Provider: Rocky Mountain Power

The Concept Utilities Plan was submitted to Rocky Mountain Power May 30, 2017, and a service provider letter was received June 7, 2017. (ref. 10)

Natural Gas

Provider: Questar Inc.

The Concept Utilities Plan was submitted to Questar May 30, 2017, and a service provider letter was received May 31, 2017. (ref. 11)

Concept Alternative Energy Sources

Geothermal and solar systems will be considered during final design according to any applicable ordinances subject to maintaining exterior heat melting systems integral to the Fire Protection Plan and Project snow management.

CONSTRUCTION PHASE ACTIVITIES

Construction Impacts of Traffic, Environmental Quality, Noise

Big-D Construction Corporation (Big-D), a large regional, multi-disciplined construction company headquartered in Salt Lake City, Utah, was retained to study the Treasure CUP application and provide an outline of construction method feasibility, a general construction time frame, and to address proposed traffic management of construction personnel and construction material deliveries. Big-D made three presentations to the Planning Commission on January 26, 2005, January 11, 2006, and February 8, 2006 (ref. 12). The presentations provided an overview of the traffic reduction methods to be used such as offsite parking for construction personnel with planned shuttles to the job site and coordinated material delivery routes and managed hours of delivery. The presentations discussed environmental controls and the SWPPP compliance procedure. The mitigation measures to address construction phase noise, dust control, and public communications were discussed with an acknowledgement of sensitivity to the surrounding neighborhoods and the desire to buffer the construction impacts as much as possible.

Big-D has provided an updated opinion letter that reviews the current refined Treasure CUP with regard to the prior proposed management practices. The memorandum reaffirms and updates certain measures and approaches discussed in the previous presentations referenced above. (ref. 13)

Excavation of the site may require blasting as part of the construction process. When necessary due to hard rock conditions, blasting is a more efficient construction methodology with less environmental impact and disruption than the alternatives of hammer drilling or tedious ripping with large dozers/tractors or excavators. A presentation and a comprehensive report discussing the construction protocol, safety, and effects of blasting was presented to the Planning Commission on March 08, 2006, (ref. 14). The conclusion of the report is that blasting can be designed and managed to effectively aid in the excavation process with minimal impacts to the surrounding areas and neighborhoods. The included report's evaluations and conclusions, based on current industry standards remain a valid assessment of the blasting operations anticipated.

Construction Phasing

The initial excavation of the site will most likely be concentrated in the entry level site shown on Exhibit E-1.0. This zone will serve as the initial staging area that will contain the storm water management to be utilized throughout the construction phase.

The Treasure Project anticipates that a building permit will be issued for the below grade work either as an overall permit or a series of phase dependent permits. A subgrade permit would include the grading, excavation, material placement and the construction of the parking structure(s) that would then be pad ready for construction of the associated above grade structures. Permits can then be submitted sequentially or concurrently for construction of the subsequent above grade structures as appropriate.

During the initial phase of excavation and parking structure construction, the Town Lift(s) will operate each ski season and ski access into the Old Town Core area will remain a priority and will be maintained to the reasonable extent practicable with all presently functioning ski routes restored and new routes added as soon as possible as construction progresses.

Construction Staging

The overall concept of construction staging will be to expeditiously establish an initial staging area on site, then construct and move as much activity as possible into the parking structures as soon as possible. As construction progresses staging can move further into the property away from the adjacent neighborhoods. Early establishment of the initial staging area will serve for construction of the first section of the underground parking structure, most likely the parking structure under the Midtation site. This approach will bring almost all construction related activities immediately onsite. Berming, fencing, screening, and aggressive re-vegetation will be employed as noise and visual abatement measures. As staging moves further into the site, intervening landscaping to create a visual barrier will be completed.

Due to the requirement for ambulances to be able to be driven throughout the parking structures and fire trucks through portions of the parking structures, and the enhanced dimensions of the parking spaces and driveways, the parking structures and associated surface routes to the interior of the Project will serve particularly well for construction staging on site screened from the neighbors.

The overall construction schedule will be developed through a collaborative effort with the PCMC building department and will adhere to current Park City ordinances at the time of building permit application. Detailed mitigation measures will be defined and coordinated through the Building Department and will be incorporated in the construction mitigation plan submitted as part of the code required building permit process.

Summary of Construction Mitigation

Listed below are some key mitigation measures. The mitigation measures mentioned or referenced in this report will be part of a mitigation plan satisfactory to PCMC, fully developed, implemented, and monitored during all phases of construction.

Construction Traffic

- The enhanced road section on Lowell Avenue will be used for heavy loads.
- Significant offsite parking for employees and shuttles to the Project will be provided.
- Material deliveries will be coordinated and adhere to a traffic control plan and will be limited to favorable weather conditions on delivery routes.
- Excavated waste material will be placed onsite and the adjacent Park City Mountain to the greatest extent possible resulting in reduced construction haul traffic on access routes.
- Traffic Control meetings will be held regularly addressing employee parking, safety, and noise.
- A project website will be maintained to communicate schedules to neighbors as well as receive input from neighbors; the construction superintendent will be available to communicate directly with neighbors.

Environmental Impacts

- Fencing, screening, and berms will be installed and proactive re-vegetation will occur.
- Material deliveries will be coordinated and adhere to an agreed upon traffic control plan.
- Deliveries will be limited to favorable weather conditions on delivery routes.
- Noise levels will be limited in accordance with the Noise Ordinance at the time of building permit issuance.
- Construction work hours (and associated noise) will comply with Park City ordinances and, nonetheless, hours will be reduced and/or skeleton crews used during busy holidays periods and special events.

- Environmental protection (temporary erosion and sedimentation control facilities) will be installed in accordance with Best Management Practices.
- Fugitive dust control measures will be employed according to DEQ standards.
- If necessary, a wash station will be installed on site to decrease tracking of mud and dirt onto City streets; dirt and debris carried from the construction site on tires of vehicles to the street will be removed at the end of each working day.

Construction Schedule

- Construction will progress for each phase adhering to the principal of “time is of the essence” with no period of inactivity (except for special events, holidays, and necessary re-scheduling due to unforeseen circumstances such as inclement weather, and periods of inactivity between phases).
- A construction schedule will be submitted and approved by the City and updated periodically for each phase of the Project.
- Hours of Construction will comply with Ordinances in place at the time of building permit issuance.

Construction Staging

- Initial Construction Staging will be expeditiously established on site and internalized to the extent practical and as soon as possible inside the Project parking structures.
- Pro-active re-vegetation will be scheduled to occur as soon as practical and installed and maintained in accordance with the approved construction mitigation plan.
- Material placement and laydown will be carefully managed onsite.
- Staging will move further towards the interior of site as construction progresses.

EXHIBITS

- E 1.0 Refinement 17.1 Excavation Volumes
- E 1.1 Refinement 17.2 Excavation Volumes
- E 2.0 Material Placement Zones
- E 3.0 Vicinity Map & Ski Run Grading
- E 4.0 Refinement 17.1 Concept Utility Plan
- E 4.1 Refinement 17.2 Concept Utility Plan

APPENDIX

- Ref. 1 Historic Soils Studies: Rollins June 1977; Lund May 1979; SHB Agra; Project No. E 93-22-67 April 22, 1994
- Ref. 2 ESA AGECE P.C.; Project No. 1051008 October 12, 2005
- Ref. 3 EMP Alta Engineering Inc.; December 15, 2008
- Ref. 4 Applied Geotechnical Engineering Consultants: Project No. 1160503 May 17, 2017; Project No. 1030820 October 7, 2003; Project No. 1160503 September 8, 2016; Project No. 1160503 January 10, 2016
- Ref. 5 Robinson Construction Technical Letter; May 24, 2017
- Ref. 6 Quantities; Alliance Engineering Technical Letter; January 27, 2006
- Ref. 7 Hansen Allen & Luce Consultants; Project No. 344.150.100 May 25, 2017
- Ref. 8 Snyderville Basin Water Reclamation Service Provider Letter
- Ref. 9 Telecommunications Service Provider Letter
- Ref. 10 Rocky Mountain Power Service Provider Letter
- Ref. 11 Questar Gas Service Provider Letter
- Ref. 12 Big D Construction Presentations to Planning Commission:
January 26, 2005
January 11, 2006
February 8, 2006
- Ref. 13 Bid-D Construction Technical Letter; May 30, 2017
- Ref. 14 Blasting Analysis Report; March 05, 2006