



2610 ARROYO DRIVE
 DURANGO, CO 81301
 (970) 749-0336

January 29, 2016

La Plata County
 Planning Department
 1060 East 2nd Avenue
 Durango, CO 81301
 Attn: Daniel Murray

Re: GCC Energy Response to LSC – King II Coal Mine Technical Memorandum dated January 15, 2016

Dear Daniel;

I have reviewed the above referenced document and provide the following comment(s). The core of LSA’s technical summary was presented in tabular form: Tables 1 – 4. For ease of review, I have restated each of the Tables with LSA comments and corresponding response and GCC Energy action.

TABLE 1
Ultimate CR 120 Improvements

LSC Comment	GCC - Action	GCC - Additional Comment
Construct a 24-foot-wide (minimum) paved, upgraded roadway from Highway 140 to the mine.	Agreed	Per La Plata County Code Sec. 74-91
Utilize four-foot gravel shoulders and county standard ditch sections.	Agreed (MP 0.0 to approx MP 1.7) – Collector Road Classification, La Plata County Code: Sec 74-91	3.0ft gravel shoulders (approx MP 1.7 – MP 6.5) – Local Road Classification, La Plata County Code: Sec 74-91
Include wider paved cross sections through sharp horizontal curves to allow for the rear wheel tracking of the large coal transport trucks. (Use standards in AASHTO pages 202-215.)	Agreed	Will be reflected on Preliminary Plan set
Complete CDOT turn lane improvements at Highway 140 and CR 120 (N).	Agreed	Scheduled for construction Yr 2016
Meet minimum curve radius standards and sight distance standards for the proposed 35-mph design speed.	Agreed	Design constraints may require limited application of reduced design speed. Roadway to be signed accordingly.



2610 ARROYO DRIVE
 DURANGO, CO 81301
 (970) 749-0336

Continuation of Table 1 - Ultimate CR 120 Improvements

LSC Comment	GCC - Action	GCC - Additional Comment
<p>Prepare a design alternative for evaluation/comparison using a maximum six percent superelevation rate. Given the proposed tight minimum curve radii (generally 314 feet), the lower speed nature of this roadway, and the snowy climate, LSC believes a maximum six percent superelevation will reduce the potential for vehicles sliding horizontally to the inside of what are currently designed as eight-percent-superelevated curves at low speeds (or stopped) on snow/ice.</p>	<p>Agreed – Assessment of 6° superelevation as part of Preliminary Design development</p>	<p>CR 120N is aligned on north side of gulch with predominate southern facing regions. Road location benefits from sun exposure. Final alignment will balance existing conditions of challenging topography and minimizing impacts to adjacent agriculture/improved parcels.</p>
<p>Meet required pavement structure to accommodate to 20-year vehicle loading.</p>	<p>Agreed</p>	<p>Pavement structure will be based on site specific geotech information</p>
<p>Incorporate into the next stage of the design plans safety signage (advance warning signs and curve chevrons) at sharp curve near “the barn” (station 199+50) as it is sharp, substandard, and at the end of a straight section.</p>	<p>Agreed</p>	<p>Preliminary plans sheets to reflect preliminary signage and striping plans</p>
<p>The plans should meet the requirements of the AASHTO <i>Roadside Design Guide</i> and may need to include guardrail sections.</p>	<p>Agreed</p>	<p>Guardrail currently reflected within Conceptual plan set</p>
<p>LSC recommends the use of yellow centerline striping and white edge striping per MUTCD (as is currently being used on the paved section of CR 120 (N)) for the entire upgraded roadway section.</p>	<p>Agreed</p>	<p>Will be reflected on signing and striping plans</p>



2610 ARROYO DRIVE
 DURANGO, CO 81301
 (970) 749-0336

Continuation of Table 1 - Ultimate CR 120 Improvements

LSC Comment	GCC - Action	GCC - Additional Comment
<p>The county will likely evaluate the speed limit(s) appropriate for passenger vehicles on the upgraded roadway segments once the roadway is completed and operational.</p> <p>Similar to the current dual speed limits on CR 120, the county should implement a dual speed limit on the upgraded road if found to be safe and operationally sound as part of a traffic engineering speed study. The large trucks traveling at a reduced speed will have a reduced impact on the adjacent properties.</p>	<p>Agreed to dual signing</p>	<p>CR 120N currently dual posted to include truck specific signing</p>

TABLE 2
Interim Mitigation Measures

LSC Comment	GCC - Action	GCC - Additional Comment
<p>Reduce coal transport truck volumes on CR 120 (N) to 2010 levels. This would be a six-day, average daily coal transport truck volume of about 110 vehicles per day (55 westbound and 55 eastbound). The reduction to 2010 levels would likely result in a volume of about 400 to 500 vehicles per day on the gravel section.</p>	<p>Rejected</p>	<p>Truck volumes and construction phasing will be a component of CL II permit approval. Conditions of approval will address trucking operations. Truck volumes expected to balance roadway conditions and GCC contractual obligations.</p> <p>Roadway structure of gravel and/or asphalt to be based on ESAL loading.</p>



2610 ARROYO DRIVE
 DURANGO, CO 81301
 (970) 749-0336

Continuation of Table 2 - Interim Mitigation Measures:

LSC Comment	GCC - Action	GCC - Additional Comment
<p>Add interim vehicle detection and actuated warning system with flashing yellow beacons on the eastbound and westbound approaches to “the barn” curves. These would be in addition to the existing curve warning signs. Motorists approaching these series of curves would see a new yellow advance warning sign indicating “Be prepared to stop” with a supplemental panel “when flashing.” Two flashing beacons would be mounted on the sign post. These flashing beacons would be activated by a vehicle detection system when a vehicle is approaching from the opposite direction.</p>	<p>Agreed</p>	<p>Applicable vehicle detection system to be assessed, evaluated, installed and operational Year 2016</p>
<p>Trim vegetation and report the measured sight distance after trimming compared to before trimming and indicate if the removal of vegetation brought the sight distance up to standard. Some vegetation removal may not result in significant line-of-sight improvement.</p>	<p>Agreed</p>	<p>Completed in Year 2015. Scope of vegetation clearing developed through joint survey by La Plata County and GCC Energy parties. Improved roadway sight distance requirements will be a component of constructed roadway improvements</p>
<p>Complete any minor widening on the inside (or outside) of substandard curves where practical and where existing right-of-way allows. The purpose would be to provide any beneficial additional width to minimize encroachment of truck turning paths into the opposing traffic lane.</p>	<p>Agreed</p>	<p>Limited widening will be completed based on locations agreed to by County and GCC. Batching operation of haul trucks will improvement operations of CR 120N. Trucks will not meet on CR 120N, but will meet at the terminus points (Mine, Staging Area).</p>



2610 ARROYO DRIVE
 DURANGO, CO 81301
 (970) 749-0336

Continuation of Table 2 - Interim Mitigation Measures:

LSC Comment	GCC - Action	GCC - Additional Comment
Other interim mitigation measures committed to by GCC.	Agreed	<ul style="list-style-type: none"> • Visual wall at McCue and Hunzeker parcels. • Batching of truck transports. • Trucking hours of operation M-F, 0600-2200, Sat, 0600-1400, Sun off • Asphalt Paving of CR 120N in front of McCue and Hunzeker parcels. • Reduced truck speeds as posted. Also, operations include 10-mph limit adjacent to McCue and Hunzeker parcels • Suspension of trucking during snow conditions. • Designated truck chaining location clear of CR 120N roadway.
Items included in Table 3 - Hay Gulch Citizen’s Advisory Panel Recommendations.	Limited Agreement	With truck batching, haul truck operations: M-F 6:00AM to 10:00PM, Sat 6:00AM to 2:00PM, Sun Off Truck volumes and construction phasing as agreed within CL II Conditions of Approval.
One-Way Coal-Transport Truck Route Option - The option of routing coal-hauling trucks to arrive using CR 120 (N) and depart from the mine to the south is worthy of further consideration in our opinion, both as an interim mitigation measure for CR 120 (N) and as a potential ultimate solution. Please refer to the section titled “One- Way Coal-Transport Truck Route Option” later in this report.	Rejected	Previous assessment complete. Route primarily selected based on reduced environmental impacts, residential density, and number of intersecting county roadways & driveways (safety). Trucking operations per CL II Permit and Roadway Improvement Agreement (RIA).



2610 ARROYO DRIVE
 DURANGO, CO 81301
 (970) 749-0336

TABLE 3
Hay Gulch Citizen’s Advisory Panel Recommendations
(with LSC comments added)

LSC Comment	GCC - Action	GCC - Additional Comment
<p><i>Effective immediately GCC Energy shall reduce impacts to CR 120N by decreasing the number of coal haul truck using 120N to 2010 levels until improvements to CR 120N have been completed.</i> LSC concurs with this recommendation. The current roadway is substandard and not adequate to safely and efficiently accommodate the current level of truck traffic. This traffic volume reduction should be accompanied by the interim mitigation measures contained in Table 1.</p>	<p>Rejected</p>	<p>Truck batching operations will limit truck platoons groups to volumes of zero to eleven trucks. Truck operations and construction phasing as agreed within CL II Conditions of Approval.</p>
<p><i>Effective immediately coal haul trucks will cease operations on CR 120 from 10 pm - 6am Mon. - Sat. and from 10pm Sat. until 6am Mon. for the life of the coal mine.</i> LSC concurs with this recommendation.</p>	<p>Agreed – though qualified</p>	<p>With truck batching, haul truck operations M-F: 0600-2200 Sat: 0600-1400 Sun: off</p>



2610 ARROYO DRIVE
 DURANGO, CO 81301
 (970) 749-0336

Continuation of Table 3 - Hay Gulch Citizen’s Advisory Panel Recommendations (with LSC comments added):

LSC Comment	GCC - Action	GCC - Additional Comment
<p><i>If/when the number of coal haul trucks exceeds 144 per day, a separate coal haul road shall be installed and maintained at GCC Energy's expense. The haul road must address our desire to alleviate the negative impacts associated with the coal haul trucks.</i></p> <p>It is our understanding that a detailed and comprehensive analysis of a dedicated haul road option has not been completed. Although such an analysis was not part of our scope-of-work (should be the responsibility of the applicant anyway), LSC recommends further consideration, evaluation, and comparison to the 120 (N) only and one-way truck transport options.</p>	<p>Rejected</p>	<p>GCC completed an assessment of various haul route options to include a separate coal haul road. Based on factors such as physical, agricultural, environmental constraints along with desires of property owner GCC will advance the construction improvements to CR 120N. No separate haul road is advanced at this time.</p>
<p><i>As a contingency to approval of the Class II Land Use permit the applicant shall immediately begin the upgrades and improvements, including replacing culverts, to CR 120N in compliance with current design and construction standards to ensure the safety of residents as well as drivers. This includes widening and paving CR 120N from the mine entrance to SH 140. All upgrades shall be complete no later than Jan.1, 2017 at the applicant's expense.</i></p> <p>LSC agrees, however the design process and right-of-way acquisition process both take time to accomplish. GCC should make every reasonable effort to meet the above schedule and be held accountable. Until the roadway improvements are completed, LSC recommends interim measures contained in Table 2 and a road improvement agreement should be in place.</p>	<p>Agreed – though qualified</p>	<p>GCC to comply with Roadway Improvement Agreement (RIA)</p>



2610 ARROYO DRIVE
 DURANGO, CO 81301
 (970) 749-0336

Continuation of Table 3 - Hay Gulch Citizen’s Advisory Panel Recommendations (with LSC comments added):

LSC Comment	GCC - Action	GCC - Additional Comment
<p><i>LPC officials establish a 25 MPH speed limit for trucks having a GVW of greater than 20,000 pounds, on gravel and leaving the mine loaded with coal and 35 MPH for all other traffic using CR 120. Additionally, GPS monitoring and increased speed enforcement should be required.</i></p> <p>The speed limits have been changed.</p>	Agreed	Roadway speed limit signing has been incorporated.

TABLE 4
Roadway Improvement Agreement

LSC Comment	GCC - Action	GCC - Additional Comment
<p>Prior to class II approval: Provide complete preliminary design for two to three of the most challenging sections of CR 120 (with respect to the terrain and where additional right-of-way will likely be needed). The designs should show:</p>	Qualified response	<p>Initial design assessment; although some segments are topographically challenging, the roadway can be built as reflected within Conceptual plans. Final alignment and constructed roadway to balance physical, agricultural, environmental constraints along with desires of property owner. Roadway Design plan sets will be provided as outlined in Class II Conditions of Approval and Roadway Improvement Agreement</p>



2610 ARROYO DRIVE
 DURANGO, CO 81301
 (970) 749-0336

Continuation of Table 4 – Roadway Improvement Agreement

LSC Comment	GCC - Action	GCC - Additional Comment
Extent of Improvements required relative to the current and proposed right-of-way. A detailed grading plan including necessary drainage improvements, impacts to steep slopes including lines showing the extent of grading. It would also be helpful to show elements needed per the AASHTO <i>Roadside Design Guide</i> . The plans may also need to include slope stability analysis and a preliminary erosion control plan.	Qualified response	As part of Preliminary Design plan set
Incorporate into the plans additional paved width beyond 24 feet around sharp curves to accommodate large trucks. (Per standards in AASHTO pages 202-215).	Qualified response	As part of Preliminary Design plan set
Identifying estimated approximate quantities of cut and fill required would also provide a general idea of the number of additional truck trips needed for import or export. These would also be part of the roadway traffic volume and would impact the area residents during the construction period.	Qualified response	As part of Preliminary Design plan set
Include construction phasing and a traffic management plan.	Qualified response	As part of Preliminary Design plan set
Demonstrate that necessary right-of-way can be obtained for construction of the upgraded roadway	Qualified response	As part of Preliminary Design plan set
Agree to construct the upgraded roadway. (Table 1 presents LSC recommendations.)	Qualified response	As part of Preliminary Design plan set
Agree to the recommendations of the Hay Gulch Advisory Committee in Table 3.	Qualified responses	As noted within Table 3



2610 ARROYO DRIVE
 DURANGO, CO 81301
 (970) 749-0336

Continuation of Table 4 – Roadway Improvement Agreement

LSC Comment	GCC - Action	GCC - Additional Comment
La Plata County items from the September 2015 Staff Report: 1. Timing and process for development of final road construction plan; 2. Right-of-way acquisition process and timing; 3. Start and completions dates for all phases of construction; 4. Interim mitigation measure to be implemented between project approval and completion of road construction; 5. Interim mitigation fees to cover maintenance of gravel road until improvements are complete; and 6. Long-term mitigation fee to cover future road maintenance.	Agreed	As part of Roadway Improvement Agreement (RIA)

The listed tables reflect a summary of LSC’s technical evaluation of trucking operations on CR 120N. Response to each of LSA’s comments is provided with corresponding action.

Respectfully submitted,

Mike Olson P.E.

Cc: Jim Davis PE (La Plata County)
 Gina Nance (GCC Energy LLC)
 Trent Peterson (GCC Energy LLC)
 Brian Kimmel (Southwest Land Services)