

7.0 ALTERNATIVES

7.1 *Alternative Mining Plan*

The mining plan has been formulated to extract the strata containing the desired high-friction rocks and to protect quality and quantity of water in the drop cut. Factors considered in the design of the proposed mining plan included:

Rate of Extraction – The projected rate of extraction is based on the history of demand from government and private customers. The actual rate is adjusted daily during the mining season to meet the current rate of demand.

The rate of extraction may affect noise and dust levels; mitigation measures will limit the impacts of the noise and dust generated by the operation, as discussed in Section 5.0. Traffic levels are also a function of sales; an increased number of truckloads are needed to satisfy an increased regional demand for aggregate. This demand will be met from available sources of aggregate, whether the expansion of the Colarusso Quarry is permitted or not. Limiting production of one quarry because of some perceived impact on traffic will not necessarily decrease the number of trucks hauling aggregate in the region. A regulated limit of a mining rate below projected demand may create a shortage of stone for highway projects or force customers to import aggregate from more distant, foreign-owned mines.

Location – The location of the excavation area within the property is dictated by the location of the New Scotland and Kalkberg Formations, which are approved as sources of high-friction aggregate by the NYSDOT. It is also located to avoid the quarry drop cut containing the City of Hudson emergency water supply.

Placement of the excavation area elsewhere on the property may exclude the target strata and/or require removal of excess amounts of overburden materials. Therefore the mine cannot be relocated to other portions of the property where these formations are not readily available.

Size – The overall size of the mine is limited by the distribution of the target strata and proximity to the reservoir. A larger mine would extend into areas that either contain non-target materials or impinge on the emergency water supply. Alternatively, a smaller mine would limit the life of the operation and leave needed rock in the ground. Most of the identified impacts are not size-sensitive, therefore, reducing the size of the mine will not reduce impacts.

Phasing – The 122-acre excavation area will be mined in 5 phases to insure concurrent and timely reclamation; reclamation will be completed of all but 5 acres of the active

phase before mining extends into the subsequent phase. The haul road and drainage ditch will remain within the reclaimed phases.

The 24-acre average size of the phases will allow for safe drilling, blasting, and extraction operations. It will also allow proper design of the explosives program to accommodate the geologic grain of the site. Subdivision of the excavation into more and smaller phases would restrict the ability of the operator to provide a safe work environment and the flexibility to alter the explosives design as needed to efficiently remove the rock.

Method – Aggregate mining operations generally use similar methods around the world. The technology for drilling and blasting, loading and hauling, and processing is well known and mature. Underground aggregate mining is the primary alternative to traditional methods.

Surface mining extracts all rock within an excavation area; underground mining leaves a layer of rock overhead and supporting pillars. Underground mining is generally only feasible in areas of deep, high-value mineral deposits. Only one underground aggregate mine is operating in eastern New York. The Peckham Wingdale mine produces a high-value byproduct (garnet) and proposes to use the cavern for the disposal of ash. Surface mining is generally used to extract aggregate reserves located in shallow positions, as it is less expensive and safer than underground mining.

The plan has incorporated the recommended measures to protect the City of Hudson emergency water supply. All significant adverse impacts have been mitigated to the maximum extent practicable; therefore, an alternative plan would not necessarily reduce impacts further.

7.2 Alternative Site

The company does not have an alternative site available for the production of aggregate suitable for high-friction aggregate. Becraft Mountain contains the only known reserves of NYSDOT-approvable high-friction aggregate in Columbia County. The only other location of such stone in the County (Mt. Ida northeast of Hudson) has been depleted of its reserves. St. Lawrence Cement controls most of the remainder of the reserves on Becraft Mountain, outside of property owned by Colarusso or by the City of Hudson. The future availability to ACS of its essential raw material from the St. Lawrence property is unknown, as exemplified by the history of the relationship over the past 20+ years (see Section 4.4). ACS is pursuing the expansion onto the City of Hudson property as a long-term source of needed stone for this reason.

Other sites in the region, containing NYSDOT-approvable high-friction aggregate resources, are likely to require development of a greenfield site outside of the County. Such sites are extremely difficult to get permitted in today's political and regulatory environment.

7.3 Alternative Land Uses

The Town of Greenport has no zoning regulations so, theoretically, there are no regulatory restrictions on future uses of the property. Alternative uses for the property can be characterized as:

- public uses (active or passive)
- agriculture
- residential
- commercial/industrial

7.3.1 Active Public Uses

The development of active public uses require the construction of facilities and supporting infrastructure and the modification of the site to accommodate those uses. Common active public uses can include: landfills, highway garages, salt storage, sewer plants, and sports fields. The existing emergency water supply could be considered a minimally-active use, in that it requires the maintenance of the pipeline and access road to the reservoir. In addition, changes in water levels resulting from the use may impact other uses.

Geology – the shallow depth to bedrock is a significant limitation to construction on the property, according to the Columbia County Soil Survey (USDA, 1989). Infrastructure installation would likely require expensive rock removal techniques.

Water Resources – active public uses, such as highway garages and sewer treatment plants, can affect water quantity and quality. Water quality can be impacted through the discharge of pollutants, such as petroleum products. Water quantity can be impacted by direct withdrawals, increases or decreases in the recharge rate, or alteration of discharge rates. The potential impact on water resources and the emergency water supply is dependent on the specific proposed land use.

Air Resources – impacts on air resources are dependent on the type of active land use. Gaseous emissions from highway garages, for example, may increase due to the intense, ongoing use of diesel-engine powered equipment or from a waste to energy plant. Fugitive dust may be produced from traffic on unpaved roads and from wind

erosion of unprotected material stockpiles. The potential impact on air resources is dependent on the specific proposed land use.

Noise – active public land uses may produce lower noise levels at the source than mining operations. However, the public land uses may not include the buffers proposed as part of the mine. Hence, sources may be located closer to nearby receptors. Any land use requiring a permit under 6NYCRR Part 360 would be subject to the noise limits set by Part 360.1. Potential noise impacts are dependent on the specific proposed land use and mitigation measures.

Blasting – active public land uses may require blasting of the bedrock during the construction phase. However, it is unlikely that ongoing blasting would be required.

Traffic – active public land uses may generate significant traffic levels. A highway garage, for example, would include trips by employee-owned vehicles and municipal-owned trucks. Construction of an improved access road would be required, which would increase the traffic volume on the accessed highway. Newman Road is posted with a weight limit south of the quarry entrance, so it is likely that a new entrance would access Spook Rock Road or Route 23B. The potential impact on traffic is dependent on the specific proposed land use and the roadway accessed.

Visual – active public land uses, by definition, require the construction of facilities and infrastructure. The relatively high topographic position of the property, near the edge of Becraft Mountain, suggests that buildings or other structures may be visible from off-site locations. The potential visual impact is dependent on the specific proposed land use and mitigation measures.

Community Goals – The property, although owned by the City of Hudson, is located within the Town of Greenport. The goal of the City, as expressed in the lease option, is to use at least a portion of the property for mining and to derive revenue from the operation. The Town is unzoned, indicating that it has no specific goals for the property.

Community Services – active public uses would require community services, such as fire and police protection. Driveways and parking lots would require maintenance; solid waste removal may be required. The potential demand for community services is dependent on the specific proposed land use.

7.3.2 Passive Public Uses

The use of the property for passive recreational purposes would not require significant changes to the site or the construction of infrastructure. Such uses could include hiking,

picnicking, bird watching, and similar activities. The potential exists to create a passive recreation park on the property. However, opening up the property to public use create risks from the high cliffs and flooded part of the quarry.

Geology – passive uses would not require removal of bedrock. Soil erosion on steep slopes would have to be controlled.

Water Resources – passive uses would generally have little impact on the water resources of the property. Fishing in the reservoir may be permitted, without the use of outboard motors. On the other hand, the City may decide to exclude access to the water body as part of its Homeland Security and Disaster Preparedness program.

Air Resources – passive uses would have little affect on the air resources of the region. Smoke from campfires may be a minor source of particulate matter.

Noise – passive uses would generally not include significant noise sources. Motorized vehicles, such as ATV's and snowmobiles, may create noise conflicts with other passive users of the property.

Blasting – passive land uses may require minor blasting to establish access to the property. However, this would be of short duration.

Traffic – use of passive recreation areas is generally highest on weekends and holidays during periods of good weather. One or more access points to public highways would be required. Traffic levels would be expected to be highest at these times. The potential impact on traffic is dependent on the specific proposed land use and the roadway accessed.

Visual – the property could be used for passive purposes with little impact on the visual resources of the area.

Community Goals – the property is located within the Town of Greenport; it is unclear if the taxpayers of the City of Hudson would be willing to expend funds to create a park outside of its boundaries. In addition, the City would forgo the revenues generated by the mining operation.

Community Services – passive recreation areas require police patrols, fire protection, and EMT services. Trails, parking areas, and toilet facilities require maintenance; trash cleanup and removal is generally needed.

7.3.3 Agriculture

Farming in the region includes cropping and livestock raising on lands that are generally level to gently sloping, with deep, well-drained soils. According to the Columbia County

Soil Survey (USDA, 1989), “the soils on the property are not suited to cultivated crops because of the depth to bedrock, the rock outcrops, the slopes, and droughtiness. The slope and rock outcrops hinder tillage, and crop yields are low because of droughtiness. The soil is poorly suited to hay and pastures”. Therefore, farming is not considered to be a viable alternative land use.

7.3.4 Residential Development

Building of houses requires significant site preparation and the construction of supporting infrastructure. Significant land resources are currently available for residential uses; however, increasing housing pressures in the region may make residential development feasible on marginal lands, such as the subject site.

Geology – According to the Columbia County Soil Survey (USDA, 1989), “the depth to bedrock is the main limitation of this soil as a site for dwellings with basements. The bedrock is hard limestone and generally is not easily ripped. Building above the bedrock and landscaping with fill will help to overcome the bedrock”. In addition, the installation of infrastructure is problematic as “the depth to bedrock is also a limitation on the soil as a site for local roads and streets and for septic tank absorption fields”. It may be feasible to build a few expensive homes on large lots, as the development costs could be factored into the overall construction costs.

Water Resources – the development of a residential subdivision, even if feasible, may severely impact the water quality and quantity of the emergency water supply. The use of individual wells may draw down the water table, especially during times of drought, when the emergency supply is needed. Seepage from sanitary disposal systems, fertilizers and pesticides from lawns, and salt-laden snowmelt could reduce the water quality in the reservoir.

Air Resources – impacts on regional air resources derive from the associated use of heating appliances and automobiles. The magnitude of the impact is directly proportional to the number of dwelling units constructed.

Noise – sources associated with residential development include construction activities (such as land clearing and framing) and post-construction activities (such as traffic and lawn mowing). The magnitude of the noise impact is directly proportional to the number and size of the dwelling units constructed.

Blasting – rock removal would be required to create basement excavations, roads, and infrastructure installation. Blasting would be limited to the construction phase of development.

Traffic – access points would have to be established to accommodate a residential development. These points would likely access Spook Rock Road and Newman Road. The volume of traffic would be a function of the number and size of the dwelling units in the development.

Visual – significant land clearing may be required to allow development of the property. This may increase the visibility of the homes from off-site locations.

Community Goals – development of housing on the subject property would not benefit the City of Hudson. The City would derive no tax revenues from the property, as it is outside of the City limits.

Community Services – residents on the property would require the full suite of community services (such as fire, police, ambulance, recreational, solid waste). A residential development would increase the burden on the local school district, unless age restrictions are placed on the residents. Numerous studies have demonstrated that property taxes from residential developments do not cover all of the costs of supplying the required services. Therefore, the taxpayers of the Town of Greenport would have to subsidize the services needed by residents of the property now owned by the City of Hudson.

7.3.5 Commercial/Industrial Development

The designated “support areas” may have a potential for commercial or industrial development. These are located in the northeast part of the property, at the intersection of Route 23 and Spook Rock Road, and in the southwest corner, on Newman Road. The areas of potential development are outside of the proposed excavation area; it may be possible to have simultaneous development and mining. The floor of the mine, upon completion of mining, may also be suitable for development of an industrial facility.

Geology - depth to bedrock may not be a limitation to such development, as commercial buildings commonly do not have basements. According to the Columbia County Soil Survey (USDA, 1989), the installation of infrastructure is problematic as “the depth to bedrock is also a limitation on the soil as a site for local roads and streets and for septic tank absorption fields”. Placement of the buildings near the roads would reduce the amount of streets and infrastructure to be constructed.

Water Resources – commercial/industrial land uses may discharge contaminants that would pose a threat to the City of Hudson emergency water supply. Therefore, such uses should be limited to relatively clean facilities that do not use, produce, or dispose of toxic or hazardous materials.

Air Resources – combustion sources associated with commercial and industrial processes may impact regional air resources, in addition to impacts arising from the use of heating appliances and vehicles. The pollutant composition and magnitude of the impact on the air resources are directly related to the specific process and number of employees.

Noise - sources associated with commercial or industrial development include construction activities (such as land clearing and building) and post-construction activities (such as traffic and processes). Potential noise impacts are dependent on the specific proposed land use and mitigation measures.

Blasting – development of commercial and industrial sites may require blasting of the bedrock during the construction phase. However, it is unlikely that ongoing blasting would be required.

Traffic – commercial and industrial development may generate significant traffic levels of both employees and suppliers. Construction of one or more improved access roads would be required, which would increase the traffic volume on the accessed highway(s). Newman Road is posted with a weight limit south of the quarry entrance, so it is likely that a new entrance would access Spook Rock Road and/or Route 23B. The potential impact on traffic is dependent on the specific proposed uses and the roadway accessed.

Visual – commercial and industrial land uses require the construction of facilities and infrastructure. The relatively high topographic position of the property, near the edge of Becraft Mountain, suggests that buildings or other structures may be visible from off-site locations. The potential visual impact is dependent on the specific proposed land use and mitigation measures.

Blasting – rock removal would be required to create building pads, roads, and infrastructure installation. Blasting would be limited to the construction phase of development.

Community Goals – development of commercial and industrial uses on the subject property would not benefit the City of Hudson and, in fact, may detract from its current

commercial and industrial base by providing competing sites. The City would derive no tax revenues from the property, as it is outside of the City limits.

Community Services – the commercial or industrial development of the property would require the full suite of community services (such as fire, police, ambulance, solid waste).

7.4 No Action

Implementing the 'No Action' alternative would allow the former Lone Star property to remain in its present condition. However, no significant impacts have been identified from the proposed mining operation. With no action, the land would not contribute to the regional economic status or supply community needs. Depletion of aggregate reserves on the Colarusso property would reduce competition and increase the reliance on foreign-owned resources.