

Impact Statement  
 Vulcan Lands, Inc.  
 Rezoning Tax Map Parcels  
 Conditional Use Permit

Tax Map	Current Zone	Proposed Zone	Proposed Use	Area
19-64 Martin-Jones	M-2	M-2 with Amended Proffers	Mining	99.64 acres
19-65 Central	M-2	M-2 with Amended Proffers	Mining	239.41 acres
19-67T	M-2	M-2 with Amended Proffers	Asphalt Manufacturing	16.13 acres
20-2 Pollard	M-2	M-2 with Amended Proffers	Mining	56.65 acres
20-4A Hampton	M-2, A-1	M-2 and A-1 with Amended Proffers	Mining	150.92 acres
20-3A Leming	A-1	M-2 and A-1 with Proffers	Mining and Buffer	21.91 acres
20-3	A-1	A-1	Buffer	17.28 acres

The Vulcan Stafford Quarry operations are now located on multiple parcels totaling ±546 acres. The Quarry has been providing essential building materials for homes, churches, medical facilities, local businesses and government projects in northern Stafford County since August 1976. This application proposes to consolidate proffer statements and conditional use permits into a single proffer statement and permit. In addition, portions of the mining operations will be expanded to attain reserves that cannot presently be accessed. The above-referenced parcels will be referenced hereinafter as the “Property.”

With the exception of Parcels 20-3A and 20-3, the Property encompasses the current Vulcan Stafford Quarry. The expansion enabled by the acquisition of Parcel 20-3A and elimination of use restrictions on Parcel 20-2 will enable Vulcan to access additional reserves on Parcels 19-65 and 20-4A not presently accessible. As a part of this process, Vulcan proposes to modify the proffers for the Martin-Jones, Hampton and Pollard tracts and affix the same proffers to Parcel 20-3A and Parcel 19-65, which presently have no proffers. Vulcan also is filing an application for an amended Conditional Use Permit (CUP) for the consolidated parcels listed above in order to conduct quarrying and associated extraction operations and bermning, as well as for the operation of an Asphalt Manufacturing Plant and a Concrete Batch Plant, to be relocated from

the Wyche Road area, which operation must be terminated because of the new Courthouse Road interchange. The foregoing activities fall under the general use under the Zoning Ordinance of "Heavy Industrial and Heavy Manufacturing uses not otherwise listed for this district." An existing Asphalt Manufacturing Plant (known as Virginia Paving) is operating on Tax Map 19-67T, as authorized by SUP 88-06, as amended by CUP 2900091 on June 16, 2009. Parcel 20-3 will be utilized only for the deposit of overburden and installation of berms.

No extraction operations will commence within any part of the reserve areas for the immediate future; instead, the land will be held in reserve while commercial extraction operations are completed on the portion of the existing quarry known as the Hampton Tract. The active Quarry operations will then be relocated in the pit area of the initial Quarry operations, and subsequently be relocated to Tax Map Parcels 19-64, 19-65, 19-67T, and 20-2, leaving 20-3A, a portion of which will not be rezoned or subject to a Conditional Use Permit, but will be utilized for berms and buffer. In addition, a buffer and berm will be installed on Parcel 20-3, which is not part of the mining operation. Within five years after the commencement of commercial extraction of rock from the reserve areas, reclamation procedures (procedures mandated by the Virginia Department of Mines, Minerals, and Energy (DMME)) will be initiated and completed for the Hampton tract pit.

The Virginia Paving Asphalt Plant would also be relocated to the reserve area under the present proffers and conditional use permit for Parcel 19-64. Active operations involving the commercial manufacture of asphalt will not commence in the reserve area until such time active operations of the asphalt plant cease at its present location on Tax Map 19-67T. The Concrete Batch Plant will be relocated from its current site off of Wyche Road, which must be closed due to the routing of the new Courthouse Road/I 95 interchange.

After all reclamation obligations are completed within the Hampton Tract, the Hampton Tract will be conveyed to Stafford County for use as a public park and public water supply consistent with the existing proffer conditions contained in Ordinance 091-09, which authorized the M-2 zoning for the Hampton Tract.

Upon cessation of Quarry activity in the reserve area, Vulcan is proffering to dedicate all portions of the Property currently being used for a Quarry to Stafford County, for use of the quarry pit as a reservoir for drinking water for Stafford County and use of the surrounding land for active and passive recreation. The operations of the Asphalt Plant will, however, continue in operation, and the area containing the Asphalt Plant will be excluded from the land to be dedicated to the County.

Since August 1976, Vulcan Quarry has grown and modified its operations, making routine improvements and investing millions in capital, so as to keep up with the rapid changes and escalating growth of Stafford County. This application is the next evolutionary step in the 42-year history of the Stafford Quarry operation.

A. Capacity Impacts

1. Transportation - The existing entrance for Vulcan Quarry is located on State Route 610 (Garrisonville Road). No additional entrances are proposed to serve the expansion area. Garrisonville Road has a ±104-foot variable width right-of-way, four lanes of divided roadway, a traffic volume of 16,000 vehicles per day (VPD) and has a posted speed limit of 45 miles per hour. Route 610 runs generally in an east-west bound alignment across the northern section of Stafford County. This project has no frontage along Garrisonville Road except for the existing entrance onto a 4,000-foot-long travel way into the site, which is fully signalized with dedicated right and left turning lanes. The travel way width is 80-feet at Garrisonville Road. The existing operations (as well as the traffic generated by Virginia Paving, which shares the Vulcan access road) generate 124 vehicles per hour based on a previous traffic study prepared for Vulcan Quarry by Kimley-Horn dated February 24, 2006. This equates to a daily traffic count of 1,033 VPD assuming the peak hour VPH is 12 percent of the VPD. The concrete batch plant is not expected to increase vehicles per hour since trucks now leave the Vulcan Quarry to deliver rock and material to the current concrete batch plant on Wyche Road. There will be no net increase in traffic since there will be no increase in sales for these products on a daily basis. Instead, the expansion will permit the mine to continue to operate and provide stone product supply for up to another sixty-five (65) years. As discussed above, the purpose of the Rezoning and the CUP application is to provide additional stone reserves to extend the life of the local business and provide for the continued supply of essential construction materials into the local economy. An additional benefit for the County will be significantly increased water storage capacity. The existing entrance will not need to be relocated. No additional access points or other changes to the transportation infrastructure are proposed.

2. Utility Impact – The existing quarry operation and asphalt plant are served by public water and private sewer. The proposed reserve area is partially located in the Urban Service Area.

a. Water – The additional land for the quarry operation proposes no additional public water demands. The Asphalt Plant water usage will remain constant. Moreover, as the two mining areas are completed and reclaimed, the County will acquire two additional public reservoirs and storage capacity that exceeds that now available to the County. Public water will be supplied to the Concrete Batch Plant.

b. Sewer - The reserve areas for the quarry operation and the asphalt plant propose no additional public sewer demands. The existing quarry and asphalt plant offices are currently served by a private drainfield.

B. Water Quality Impacts

The Quarry is subject to regulation by the DMME, pursuant to Title 45.1 of the Code of Virginia

and the Virginia Administrative Regulations titled 4VAC25-140-10 et seq. These regulations include provisions for control of nonpoint source pollution, stormwater runoff, erosion and sedimentation and other regulated items associated with mining activity. The regulations preempt and are more restrictive than the Stafford County's ordinances regulating stormwater.

1. Storm Drainage - There are two main drainage areas to the quarry, but the entire operation drains to upper Aquia Creek at the Hydrologic Unit Code 12 level (HUC 020700110202). They are the Embry Creek and an unnamed tributary officially referenced as Tributary 4. It is hereafter referenced as the "Martin Jones" tributary. The "Martin Jones" tributary is primarily a stormwater conveyance that drains into Aquia Creek. Stormwater runoff to these drainage ways will temporarily decrease as result of the quarry operation removing contributing drainage areas from the system. The drainage area for the Embry Creek tributary is 349 acres and the drainage area for the "Martin Jones" tributary is 374 acres. The drainage area for each of these tributaries will be reduced by 5 acres for the Embry Creek tributary and 62 acres for the "Martin Jones" tributary respectively when the quarry is fully developed.

The initial reduction in run-off in the area will have a direct correlation to the amount of runoff that is reduced. For Embry Creek the pre-developed 2-year and 10-year runoff is calculated at 120 cubic feet per second (cfs) and 297 cfs, respectively. The post developed 2-year and 10-year runoff is calculated at 119 cfs and 294 cfs, respectively. This represents a reduction in runoff from 1 cfs for the 2-year storm and 3 cfs for the 10-year storm.

For the "Martin Jones" tributary the pre-developed 2-year and 10-year runoff is calculated at 126 cfs and 310 cfs respectively. The post developed 2-year and 10-year runoff is calculated at 112 cfs and 276 cfs, respectively. This represents a reduction in runoff from 14 cfs for the 2-year storm and 34 cfs for the 10-year storm. While each of these drainage areas will be reduced initially, it is important to note that the reduction in runoff can, under controlled conditions and subject to a VDPDES permit, be directed back to Aquia Creek after the water is collected and settled in the bottom of the quarry.

2. Flow diversion - A flow diversion was acquired in 2010 to divert flow from the upstream reach of the "Martin Jones" tributary around the quarry reserve areas to the downstream reach of the tributary. This diversion will allow for the continued flow of the "Martin Jones" tributary into Aquia Creek and prevent any commingling of these stormwaters with quarry operations.

As described above, stormwater runoff and erosion and sediment control issues for the quarry will be addressed in accordance with the standards and permitting of the DMME, Post development discharges will not increase the amount of flow downstream of the development; thus an adequate channel downstream is not altered or of concern. The Hampton Tract pit and the eventual pit located in the reserve area can be used to effectively control large stormwater runoff events into Aquia Creek through installation of weir sections to divert a portion of a particular design storm runoff into the pits. This will reduce sediment yield to Aquia Creek and assist in the nutrient removal from the

Bay watershed.

Stormwater runoff and erosion and sediment control issues for the future asphalt plant will conform to all County and State standards for runoff, erosion/sediment controls and

Chesapeake Bay requirements. The stormwater runoff from the future asphalt plant will not be commingled with quarry runoff and will continue to flow into the Aquia Creek.

C. Environmental Impacts

The wetlands, streams and Resource Protection Areas (RPA) have been field located, as depicted on the GDP, by Resource International, Ltd. Vulcan has received a Jurisdictional Determination from the U.S. Army Corps of Engineers. Staff at DEQ has expressly requested that the Applicant not request approval until the Stafford County Board of Supervisors has acted on the proposed zoning applications. Due to the location of the forested wetlands on the property and the inherent nature of mining operations, total avoidance is impossible. Rock reserves are located at or near the surface beneath existing waters of the U.S. and maximizing recovery of the rock reserves on the Property will limit the need to permit for waters of the United States impacts at other sites. Therefore, total avoidance of these areas is not practicable. The Quarry's proposed rezoning and conditional use application proposes the permitting of approximately 5,620 linear feet of stream, 0.72 acres of wetlands, and 9.60 acres of RPA over the next 50 or more years. Future mining activities on the property containing the future reserves are located outside the 100-foot RPA buffers of Aquia Creek. The project proposes the avoidance of 9.92 acres of the 100-foot RPA buffer along 1,825 linear feet of Aquia Creek. Drainage from significant areas of the plant and service areas will drain into the quarry – effectively acting as a large stormwater retention/detention basin. As a result, post development flows will carry significantly less sediment to Aquia Creek. Drainage from the quarry will be released under controlled conditions and, again, will act as a regional stormwater BMP when the water is returned by either direct outfall at full pool or controlled pumping to the same drainage basin.

D. Historical Impacts

There are no known historical sites on the Property.

E. Fiscal Impacts for proposed rezoning and conditional use permit applications

The reclassification of the 18.63 acres of Tax Map Parcel 20-3A will provide substantial additional tax revenue for Stafford County than existing conditions, even if the parcel is not developed for some time. Similar M-2 properties are currently valued at \$25,000 per acre. Based on this value, the following real estate tax per year will be generated:

$$\frac{\$25,000 \times 18.63 \text{ acres} \times 1.01}{\$100} = \$4,704.00$$

This compares with the \$2,613.88 yearly tax paid on Tax Map Parcel 20-3A, with the improvements thereon, a portion of which is currently in land use. Additional taxes will be paid

by the Vulcan Quarry once operations commence on the site. The existing Vulcan Quarry (proposed to be relocated and continue its operation in the reserve area) pays substantial amounts of taxes for State income tax, unemployment tax, local personal property tax, and the local share of the State Sales Tax, as shown in the table below:

Year	VA Income Tax	VA Unemployment Tax	Personal Property Tax (Vehicles)	Real Property Tax	State Sales Tax	Stafford County Share of State Sales Tax (20%)	Total
2013	\$2,623,727.00	\$18,637.00	\$3,229.57	\$92,866.28	240,794.37	\$57,668.83	\$ 2,796,128.68
2014	4,172,888.00	18,702.00	3,287.06	96,392.73	244,133.91	56,782.14	4,348,051.93
2015	1,467,999.00	15,710.00	4,071.99	86,506.96	328,541.00	76,405.54	1,650,693.49
2016	2,544,611.00	12,483.00	3,234.49	84,039.26	273,647.41	63,647.51	2,708,015.26
2017	2,053,128.00	7,301.00	4,144.10	84,039.26	214,311.15	49,895.28	2,198,507.64
2018	3,687,007.00	4,347.00	4,315.49	84,331.69	189,054.79	43,891.77	3,821,982.95
						6 Year Impact	17,523,379.95

In comparison, residential development at the maximum by-right density will generate higher real estate revenue, but also potentially higher infrastructure impacts to roads and other county infrastructure, such as schools. By Right residential development of 21.91 acres under the current zoning classification of A-1, while consuming significant County services, will yield 7 homes valued at \$400,000 each with 2.3 average cars per house valued at \$12,000, and would generate the following continuing revenue:

Real Estate Tax	$\frac{\$400,000 \times 7 \times 1.01}{\$100.00}$	=	\$ 28,280.00
Personal Property Tax	$\frac{\$12,000 \times 7 \times 2.3 \times \$6.46 \times .4}{\$100.00}$	=	\$ 4,992.28
Vehicle License Fee	$7 \times 2.3 \times \$23$	=	\$ 370.30
	Real Estate Tax:		\$ 28,280.00
	Personal Property Tax		\$ 4,992.28
	Vehicle License Fee		\$ 370.30
	Total Revenue		\$ 33,642.58

The impacts described above for the rezoning application also apply to the Conditional Use Permit (CUP) application, which includes the current location of the Virginia Paving Asphalt Plant. As the Asphalt Plant will continue operation at its relocated site within the CUP area, there will be no change in the fiscal impact to the County. Similarly, relocating the existing

Vulcan Concrete Batch Plant from Wyche Road to the quarry location will simply transfer the positive fiscal benefits.

Additional positive economic benefits will accrue from the development of the Property by the Applicant. In the recent past, Vulcan has made approximately \$12 million in capital investments at the Stafford Quarry. For example, a new primary crusher and conveyors were installed down in the original pit (reduces haul truck travel and carbon emissions by conveying stone more by conveyor and less by truck). Vulcan expects to make similar types of capital investments over the life of the operations.

In addition, the future dedication of the Quarry land as a future water reservoir for the county will provide a substantial future economic benefit to the County, eliminating acquisition costs for land for a future reservoir.

#### F. Screening and Buffers

A combination of vegetative buffers and berms will be utilized to mitigate the visual and sound impacts of the quarry operations, as well as those of the Asphalt and Concrete Batch Plants.

#### G. Noise

Operations within the Quarry shall continue to be conducted in compliance with the rules and regulations of the Division of Mineral Mining within the DMME. These rules are cited as 4 VAC 25-40, Safety and Health Regulations for Mineral Mining.

#### H. Emissions and Odor

All machinery and equipment used in the quarry and asphalt manufacturing have dust suppressant features as required by the Virginia State Air Pollution Control Board. Other preventive and control measures are put into effect through the operation's standard operating procedures, including use of a water truck and/or low volume high pressure wet suppression sprinkler systems. Access roads in the plant yard are paved and dust suppression is used as needed. The truck access road is swept regularly. These preventive and control measures ensure compliance with all applicable regulations of the Virginia State Air Pollution Control Board/DEQ Standards. The proposed relocation of these operations in the future will continue to meet these standards.

#### I. Adjacent Properties

The proposed rezoning reserve area is bound by Aquia Creek and Quantico Marine Base to the north, single family detached home subdivision zoned R-1 to the east, vacant land and another single family detached home subdivision zoned R-1 to the south, and a large lot single family subdivision zoned A-1 to the west.

## J. Comprehensive Plan Consistency

The proposed rezoning reserve area is designated Mining and Agricultural/Rural on the adopted Comprehensive Plan Map. The Property is clearly identified as an area “where mining and extraction activities are actively occurring or planned through previously approved expansions to existing operations or new operations.”

Designation of the Property as Heavy Industrial is desirable because Heavy Industrial uses are compatible with the existing neighborhood. The Property is adjacent to areas designated Heavy Industrial in the adopted Comprehensive Plan, and the language contained within the Plan text calls for areas with Heavy Industrial Uses to be located near Shelton Shop, north of Garrisonville Road and near the existing stone quarry operation. It is noted that the Code of Virginia requires that mineral resources be included in development of and required periodic updates of the Comprehensive Plan of local governments. See Virginia Code Sections 15.2-2323 and 2324.

In contrast, residential development is not desirable in this area, due to the proximity of the Quantico Marine Corps Base. The Applicant is proposing the construction of a substantial berm with landscaping to protect and buffer adjacent agricultural/residential uses, in compliance with State regulations as well as the following requirement of the Comprehensive Plan to “be well buffered from residential uses so as to minimize noise and visual impacts.”