Alexandria Industrial Use Study

Submitted To:
City of Alexandria

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Executive Summary

The City of Alexandria commissioned this Industrial Use Study to explore various economic questions concerning four industrial uses in the West End section of the City. As a result of recent land use and business operating debates in the Eisenhower West area, the City of Alexandria initiated this special economic study of the four industrial land uses:

- Vulcan Materials Van Dorn Yard (Vulcan): provides aggregate materials, such as stone and gravel to other companies in the area
- Virginia Paving Asphalt Plant (VA Paving): produces asphalt
- Covanta Energy from Waste (Covanta) Facility: produces energy from incinerating solid waste
- Norfolk Southern Railroad Ethanol Transloading Facility (Norfolk Southern): transfers ethanol from rail to trucks

Vulcan, Virginia Paving, and Covanta have been cooperative in providing information for this study. Norfolk Southern declined to participate in the study due to on-going litigation between Norfolk Southern and the City.

This technical study does not provide a specific plan for redevelopment of the four uses (either together or separately) nor was it intended to, but rather considers economic questions pertaining to the long-term future of each use. Specifically, the study considers market demand for a variety of uses and analyzes the financial viability and fiscal impact of redeveloping the four subject parcels (collectively known as the study sites) into a mixed-use, pedestrian- and transit-oriented development. The study also considers some of the environmental impacts of redevelopment, particularly air quality impacts, as well as a qualitative evaluation of quality of life and sustainability issues. This study provides important background information necessary to inform the future Eisenhower West small area plan.

Key questions explored in this study include the following:

- What are the economic and environmental costs and benefits of the existing industrial uses?
- What are the location requirements of the current industries and where could they relocate if the sites were redeveloped?
- What is the redevelopment potential of the area?
- Would the potential value appreciation in redeveloping the sites encourage the current operations to relocate?
- What is the cost of providing public services if the area undergoes redevelopment?
- How do the economic and environmental impacts of possible future redevelopment compare to existing conditions?

Findings by Topic

The summary below addresses the key questions posed by the Industrial Use Study.

What are the economic and environmental costs and benefits of the existing industrial uses?

The tables below summarize the economic and environmental costs and benefit associated with the four subject properties. Table ES-1 is a summary of the jobs, tax revenue, goods and services, and quality of life considerations associated with the existing uses. Table ES-2 summarizes the estimated emissions that can be attributed to the existing uses and the extent to which the existing uses contribute to the City's emissions.

Table ES-1: Summary of Economic Benefits and Costs of Existing Uses

	Vulcan	Virginia Paving	Covanta	Norfolk Southern
Economic Benefits/Costs				
Employees	3 to 7	170 to 191	48	N/A
Tax Revenue to City (a)	$140,000	$524,000	$331,000	N/A
Green Jobs Potential (b)	Yes	Yes	Yes	Yes
Other Benefits/Costs				
Goods and Services	Provides aggregate to Virginia Paving	Provides 100% of City asphalt	All solid waste collected by City is processed here. Provides electricity to City residents and businesses	N/A
Quality of Life	Noise, dust, and diminished views	Noise, dust, and diminished views	Noise and diminished views	Potential hazard

Notes:
(a) City in various tax revenues in 2008, including real property taxes, business licenses, business tangible property, and sales tax.
(b) Definitions of what constitutes "green" jobs vary widely, but by some measures, a segment of the employment found at some of the four operations under study could be considered green because they either involve production of environmentally sustainable products or utilize production methods that result in waste reduction.

Source: City of Alexandria, 2009; MACTEC, 2009; HDR, Inc., 2009; BAE, 2009.

- The average of 234 jobs provided by Vulcan, Virginia Paving and Covanta represent less than one percent of total City employment in 2008.

- Although having a solid base of goods-producing sectors such as manufacturing and construction can improve economic diversity, these sectors can often demonstrate as much, if not more, volatility and fluctuation as service sectors. These sectors have also demonstrated relatively slower growth historically and are forecasted to continue lagging other sectors in the future.

Table ES-2: Summary of Air Quality Conditions of Existing Uses

	Vulcan	Virginia Paving	Covanta	Norfolk Southern	Total	Percent of City Emissions (a)
Point and Mobile Sources of Emissions from the Existing Uses						
CO (carbon monoxide)	0.1	13.5	62.1	<0.1	**76**	0.4%
Nox (oxides of nitrogen)	0.5	14.8	576.4	0.1	**592**	12.9%
PM_{10} (particulate matter less than 10 microns in size)	0.8	7.0	4.2	0.2	**12**	0.5%
$PM_{2.5}$ (particular matter less than 2.5 microns in size)	0.1	4.8	3.1	<0.1	**8**	1.4%
SO_2 (sulfur dioxide)	<0.1	5.2	12.6	<0.1	**18**	0.4%
VOC (volatile organic compounds)	<0.1	4.0	2.3	<0.1	**6**	0.2%

Notes:
(a) City emissions total includes point, mobile, area, and non-road mobile sources.

Source: MACTEC, 2009; BAE, 2009.

- Emissions from the four industrial sources in the study area, including both the industrial processes and associated truck traffic, comprise a very small fraction of the total City-wide criteria air pollutant emissions.

What are the location requirements of the current industries and where could they relocate if the sites were redeveloped?

Table ES-3 summarizes the relocation requirements of each of the uses and the potential relocation sites available.

Table ES-3: Relocation Considerations

Consideration	Vulcan	Virginia Paving	Covanta	Norfolk Southern
Land	Minimum of 15 acres	Minimum of 9 acres	See Notes (a)	N/A
Transportation Access	Need rail line	Need rail line	See Notes (a)	Need rail line
Proximity to end user	N/A	Need to be within short distance from current location to continue to serve current market	See Notes (a)	Need to minimize travel to tank farms in Springfield and Fairfax City
Estimated Business Relocation/ Cessation Costs (b)	$15.5 million/ $7 to $15 million	$10.5 to $14.5 million/ $23 to $27 million	$300 to $335 million for new facility, $11.5 million for transfer station	N/A
Possible Relocation Alternative (c)	Industrial Zone in Springfield close to Newington exit on I-95	Industrial Zone in Springfield close to Newington exit on I-95	None identified	Industrial Zone in Springfield close to Newington exit on I-95

Notes:

(a) The agreements governing the Covanta operation and acceptance of solid waste from Alexandria and Arlington (the jurisdictions) severely constrain the ability for the site to relocate. The existing lease is set to expire on October 1, 2025, at which time the facility reverts to the City and County. Priort to 2025, redeveloping the site of the EfW facility would be a violation of the terms of the lease, requiring renegotiation of terms that would be statisfactory to Covanta and requiring a costly replication of the site on another site suitable to Covanta. After 2025, when the land and all of the improvements on it revert to the City of Alexandria and Arlington County, the terms of the lease will be met and there will be no obligation to provide a relocation or buyout to Covanta. However, if a relocation of the site is desired after that date, the City, in agreement with Arlington County, will need to either address its waste disposal needs through the siting and construction of a new facility, or arrange for a different method for the disposal of their waste.
(b) Covanta estimated business relocation/cessation costs do not include property acquisition.
(c) The site that represents the closest available property that meets the basic requirements for each of the uses. Relocation issues and constraints are discussed in the report.

Source: City of Alexandria, 2009; Vulcan, 2009; Virginia Paving, 2009; HDR, Inc., 2009; BAE, 2009.

What is the redevelopment potential of the area?

A market analysis and an analysis of the characteristics of the study sites yields these findings:

- **Residential** uses have the greatest long-term market support and would likely be the predominant use of the study sites.
- **Neighborhood serving retail** can be supported on the site and would provide an amenity that would enhance the marketability of the site.
- **Office space** could be constructed, but demonstrates weaker market support as it would be competing against a large supply of proposed office space in and near Alexandria.

Comparison of the benefits, costs, and impacts of redevelopment to existing conditions requires the creation of potential future development alternatives. The redevelopment alternatives, described in Table ES-4, are hypothetical but based on an understanding of long-term market potential for residential and commercial space, as well as the physical characteristics of the study sites that could impact future redevelopment.

Table ES-4: Summary of Redevelopment Alternatives

Alternatives (a)	Vulcan	Virginia Paving	Covanta (b)	Norfolk Southern
A: Baseline	Townhouses and low rise multifamily housing, neighborhood-serving retail	Townhouses and low rise multifamily housing, neighborhood-serving retail	Mid-rise office space, neighborhood serving retail	Mid-rise office space, neighborhood serving retail
B: Baseline plus Open Space	Townhouses and low rise multifamily housing, neighborhood-serving retail	Park/open space	Mid-rise office space, neighborhood serving retail	Mid-rise office space, neighborhood serving retail
C: Baseline minus Covanta and Norfolk Southern	Townhouses and low rise multifamily housing, neighborhood-serving retail	Townhouses and low rise multifamily housing, neighborhood-serving retail	No Change	No Change
D: Baseline plus Additional Density and Multimodal Bridge	Townhouses and neighborhood-serving retail	Townhouses and neighborhood-serving retail	Mid-rise office, mid-rise multifamily and neighborhood-serving retail	Mid-rise office, mid-rise multifamily and neighborhood-serving retail

Notes:
(a) The assumptions associated with each alternative are described in detail in the report but include the following: portions of the sites within the Resource Protection Area (RPA) and the 100-year flood plain are not developed; and all parking is underground.
(b) Assumes redevelopment would occur after 2025, when Covanta's lease expires.

Source: City of Alexandria, 2009; BAE, 2009.

Would the potential value appreciation in redeveloping the site encourage the current operations to relocate?

Table ES-5 summarizes the results of the financial analysis of the redevelopment alternatives. The financial analysis estimates the change in land value (calculated as the value of the revenue produced by new construction, minus the costs of redevelopment), and compares it to estimated relocation and business cessation costs.

Table ES-5: Summary of Financial Analysis by Existing Use

	Vulcan	Virginia Paving	Covanta	Norfolk Southern
Estimated Relocation Costs	$15.5 million	$10.5 - $14.5 million	Minimum $300 million	N/A
Estimated Cessation Costs	$15-$17 million	$23-$27 million	Minimum $11.5 million (after 2025)	N/A
Change in Residual Land Value from Current Use (a)				
Alternative A	$10.2 million	($1.2 million)	($24.5 million)	$13.1 million
Alternative B	$10.2 million	No Change	($24.3 million)	$13.1 million
Alternative C	$10.2 million	($1.2 million)	No Change	No Change
Alternative D	$22 million	$5.3 million	($24.3 million)	$17.9 million
Does Change in Land Value Support Relocation or Business Cessation Costs?				
	Possibly Alternative D	No	No	Unknown

Notes:
(a) Relocation/business cessation estimates and residual land calculations are based on assumptions and methodology described in the report and in Appendices D and F.

Source: BAE, 2009.

- None of the alternatives presented in Table ES-5 demonstrate an increase in residual land value that can support the full costs of redevelopment, including likely costs to relocate or buy out the existing businesses.
- Only in Alternatives C and D do land values resulting from redevelopment exceed existing land values.
- No alternative has an outcome in which all four parcels have residual land values that are greater than their current values.

Appendix F describes in detail the assumptions, methodology, and findings of the financial analysis.

How do the economic and environmental impacts of possible future redevelopment compare to existing conditions?

The fiscal impact of the redevelopment alternatives measures estimated net revenue by subtracting the estimated costs to service new development from the estimated general fund revenue gained from taxes produced by the new development.

Table ES-6: Impacts of Redevelopment Compared to the Status Quo

		Alternatives			
Benefits/Costs	**Status Quo**	**A**	**B**	**C**	**D**
Economic					
Fiscal Impact	$890,000	$4,450,000	$4,230,000	$1,950,000	$3,620,000
Potential Employees	234	4,500	4,460	80	2,500
Environmental					
Change in Emissions from Industrial Retention Scenario (tons/yr) (a):					
CO	N/A	-16	-20	7.3	-50
NO_x		-579	-579	-11	-586
PM_{10}		-7.6	-7.9	-6.4	-10.2
$PM_{2.5}$		-7.6	-7.7	-4.8	-7.8
SO_2		-18	-18	-5.1	-18
VOC		0.6	0.1	-1.6	-3.4

Notes:
(a) The table shows that in most cases emissions will decrease in the immediate West End Study Area; however, these emissions will not eliminate but rather transferred to other Northern Virginia neighborhoods where the industrial sources may be relocated.

Source: MACTEC, 2009; BAE, 2009.

Next Steps

Additional findings from this study are summarized below and provide direction for near term decision-making regarding possible redevelopment of the study sites.

- **Market pressure supporting short term redevelopment is weak.** Long term demand trends, compared to opportunities presented by Potomac Yards, Landmark Van Dorn, Braddock, and other redevelopment areas, indicate that there is more than adequate land available to meet development pressure as economic conditions improve. In the near term, the study sites do not present a strong opportunity for transit-oriented development (TOD). Physical barriers that impede high quality TOD include the physical barrier created by the freight rail line (without construction of strong vehicular and pedestrian connections as mitigation) and the large surface parking lot that services the Metrorail station.

- **Significant constraints to redevelopment exist.** Hurdles to redevelopment include: 1) difficulties in relocating the existing uses; 2) the City's limited legal and practical options for relocating or ceasing operations of the ethanol transloading and the Covanta facility; and 3) environmentally sensitive lands and other development constraints found on the study sites.

- **If hurdles facing the development of all or a portion of the sites are overcome, there could be fiscal and economic benefits to redevelopment.** Benefits include increased revenues to the City from an expanded tax base. Fiscal and economic benefits will accrue if redevelopment results in an expansion of the base of jobs and households in the City. . Economic and fiscal benefits need to be weighed against potential traffic and air quality impacts.

- **Even in the long term, comprehensive redevelopment would likely require substantial City involvement**. The financial analysis suggests that even when market demand is more favorable for redevelopment in the long term, public subsidy or other incentives will be required to cover some infrastructure and possible business relocation/cessation costs in order to attract private investment. It is possible that the fiscal benefits that would accrue to the City through redevelopment could be used to as a source of funds to cover all or a part of the subsidy required.

The study recommends two general paths for further consideration by the City and area stakeholders. These non-mutually exclusive recommendations recognize the short-term constraints to redevelopment but also encourage long-term planning.

- **Improve existing conditions around the study sites and in the Eisenhower West area.** The City will initiate a process to explore improvements to the Eisenhower West industrial area for the benefit of the industrial uses and the surrounding residential neighborhoods. The focus of this effort should be on practical design, circulation, and infrastructure projects that can be implemented in the short term to ameliorate some of the existing conflicts which gave rise to this study.

- **Explore whether rezoning is appropriate through a small area planning process.** A rezoning would allow the private sector to undertake desired redevelopment when conditions are right and can set the stage for the eventual realization of a vision for the area's future. A planning process would be the forum in which the key issues over the area's reuse would be debated. It would endeavor to resolve these issues to the greatest extent possible. As part of the process participants should consider among other issues:
    - The continued industrial use of the area, in the event that one of the existing uses voluntarily ceases operation.
    - The conditions under which redevelopment of the area should occur, and the City's role in implementing redevelopment.
    - Promotion of transit-oriented development.