

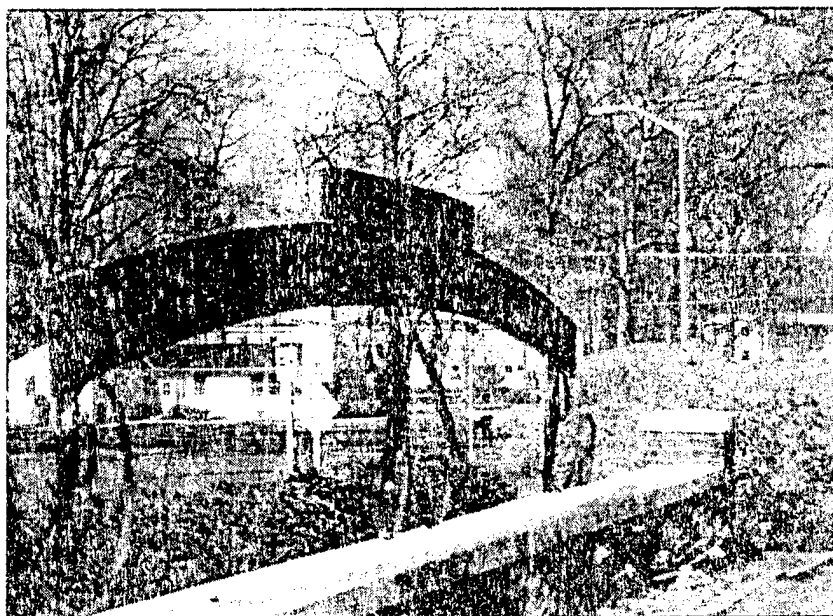


**US Army Corps
of Engineers**
Construction Engineering
Research Laboratories

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May 1998

Technical Review of the Economic Development Conveyance Application for Vint Hill Farms Station, VA

by Jeffrey J. Bogg, Samuel L. Hunter, Jeffrey G. Kirby, Gary Gerdes, Jane DeRose, and Aaron A. Freeman



In 1993 President Clinton requested that Congress provide new authority to expedite the reuse of military bases adversely affected by Base Realignment and Closure (BRAC) actions. The result was a new property transfer method, called an Economic Development Conveyance (EDC), which gives greater flexibility to the Department of Defense (DoD) and affected communities to negotiate a mutually beneficial property transfer.

On 30 April 1997, the Vint Hill Farms Economic Development Authority filed an EDC application for transfer of Vint Hill Farms Station, a U.S. Army installation slated for closure in 1993 under BRAC. The U.S. Army Construction Engineering Research Laboratories was tasked by Headquarters, U.S. Army Corps of Engineers to (1) review the EDC application for compliance with DoD rules implementing the Federal EDC policy, (2) analyze the findings, and (3) report to the sponsor.

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Executive Summary

Adverse Economic Impact of the Closure on the Region and the Potential for Recovery After the EDC (Chapter 1)

The analysis made by the U.S. Army Construction Engineering Research Laboratories (USACERL) generally did not support the closure impacts and potential for recovery suggested by the Vint Hill Farms Station (VHFS) Economic Development Authority's (EDA's) EDC application. In particular, USACERL determined that total likely detrimental impacts will probably amount to about 2,610 direct and indirect jobs, or just over \$150 million in gross output as opposed to the EDA's estimates of 2,600 direct jobs, 1,900 indirect jobs, and a loss of \$260 million in output.

USACERL's estimates varied from those presented in the EDC application primarily because of two methodological shortcomings that were perceived in the calculation approach used by the EDC application. The first of these, the choice of an overly small analysis area, was deemed incorrect because it neglected important regional economic interrelationships and thus incorrectly amplified perceived local impacts. The second was a failure to account for the offsetting positive impacts caused by various job placement programs and other impact-mitigation programs that have been in operation since the closure was announced. USACERL's estimates correct both of these limitations.

Extent of Short- and Long-Term Job Creation (Chapter 2)

USACERL's analysis of potential long-term job creation suggests that between 5,790 and 7,170 jobs will eventually be created as a result of redevelopment. Note, however, that these projections are based on the particular assumption that absorption of redeveloped space will proceed at a rate of at least 60% of the estimate presented in the EDC application, and the assumption that employment densities will be approximately one employee for each 350 square feet of space; other specific assumptions were also made. These projections further suggest that total closure impacts (as calculated by USACERL) will be fully mitigated at some point between Years 4 and 5 of the redevelopment.

USACERL's analysis also did not support the job creation estimates advanced by the EDC application. Specifically, the EDC application suggested that a maximum of approximately 4,800 jobs will be created, and that total impacts (as calculated by the EDC application) will be fully mitigated around Year 15 of the redevelopment. USACERL's review of the methodology used in the application revealed that it completely failed to consider significant indirect and induced job-creation effects, which would dramatically increase projected job creation estimates. Recasting of the EDC projections and assumptions, along with a USACERL-developed estimate of indirect and induced effects, suggests that the redevelopment will produce over 9,000 long-term jobs, and would allow full mitigation to take place around Year 4.

Consistency of the EDC Application With the Overall Redevelopment Plan (Chapter 3)

USACERL finds that the EDA EDC application for VHFS is generally consistent with the goals, objectives, and implementation strategies set forth in the 1995 Preferred Reuse Plan. However, in USACERL's opinion, stated goals of nearly 4,800 new jobs over 15 years may not be fulfilled in their envisioned entirety due to a highly competitive economic development market, locational and transportation constraints, and a lack of financial commitment from other government agencies, which all engender a less than supportive environment for redevelopment and job creation.

Business Plan Review and Market and Financial Feasibility (Chapter 4)

The EDA is requesting an EDC to acquire approximately 680 acres of Vint Hill Farms Station, Fauquier County, VA, along with 1.26 million square feet (SF) of existing building space, and storm water and street utility systems for a proposed consideration to the Department of the Army of \$300,000 (EDA 1997, pp i and ix). It is the conclusion of USACERL that the EDA's proposed business plan suffers from an undue level of financial risk and, as such, can only maintain financial feasibility under certain project assumptions.

The applicant's business plan is based on a mixture of innovative technology, research and development, office, retail, community, residential, and golf course uses with the intent of creating a unique and balanced "village" atmosphere. Key components and assumptions of the EDA's operations and business plan include:

- Absorption of 118,000 SF/yr of office/industrial/R&D/retail property through Year 15 (2011) resulting in a full build-out of 1.77 million SF.

- Projected higher than statistical "average" absorption is directly correlated with the site's unique "electromagnetic free zone" and "satellite view characteristics" which will hold a broad appeal to high-tech and communications firms.
- 15-yr total revenues of \$82.8 million, the majority of which are derived from real estate operations (i.e., land sales - \$26.7 million, building sales - \$8.5 million, golf course operations - \$7.2 million, and leasing - \$1.7 million)
- 15-yr projected operating costs of \$36.1 million, the majority of which (\$23.2 million) stem from buildings and ground maintenance including \$12.2 million alone for sewer system maintenance
- To attract and support 1.77 million SF of commercial development, the EDA has programmed over \$37.1 million of capital improvement over 12 years. The largest investments are a new wastewater treatment plant (WWTP) costing \$6.3 million and road and utility improvements costing over \$11.0 million.
- The EDA proposes to fund 15-yr operational shortfalls through the use of 20-yr tax-free bonds. Total debt incurred over 26 years is \$47.0 million (\$27.1 million in principal plus \$19.9 million in interest).

Market feasibility analysis revealed that the EDA's projected absorption of 118,000 SF a year within the Interstate 66 and Route 29 Corridor submarket is in all likelihood an overstatement of the property's market potential. Some of the key findings include:

- VHFS suffers from locational disadvantages in terms of the site's rural setting, distinct absence of spatial or economic linkages with major regional economic centers, and the potential burdens associated with increased transportation costs for employees and materials.
- In terms of transportation, the site is primarily served by two-lane rural arterials. Although the EDA and Army Environmental Impact Statement both recommend off-site improvements to enhance VHFS marketability and functionality, no such improvements are scheduled until 2010, well after the peak of the EDA's marketing campaign.
- The EDA's "unique" site characteristics were found to be of economic value to the government and military, the very tenants which were realigned to Fort

Monmouth, NJ. Additionally, Internet and satellite communications have supplanted much of the need for sites which possess characteristics conducive to radio communications.

- The I-66/Rt 29 submarket was found to be a highly competitive economic development market. Fauquier County's neighbor, Prince William County, aggressively markets thousands of acres of commercial land that is fully serviced with utilities, and encourages development through the use of incentives. Moreover, the county supports academic institutions such as the Prince William Institute, which specializes in information technology and telecommunications.
- Just over 100,000 SF of commercial property was absorbed (net) in the past 4 quarters in the I-66/Rt 29 Corridor, which is the same amount projected on a yearly basis by the EDA alone.
- The EDA's overall real estate pricing strategy was found to reflect the necessary discount for the site's disadvantages while simultaneously maintaining the integrity of local property values.

USACERL's estimated business plan valuation is based on the EDA's operations and business plan in addition to the Preferred Reuse Plan. Two project views were developed as a result of market analysis findings: (1) 25% reduction in property absorption, and (2) 40% reduction in property absorption. In addition, to test the sensitivity of the business plan and more effectively demonstrate potential project financial feasibility, USACERL developed five project assumptions which were applied to the two project views: (1) reduced WWTP requirements, (2) reduced infrastructure program (plus WWTP reduction), (3) withdrawn financial support from Fauquier County, (4) increased financial support from Fauquier County, and (5) reduced WWTP operating costs.

Based on the foregoing scenario and sensitivity analysis, financial feasibility as expressed in terms of *positive* net present value (NPV) was only achieved under a limited number of assumptions when more realistic 25 and 40% absorption reductions are applied. The most realistic scenario under which *positive* NPV is calculated includes: (1) \$10 to \$12 million reduction in capital improvements, (2) a \$6 to \$10 million reduction in 15-yr debt service costs, and (3) a \$4 to \$5 million reduction in WWTP operating costs for 25 and 40% project views, respectively. The calculated range of NPVs under this scenario is *positive* \$160,000 to \$1,000,000 at a 15% discount rate.

USACERL concludes that the EDA's business plan is financially feasible only when substantial reductions in redevelopment costs are made. This conclusion is due to the absence of compelling data and information to support 118,000 SF a year of commercial absorption. Moreover, the EDA is, for all practical purposes, financially independent in terms of support from other government agencies. Part of the EDA's financial independence rests with fact that it is not a taxing body that can pledge tax revenues against bond issues. Only Fauquier County can do so, and at the time of this writing is only contemplating a one-time moral obligation for the EDA's debt reserve. In USACERL's opinion, the EDA's proposed business plan is marked by an unusually high degree of market and financial risk which can only be remedied through the realization of unsupported absorption rates and/or a substantial reduction in redevelopment costs.

Need and Extent of Infrastructure Improvements (Chapter 5)

According to the EDA, capital costs required to bring VHFS up to marketable, code compliant, and functional standards total \$34 million (constant dollars). The largest categories of infrastructure improvements include: (1) roads and utilities - \$11.0 million, (2) a new WWTP - \$6.3 million, (3) building demolition - \$6.0 million, (4) a new golf course - \$3.0 million, and (5) soft costs of \$2.0 million. In terms of phasing, well over half of the capital improvement program is complete by the end of Year 3 (1999). In fact, Year 2 is marked by over \$11 million alone. USACERL determined that the EDA's capital improvement costs fall within a range of reasonableness.

As to need and extent, USACERL takes exception to the EDA-purported need for a 700,000 gallon per day (gpd) WWTP. USACERL was unable to independently validate the EDA's projected sewage generation based on full build-out. Furthermore, when 25 and 40% reductions in property absorption are applied, total on-site infrastructure requirements are reduced, resulting in lower program costs. Under more supportable absorption rates (i.e., 25 and 40% reduction from EDA's projected 118,000 SF a year), USACERL estimates that infrastructure costs range between \$24 million and \$27 million versus the EDA's \$37.1 million (inflated dollars). This level of investment will, however, still go a long way towards the EDA's twin redevelopment goals of job creation and tax base expansion while better ensuring project financial feasibility.

Extent of State and Local Investment and Risk (Chapter 6)

Compared to the level of risk USACERL has observed from previously granted EDC requests, the EDA's project risk exposure is substantially higher. Unlike

other redevelopment enterprises which receive financial and in-kind assistance from state and local sources, the EDA is, by its own admission, "financially independent" in that it enjoys little or no financial commitments from other sources. This independence has obvious implications in terms of the EDA's ability to fund operating and capital investment costs totaling \$73.2 million and, ultimately, attracting new tenants and end users.

This problem is further compounded because the EDA's projected revenue stream from real estate activities is highly risky due to the rural nature of the site, transportation constraints, robust regional competition, and Fauquier County's reputation as a "slow growth" community. In USACERL's preferred alternative scenario, it is estimated that in the absence of additional financial support, the EDA would be required to reduce capital improvement costs by \$10 million, operating costs by \$2 to \$3 million, and debt service by \$10 to \$15 million in order to achieve a business plan which is financially feasible within the context of more realistic market assumptions.

Finally, project risk and uncertainty is further increased because zoning for the site has not yet been approved. The EDA argues that zoning before a granted EDC from the Army would be premature and could potentially jeopardize job creation goals. However, the fact remains that the EDA parcel has not been zoned by Fauquier County, and in all likelihood the Preferred Reuse Plan will face new opposition when it is before the County Board of Supervisors for zoning approval.

Local and Regional Real Estate Market Conditions (Chapter 7)

USACERL's review of market conditions generally supported the conclusions reached by the EDC application with respect to local residential markets and recreational markets, but not with respect to the state of area commercial markets. USACERL's independent market analysis findings suggest that both residential and recreational markets are fairly robust, and unlikely to present a limitation to redevelopment. However, USACERL's analysis has determined that both the location of VHFS, relative to other competing areas, and the lack of other nearby land uses that are similar to those projected in the reuse plan may significantly complicate the marketing and absorption potential of redeveloped commercial space. Since VHFS will be directly competing for tenants with other nearby areas that do not suffer from these limitations, and since this market has not yet fully recovered from prerecessionary overbuilding, USACERL has determined that the commercial market aspect of the VHFS redevelopment is likely to face a significant degree of market risk.

The Army's Disposal Plan, Other Federal Agency Concerns, and Other Property Disposal Authorities (Chapter 8)

As part of the EDC application review process adopted by the BRAC office at HQUSACE and presented at a Corps of Engineers Real Estate Workshop in Denver, CO, in December 1995, USACERL has been asked to defer comment on these issues to the Real Estate Directorate at HQUSACE and the Corps of Engineers, Baltimore District. In addition, both the negotiation process leading up to the submittal of the formal EDC application and review of the legal environment related to real and personal property are beyond the scope of USACERL's technical review.

Economic Benefit to the Federal Government (Chapter 9)

One of the criteria for EDC applicant eligibility that may be considered by the military department is the economic benefit to the Federal Government that will be derived from the proposed EDC. The military department is asked to consider the protection and maintenance cost savings that would be avoided by a swift conveyance of the EDC parcel, as well as anticipated consideration from the transfer. USACERL's evaluation and analysis estimates the value of the business plan to be approximately \$160,000 to \$1,000,000. The EDA has proposed an offer of \$300,000 to the Army, which falls within USACERL's estimated range of NPV. However, USACERL's range is conditioned on strict assumptions that reduce project costs substantially. Therefore, it is recommended that the Army negotiate from the USACERL NPV range and strongly encourage the EDA to reduce project costs, if only in concept.

Further, the Army should consider one-time facility layaway costs of \$431,000 to \$862,000 and recurring annual maintenance and repair costs of \$1.3 million to \$2.4 million when deciding the eligibility of the EDC applicant.

Review of Application for Completeness (Chapter 10)

USACERL concludes that the EDA's EDC application is complete. The application includes a complete project narrative, EDC contributions to short- and long-term job creation and economic development, a business and development plan, justification for use of the EDC process and a statement of the EDA's legal authority to acquire and dispose of property.

Foreword

This study was conducted for the Base Realignment and Closure (BRAC) Office, Headquarters, U.S. Army Corps of Engineers, and funded through the BRAC Officer, Office of the Assistant Chief of Staff for Installation Management (ACSIM-DAIM-BO) under Military Interdepartmental Purchase Request (MIPR) No. 7ACERB3001, dated 10 October 1997. The technical monitor was Gary B. Paterson, CERE-C.

The work was conducted by the Environmental Processes Division (PL-N) of the Planning and Management Laboratory (PL), U.S. Army Construction Engineering Research Laboratories (USACERL). L. Jerome Benson is Division Chief, PL-N and L. Michael Golish is Operations Chief, PL.

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COL James A. Walter is Commander of USACERL, and Dr. Michael J. O'Connor is Director.

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Introduction

Background

The Vint Hill Farms Station (VHFS) Economic Development Conveyance (EDC) parcel consists of approximately 680 acres and 1.26 million square feet (SF) of building space in Fauquier County, VA, about 38 miles west of Washington, DC. and about 7 to 8 miles west of Manassas, VA (see Figure 1, p 23). The entire VHFS facility is comprised of 701 acres situated near the border of Prince William County, VA. Primary site ingress and egress is achieved by State Road 652, which intersects with Route 215. Rt 215 in turn intersects with Rt 29, which eventually meets with Interstate 66. The areas immediately contiguous with VHFS are predominantly open space, agriculture, and low-density residential development. In fact, the nearest urbanized area is Warrenton, which is nearly 5 miles from the site.

When VHFS was slated for closure by the 1993 Base Realignment and Closure (BRAC) Commission, Fauquier County stepped forward and established the Fauquier County Economic Adjustment Task Force and subsequent Vint Hill Farms Economic Development Authority (EDA) to facilitate the reuse and economic redevelopment of the surplus parcels. Since the 1993 announcement, the facility has essentially demobilized in preparation for disposal. Figures 2 and 3 (pp 25 and 26) are maps showing the site's market area and geographic relationship to key transportation corridors from regional and local perspectives, respectively.

On 2 July 1993, President Clinton announced a major new policy to speed the economic recovery of communities adversely affected by military base closures or realignments. The President requested that Congress provide additional authority to expedite the reuse of closing military bases, in an effort to create new jobs and reestablish the economic base. Congress provided this new authority (commonly called the "Pryor Amendments") and subsequent amendments as Title XXIX of the National Defense Authorization Act (NDAA) for Fiscal Year (FY) 1994. The Department of Defense (DoD) has recently codified the final implementing regulations for this legislation at 32 CFR 90-92, "Revitalizing Base Closure Communities." Collectively, these new rules are

intended to facilitate the conveyance (transfer of military real and personal property) from the Federal government to an approved Local Redevelopment Authority (LRA).

These new regulations created a new property transfer authority called an EDC, which gives greater flexibility to the military departments and affected communities to negotiate the terms and conditions of the conveyance if specified criteria are met. On 30 April 1997, the EDA, acting as the approved LRA, filed an EDC application with the Chief of the BRAC Office, Headquarters, U.S. Army Corps of Engineers (HQUSACE), for the conveyance of certain parcels at VHFS. Included as part of the EDC application was a copy of the Vint Hill Farms Station Preferred Reuse Plan.

In general, the EDA has requested that the Army transfer the EDC parcel under the following general terms and conditions:

1. The Army will negotiate a Master Lease/Purchase Agreement covering all 680 acres of the EDC parcel, including land, buildings, storm water utility systems, roads and related infrastructure and personal property by September 1997.
2. The EDA offers to pay \$300,000 in current dollars to the Army beginning in the year 2007.

The EDA's EDC application provides discussion of the required elements under the regulation, but elements of the business plan as presented are unsupported by narrative discussion and appropriate references. In fact, USACERL believes that the real estate market findings proffered within the EDA's operations and business plan have led to an overstatement of redevelopment financial feasibility, to the extent that USACERL issued a memorandum to the EDA to provide additional support for tenuous market assumptions. The EDA replied on 25 July 1997, but offered very little in terms of additional support for assumptions (Appendix A). Because the EDA's business plan does not demonstrate financial feasibility when more realistic assumptions are applied, USACERL was compelled to develop alternative scenarios under which project financial feasibility would likely be achieved. It is hoped that the EDA considers a more conservative approach to redevelopment for at least the short-term, while potential tenants, developers, and investors are identified and additional sources of funding are sought.

Subsequent to the receipt of the application by HQUSACE, the U.S. Army Construction Engineering Research Laboratories (USACERL) was tasked by headquarters to provide a technical review of the EDA application, evaluating it for compliance with 32 CFR Part 91 and related regulations. This report comprises USACERL's findings and conclusions.

Objective

The objective of this study was to technically evaluate the EDA EDC application in terms of:

1. validity of the information provided by the EDA
2. completeness of the application according to the criteria and factors specified in the DoD regulations governing EDCs.

The objective of this report is to document the study's findings, noting any deficiencies found in the application, and to attempt to address those deficiencies.

Tasking and Approach

Technical review of the EDA's EDC application was executed by a multi-disciplinary work group formed and managed through the USACERL Planning and Management Laboratory (PL). In anticipation of the EDC application, the USACERL work group conducted site visits to VHFS and the northern Virginia region during the week of 15 April 1996. A final site visit was conducted during the week of 19 May 1997 in conjunction with the EDA's 30 April 1997 EDC application submittal. The purpose of these visits was to coordinate the application review with VHFS Army Caretaker Force personnel and to collect preliminary and follow-up data. Most of the group's analytical work and documentation occurred between 19 May and 4 August 1997. Additionally, USACERL, in conjunction with DAIM-BO, submitted a memorandum on 8 July 1997 to communicate USACERL's concerns with the EDA's proposed EDC application in attempt to better understand weakly supported key assumptions.

Validity of the information provided on the EDC application was determined by following a protocol specifically developed to demonstrate how the substance of the application meets the criteria in the DoD implementing regulations related

to EDCs. Using data provided in the EDC application and supporting documents, as well as, data gathered independently by team members, USACERL evaluated the application according to the following criteria and factors:

1. adverse economic impact of closure on the region and potential for economic recovery after an EDC
2. extent of short- and long-term job generation
3. consistency with the overall Redevelopment Plan (i.e., the VHFS Reuse Plan)
4. financial feasibility of the proposed development, including market analysis, and the need and extent of proposed infrastructure improvements
5. extent of state and local investment and risk incurred
6. current local and regional real estate market conditions in the affected area
7. relationship to the overall Military Department disposal plan for the installation, incorporation of other Federal agency interests and concerns, and applicability of, and conflicts with other Federal property disposal authorities
8. economic benefit to the Federal government, including protection and maintenance cost savings and anticipated consideration from the transfer.

Another criterion to be reviewed under the EDC implementing regulations is the proposed EDC's compliance with applicable Federal, state, and local laws and regulations. This type of legal review falls beyond the scope of USACERL's tasking and expertise, and is not addressed in this report.

After evaluating the validity of the information provided in the EDC application, USACERL determined whether the application was complete in terms of the seven criteria specified in the EDC implementing regulations. (These criteria are discussed in Chapter 10, **Review of the Application for Completeness.**)

Finally, the USACERL work group compiled its findings into this report and a briefing for the sponsor. The final briefing was given to Army decisionmakers on 12 August 1997.

Metric Conversion Factors

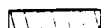
U.S. standard units of measure are used throughout this report. A table of metric conversion factors is presented below.

1 in.	=	25.4 mm
1 ft	=	0.305 m
1 SF	=	0.093 m ²
1 mi	=	1.61 km
1 gal	=	3.78 L

LEGEND

PROPOSED LAND USE

INNOVATIVE TECHNOLOGY	(+/- 202.1 ACRES)
RESEARCH & DEVELOPMENT	(+/- 42.6 ACRES)
OFFICE/SERVICE	(+/- 17.0 ACRES)
RETAIL SERVICE	(+/- 32.2 ACRES)
COMMUNITY FACILITY	(+/- 2.6 ACRES)
MICROWAVE TOWER	(+/- 4.5 ACRES)
GOLF COURSE	(+/- 210.7 ACRES)
RESIDENTIAL	(+/- 90.6 ACRES)
PUBLIC FACILITIES	(+/- 24.4 ACRES)
SCHOOL	(+/- 28.3 ACRES)
VILLAGE GREEN	(+/- 15.9 ACRES)
ROADS	(+/- 29.6 ACRES)
	701.0 ACRES



OPEN SPACE BUFFER



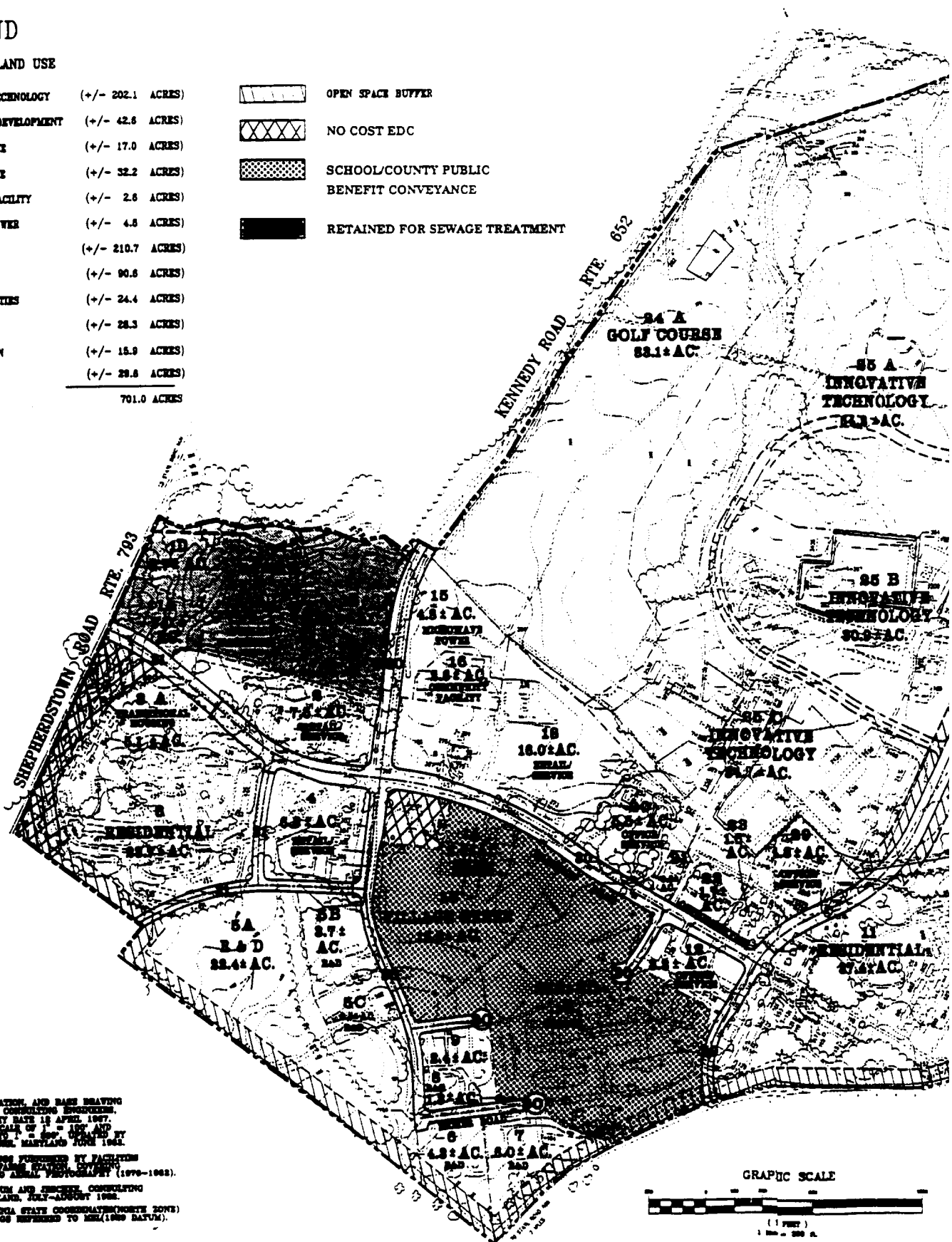
NO COST EDC



SCHOOL/COUNTY PUBLIC
BENEFIT CONVEYANCE



RETAINED FOR SEWAGE TREATMENT



1. AERIAL PHOTOGRAPHY, CORRELATION, AND BASE DRAWING BY BAKER ASSOCIATES, LTD., CONSULTING ENGINEERS, COLETSVILLE, OHIO. PHOTOGRAPHY DATE 12 APRIL 1967. BASE MAPS DERIVED AT A SCALE OF 1" = 100' AND 1" = 200' BY THE U.S. GEOLOGICAL SURVEY, WASHINGTON, D.C. DATE 1962.
2. AS-BUILT AND PROPOSED DRAWINGS FURNISHED BY FACILITY OPERATOR, VINT HILL FARM STATION, COLETSVILLE, PENNSYLVANIA. DATE 1979-1982.
3. VISUAL FIELD CHECK BY FURMAN AND FURMAN, CONSULTING ENGINEERS, BALTIMORE, MARYLAND, JULY-AUGUST 1982.
4. DATUM = BIRMINGHAM - VIRGINIA STATE COORDINATES (NORTH ZONE). VERTICAL - USC & GS REFERRED TO MSL (1989 DATUM).

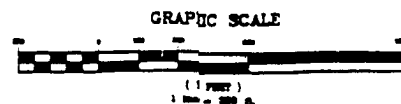
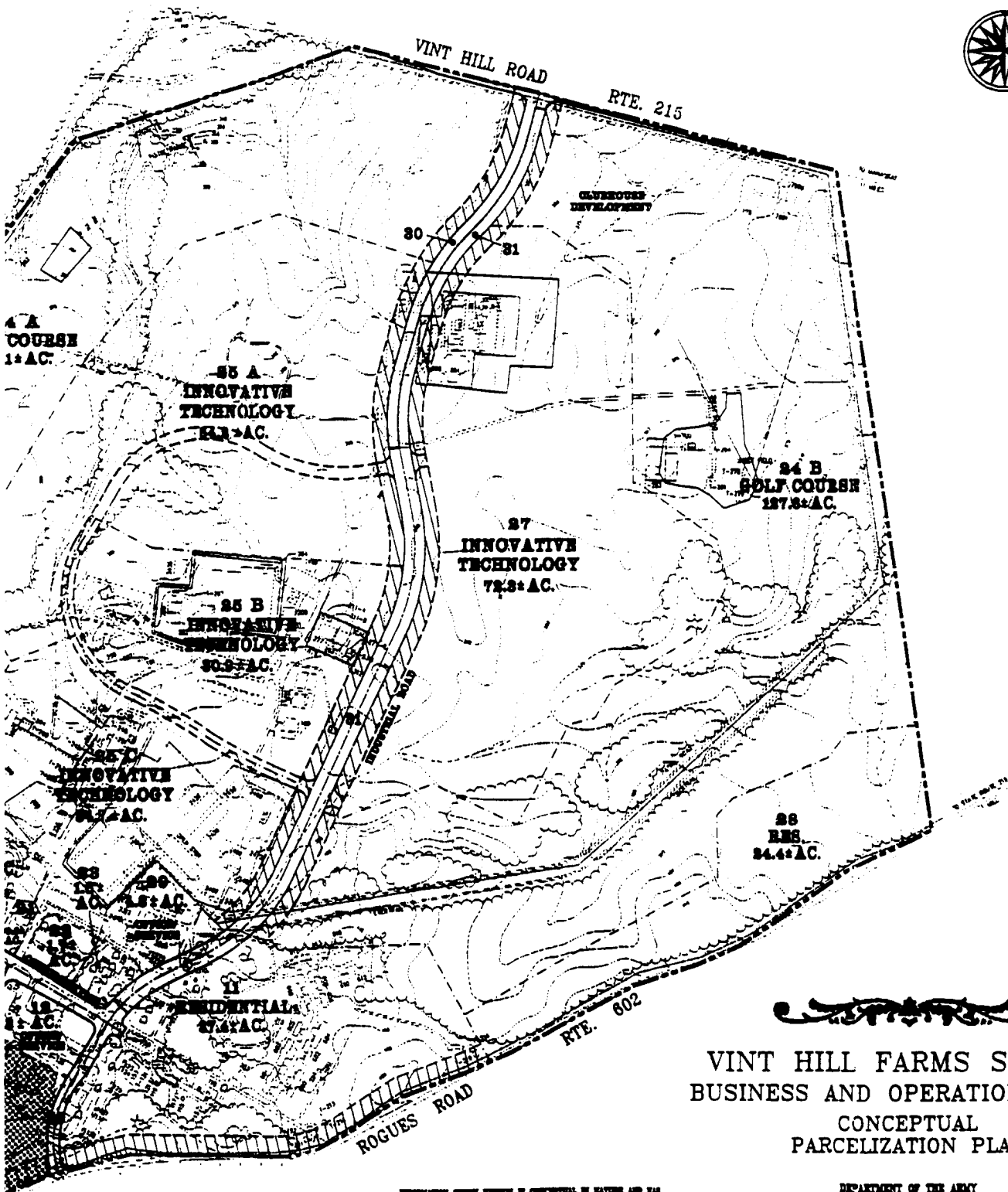


Figure 1. Vint Hill Farms Station site plan and proposed reuse parcelization.

①

②



VINT HILL FARMS STATION
BUSINESS AND OPERATIONAL PLAN
CONCEPTUAL
PARCELIZATION PLAN

DEPARTMENT OF THE ARMY
BALTIMORE DISTRICT CORPS OF ENGINEERS
BALTIMORE, MARYLAND

Dewberry & Davis

DATE: NOVEMBER 1988
REVISED: 1/8/97
SHEET 1 OF 12



MAN M-304

GRAPHIC SCALE

(1 INCH = 100 FEET)

INFORMATION SHOWN HEREIN IS CONCEPTUAL IN NATURE AND WAS PREPARED AS SUPPORT TO THE COMPLETION OF THE BUSINESS AND OPERATIONAL PLAN. IT IS SUBJECT TO CHANGE BASED ON RELEVANT MARKET CONDITIONS AND FUTURE DEVELOPMENT REQUIREMENTS.

THIS STUDY WAS PREPARED UNDER CONTRACT WITH VINT HILL FARMS ECONOMIC DEVELOPMENT AUTHORITY WITH FINANCIAL SUPPORT FROM THE OFFICE OF ECONOMIC DEVELOPMENT, DEPARTMENT OF DEFENSE. THE CONTENT REFLECTS THE VIEW OF THE VINT HILL FARMS ECONOMIC DEVELOPMENT AUTHORITY AND DOES NOT NECESSARILY REFLECT THE VIEW OF THE OFFICE OF ECONOMIC DEVELOPMENT.

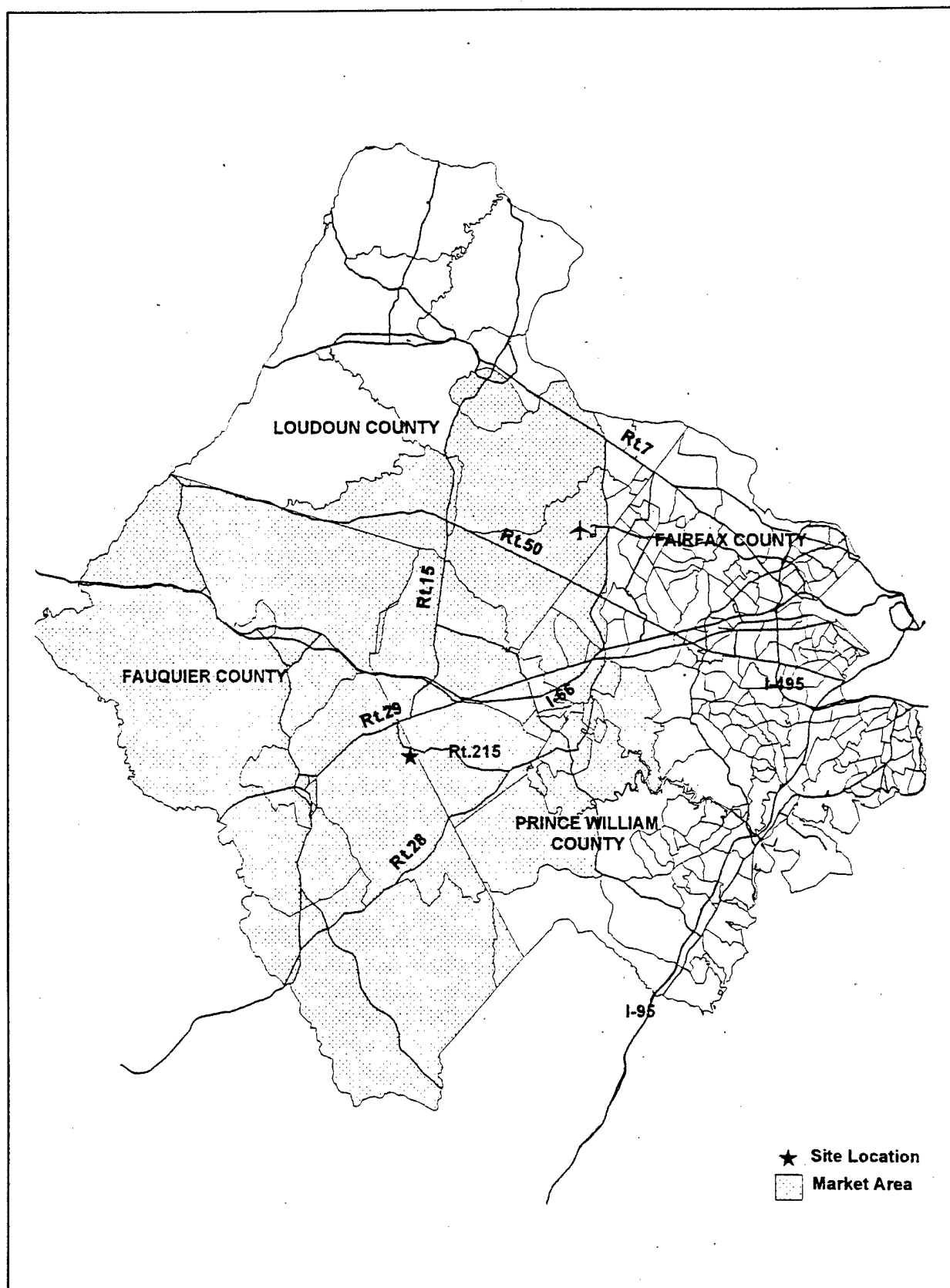
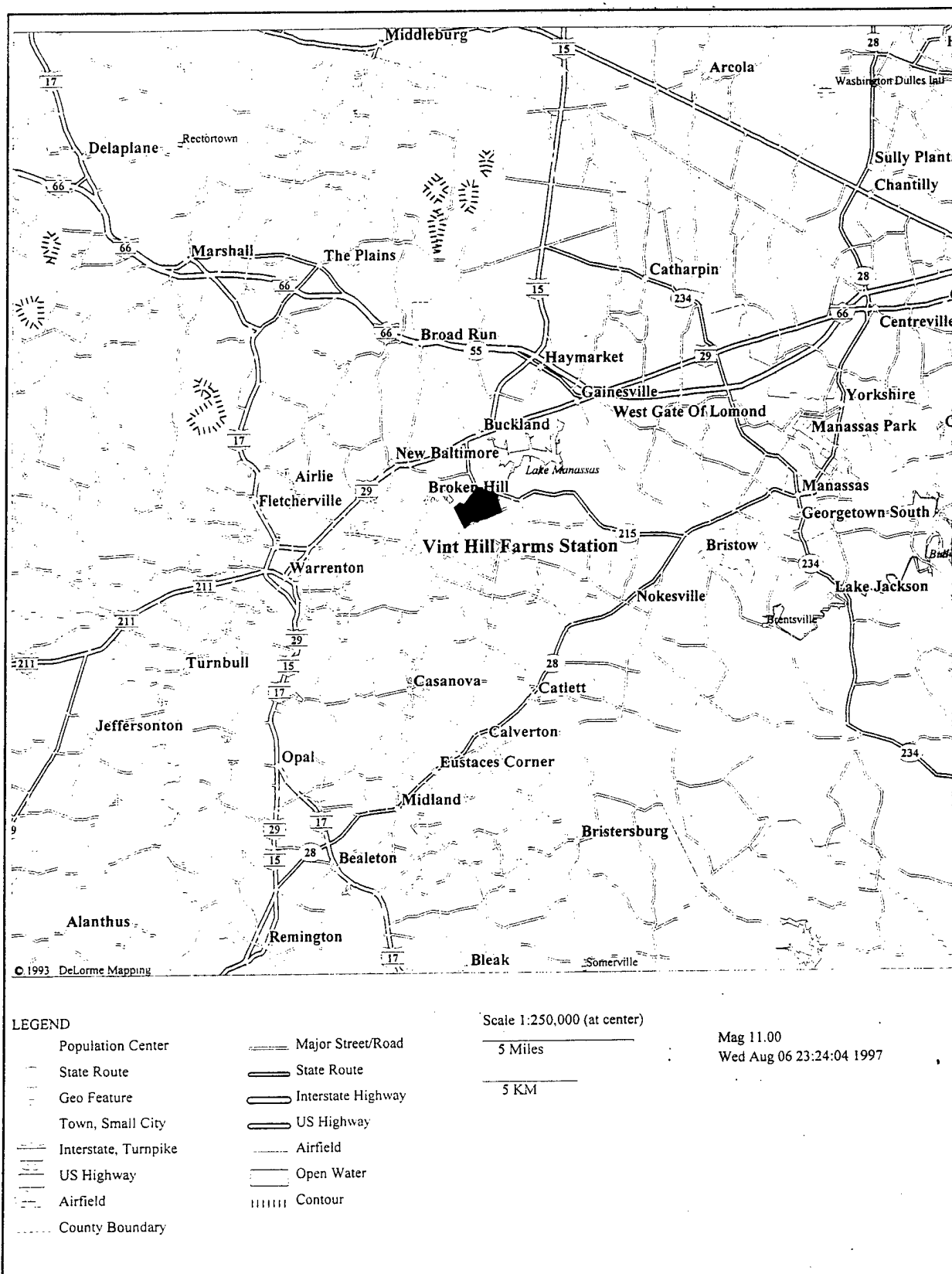


Figure 2. Geographic relationship of Vint Hill Farms Station within the Northern Virginia and Washington, DC, metropolitan area.



1 Adverse Economic Impact of the Closure on the Region and the Potential for Recovery After the EDC

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Background

Pursuant to 32 Code of Federal Regulations (CFR) §175, the prescribed content of the Economic Development Conveyance (EDC) application must include a description of the economic impact of a base closure on the local communities. This chapter addresses these concerns by examining the extent of closure impacts and whether the proposed Vint Hill Farms Station EDC request will facilitate a recovery of lost jobs and revenues.

Methodology

To determine economic impacts from the closure of VHFS, USACERL first reviewed the April 1995 Reuse Plan, the U.S. Army Draft Environmental Impact Statement (DEIS), and other referenced documents to ascertain the extent of the adverse economic impact experienced in the Fauquier County region as a result of the closure. USACERL found that, while these documents describe some of the adverse impacts that have resulted from the closure, they simply do not present a sufficiently comprehensive socioeconomic analysis of possible closure and reuse scenarios.

Accordingly, USACERL chose to use a two-part analysis for evaluating the VHFS EDC application. For part one, USACERL examined the assumptions

and methodologies used to develop the impact estimates in the application for their internal consistency and appropriateness. In part two, USACERL developed independent estimates of the likely impacts of the closure. In developing these independent estimates, USACERL relied primarily on Implan Pro v1.1*, a software program that uses a standard input-output modeling methodology to generate impact multipliers from county-level economic data. Implan Pro has been used extensively by private and public entities (including the State of Virginia, which developed the impact models referred to in the EDC application) to quantify positive and negative economic effects that may result from a wide array of investment scenarios, including the closure of military bases.

Review of EDC Application Assumptions and Methodology

Overall, USACERL's review of the economic impact estimates in the EDC application suggested that it suffers from two significant shortcomings, both of which probably caused the impact estimates to be overstated.

Choice of Analysis Area

The most probable reason that the economic impacts are likely to be overstated relates to the choice of only Fauquier County as the appropriate area for economic analysis. It is important to realize that any given economic effect will almost never have the same boundaries as a city or county. The U.S. Census Bureau recognizes this fact, which is why the concept of a "Metropolitan Statistical Area" was developed.

Although most of Fauquier County is undeveloped commercially, it is not economically isolated, and its proximity and economic connections to more distant, but well-developed areas, such as Fairfax County, Prince William County, and the metropolitan area of the District of Columbia (DC) will probably mitigate the ultimate impacts of the VHFS closure. The DEIS recognizes this fact, and defines an area that includes both Fauquier and Prince William counties as the "primary Region of Influence" (primary ROI). An additional area composed of these two counties and five additional counties (the counties of Culpeper, Fairfax, Stafford, Warren, and Rappahannock) was defined as the "secondary ROI." The primary ROI has over 290,000 residents and employs over 110,000

*Minnesota IMPLAN Group, Inc. (MIG), 1940 S. Greeley Street, Suite 101, Stillwater, MN 55082.

people, while the larger secondary ROI forms an integral part of one of the largest regional economies on the East Coast.

Even the EDC application itself implicitly recognizes this fact when it describes large "leakage" effects caused by Fauquier County residents shopping outside of the county.* Ideally, economic impact studies should attempt to minimize leakage distortions by selecting an area that is fairly self-contained economically; the presence of large leakage effects in the results of an impact analysis would typically suggest that the area chosen for analysis was under-inclusive.

Of course, the use of a large study area (such as the seven-county secondary ROI) may unnecessarily trivialize important local closure impacts. In deference to this possibility, USACERL's independent assessment used only the primary ROI (composed of only Fauquier and Prince William counties). Even assuming that all VHFS closure impacts will be confined to only the primary ROI, however, it is still clear that the impact of the closure will be much more scattered than the EDC application suggests. Furthermore, USACERL's review of the Base Reuse and Implementation Manual (DoD 4165.66-M, July 1995) and other significant legislative and regulatory guidance revealed nothing suggesting that only local impacts are relevant to an EDC review, or that specific local impacts would be somehow more relevant than more regional impacts. Thus, since the detrimental impacts of closure will likely be distributed throughout a region much larger than just Fauquier County, USACERL finds that the EDC application inappropriately focuses on only local impacts within Fauquier County; therefore, the relative significance of these impacts has probably been overstated in the EDC application.

Effects of Job Placement Programs

The other reason that the EDC application probably overstates closure impact estimates relates to some apparent methodological omissions about the net impact of job replacement efforts in an impacted region. While it is true that lost jobs detrimentally affect a local economy, it is also true that such effects can be largely mitigated if laid-off persons are able to find similar new employment

* See, for example, section 2-3 of the EDC application. It should also be noted that two consulting reports cited in the EDC application also recognize this fact. The consultants' estimates of leakage effects for the area surrounding Fauquier County ranged from \$365 million to \$100 million. One of these studies also states that many Fauquier County residents choose to shop in coterminous areas, such as Prince William or Fairfax counties. Such a finding would typically suggest to an analyst that a larger study area should be selected.

in the same region.^{*} The EDC application apparently ignores this fact and bases its impact analysis on the assumption that every former VHFS employee will either leave the area or be unable to find a new job locally.

These omissions were particularly evident in the job placement effort discussion, which was interspersed with the discussion of closure impacts. In fact, page 2-2 of the application states: "Fauquier County is losing *all* the 2,656 jobs from its job base and all 1,170 base residents with VHFS's closure."[†] Page 2-5 reiterates this point, stating that total job losses in the area will amount to 2,656 jobs on-site, and adds an additional 1,953 off-site jobs to the estimate. Yet, between pages 2-2 and 2-5, the application praises the success of various job placement efforts, stating: "[a]s a result of these intensive assistance efforts, most employees who sought replacement jobs as of April 1997 have been successfully placed ... the aggressive placement program [has] prevented personnel terminations that might have increased Fauquier County's unemployment rate."[‡] Read plainly, this is an apparent contradiction—either a former job was actually lost (either because the employee left the area, or is still in the area but was unable to find a new job), or it was not (because the employee was able to get a new local job).[§] The EDC application explicitly states that at least 176 people have been successfully placed in new jobs through various job placement programs and that an undisclosed number of others have been able to secure new employment on their own; additional inquiry by USACERL has suggested that at least half of the former VHFS employees have been able to find a new job within the local area since the closure was announced more than 4 years ago.

The EDC application appears to incorrectly ignore the offsetting positive effects of these placement efforts. Although the EDC application clearly suggests that placement efforts have been "successful," it makes no attempt to account for

^{*} Note that this assumes that the new position is substantially similar in type and compensation to the old position.

[†] This is an estimate of total on-site employment, including all civilian employees, military personnel, and civilian contractors.

[‡] Note that this wording indicates that these new jobs must necessarily have been local; otherwise, the local unemployment rate would have increased.

[§] Subsequent paragraphs make clear that these new jobs are not located outside the area. For example, a later sentence suggests that Fauquier County "lost Vint Hill's jobs, but retained some of its former employees as residents, although they now commute to employment outside the county." This would amount to a "lost" job if the ROI had been only Fauquier County (because the person would work outside the ROI), although even this assumption would still incorrectly overstate actual impacts, since residents typically spend a portion of their income locally.

these effects in the impact model. Because of this, and the fact that such an omission would significantly skew the results of an impact model, USACERL finds that it is highly likely that the total impact estimates in the EDC application are overstated.

Adverse Economic Impact of the Closure of VHFS

After developing independent estimates of the closure impacts for VHFS, USACERL was unable to confirm the estimates presented in the EDC application. Although the EDC application correctly notes that VHFS was one of the larger employers in Fauquier County, USACERL finds that actual closure impacts will probably be substantially lower than the estimates presented in the EDC application, and does not generally share the view that closure "will have significant adverse impacts on job opportunities and on the Fauquier County economy."

Assumptions

USACERL's independent impact estimates relied on the following assumptions:

- Approximately 19% of employees' salaries and wages are paid to Federal and state governments in the form of taxes*
- The consumption patterns of civilian employees and contractors are similar to the consumption patterns of other middle-class residents of Fauquier and Prince William counties
- The consumption patterns for less-compensated military personnel (i.e., below \$30,000 per year gross income) were assumed to be similar to consumption patterns of other lower-income area residents
- Spousal employment patterns for VHFS employees are similar to spousal employment patterns for Fauquier and Prince William counties

* 19% is an approximate figure because some forms of taxation are difficult to measure directly; for example, vehicle licensing fees, service fees, or other similar municipal fees are economically similar to taxes, but can be difficult to capture using an input-output approach.

- "Employee compensation" includes all salaries and wages, as well as life and health insurance, pension payments, and any other non-cash compensation.

Findings

In general, USACERL's independent analysis confirmed neither the absolute volume of closure impacts claimed in the EDC application, nor the economic multiplier that was used. Instead, the analysis indicates that the total impacts associated with the closure of VHFS generally will be only about 40 to 50% larger than the direct losses associated with the base closure itself. More specifically, USACERL found that, for each dollar spent directly on base activities, the surrounding communities will lose about \$1.52 in total output, and for each job lost at VHFS, the area will lose a total of about 1.43 jobs. Conversely, the EDC application suggests that these impacts will be in the range of about 175% of direct losses, or almost twice as large as USACERL's estimates. USACERL's findings are consistent with similar findings presented in studies of short-term base closure impacts.* Note that "very" short-term impacts will generally be the most obvious and pronounced, as the local economy stabilizes and clears excess capacity and resources.

USACERL's independent analysis also indicated that many, if not most, of the civilian employees and contractors of VHFS will probably not leave the area to seek new employment, further limiting likely impacts on the area. USACERL did not develop exact estimates of the number of people leaving, both because of the volume of available data and the lack of consistency within it, although it appears clear that at least 50% of former employees will be staying in the area.† The impact analysis presented in the EDC application assumes that the jobs held by all former employees will be lost as these employees leave the area.‡ As noted above, however, employees that are able to find new employment within

* See, for example, National Defense Research Institute, "The Effects of Military Base Closures on Local Communities: a Short-term Perspective," Rand Institute.

† To reach this estimate, USACERL queried a variety of sources, including the Virginia Employment Commission and military personnel associated with both the Transition Office and the Priority Placement Program; anecdotal reports from local news services were also considered. Although most of these sources suggested that between 60 and 65% of the civilian employees would remain in the area, USACERL's analysis relies on a figure of 50% in order to generate a more conservative estimate. The DEIS, in contrast, suggests that fully 75% of former employees will remain in the area (DEIS, page 5-11).

‡ The EDC application does recognize: "...since many of Vint Hill's employees will obtain other jobs in the larger region, the indirect and induced job losses to the region will be mitigated." However, it makes no attempt to estimate the degree to which impacts might be reduced by these efforts.

the area after closure will mitigate the ultimate impacts of the closure. USACERL's findings are shown, in more absolute terms, in Table 1.1.

Note that estimates for lost output and lost personal income do not map directly to the job loss estimates because of various inconsistencies and lack of detail in the available VHFS budget data. Since USACERL was able to obtain only gross figures that did not list specific budget expenditures, the lost output and lost income figures shown in Table 1.1 do not fully reflect possible mitigation measures that have been undertaken since the closure was announced. Thus, these estimates probably overstate actual impacts. However, because USACERL was able to extrapolate some necessary information from average compensation and total employment figures, the magnitudes of these discrepancies should be fairly insignificant.

Table 1.1. Adverse economic impact of VHFS closure.

Economic Impact	EDC Application Estimate	USACERL Estimate
Local jobs	4,609	2,616
Lost jobs (Direct)	2,656	1,842
Lost jobs (Indirect/Induced)	1,953	774
Lost economic output	"...should exceed \$200 million"	\$151,840,000
Lost personal income	Not specified	\$66,960,000

Significance of Impacts

The results of USACERL's analysis generally fail to support the claim that closure impacts will dramatically affect the local economy. USACERL's findings also generally support the conclusions presented in the DEIS, which suggest that total area impacts will not be significant.*

USACERL's analysis suggests that the total loss of employment caused by the closure will probably not be significant. As of 1993, total employment for the ROI amounted to over 110,000 people, which means that even a total moth-balling of VHFS would result in a net loss of only about 2.2% of the total area workforce. To be considered significant in light of historical area employment statistics, the total loss in workforce would have to be nearly three times this size, or more than 6%. Alternatively, the findings presented in the DEIS suggest that the area will experience "... a 3.2 percent decrease in total regional

* See DEIS, pp 5-12 to 5-14, generally.

employment, which is not considered significant." The analysis presented in the DEIS and USACERL's independent analysis both demonstrated similarly insignificant impact magnitudes for total economic output and personal income.

Analysis of the regional economy surrounding VHFS also fails to support a claim of severe closure impacts. As the EDC application correctly notes, the unemployment rate in the area has actually fallen in the intervening years since the VHFS closure was announced, from over 5% in 1991 for the ROI to a rate (as of December 1996) of 2.6%. As of 1997, many former VHFS employees have already been laid off or have left the area, so it would be reasonable to expect some negative trend in economic indicators for the ROI during the years since the closure was announced in 1991. Instead, the unemployment rate in the area actually dropped by about 40% during this period. Analysis of other area economic indicators suggests that the northern Virginia region is in the process of recovering from an extended recession that was present during the early '90s, and will continue to experience at least short-term growth.

Caveats

Finally, it should be noted that USACERL's analysis and methodology are also subject to several limitations that may distort findings or limit their applicability. These limitations are as follows:

- This analysis is based on static modeling techniques which cannot capture dynamic economic effects that may become apparent over a longer time, such as 5 to 10 years
- Because this methodology does not capture underemployment effects and equates all jobs equally, it does not fully reflect the possibility that former employees will be able to find new employment, but only at a lower compensation level.

It should also be noted that USACERL's analysis relied on the larger ROI used by the DEIS, which included both Fauquier and Prince William counties, instead of the area used for the study in the EDC application, which included only Fauquier County. Although USACERL has determined that this larger area better represents the economic activities occurring in the area, the selection of a larger ROI also spreads the calculated impacts out over a larger area, which may mask local impacts that are not evenly dispersed.

Potential for Economic Recovery

As discussed above, USACERL's independent analysis indicates that the total closure impacts will be fairly insignificant, which also suggests a strong potential for a full recovery in the long term. Although job creation is discussed in more detail elsewhere (see Chapter 2, **Extent of Short- and Long-Term Job Creation**), a full recovery appears likely even with very conservative job-creation estimates. Even if it is assumed that redevelopment will track USACERL's most constrained development schedule (see Chapter 4, **Market and Financial Feasibility of the Redevelopment Business Plan**), it appears very likely that all of the jobs lost in the VHFS closure will be recovered by at least the 6th year of redevelopment, based on USACERL's total job loss estimates.

Conclusion

The EDC application states that one of the primary goals for redeveloping VHFS is to replace jobs being lost in Fauquier County by closing VHFS. Although the impact analysis presented in the EDC application suffers from a series of theoretical and practical limitations, USACERL has determined that even under the most conservative assumptions, a full economic recovery from the closure of VHFS will be likely, particularly given the relative insignificance of the closure on the local economy.

2 Extent of Short- and Long-Term Job Creation

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Background and Approach

The VHFS EDC application is required by Federal law to discuss job creation prospects for the proposed reuse of the VHFS facility. One of the principal eligibility criteria that the military must consider when reviewing an EDC application is the extent of short- and long-term job generation. Job creation, after all, is the primary intent of this "jobs centered" property disposal authority.

Although both the DEIS prepared by the U.S. Army Materiel Command and the VHFS Reuse Plan mention the prospect of job creation, neither document discusses potential job creation with any degree of particularity. Accordingly, USACERL elected to construct several independent model scenarios that were then used to forecast potential post-redevelopment economic activity and job creation.

Since projections of gross revenue from tenant operations were unavailable at the time of this writing, USACERL established figures for short-term job creation, and general estimates of long-term job creation, by making some assumptions about the types and volume of economic activities that will likely take place after redevelopment. Implan Pro was then used to model the effect of these assumptions and construct several "what-if" scenarios that could be compared with calculated closure impacts.

It is important to note that, although this forecasting procedure allowed USACERL to generate sound estimates, the following projections are only as useful as the validity of the underlying assumptions. Major changes in these key assumptions, especially changes in the absorption schedules for existing and new gross square footage (see Chapter 4, **Business Plan Review and Market and Financial Feasibility**, for more detail on these schedules), or in the aggregate economic activities of the tenants, may lead to dramatic differences between the number of jobs actually created and these projections.

General Methodology

Following the standard procedure for applying an input-output analysis, USACERL first conceptually divided the economic impacts of the VHFS redevelopment into short- and long-term impacts. For purposes of this analysis, "short-term" refers primarily to impacts related to the redevelopment process itself, such as the jobs and economic effects created as a result of construction and maintenance activities. "Long-term" refers to the impacts related to the ongoing activities of firms that will be permanent or semi-permanent VHFS tenants.

Each group of impacts (short- or long-term) was then separately analyzed to determine both the types of economic activity that it might involve, and the relative magnitude of each activity. By comparing these activities, and their volume, to similar activities already occurring in the local economy, USACERL was able to construct a series of multipliers describing the likely impact that any new (but similar) activities would have on the local area.

Because the elements of a regional economy are inherently interrelated, this general approach effectively measures the entire impact of a given event. For example, each particular programmed capital improvement will give rise to a particular set of jobs at VHFS. These on-site jobs will also give rise to an additional number of jobs located in the economic area surrounding VHFS. A local multiplier constructed for this type of capital improvement will capture both the impact of on-site job creation (a direct effect), as well as the number of additional jobs created as a result of on-site jobs and economic activity (an indirect effect). Once these effects are calculated for each activity, they can be grouped together to find total impacts.

Extent of Short-term Job Creation

To calculate short-term job creation using this methodology, USACERL first developed two scenarios estimating both the types of construction and maintenance activities that would be necessary to redevelop VHFS, and the likely capital costs of these activities (see Chapter 5, **Need and Extent of Infrastructure Improvements**). Multipliers were then developed by examining the state of similar construction and maintenance activities in both Fauquier and Prince William counties. Finally, total direct and indirect impacts were projected by applying the multipliers for each scenario over a 3-yr capital improvement schedule.

According to USACERL's independent engineering analysis (see Chapter 5, **Need and Extent of Infrastructure Improvements**), likely total capital costs for the redevelopment will probably amount to between \$23 million and \$26 million.* Since the EDC application projects total costs of \$33 million, which is outside this range, its capital improvements program was also modeled. After analyzing each programmed improvement, USACERL found that typical employment multipliers for redevelopment activities ranged around 1.4 for USACERL's engineering estimates, to between 1.5 and 1.6 for the engineering estimates in the EDC application. These figures vary somewhat because of differences in the programmed capital improvements schedule, although neither set of figures is unusual, given the types of economic activities that exist in the two-county study area.

Applying these calculated multipliers directly to the cost estimates suggests that between 260 and 590 direct and indirect short-term jobs will be created as a result of the VHFS redevelopment process. These results are summarized in Table 2.1.

* Note that USACERL's independently developed range of Vint Hill Farms Economic Development Authority (EDA) capital costs does not capture all construction activity and related job creation resulting from the redevelopment of Vint Hill Farms. For example, 777 new housing units are proposed in addition to the fit-up of buildings 260 and 2400. However, if the fit-ups are to be financed by the private sector rather than the EDA, then estimates are more difficult to make because no reliable proposals have been put forward to date.

Table 2.1. Short-term job creation schedule.

Table 2.1: Short-term Job Creation Schedule.																
	Short-term (Direct and Indirect) Job Creation Estimates by Year															Cumulative Jobs
	1	2	3	4	5	6	8	8	9	10	11	12	13	14	15	
EDC Application Estimates (Based on \$33 Million Capital Improvements Scenario)																
Short-term Jobs (Direct)	2	110	76	24	43	98	13	0	0	7	0	7	0	0	0	380
Short-term Jobs (Indirect and Induced)	2	70	49	13	19	43	5	0	0	3	0	3	0	0	0	208
Total Jobs	4	180	125	38	62	141	18	0	0	10	0	10	0	0	0	587
USACERL High Estimate (Based on \$20 Million Capital Improvements Scenario)																
Short-term Jobs (Direct)	125	107	76	0	0	0	0	0	0	0	0	0	0	0	0	308
Short-term Jobs (Indirect and Induced)	50	43	30	0	0	0	0	0	0	0	0	0	0	0	0	124
Total Jobs	175	151	106	0	0	0	0	0	0	0	0	0	0	0	0	431
USACERL Low Estimate (Based on \$12 Million Capital Improvements Scenario)																
Short-term Jobs (Direct)	78	61	45	0	0	0	0	0	0	0	0	0	0	0	0	185
Short-term Jobs (Indirect and Induced)	31	25	18	0	0	0	0	0	0	0	0	0	0	0	0	74
Total Jobs	109	86	65	0	0	0	0	0	0	0	0	0	0	0	0	259

Note that both USACERL scenarios assume that all capital improvements will take place over only a 3-yr schedule. Although this is undoubtedly an over simplification of what will actually occur, market and business plan analysis by USACERL (see Chapters 4 and 7) has suggested that the programming of necessary capital improvements may vary significantly from the schedule proposed by the EDC application, and may be difficult to predict. Because a 3-yr schedule has the effect of accelerating short-term job creation, USACERL's estimates should be viewed as close to the probable upper boundary of likely developments. Given the smaller magnitude of short-term job creation in comparison to long-term estimates, and the uncertainties of the capital improvements schedule, USACERL concluded that data on the maximum potential for short-term job creation would be most useful to decisionmakers. Finally, note that USACERL made no attempt to calculate the duration of impact for short-term job creation; typically, most of these jobs will last for several years, although the exact length of time is a function of a variety of factors, including the development time of the relevant capital expenditure, maintenance needs, and area economic trends.

Extent of Long-term Job Creation

As with the procedure for short-term job creation, long-term job creation estimates were generated by first considering the types of activities that are likely to take place during and after full redevelopment, developing appropriate multipliers to capture the local impact of these activities, and then projecting likely cumulative total impacts. However, the calculation of these estimates was

constrained by the absence of information about the types of end-users that are likely to occupy space at the redeveloped VHFS, and also about the volume of economic activity these end-users are likely to generate. Although USACERL was able to generate gross estimates based on (1) various assumptions about the total number of people that might be employed and (2) assumptions about the type of end-users likely to locate at VHFS, the inaccuracies inherent in this approach will likely result in a model that is less accurate than one based on actual gross revenue data.

Gross Output Analysis

Usable estimates of revenue volume were unavailable, so USACERL had to extrapolate potential revenue volumes by examining both the volume and intensity of potential VHFS reuses. Both factors are important for a gross output estimate because employment projections are a function of both how intensively new space is used and how fast the local market absorbs new space.

USACERL's estimates of reuse intensity were developed by comparing the on-site employment density estimates provided in the EDC application to estimates suggested by USACERL's standard engineering analysis. Because the EDC application suggests that the maximum reuse intensity that likely could be supported by the redeveloped property is about one employee for each 350 square feet of space—and USACERL's engineering and market analyses generally support this estimate—all of USACERL economic volume estimates were generated directly from this ratio.

Similarly, USACERL's projections of probable reuse volume were generated by relying on the absorption projections presented in both the EDC application, and on the examination of local real estate market conditions performed as part of USACERL's market analysis (see Chapter 7, **Local and Regional Real Estate Market Conditions**). The results of the market analysis were somewhat inconclusive (see Chapter 4, **Business Plan Review and Market and Financial Feasibility Analysis**), so USACERL elected to model the absorption schedule presented in the EDC application and two additional independent absorption schedules as possible scenarios for long-term job creation. In general, both of the separate scenarios developed by USACERL make the same market and absorption assumptions as the business plan analysis presented in Chapter 4.

Multiplier Calculation

The lack of firm employer and revenue data also compelled USACERL to make some general assumptions about the types of end-users likely to lease space at

the redeveloped VHFS. For example, since the primary focus of the VHFS Reuse Plan is upon the development of an "innovative technology" center, USACERL's analysis assumes that the activities of future high-technology (high-tech) tenants will be similar to those of other high-tech firms, research and development (R&D) firms, and specialized manufacturing firms in the local two-county area. Making this assumption allowed USACERL to aggregate similar high-tech industries in the area into a gross multiplier that generally describes the impact of other local high-tech firms. Similar aggregation operations were performed for both projected office and retail uses.

After constructing these aggregations, USACERL found that typical employment multipliers for local high-tech activities are probably about 2.1, or even slightly higher. Although this estimate would typically be deemed to be fairly high, this may be explained by both the high income per household (over \$74,000 per year) and the predominately service focus of the study area. Similarly, employment multipliers for office uses were found to be about 1.6 to 1.7, multipliers for retail uses were found to be about 1.3, and multipliers for the "special facilities" employees were found to be about 1.4. These multipliers were used to develop the projections for both of USACERL's employment scenarios.

Finally, because no accurate data on distribution of tenants were available, USACERL created a weighted, or "blended," multiplier based on (1) the amount of land programmed for each use in the Reuse Plan and (2) the number of "special facilities" employees projected in the reuse plan. Based on these forecasts, USACERL determined that about 5.1% of future employment will come from retail land uses, while 14.0% will come from office uses, 78.1% will come from "innovative technology" uses, and the remaining 2.8% will come from unprogrammed "special facilities" jobs. Based on these land-use ratios (and the above-noted uniform assumption of about 350 square feet per employee), the weighted long-term employment multiplier for VHFS activities should be about 1.95. This figure was used to generate all further direct and indirect employment projections.

Long-term Employment Projections

After forming an idea of the economic volume that will take place after redevelopment and the types of activities it will probably involve, USACERL developed several forecasts for likely long-term job creation. Table 2.2 summarizes the long-term employment projections calculated as part of USACERL's independent analysis and in the EDC application.

Table 2.2. Long-term job creation schedule.

	Long-term (Direct and Indirect) Job Creation Estimates by Year															Cumulative Jobs
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
EDC Application Projections																
Long-term Jobs (Direct)	84	590	300	495	523	149	219	102	502	259	572	288	104	102	570	4859
Long-term Jobs (Indirect and Induced)	80	559	284	469	495	141	207	97	475	245	542	273	98	97	540	4601
Total Jobs	164	1149	584	964	1018	290	426	199	977	504	1114	561	202	199	1110	9460
USACERL High Estimate (Based on USACERL 25% Reduced Absorption Scenario)																
Long-term Jobs (Direct)	65	450	227	392	394	112	165	77	377	194	430	217	79	77	428	3684
Long-term Jobs (Indirect and Induced)	62	426	215	371	373	106	156	73	357	184	407	205	75	73	405	3487
Total Jobs	127	876	442	763	767	218	321	150	734	378	837	422	154	150	833	7171
USACERL Low Estimate (Based on USACERL 40% Reduced Absorption Scenario)																
Long-term Jobs (Direct)	84	432	229	348	212	75	92	61	302	156	345	173	63	61	343	2976
Long-term Jobs (Indirect and Induced)	80	409	217	330	201	71	87	58	286	148	327	164	60	58	325	2618
Total Jobs	164	841	446	678	413	146	179	119	588	304	672	337	123	119	668	5794

Note that both of USACERL's scenarios shown in Table 2.2 rely on the same reduced-absorption schedules developed as part of the business plan analysis; thus, the reduced-absorption schedule does not apply to "special facilities jobs." This exception was deemed appropriate because most of these jobs will rely more on housing or recreational land uses after redevelopment (for which there is a very strong local market), rather than on more unpredictable commercial uses.

Also note that EDC direct job creation estimates for Table 2.2 were taken only from Table 6-1 of the EDC application. Although the direct job creation estimates presented in the application suffered from several shortcomings, the main problem was that the estimates presented in different parts of the application varied by as much as 15%, without any apparent explanation. In fact, the EDC application did not contain any statements that it was attempting to provide a range of estimates, yet it presented widely disparate job creation estimates, ranging from a total of 4,862 jobs* to more than 5,600 jobs.† Because of these limitations (and the fact that the job estimates given in Table 6-1 of the EDC application were somewhat more acceptable), USACERL based all subsequent evaluation of the EDC direct job creation claims on the Table 6-1 figures. Thus,

* See Table 6-1: Projected Job Generation Schedule (EDA 1997).

† This figure is a partial sum of the jobs claimed in section 6.3, "Types of Jobs to Be Created," of the EDC application. See page 6-5.

although other figures are presented in the application, USACERL did not consider them.

Finally, the EDC job creation scenario presented in Table 2.2 is actually a hybrid of EDC assumptions and USACERL-developed multipliers. In examining the EDC job creation scenario, it quickly became evident that direct comparison (or even full evaluation) of the claims made in the EDC application would not be possible because it had not considered indirect job creation after redevelopment. Because the EDC application incorrectly ignores the possibility of any potential indirect or induced employment effect on the local economy, USACERL constructed indirect job creation estimates for the EDC figures with the same multipliers used for USACERL's independent analysis. Thus, all of the indirect job creation estimates in Table 2.2 are based on USACERL-developed multipliers; only the direct job creation estimates were taken from the EDC application.

Caveats

Because it was necessary to make a variety of assumptions in order to construct these estimates, several caveats are in order. Although USACERL has attempted to present conservative estimates that minimize the possibility of overstating job creation estimates where possible, potential problems can always arise when economic forecasts are projected over a 15-yr period.

First, assumptions were made about both the volume and the types of economic activities that will take place at VHFS, both of which are crucial to the projections. While USACERL has determined that these assumptions are reasonable, given the state of the local market and the adopted reuse plan, further reductions in either the absorption rate or the intensity of reuse would further reduce job creation. For example, although the 40%-reduced absorption schedule is a fairly conservative estimate, a further reduction (as if environmental or other encumbrances were to surface) would reduce potential gross output and, thus, future job creation. Similarly, the employment per square foot estimate was derived from broad industry-average standards; less intense reuse, such as that associated with a large laboratory facility, would also likely result in the creation of fewer jobs. Changes in these assumptions would be particularly significant, because they would affect both the direct and indirect forecast figures.

Second, the modeling procedure used to construct these estimates (a standard input-output model) assumes that an underlying regional economy is static in

nature and thus it can capture essential long-term structural changes. As a result, fundamental shifts in a local economy may render its projections inaccurate, especially with regard to indirect and induced projections. As an example of this possibility, consider that the electric service and communications sectors account for about 2/3 of all "innovative technology" output in the two-county study area.* Since all of the employment multipliers are based on the assumption that each industry will continue to provide about the same ratio of total output in the future, changes in these relative percentages may contribute to forecasting errors. For a larger, more diversified economy, this presents less of a problem. However, the Fauquier County area has a limited total output in high-tech sectors, and is attempting to dramatically increase it through VHFS redevelopment.† Because this local market is relatively thin, and because future projections are based on its current composition, forecasting assumptions may be unstable, particularly over the long term. Fortunately, these errors, if they develop, will affect primarily the indirect and induced job creation forecasts, not the direct forecasts. Also, these changes tend to develop slowly, so it is unlikely that these potential errors would begin to manifest for at least 5 years.

Third, this analysis does not consider other privately funded economic activity that will accompany the VHFS redevelopment. For example, none of the short-term economic effects relating to the construction of housing at VHFS were considered, although this construction will undoubtedly have some effect on area employment. USACERL elected not to model these effects both because they will likely be transitory in nature and because it would have been difficult to obtain necessary cost or revenue data from private developers. This omission will likely cause total job creation effects to be understated, although the degree of error will be small.

Finally, no attempt was made to adjust for inflationary effects. Although these effects were considered for the short-term job creation estimates, the lack of data on future gross output precluded USACERL from developing an acceptable method of adjusting long-term estimates, although the errors caused by this omission will likely not be of primary significance.

* "Innovative technology" in this sense refers to a collection or aggregation of all area industries that produce primarily high-tech goods or services; within this aggregate sector, these two subsectors contribute over \$425 million of the total \$625 million output. Note that computers, computer peripherals, data processing services, and R&D services sectors are also significant, with total output ranging from \$14 million to \$88 million.

† Under even the 40%-reduced absorption schedule, gross output from tenants at the facility projects at full build-out to be over 130% of total area gross output for high-tech sectors.

Reconciliation of Job Creation Projections and Closure Impacts

As the final step of the analysis, USACERL compared the various employment generation forecasts to the economic impacts of the VHFS closure (see Chapter 1, **Adverse Economic Impact of the Closure on the Region and Potential for Recovery After the EDC**). This final analytical step offers an idea of when total closure impacts might reasonably be mitigated, and a general, qualitative picture of how programmed capital expenditures affect job creation. The results of this step are shown in Figure 2.1.

As the graph denotes, USACERL's projections suggest that most of the employment impacts of the closure will have been fully mitigated at some point between Years 4 and 5. Conversely, the (USACERL-corrected) projections developed by the EDC application suggest full mitigation will occur at some point between Years 7 and 8. Note in Figure 2.1 that the uncorrected predictions advanced in the EDC application forecasted only direct job creation and did not consider indirect and induced effects (graphed here as "direct employment only"). Although USACERL maintains that ignoring indirect effects is an incorrect methodology, these EDC "estimates" are included in Figure 2.1 to give the reader an idea of what is claimed in the EDC application. Note that under a direct-only schedule, closure impacts are, coincidentally, not fully mitigated until the redevelopment process is nearly complete in Year 15.

Conclusion

As noted above, the extent of both short- and long-term job creation is directly linked to the absorption schedule for buildings and land within the EDC parcel, and the reuse intensity of these improvements. Depending on the absorption schedule and reuse intensity, USACERL has found that a total of between 2,976 and 3,684 direct jobs and between 5,794 and 7,171 total jobs will probably be created as a result of the VHFS redevelopment.

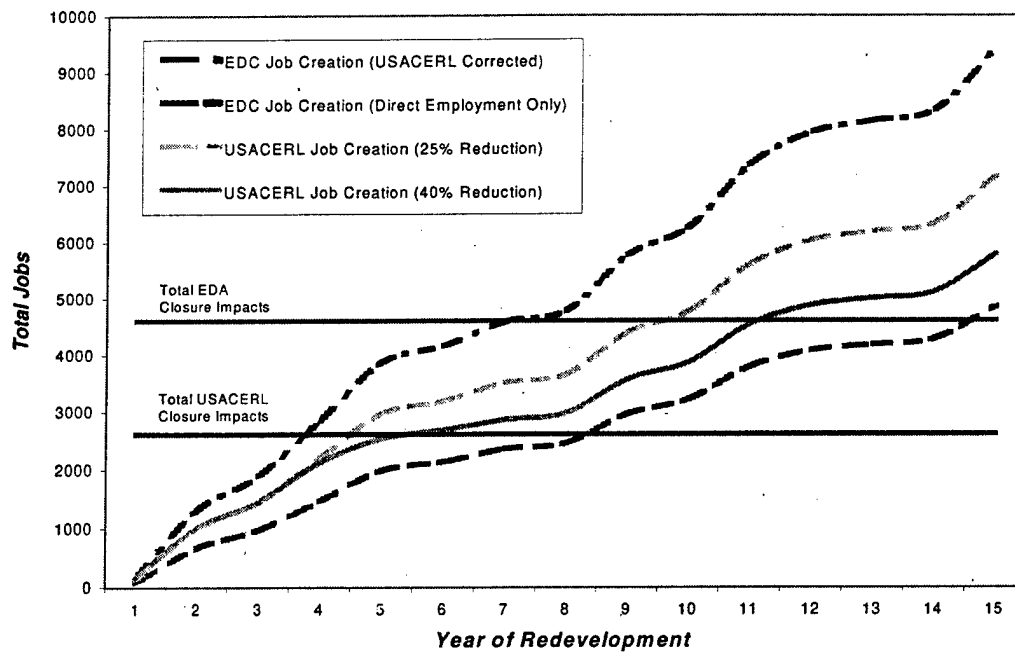


Figure 2.1. Comparison of cumulative long-term job creation estimates to closure impacts.

3 EDC Application's Consistency With the Overall Redevelopment Plan

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Background

The VHFS Preferred Reuse Plan was prepared by Dewberry & Davis and approved in June 1995 for the Fauquier County Economic Adjustment Task Force (FCEATF). Consistent with Section 7.1.5 of the DoD Base Reuse Implementation Manual which specifies the criteria under which LRA status is granted, the Governor of Virginia created the Vint Hill Farms EDA in March 1996 under provisions of Chapter 31, Sections 15.1-1320 through 15.1-1341 of the Code of Virginia for the expressed purpose of redeveloping VHFS.

The EDA is unique in terms of its statutorily granted powers. Its enumerated legal powers include the ability to obtain and accept money from various sources, dispose of property, borrow money, operate income-producing businesses, and issue development bonds. However, the similarities with other LRAs ends there. Under Virginia Commonwealth law, an EDA does not possess the legal right to tax property, approve zoning, or exercise subdivision approvals. These critical powers remain vested with Fauquier County as a matter of law.

Objective

The objective of this chapter of the review is to determine whether the redevelopment implementation strategy proposed in the EDA EDC and related business plan are consistent with the adopted Preferred Reuse Plan and other

governing documents. Among the criteria set forth for evaluating consistency are: (1) does the application capture the spirit and intent of the reuse plan, and (2) is the application consistent with the Reuse Plan's marketing strategy and implementation plan?

Conclusions

After reviewing the EDA EDC application and Preferred Reuse Plan, USACERL finds that the application is generally consistent with the goals, objectives, and implementation strategies set forth in the reuse plan. In fact, the EDA devotes an entire chapter to consistency with the reuse plan in an attempt to support what are termed market and infrastructure "refinements" based on updated information. This support is accomplished by the identification of changes on a reuse parcel basis (see Figure 1 for a graphic representation of the EDA's land use and parcelization plan).

The application captures the spirit and intent of the Reuse Plan by meeting the following stated goals and objectives:

1. The application soundly accommodates Fauquier County's need for positive and significant contributions to the county's fiscal health and collaterally affected communities by directing facility reuse toward the development of much-needed commercial space for office, innovative technology, and research and development (R&D) uses.
2. Tax base expansion is fostered through a careful balance of commercial, residential, and community uses, with a limit on nontaxable uses or transfers of VHFS property to only those organizations that serve a very important community purpose.

The application is consistent with the Reuse Plan's marketing strategy and implementation plan as follows:

1. The application addresses the need for strategic marketing and advertising efforts in a highly competitive economic development market through the programming of nearly \$1.5 million over 15 years for the purpose of business attraction. However, USACERL believes that marketing efforts and expenditures will need to be enhanced in order to effectively compete with Prince William County and others in the region.

2. The application correctly positions the facility to appeal to a diverse range of technology-related businesses. By marketing to a large and vibrant regional business sector, yet retaining the flexibility to accommodate changing market demands, the likelihood of successful reuse implementation increases. However, because of the site's locational and transportation constraints, in addition to Fauquier County's stringent regulatory and de facto development practices, the ability to capture new businesses may become diminished. Land use and implementation considerations should be more rigorously supported within the context of site characteristics, transportation networks, and regional development patterns.
3. The application identifies and programs on-site infrastructure improvements that will facilitate redevelopment through improved transportation, marketability, access, and services. However, in the absence of compelling market evidence, USACERL was unable to independently justify over \$36 million in capital improvements and subsequent debt service. The EDA's capital improvement program, as with all redevelopment programs, represents a substantial financial burden that, in this case, jeopardizes project financial feasibility.
4. The application attempts to forecast potential cash flows that indicate financial feasibility and, ultimately, the ability to implement the Reuse Plan, but the analysis lacks the necessary support and documentation to justify financial projections and a \$800,000 project net present value (NPV). The primary reason stems from USACERL's inability to independently verify the EDA's real estate market findings, which suggest commercial property absorption of 100,000 SF in the rapidly growing Interstate 66/Route 29 submarket, which absorbed (net) just over 100,000 SF within the last 4 quarters. Within the context of broader regional planning and economic development considerations, these findings were determined to be wholly unsupported and result in a business plan that is not financially feasible. (See Chapter 4, **Business Plan Review and Market and Financial Feasibility Analysis**).

USACERL's concerns with financial feasibility of the EDA's business plan and realization of Reuse Plan goals were communicated in an 8 July 1997 memorandum to the EDA with the intent of better understanding market assumptions. The EDA responded on 25 July 1997 (see Appendix A) and, while some gaps in data and additional assumption support were effectively addressed, the EDA generally reiterated proffered EDC application assumptions. To achieve a financially feasible business plan based on reduced demand for Vint Hill property

(which maintains the integrity of the Preferred Reuse), USACERL developed alternative scenarios which significantly scale back costs to a level where projected revenue streams can offset operating costs, capital improvements, and debt service (See Chapter 4, **Business Plan Review and Market and Financial Feasibility Analysis**, and Chapter 5, **Need and Extent of Proposed Infrastructure Improvements**).

4 Business Plan Review and Market and Financial Feasibility Analysis

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Objective

The objective of this chapter is to provide a review and analysis of the financial feasibility of the VHFS Economic Development Authority (EDA) EDC application and its business and operations plan. USACERL's technical review of financial feasibility includes market analysis and the need and extent of proposed infrastructure investment (Chapter 5, **Need and Extent of Proposed Infrastructure Improvements**). Elements of importance in the review of the business plan include (DoD 1995):

- a property development timetable, phasing plan, and cash flow analysis (for 15 years)
- a market and financial feasibility analysis describing the economic viability of the project including:
 - an estimate of net proceeds over the projected development period
 - the proposed consideration and payment schedule to DoD
 - the estimated fair market value
- a cost estimate and justification for infrastructure and other investments needed for the development of the EDC parcel (Chapter 5, **Need and Extent of Proposed Infrastructure Improvements**)

- local investment and proposed financing strategies for the development (also covered in Chapter 6, **Extent of State and Local Investment and Risk**).

Background

The EDA is requesting an EDC to acquire approximately 680 acres of Vint Hill Farms Station, Fauquier County, VA, along with stormwater and street utility systems for a proposed consideration to the Department of the Army of \$300,000 (Appendix D, p 12, see Figure 1).^{*} The EDC parcel contains approximately 278 existing buildings at VHFS representing nearly 1.2 million square feet (SF) of total floor space. The remaining building inventory has been claimed by Fauquier County and McKinney Act homeless providers under public benefit conveyances. Of the 1.2 million SF of existing building space contained within the EDC parcel, nearly 570,000 SF has been programmed for demolition by the EDA. The VHFS Preferred Reuse Plan has identified future uses based upon 28 land-use parcels of the property that are included in Table 4.1. Also see Figure 1 for a spatial representation of proposed reuse parcels and acreage. It is important to note that subsequent to the EDA's April 1997 submission, an EDC application amendment was filed with the Department of the Army for land use Parcel 10. USACERL considered the anticipated costs and revenues of Parcel 10 based on the 10 October 1997 amendment contained in technical Appendices A and D.

According to the EDA, the Preferred Reuse Plan "delineates a land use program that balances facility reuse and new construction opportunities within overall economic development and employment objectives, in an environment of sufficient diversity and community resources, to provide an attractive and viable adjunct to the surrounding New Baltimore community and Fauquier County" (FCEATF 1995, p II-1). The Reuse Plan focuses primarily on the Innovative Technology and Research and Development parcels due to the Plan's two goals of job creation and tax base expansion. Although the EDA's development strategy includes housing and a golf course, these land uses are only to serve as income generating vehicles in the early years of reuse to leverage significant capital improvement costs.

^{*} Originally the EDA offered a proposed consideration of \$800,000 in the April 1997 EDC application (EDA 1997, p ix). However, this figure was revised based upon financial feasibility concerns raised by USACERL and the Army during the course of the review. These concerns are extensively documented in Appendix D of this special report.

Table 4.1. Proposed EDC land uses and existing acreage and building space.

Proposed Land Use	Acres	Existing Square Feet
Innovative Technology	202.1	389,805
Office/Service	11.5	52,666
Research and Development	42.6	65,846
Residential (300 residential units)	85.5	312,688
Retail/Service	37.7	110,718
School (training/recreation/conference)	28.3	204,679
Golf Course	210.7	16,003
Other	61.6	40,053
Total	680.0	1,192,458

Of critical importance to the EDA's reuse strategy are the enumerated powers granted to it by the Commonwealth of Virginia for the expressed purpose of redeveloping VHFS. The EDA is like other Local Redevelopment Authorities (LRAs) with respect to the powers of property disposition, condemnation, demolition, and the ability to borrow money, receive grants, and negotiate an EDC with the Army. However, for all practical purposes the EDA is financially independent. In other words, the EDA's incurred debts are not financially secured by the tax revenues of Fauquier County or the Commonwealth of Virginia. Any financial support from these government bodies to the EDA must be voluntarily given. This legal arrangement is known as a "moral obligation," which contrasts with the more robust financial backing found under a "full faith and credit" arrangement. Not only does the EDA not possess the power of taxation to secure debts, it also lacks the power of zoning and subdivision approval. Under the EDA's charter, these critical powers remain under the purview of Fauquier County as a matter of law.

Approach

The approach to the technical review included a review of the entire EDC application package and supporting documents and reports. USACERL also conducted interviews with the Vint Hill Farms Army Caretaker Force personnel, U.S. Army Corps of Engineers (USACE), Baltimore District action officers who are currently handling the real estate disposal of VHFS, and Fauquier County real estate brokers. With necessary site data collection complete, USACERL was then able to perform financial feasibility analysis through the development of spreadsheet-based models, pro formas, and tables. In general, the enclosed spreadsheets are organized in two principle groups: (1) a recast of the EDA business plan assumptions and discounted cash flow results and (2) USACERL-developed data tables, analyses, and findings of financial feasibility. After a general discussion of these two sets of analyses, USACERL will present its findings.

It should be noted that USACERL identified several factors that could serve to undermine the successful implementation of the Preferred Reuse Plan early in the EDC technical review process. USACERL communicated these limiting factors to the Army BRAC Office and USACE in an effort to develop alternatives that would ensure a successful conveyance of property. The culmination of these joint efforts was manifested in the 8 July 1997 memorandum addressed to the EDA that requested additional data and support for EDC application assumptions. The EDA responded with a 25 July 1997 memorandum that addresses USACERL's original questions and requests (Appendix A). However, the responses provided by the EDA, although useful in some instances, by and large provided little support for the claims and assumptions asserted in the EDC application, which USACERL challenged. Thus, upon USACERL's presentation of the draft EDC technical findings for VHFS on 12 August 1997, the Army elected to conduct a pre-negotiation meeting with the EDA on 4 September 1997 to discuss the financial feasibility issues identified by USACERL. The product of this meeting was the 10 October 1997 "Amendment to the Economic Development Conveyance Application for Vint Hill Farms Station" (Appendix D). This document, and its potential impact on business plan financial feasibility, will be discussed further in later sections.

Recast of EDA Business and Operations Plan Scenario. To aid in the analysis and documentation of the financial feasibility of the EDA business and operations plan, USACERL recast the applicant's assumptions into computer spreadsheet-based pro formas, models, and tables. This accomplished two objectives: (1) to check the applicant's mathematical calculations, methodology, and proper application of discounted cash flow methodology and (2) to give USACERL analysts an opportunity to fully understand the assumptions that support the applicant's cost and revenue projections. Once reconciled and understood, this recast serves as a baseline model for developing and testing alternative business plan scenarios.

In this case, EDA's EDC business and operations plan and supporting narrative in the application do not support projected real estate revenues and capital costs. To even begin to determine whether the cash flow projections in the applicant's business plan were reasonable, USACERL had to independently validate underlying assumptions, data, and information. To this end, USACERL in varying degrees relied upon an assortment of technical documentation including the USACE, Baltimore District Appraisal Report (USACE Baltimore District, 1997), the Legg Mason Realty Group (LMRG) market analysis (EDA 1997, Appendix N), and independent real estate market studies and reports. These studies and reports were used to reconstruct the real estate revenue

components of EDA's business and operations plan using an independently defensible set of assumptions. Real estate absorption projections served as the primary basis for full build-out calculations and supporting capital improvement requirements.

Tables B1 through B13 contained in Appendix B of this technical review relate the baseline set of assumptions used by USACERL to evaluate the financial feasibility of the EDA business plan. A description of each of these tables follows. It should be noted, however, that USACERL was unable to independently recast the EDA's business and operations plan accurately due to the apparent presence of calculation errors and under-supported technical assumptions in the plan. These findings will be discussed in further detail in the section on Business Plan Review and Findings.

Table B1, Vint Hill Farms Property Inventory (p 10-28), provides a summary of the reuse parcelization and disposition strategy for existing building space and acreage.

Table B2, VHFEDA Land Sales (Table D-1), projects absorption of developable acres, land sales revenues, and supporting land pricing strategy for the 15-yr redevelopment horizon.

Table B3, VHFEDA Building Sales (Table D-2), projects absorption of reusable buildings, sales revenues, and supporting pricing strategy for the 15-yr redevelopment horizon.

Table B4, VHFEDA Leasing Activity (Table D-3), details 6-yr absorption and income projections for interim buildings designated for leasing.

Table B5, Golf Course Assumptions (Table IX-1, Appendix O), summarizes golf course demand assumptions including 18-hole rounds, 9-hole rounds, and golf outings, in addition to pricing strategies over a 10-yr-projection horizon.

Table B6, Golf Course Business and Operations Plan (Table IX-1, Appendix O), includes 10-yr projections of revenues, expenditures, development costs, and net operating income for all golf course related activities.

Table B7, VHFEDA Water and Sewer Business and Operations Plan (Table D-4), projects annual revenues and expenditures for the operations of VHFS water and sewer systems. The table includes projected demand in gallons per day,

revenues for utility connections and usage, and operating fixed and variable costs.

Table B8, Administrative and Marketing Expenditures (Table D-5), projects costs associated with the operations of the EDA including salaries, contracting services, maintenance, utilities, travel, and marketing for 15 years.

Table B9, Capital Expenditures (Table D-6), details EDA's estimated infrastructure improvements over a 12-yr programming time frame.

Table B10, VHFEDA Debt Service (Table D-7), outlines EDA's incurred annual and cumulative capital expenditures and debt service costs through the amortization of 20-yr development bonds secured by EDA's real estate rental and sales income streams.

Table B11, Discounted Cash Flow Analysis - VHFEDA Business and Operations Plan (Table 10-10), is the USACERL-developed discounted cash flow (DCF) analysis for the net cash flows resulting from 15 years of redevelopment activity. Net present value (NPV) calculations are performed using discount rates of 9 and 15% for the 15-yr analysis period.

Table B12, Discounted Cash Flow Analysis - CERL1 Scenario with 25% Project View (Table 10-10), is the USACERL-developed DCF analysis for the net cash flows resulting from 15 years of redevelopment activity. NPV calculations are performed using discount rates of 9 and 15% for the 15-yr analysis period.

Table B13, Discounted Cash Flow Analysis - CERL1 Scenario With 40% Project View (Table 10-10), is the USACERL-developed DCF analysis for the net cash flows resulting from 15 years of redevelopment activity. NPV calculations are performed using discount rates of 9 and 15% for the 15-yr analysis period.

Table B14, Scenario and Sensitivity Analysis, summarizes the impacts to revenues, operating costs, operating cash flows, capital costs, total cash flows, and NPVs as a result of the aggressive USACERL assumptions. The table provides three views: (1) total project (no grant dollars), (2) project with grant dollars offsetting capital improvements, and (3) an operational view (project without capital costs and tenant fit-up costs). Additionally, the sensitivity to the changed assumptions are measured by grouping the assumptions into five categories: (1) reduced WWTP requirements, (2) USACERL-developed infrastructure, (3) no financial support from the county, (4) increased financial support from the county, and (5) reduced water and sewer operating costs.

Business Plan Review and Findings

Introduction

According to the EDA, the purpose of the Business and Operations plan is to "provide the Vint Hill Farms Economic Development Authority (EDA) with a comprehensive and flexible guide to accomplish the redevelopment of Vint Hill Farms Station, following the base closure and acquisition from the Army." Furthermore, the EDA argues that the business and operations plan "forecasts the most likely reuse and development scenario for Vint Hill based upon current market conditions and the Approved Reuse Plan for the facility" (EDA 1997, p 10-1). The EDA has been designated by the Commonwealth of Virginia as the exclusive public agency to implement the Preferred Reuse Plan as supported by the EDC application business and operations plan. The following report section is dedicated to the review and analysis of EDA's business and operations plan (business plan), a vital component of the formal EDC application.

Although the business plan provided in the EDC application contains a great amount of detail and documentation, it fails to adequately demonstrate that current and future market conditions are robust enough to support projected property absorption and full build-out densities and requirements. Market feasibility after all, is a critical variable driving the overall financial feasibility of the business plan.

The following review of the business plan is loosely organized to correspond to the application's Business and Operations Plan (Chapter 10) and supporting tables and pro formas.

Property Description (EDA Business Plan, Chapter 10.2.1)

The first step in developing the business plan, according to the EDA, was to inventory land and existing facilities at VHFS that could be offered to the private sector for redevelopment. The intended purpose of this analysis was to develop a reasonable estimate of total land area that could potentially be marketed for sale, the number of marketable permanent-use buildings on the site, the amount of acreage that would be needed to support these uses, and the remaining acreage that is being transferred through public benefit conveyances. The following sections summarize the real estate assets contained at Vint Hill.

Land. VHFS has been divided into 28 reuse parcels by the EDA. It should be noted that, although the Preferred Reuse Plan has been approved through a public review process, Fauquier County must still approve the designated zoning

of Vint Hill Farms. Total developable land was calculated by subtracting parcels proposed for non-income generating community uses and parcels on which building demolition is proposed. Development acreage and proposed land uses by parcel are summarized in Table B1 in Appendix B. According to the EDA, roughly 595 acres, or 85% of Vint Hill's 701 acres, will be designated for income producing land uses. Table 4.2 summarizes the EDA's land disposition strategy.

Table 4.2. Summary of proposed land disposition.

	Acres
Conveyed with existing buildings to private sector (revenue generating)	99.9
Prepared development sites conveyed to the private sector (revenue generating)	284.5
Parcel 10 -training/recreation/conference (some revenue generating potential)	28.3
Public golf course (revenue generating)	210.7
Public benefit conveyance	15.9
Retained for public facilities (sewage treatment)	24.4
Roads	29.8
No Cost EDC: McKinney Act Housing	5.1
No Cost EDC: Future county indoor pool facility	2.4
Total Site	701
Total Revenue Generating Acreage	595.1

Buildings. As stated earlier in this report, approximately 299 buildings exist at VHFS, representing over 1.26 million SF of total floor space. Existing residential and office space comprise the largest inventories of space, each totaling over 345,000 SF. The EDA has programmed the demolition of nearly 45% (569,937 SF) of the existing building space because of functional and economic obsolescence and the need to create developable land bays for the private sector.

In terms of revenue-generating uses of existing buildings that are not programmed for immediate demolition, the EDA has designated 32 buildings, or 451,148 SF, for interim leasing activities, of which 323,260 SF will ultimately be offered for sale. The balance will be demolished or removed after leasing activities are phased out in Year 6 (2002) of the 15-yr development strategy. Buildings scheduled for interim leasing by reuse parcel are contained in Table B1.

The 35 buildings programmed for permanent use and sale represent over 531,000 SF of existing space at VHFS, of which 323,260 SF are initially programmed for interim leasing as discussed above. Table B1 summarizes buildings scheduled for sale and permanent use by reuse parcel.

USACERL findings. USACERL generally concurs with the EDA estimates of existing building space and acreage. Based upon the development strategy articulated within the Preferred Reuse Plan, the proposed parcelization, property disposition, and land use strategies appear to be reasonable and consistent with the redevelopment goals of job creation and tax base expansion. However,

USACERL finds that proposed absorption and revenues generated by particular parcels and land uses are overly aggressive in light of VHFS' locational disadvantages, Fauquier County's development climate, and local real estate conditions. These market findings are described in detail in the next section.

Market Analysis (EDA Business Plan, Chapter 10.2.2)

Once a development strategy has been formulated based on a bottoms-up assessment of existing facilities, a market analysis is performed to estimate the potential marketability of land and buildings based on real estate market demand and supply drivers. In this case, income projections for industrial/office/R&D markets and residential uses are based upon market research conducted by the LMRG. The market findings developed by LMRG serve as the basis for developing annual property absorption and revenue projections from the sale of land and existing buildings, and interim buildings designated for leasing activity.

The total 15-yr projected build-out of Vint Hill is supported by Tables B2 through B5, which project land, existing building, leasing, and golf activity, respectively. According to the EDA and the LMRG consultant, it is anticipated that 1.9 million SF of employment-generating industrial, office, R&D, retail, and service uses will be sold or developed over the forecast horizon, resulting in an aggressive but achievable absorption rate of 119,000 SF per year. At the conclusion of the 15-yr forecast, all but 22 of the 597 acres are projected to be sold. Finally, according to the EDA, land values were based on the assumption that necessary infrastructure and amenities programmed under the Preferred Reuse Plan would be in place.

Industrial/Office/R&D. For the purpose of the industrial market analysis, LMRG assumed that VHFS lies within the Interstate 66 and Route 29 Corridor real estate submarket (see Figure 2). However, it was unclear from the analysis what geographic area this submarket actually delineates. EDA's salient operations and business plan market study findings are listed below by real estate market.

- Vint Hill Farms suffers from a locational disadvantage relative to the majority of its industrial, office, and retail competition. To overcome these transportation and geographical constraints, an aggressive marketing campaign and real estate pricing strategy must be implemented.

- The electromagnetic and satellite "view" characteristics of the site are deemed to be unique site attributes and marketing assets. In fact, EDA contends that these locational attributes are likely to generate significant interest in Vint Hill Farms leading to a higher-than-normal market share of high-tech companies that can benefit from these telecommunications assets.
- The property absorption schedules for Vint Hill Farms operate under the assumption that the site will uniquely appeal to electronics and telecommunications industrial sectors that are purportedly locating in the region. In fact, the appeal of Vint Hill Farms' unique communications attributes offsets the site's inherent locational and transportation disadvantages.
- The industrial/office/R&D market along the I-66/Rt 29 Corridor continues to recover from the overbuilding of real estate that punctuated the late 1980s, posting absorption levels in the 400,000 to 550,000 SF range annually.
- Vacancy rates for the I-66/Rt 29 Corridor have been in the 5.4 to 5.6% range for the past 4 quarters.
- Based on projected employment increases in the I-66 Corridor in Prince William and Fauquier counties, 500,000 SF of existing vacant space will be absorbed over the next year, creating demand for new space in the market place.
- Vint Hill can absorb approximately 1.3 to 1.5 million SF of office/industrial/R&D space (75,000 to 100,000 SF/year) over 15 years. This total will be at least 20% of the projected absorption in the corridor and in the county. This high capture rate assumes that the ongoing trend toward rezoning and the alternative use of other previously planned industrial/office parks and potential development sites in the region will continue at some level (see Tables B2-B4 for a recast of the EDA's projected 15-yr land and building absorption).
- Land prices, which declined dramatically from prerecessionary levels of \$3.00 to \$6.00/SF (\$130,680 to \$261,360 per acre) for finished lots to between \$1.50 and \$2.50/SF (\$65,340 to \$108,900 per acre), have risen to between \$2.00 and \$3.50/SF (\$87,120 to \$152,460 per acre) (see Tables B2-B4 for a summary of the EDA's real estate pricing strategy).
- Lease rates for industrial space have also posted improvements recently. Rates for R&D space increased to from \$8.00 to \$11.00/SF while industrial

space rates are now in the \$2.50 to \$6.00/SF range (net of insurance, maintenance, and taxes).

Table 4.3 summarizes the EDA's real estate pricing strategy in relationship to current sales and rental rates in the I-66/Rt 29 Corridor.

Table 4.3. Summary of EDA's building and land pricing strategy.

Proposed Land Use	EDA Price Per Acre (developable land)	I-66/Rt 29 Corridor Market Rates Per Acre	EDA Interim Lease Rates Per Square Foot (NNN)	I-66/Rt 29 Corridor Market Lease Rates Per Square Foot	EDA Price Per Square Foot (reusable buildings)	I-66/Rt 29 Corridor Market Sales Rates Per Square Foot
Research & Development	\$87,120	\$87,120-\$152,460	\$4.00	\$8.00-\$11.00	\$20.00	\$29.00-\$58.00
Innovative Technology	\$50,094-\$65,340	\$65,340-\$139,000	\$2.50	\$2.50-\$6.00	\$11.00-\$20.00	\$29.00-\$58.00
Office/Service	\$87,120	\$87,120-\$152,460	\$0.50-\$4.00	\$4.50-\$17.00	\$25.00	\$110.00-\$152.00
Retail/Service	\$174,240		\$2.00-\$4.00	N/A	\$20.00-\$25.00	N/A
Residential	\$63,291-\$140,374	\$100,000-\$105,000	N/A	N/A	N/A	N/A

USACERL Industrial/Office/R&D Findings

Early in the EDC technical review process, USACERL identified inhibiting development factors that could likely result in the reduced market feasibility of the EDA's operations and business plan. These concerns were documented and shared with the Army BRAC Office (DAIM-BO) and HQUSACE in an attempt to work with the EDA and resolve the more questionable assumptions contained in the operations and business plan prior to negotiations for the disposition of VHFS (11 July 1997 letter from Paul Johnson, DASA I&H to Hunton Tiffany, Chairman, EDA, Appendix A). Because a significant portion of the EDA's operational revenues are derived from industrial/R&D/office real estate activities, and considering that the EDA's primary goals of job creation and tax base expansion will ostensibly be satisfied by these proposed land uses, it is imperative that a realistic assessment and forecast be developed to determine market capture of real estate absorption and, ultimately, project financial feasibility.

The USACERL industrial/R&D/office market findings discussed in this section are marked by a high degree of correlation and inter-relatedness. In other words, a clear cause-and-effect relationship for particular findings is generally not outwardly apparent; rather, each finding could effectively be construed to be symptomatic of or the inducement for other relevant market findings.

Location

The first key market finding identified by the EDA and independently confirmed by USACERL is the relative locational disadvantage of the site. Indeed, the EDA concedes in the EDC operations and business plan that, "the access and visibility characteristics of the property remain inferior compared to the majority of competitors for industrial, office, and retail uses." Although the site practically borders on the economically thriving Prince William County, the fact remains that Vint Hill's primary entrance is 1.7 miles from the Route 29 corridor and nearly 7 miles from the Route 29 and Interstate 66 interchange. Industrial park developers and the firms that follow them favor locations near interstate and freeway exchanges because of the potential savings realized from reduced transportation costs for factors of production and output, an expanded labor market, and a wider and more diverse market area.

These locational disadvantages are punctuated by the rural character of the areas contiguous to the site. In fact, the Fauquier County Comprehensive Plan calculates that nearly 82% of the land in county is comprised of low-density housing, agricultural, and unimproved forest land. Finally, the nearest markets that contain commercial and industrial uses are more than 5 miles away in Warrenton, Haymarket, and Gainesville.

The Urban Land Institute (ULI) *Business and Industrial Park Development Handbook* suggests several location consideration factors for industrial/R&D/office and type developments, such as the EDA's proposed Innovative Technology Center. The first factor to consider is local linkage, which is simply defined as the frequent economic interaction between a company and suppliers, distributors, customers, consultants, and government. According to ULI, site selectors for high-tech developments evaluate the following linkage traits:

- accessibility to firms with which they do regular business
- the number of trips to be made to and from their business inside the metropolitan area
- congestion in and around the site
- production time lost during travel
- employee time required for travel in the metropolitan area

- vehicle cost, including taxes, maintenance, and fuel per mile traveled
- alternative modes of transportation.

Based on these basic local linkage factors, several conditions would have to be satisfied in order to achieve EDA's absorption of 100,000 SF. First, any high-tech business which locates at Vint Hill will require convenient transportation access not only to its labor base, but also to any suppliers, customers, and academic institutions upon which it relies to remain economically viable. In general, this condition is best satisfied when firms with extensive linkages to Prince William County locate at Vint Hill because the county nearly borders the site, is marked by robust industrial/R&D/office activity, and itself contains extensive linkages with academia such as the Prince William Institute, which is 15 miles from Vint Hill. Finally, since in many cases the output from innovative technology and R&D firms is intellectual, labor pool considerations are of paramount concern. Potential employees are most likely scattered throughout the Washington, DC metropolitan statistical area (MSA) and would be required to commute or locate to Vint Hill, which actually lies outside of the designated MSA.* Commuting and relocation considerations represent both pecuniary and nonpecuniary costs to employees and the firms which employ them, which could ultimately influence a firm's decision to locate at Vint Hill.

The second evaluation factor considered by innovative technology and R&D firms is clustering, which relates to the tendency of these types of businesses to congregate in research parks near major universities where they can take advantage of resources such as laboratories and libraries, professors and graduate students, and large pools of highly educated and skilled labor (ULI 1988). In addition, critical venture capital is also attracted to universities because of the commercially valuable discoveries they generate.

With this in mind, a successful innovative technology park will largely be a function of the ability of firms to establish and foster sustainable clustering relationships with academia and the R&D community. In the opinion of USACERL, clustering will be difficult, but not impossible, to achieve for the following reasons: (1) the Prince William Institute, which offers high-tech educational and partnering opportunities, is 15 miles from the site, (2) major

* Note, that Fauquier County is now considered part of the broader Washington, DC, primary metropolitan statistical area (PMSA) by the Bureau of the Census.

universities which likely capture the largest share of research grant funding, graduate students, and highly skilled professors (i.e., Georgetown, the University of Maryland, American University, and George Washington University) are all at least 35 miles from the site, and (3) although Fauquier County possesses a well-educated labor base as evidenced by higher than median incomes, nearly 50% of the work force commutes outside of the community and the remainder works predominantly in retail, wholesale, and services categories (Reuse Plan, p II-31).

In sum, VHFS suffers from locational disadvantages that are both a function of geographic distance to critical academic institutions, the labor pool, and suppliers, and transportation weaknesses in terms of interstate and freeway access. Indeed, the EDA maintains that both of these considerations serve to undermine, in part, EDA's projected average absorption of 100,000 SF of industrial/R&D/office space over 15 years.

Transportation Considerations

Inextricably related to locational considerations is the local transportation network that serves Vint Hill Farms. Currently, the main access to VHFS is via Rt 652, a two-lane collector which serves as the northeast border of the installation. Route 652 in turn intersects with Rt 215, another two-lane collector, which runs 1.7 miles north to the main transportation artery of Rt 29 (Figure 3), which is a four-lane divided rural highway that intersects with I-66 in Prince William County. The current off-site transportation network served the Army well because of the large on-site population that did not commute, and the Army was not marketing the property to discriminating site selectors. However, given the site's less than optimal transportation characteristics, the EDA will require off-site improvements to achieve 100,000 SF/year absorption of office/industrial/R&D space.

USACERL addressed off-site transportation considerations in its 9 July 1997 data call to the EDA. The EDA concedes in its 17 July 1997 response that no off-site transportation improvements are proposed by the EDA itself, but that Fauquier County has targeted numerous off-site improvements in conjunction with the New Baltimore Service District (NBSD) Plan. According to the EDA, "[Fauquier] County has targeted the NBSD for public sewer and water service to allow for concentrating growth in this, the largest of the County's nine service districts." The fact that the NBSD has been designated as a growth and development district bodes well for the redevelopment of VHFS because the county has traditionally taken an antidevelopment posture. Of critical

importance to the redevelopment of VHFS is the proposed new four-lane Rt 793 Parkway, which borders the western edge of the installation. However, the EDA notes that "at the current (population) growth rate of 2 percent, many of the highway improvements shown for the NBSD may not be needed or implemented before 2010." Based on the EDA's 15-yr pro forma, 2010 coincides with "Year 14" of redevelopment, well beyond the early and most critical stages of redevelopment and capital investment which establish project momentum.

Assuming a 2010 completion for the proposed Rt 793 facility, other near-term alternatives must be evaluated to ensure the marketability and functionality of the site in the early years of redevelopment. The remaining alternative capitalizes on the existing Rt 215 linkage. Within the NBSD Service Plan, a four-lane widening is proposed, but "would remain a two-lane road, unless traffic from the south (mostly in Prince William County) and from Vint Hill picked up significantly as a result of new development" (EDA memorandum, Appendix A, 17 July 1997). However, the EDA further notes that current zoning in the contiguous areas of Prince William County near VHFS is agriculture and low-density rural residential, suggesting that a fair amount of time must lapse before traffic on Rt 215 approaches levels that warrant a four-lane widening. Based on the foregoing, USACERL believes it is reasonable to assume that substantive road improvements to Rt 215, or the proposed Rt 793 Parkway, will most likely be programmed years into the future, or at least at a point in time where they will not complement the EDA's marketing efforts.*

So critical are these off-site improvements that the EDA's real estate market consultant, LMRG states that, "with proper improvements to access via Rt 215, the infrastructure, amenities and competitive pricing position proposed for the Vint Hill property will allow it to compete very effectively with Prince William County parks for industrial and R&D users (LMRG memorandum to Owen Bludau, Appendix A, 21 July 1997)." Read plainly, LMRG believes that, from a real estate market viewpoint, improvements to Rt 215 are a condition for competitive success. In the absence of such off-site improvement in the near- or possibly mid-term, USACERL believes that marketing efforts and absorption of Vint Hill office/industrial/ R&D property will be constrained.

* The EDA has programmed the most substantial marketing expenditures between 1998 and 2003, after which expenditures decrease for the remainder of the 15-yr (2011) pro forma. Recall that the EDA does not believe that any substantive off-site improvements will be made until 2010. See the recast of the EDA operations and business plan pro forma in Appendix B, Table B11.

Site Attributes

It was a testament to the rural character and quiet electromagnetic environment of the Vint Hill Farms area that the Department of the Army Signal Intelligence Service (SIS) selected the site for a new East Coast monitoring station in May 1942. The areas immediately contiguous to Vint Hill remain to this day largely rural and undeveloped because of existing zoning and distance from the Washington, DC, metropolitan area. The EDA asserts in its EDC application market analysis that the "opportunity to attract high-tech electronics and telecommunications industries to the site continues to be excellent based upon the unique electromagnetic and satellite 'view' characteristics of the property."

In the 21 July 1997 memorandum responding to USACERL's 8 July 1997 EDC data call (Appendix A), the EDA real estate consultant LMRG maintained this assertion and further cited Vint Hill Farms' unique site attributes as a key marketing strategy for "higher than statistical average" absorption of industrial/R&D/office property. Additional support is ostensibly grounded in two key informant interviews conducted with Mantech Corporation and Hughes Communications. According to LMRG, "both companies indicated that industries involved in communications and electronic equipment testing would be interested in the characteristics of the site." Furthermore, with "the property's location in one of the largest concentrations of communications and electronics companies in the United States, LMRG projected that, assuming a significant marketing effort targeted at those companies, the Vint Hill property could capture a higher than normal 'market share' in the I-66/Rt 29 corridor." Finally, LMRG maintains as accurate its original average absorption projection of between 75,000 and 100,000 SF.

USACERL concurs with LMRG's assertion that a specialized and large industrial base of communications and electronics resides within the Washington, DC area. The market assumption that Vint Hill will capture a portion of this growing market is also largely uncontested by USACERL. However, USACERL does not agree that Vint Hill's "unique" attributes will provide the necessary marketing attraction that supports a higher than normal market share, all else being equal. This assessment is supported by the following considerations proffered by VHFS Public Works staff:

1. Vint Hill Farms lies within what is known as a *low noise floor*. Essentially, this site attribute results in such low background noise that R&D type activities could operate under low power requirements and still accomplish a given testing mission. One of the key benefits of this unique site attribute is

the fact that lower power results in a shorter distance in which a signal travels, in many cases negating the need for communications licensing. However, this attribute is largely contingent upon the absence of a substantive industrial base that emits noise and signals. The EDA's reuse plan, which contains over 270 acres of office/industrial/R&D uses and a proposed \$36 million in on-site improvements, would seem to suggest that the low noise floor's integrity would be comprised by development at some point in the future. Furthermore, the primary industry that benefits from such an attribute is naturally R&D oriented, namely, military or national interest type activities. It is precisely these activities that will be realigned to Fort Monmouth, NJ, as a result of the 1993 BRAC Commission's decision to close VHFS.

In an effort to maintain the integrity of the low noise floor, the Army has attempted to encourage Fauquier and Prince William counties to adopt "ordinances to prohibit the installation or use of electrical equipment in a 15 mile area that surrounds the fenced grounds of the U.S. Vint Hill Farms Station in Fauquier County that emit, would emit, electrical impulses and noise that interfere with the research and development being conducted at the location." Such a stringent ordinance, or even a more relaxed variation, to preserve the low noise floor integrity of the site and potentially attract companies that could capitalize on the preserved unique asset, would (and has) undoubtedly face opposition because of the inhibiting effect on nearby development and would almost certainly adversely affect the EDA's broader business attraction efforts.

2. The main reason the Army selected the site was because of its unique *hearability* characteristics. Signals in the High Frequency (HF) range (2 to 30 MHz) are heard very well at VHFS. However, although that band was invaluable during World War II and for most of the Cold War, it has been supplanted by satellite communications and the Internet. Current cell phones that rely on satellite up- and down-links use 900 MHz, and the new PCS digital cell phones (Sprint Spectrum et al.) use 1800 MHz. Commercial applications that capitalize on hearability are rare. However, the frequency range is still used extensively by amateur radio operators.
3. In terms of *unique satellite view characteristics*, the site enjoys no better or worse views than any other site that has a clear site line for satellite up- and down-links. This site attribute is only valuable to the extent that land upon which satellite relay stations could be sited is scarce in the Washington, DC MSA. However, USACERL has been unable to corroborate such a scarcity.

It is the conclusion of USACERL that the strong relationship drawn between Vint Hill Farms' "unique" site attributes and higher than normal market share of absorption by the EDA is tenuous. The site attributes enumerated by the EDA are either outmoded in light of today's communication technology, would impose upon on- and off-site development if they were to be preserved for any economic potential, and in some cases are in fact not unique at all. These findings do not suggest, however, that VHFS will not attract office/industrial/R&D type uses. On the contrary, these uses are enjoying a resurgence in the Northern Virginia real estate market and are a real redevelopment opportunity for VHFS. However, the northern Virginia market is highly competitive, and, in reality, there is very little at Vint Hill that warrants "higher than normal" absorption and market share projections.

Regional Real Estate Market

USACERL generally concurs with the EDA's pricing strategy for real estate products, which include leasable buildings, developable land, and buildings that will be sold. The basis for this conclusion stems from current rental and sales rates for buildings and land in the I-66/Rt 29 submarket. The EDA's pricing strategy, contained in Table 4.3, clearly demonstrates that Vint Hill pricing is competitive with that of the I-66/Rt 29 market, in most cases providing a significant discount to account for locational disadvantages and to increase its market position in this highly competitive real estate submarket (see Chapter 7, **Local and Regional Real Estate Market Conditions**). Although the pricing strategy provides for significant discounts, they are, in USACERL's opinion, not drastic enough to undermine Fauquier County commercial property values. Furthermore, the EDA's phasing plan is sympathetic to a possible "flooding of the market" of land and buildings by systematically controlling how much product is put on the market in a given period.

Northern Virginia office/industrial/R&D markets are improving from the recessionary downturn of the late 1980s and early 1990s, to the point where "pure" speculative construction may commence in 1997 or 1998 (CB Commercial 1996). The increasing strength of the northern Virginia commercial real estate market is shown by the high level of public investment and private sector real estate development in Fauquier County's neighbor to the east, Prince William County. Consider the following:

- Structural vacancy rates for office/industrial/R&D space continue to decline in the northern Virginia and I-66/Rt 29 markets. The most recent COSTAR report furnished to USACERL by LMRG, indicates a vacancy rate of 5.6% for

office/industrial/R&D space in the I-66/Rt 29 market. At first glance, this rate seems to suggest that commercial development of this type may perform in line with the EDA's market expectations. However, upon further analysis, it becomes apparent that more than adequate developable land is available to accommodate new construction of space precipitated by declining vacancy rates and increasing rental rates that normally justify new construction. This potential is clearly evidenced by the availability of over 500 sites suitable for immediate office construction in Loudoun, Fairfax, and Prince William counties (USACE Baltimore District, 1997).

- Prince William County appears to be absorbing its fair share of the development activity demanding the abundant sites referenced above. This argument is grounded in the following regional real estate market findings:
 - According to the Baltimore District's market analysis for the I-66/Rt 29 Corridor, over 3,000,000 SF of office/industrial/R&D development is planned for the Haymarket/Gainesville area, which is roughly 7 to 8 miles from VHFS. However, LMRG notes in its 21 July 1997 response to USACERL's 8 July 1997 data call, that in all likelihood the planned development will occur over a 7 to 10-yr timeframe based on discussions with area brokers (Appendix A). The fact remains, however, that competition for office/industrial/R&D space remains strong and that the nearby market of Haymarket/Gainesville is competing effectively.
 - The *Innovation@Prince William* (or Broadview Centre) multi-use development—the result of a collaboration between Prince William County and George Mason University—currently offers 1,200 acres in Manassas for development, with additional expansion being considered. Full build-out will include 750,000 SF of office/technology space, 250,000 SF of industrial/distribution uses, a 200- to 300-room hotel, a 30,000 SF conference center, 50,000 SF of retail space, and an 18-hole golf course. Additionally, Prince William County's contribution to the \$140 million Rt 234 Bypass will provide convenient access to I-66 from adjacent Rt 28. Build-out is projected over 5 years.
 - The 100-acre Manassas Gateway Business Park is strategically located between the Manassas Municipal Airport and the facilities for the Dominion Semiconductor plant (IBM/Toshiba joint venture). It is the intention of the City of Manassas to capture Dominion-related business activity such as Dominion's supplier LAM Research within the Gateway Business Park.

- LMRG indicates in their 21 July 1997 memorandum that 428,191 SF of commercial space has been absorbed in the I-66/Rt 29 submarket. However, closer analysis shows that figure to be a gross absorption estimate as opposed to net. Although gross absorption is useful in gauging the volume of real estate activity in a given market, net absorption calculations provide the analyst with the true number of "new" square feet absorbed from the previous period. Net absorption for 1996 was 100,685 SF, a majority of which occurred in Prince William County. Commercial absorption of 100,685 SF is reflective of the growing market within the I-66/Rt 29 Corridor, but is also the same amount the EDA projects to absorb on a *yearly* basis within VHFS alone. In USACERL's opinion, this assumption is untenable given the competitive strength of Prince William County and current absorption rates within the corridor.
- Prince William County budgeted over \$2.5 million for economic development marketing for FY97, a highly aggressive campaign by any measure. Additionally, individual business parks typically market properties in conjunction with county efforts. In fact, one park allocates over \$300,000 a year for marketing purposes. This figure compares with the EDA's maximum effort of roughly \$100,000 a year for the entire site and all land uses, including residential. However, LMRG argues in its 21 July 1997 memorandum that marketing in one area (e.g., Prince William County) typically generates interest in other areas (e.g., Vint Hill Farms). But, the attraction to "other" areas usually stems from tax and land price savings that entice the developer. In the case of VHFS, the EDA cannot provide tax incentives, but can absorb proffers (development exactions) which developers would otherwise incur under the rezoning process.*

A final regional real estate consideration is Fauquier County's decidedly "slow growth" posture towards development. The EDA provides numerous newspaper articles in Appendix I of the EDC application which demonstrate that a vocal contingent of Fauquier County's citizenry oppose development. The county has traditionally maintained a "development should pay its own way" posture as

* Recall that the power of taxation is vested in the county as a matter of law. Therefore, only Fauquier County can provide tax incentives to developers who wish to invest in Vint Hill Farms. This, however, appears to be less than likely due to the county's apparent lack of involvement with the redevelopment of the site and the community's generally negative posture towards the subsidization of developers (Appendix I of the EDA's EDC application contains a compilation of Fauquier County newspaper articles which clearly suggest that a contingent of county residents oppose revenues from the general fund being used to support new development).

manifested by the tension between developers who believe the county should pay for water and sewer infrastructure, and the county's preservationists who believe developers are solely responsible for those development costs. However, in the absence of infrastructure investment from the county, a developer's project financial feasibility is typically jeopardized, necessitating the developer to invest elsewhere, which is undoubtedly the desired outcome in view of the county's long-standing regulatory framework and traditional practices.

An uncertain political environment, lack of public investment in development projects, and protracted development permitting and approval processes do not foster an environment conducive to real estate development. Municipalities typically develop reputations within the development community that can encourage or discourage a developer from seriously considering a jurisdiction for investment. In the case of Fauquier County, the development community is acutely aware of the potential constraints and risks associated with working with the county, especially when compared with other counties, such as Prince William, which clearly embrace growth and provide incentives for it.

In all fairness, a rezoning for a WalMart in Fauquier County was recently approved by the Board of Supervisors, but only after years of debate and bitter fighting. However, the EDA admits in its EDC application that the "Operations and Business Plan will face renewed opportunity for citizen scrutiny by opponents to development when a rezoning application is submitted to Fauquier County for approval. These types of well-publicized incidents send a clear message to the development community which is hard to erase. Even if development is wholly supported by Fauquier County, the county must overcome its "no growth" image and demonstrate a strong commitment to successful redevelopment of VHFS. At this point in time, USACERL does not see that commitment.

Based on the foregoing analysis of locational, site, and real estate factors, it is the conclusion of USACERL that VHFS suffers from many disadvantages which negatively influence redevelopment and market feasibility. This assessment is not to say that redevelopment will be unsuccessful, but in all likelihood it will not achieve EDA's projected absorption and full build-out estimates within the 15-yr planning horizon. Although it is difficult to adjust absorption estimates downward empirically because of the distinct absence of relevant market data for VHFS and the inherent difficulties of real estate forecasting of any sort, USACERL believes a more reasonable range to be 70,000 to 88,000 SF a year for a total 15-yr build-out of 1,062,331 and 1,327,915 SF, respectively. This range represents 40 and 25% reductions in EDA's projected 15-yr absorption, respectively.

Residential Development

Although residential development is generally not considered a job-generating reuse consistent with EDC legislation and guidance, it does offer rapid revenue-generating opportunities that can be leveraged into investment activities to spur job creation. The EDA proposes 300 residential units as part of its overall development strategy to foster a "village" atmosphere and generate revenues in the early years of redevelopment. Table B2 contains the EDA's projected 15-yr residential land absorption and pricing strategy. Listed below are the EDA's key residential market findings in relationship to the redevelopment of VHFS:

- The locational and access characteristics of the site lend themselves to market rate residential development, including an active adult community.
- Despite the recent downturn in sales induced by increases in interest rates, the residential markets of western Prince William County and eastern Fauquier County have performed well, with sales increasing by over 8.0% annually between 1991 and 1995.
- The bulk of residential sites available in the eastern portion of Fauquier County are large (over 1 acre) and are not served by public sanitation. Conversely, the bulk of lots in western Prince William County are smaller (less than ½ acre) and are in subdivisions supplied with public water and sewer.
- The limited residential uses proposed for the reuse of VHFS (300 housing units) should attract demand due to the proposed golf course and other adjacent services and amenities built into the "village" plan.
- The demographic trends in Fauquier County suggest a growing number of upper-income, active adults who need alternative housing choices such as the 125 to 150 units proposed for the active adult village.
- LMRG concludes that residential market conditions in the area are prime for rapid absorption of 300 residential units with public sewer and community amenities. Prices are estimated to range from \$10,000 to \$15,000 per unit for the active adult component and \$25,000 to \$45,000 per lot for ¼- and 1/3-acre residential lots. Those lots with frontage on the golf course will support a 10 to 15% premium over this range, to a high of roughly \$50,000 per lot. Table 4.3 summarizes land prices.

USACERL Residential Findings

USACERL believes that the limited residential use proposed for the VHFS property will be in demand because of the adjacent services and amenities built into the Reuse Plan. Unlike the proposed office/industrial/R&D uses which require strategic location and transportation site attributes, residential development generally does not depend on these factors.

Demographic trends also suggest that the population of Fauquier County will increase 35.8% (48,741 to 65,000) between 1990 and 2000, and 33.4% (65,000 to 80,700) between 2000 and 2010 (EDA, Appendix N, p 5). New residents will undoubtedly demand new housing, as shown by the county's average issuance of 486 residential building permits per year (EDA, Appendix N, p 75). Additionally, the "village" which the EDA intends to create through the implementation of the reuse plan will provide amenities such as a golf course, community retail, and public facilities which current home purchasers increasingly expect from master-planned communities (see Chapter 7, **Local and Regional Real Estate Market Conditions** for additional analysis).

Commercial/Retail

EDA's redevelopment strategy for VHFS also includes retail- and service-type uses to support the on-site population of workers and residents. These community uses will support a 3-mi market radius area primarily serving VHFS users. In this way, retail- and service-type uses will only be supported when a "critical mass" of on-site activity has developed to warrant these types of land uses. Market findings are therefore largely irrelevant, but a few considerations are included by the EDA:

- The property is not well located to include a large retail segment. The property is well located to serve the neighborhood and convenience needs of the NBSD population but would not function well as a community or regional retail site.
- The market will support approximately 110,000 SF of neighborhood and convenience retail space on the property by the year 2000 assuming a capture rate of 50% for projected households in the NBSD and the addition of employers on site.
- The various recreational uses and services included in the Village Center (including a theater, swimming pool, gym, and day care center) are an

integral part of the center and raise the supportable space to approximately 200,000 SF.

- Land values for the proposed retail sites at Vint Hill are estimated at \$4.00/SF. However, this value assumes that the parcels would be held out of inventory and marketed when residential development and employment on VHFS reaches levels sufficient to support retail uses. Table 4.3 summarizes retail land pricing.

USACERL Commercial/Retail Findings

In the opinion of USACERL, the EDA's proposed 200,000 SF of commercial/retail space will complement other uses and perhaps make the "village" concept a reality more quickly than any other proposed use. USACERL concurs with LMRG's finding that proposed retail development should be community-focused as opposed to regional. Regional retail requires a large market of shoppers in addition to good access and location, none of which VHFS possesses.

However, USACERL demonstrated that office/industrial/R&D uses will likely fall short of projected absorption and build-out for a variety of reasons. The future workforce employed at VHFS in these uses will partially support on-site retailers creating a synergistic relationship, but fewer employees will most likely be supporting community retail than projected. USACERL believes that this factor will reduce the demand for community retail to some extent, but sufficient demand from on-site and local off-site shoppers should support a reasonable level of retail activity.

Golf Course

The final component of EDA's real estate revenue strategy is the construction of an 18-hole golf course encircling the Innovative Technology Park. Although golf courses in general are not considered job-creation land uses consistent with the spirit and intent of the EDC, they do pose significant opportunities for revenue generation through golf-related activities and improved marketability of adjacent development sites. Tables B5 and B6 present the EDA's forecasted demand, revenues, and costs associated with golf course construction and operations. EDA's key golf course market findings are listed below.

- The physical characteristics of the proposed golf course site at VHFS are supportive of a daily fee golf operation. The site does not pose any significant topographical or site constraints which means reasonable construction

and maintenance costs. The cost for developing an 18-hole golf course at Vint Hill is likely to fall in the range of \$4.5 to \$5.5 million.

- Demand for golf in the market area is one of the strongest in the United States. Current demand for public golf in the market area is approximately 525,000 rounds. Demand is projected to reach 635,000 public rounds by 2001. Over the long term, demand for golf should continue to grow as the baby boom segment of the population continues to age.
- Public golf courses in the market area are currently averaging over 42,000 annual rounds, which is near capacity for weekend tee times and for much of weekday play. Existing facilities have very limited capacity to absorb additional growth in demand.
- It is estimated that unserved public golf demand is estimated at 200,000 rounds, and is projected to increase 325,000 rounds by 2001, which translates into 8 additional 18-hole golf courses.
- EDA's market consultant, LMRG, recommends that the proposed facility be targeted to the affordable daily fee golf market, with 18-hole weekend fees targeted below \$30. The recommended marketing concept calls for offering a value-oriented product designed to promote steady play and efficient maintenance.
- Based on the findings of the market research, the recommended marketing concept is projected to generate 38,000 stabilized annual rounds by Year 4 (Table B5). Using competitive pricing schedules and operating assumptions, revenues from all profit centers are projected to exceed \$1.7 million at stabilization, against total operating expenses of less than \$1.1 million before debt service (Table B6). This projection results in financial feasibility.
- LMRG concludes that some form of joint venture participation or publicly financed operation would be financially feasible and is more likely to generate a financial return for the EDA as opposed to a private sector investor who must pay market interest rates for construction, take out, and permanent loans.

USACERL Golf Course Findings

LMRG provides an extensive Vint Hill Farms golf course market feasibility in Appendix O of the EDC application. A considerable amount of effort and

analysis effectively demonstrates that a viable market for an 18-hole golf course at VHFS exists based upon a reconciliation of current demand and supply (see Chapter 7, **Local and Regional Real Estate Market Conditions**, for further analysis). The conclusion is based on the following findings:

- The risk incurred by the EDA is far less than that of a private sector developer who must use private sources to secure financing at higher interest rates than the public sector EDA. This restriction on the private developer will allow the EDA to charge more competitive prices, thus increasing golf course usage.
- Current and projected population growth, median per capita income, population densities, and growing popularity of golf within the Washington, DC, MSA clearly suggest that the elements of demand are ideal for golf course development.

The foregoing findings, in the opinion of USACERL, support the EDA's golf course operations and business plan analysis.

Discounted Cash Flow Analysis Assumptions (EDA Business Plan, Chapter 10.3)

The following discussion highlights key findings relating to operating revenues and expenses contained within the EDC application business plan. Tables B2 through B7 provide summaries of the EDA's projected 15-yr operating revenues generated from the sale of land and buildings, rental income, golf course revenues, and revenues generated from water and wastewater utilities. Tables B8 through B10 summarize the EDA's redevelopment expenses, including marketing, infrastructure improvements, and debt service. Table B11 is a comprehensive summary of the EDA's projected 15-yr revenues, expenditures, and cash flows.

Summary of Revenue Assumptions (10.3.2 Pro Forma Analysis - Revenues). Revenues are generally divided into six discrete sources, as outlined below.

- **Land Sales (Table B2)** - The EDA estimates that over 265 acres of developable land will be absorbed over 15 years beginning in Year 2 (1998). Yearly absorption will range from a low of 5.4 acres to a high of 57.9 acres. The indicated price per acre for all property classes is \$97,832 resulting in total 15-yr revenues of \$26.7 million. Residential land sales, as opposed to innovative technology and other uses, represents the largest proportion of

land sales at nearly \$9 million. Table 4.3, shown earlier in this chapter, summarizes and compares the EDA's pricing strategy with that of the I-66/Rt 29 submarket.

- **Building Sales (Table B3)** - Sales of 531,624 SF of permanent and temporary buildings are projected to generate over \$8.5 million in revenue. Projected sales prices range from \$5/SF for the Building 160 complex to \$60/SF for community facilities. The largest source of revenue as projected by the EDA is the Building 2400 complex with a scheduled sale in Year 5 (2001) for \$3.8 million.
- **Leases on Interim Use Buildings (Table B4)** - An estimated \$1.8 million in cumulative revenue is projected from short-term lease of 292,000 SF of building space prior to demolition or conveyance to the private sector. Of critical importance to the EDA's lease income assumptions, is the occupation of Building 2400, which represents \$450,000 in cumulative revenue over 6 years.
- **Golf Course Operations (Tables B5-6)** - Net operating income (NOI) for golf course operations is projected to be \$7.2 million over 15 years beginning in Year 4 (2000). The EDA estimates that residual value of a future sale would be in the range of \$6 million to \$7 million and could be used to accelerate the amortization of debt.
- **Grant Funding and Financial Contributions** - Nearly \$9.9 million in grant funding and financial contributions is expected from various sources over the 15-yr pro forma. The largest contributor is the Department of Commerce's Economic Development Administration with a \$5 million infrastructure grant. The second largest contributor to the redevelopment of VHFS is Fauquier County with over \$3.75 million in infrastructure funding. However, the county has not yet given the EDA a firm confirmation of its financial support.
- **Water and Sewer User and Connection Fees (Table B7)** - The EDA projects total income of over \$28.6 million for water and wastewater usage and connection fees over 15 years beginning in Year 2. Revenues are based on

on-site property absorption of 1.82 million SF and 324 housing units.* Operating costs over the period are projected to be \$16.1 million resulting in a 15-yr cumulative NOI of \$17.2 million. However, USACERL was unable to recast the EDA's projected \$16.2 million in usage fees and instead calculated 15-yr income at \$11.4 million.

- Total revenues of \$82.8 million are calculated for the EDA's 15-yr business plan pro forma (Table B11, line 20). According to the EDA, maximum revenues are earned in the early years of the redevelopment because of the bulk sale of residential parcels and the expected receipt of Federal grants.

USACERL revenue findings. Forecast pricing levels for all real estate revenue components were considered to be within the range of reasonableness based on the need to accelerate property absorption and compensate for VHFS locational and transportation constraints. The market analysis appropriately considers pricing strategies across property classes and parcel size. Nonetheless, a high level of risk remains throughout the 15-yr redevelopment period associated with achieving those forecast pricing levels and, more importantly, the projected absorption of land and buildings.

Land sales (Table B11, line 4) represent the largest revenue component of the business plan pro forma. However, USACERL was unable to corroborate the EDA's projected annual absorption of 100,000 SF of office/industrial/R&D space (see *USACERL Office/Industrial/R&D Findings* earlier in this chapter). Both 25 and 40% reductions in industrial/office/R&D absorption over 15 years result in a business plan that is not financially feasible (i.e., *negative NPV*) when all other revenues and expenditure assumptions are held constant.

However, it is USACERL's belief that proposed residential, retail, and golf course developments will meet the EDA's market expectations over the 15-yr redevelopment horizon. It is hoped that these revenue generating land uses will act to stabilize the EDA's projected revenue stream within the context of reduced office/industrial/R&D absorption.

In terms of grant funding and financial assistance, USACERL cannot confirm or dispute the EDA's sources and uses of funds in the absence of firm written

* Three hundred housing units were previously mentioned in this report as the full build-out for residential uses. The additional 24 units reflect McKinney Act homeless provider occupancy.

commitments from proposed sources. Anecdotal evidence suggests that LRAs are generally recipients of EDA, state, and local grant funding. Of course, sources and levels vary widely based on the particular redevelopment project and state and local commitments to economic development and military base reuse. Perhaps the largest unknown in terms of grant funding for the EDA would be the financial commitment of Fauquier County. The projected \$3.75 million, or 10% of infrastructure costs, from the county is, according to the EDA, based on nothing more than discussions and considerations. USACERL questions the apparent lack of financial commitment of Fauquier County relative to the redevelopment of VHFS, especially when the county collects all tax revenues, controls zoning, and approves all subdivision requests. It is the conclusion of USACERL that Fauquier County stands to benefit from the redevelopment of VHFS while incurring little or no financial risk.

Finally, water and sewer revenues are directly correlated with projected on-site property absorption. Based on USACERL's market and revenue findings, water and sewer revenues will decrease when 25 and 40% reductions in office/industrial/R&D absorption are applied to the business plan. Water and sewer connection and usage fees appear consistent with the pricing strategies used in areas that offer these services.

Summary of Redevelopment Operating Cost Assumptions (10.3.3 Pro Forma Analysis - Expenditures). Operating costs are generally divided into four categories:

1. Real estate O&M costs include the direct costs to provide public services to the base property.
2. Variable costs will likely be reduced over time as buildings are sold or leased and maintenance responsibilities are assumed by the future occupants of VHFS.
3. Infrastructure costs
4. Debt service.

Infrastructure costs and debt service will be addressed separately after the operating cost analyses.

- Buildings and Grounds - This operating cost line item includes: (1) water/sewer operations and maintenance (O&M) (Table B7), (2) electrical

and heating costs, (3) building maintenance, (4) grounds maintenance, (5) security, and (6) a contingency allowance for a total 15-yr cost of \$19.9 million. Sewer and water system O&M totals \$17.2 million alone, representing the largest buildings and grounds cost in EDA's business plan pro forma.

- **Administration and Marketing Expenses (Table B8)** - Administration costs are generally comprised of the following categories: (1) salaries and fringe benefits, (2) contracting services, (3) overhead, and (4) administrative and marketing expenses. Salaries and marketing expenses represent the largest expenditures and will be the only categories discussed.

Nearly half of the EDA staff is scheduled to be phased out between Years 7 and 10 as property is absorbed and EDA responsibilities decrease. Nearly 75% of the projected \$8.3 million in administrative costs, or \$6.6 million, is salaries and fringe benefits.

In terms of marketing, the EDA has dedicated over \$1.4 million in advertising, public relations, foreign trade zone status, rezoning, and marketing collateral. Marketing expenditures range from a high of \$143,250 in Year 6 (2002) to a low of \$29,000 in Year 15 (2011). According to the EDA, an aggressive advertising and marketing campaign will be critical to achieving the early occupancy and disposal of existing facilities, as envisioned in the operations and business plan.

- **Total Operating Costs** - Total operating costs over the 15-yr business plan pro forma are projected to be roughly \$36.1 million and remain relatively constant over time.

USACERL operating cost findings. With a cursory review, one could easily conclude that operating costs are high (i.e., buildings and grounds expenditures of \$23.2 million, administration and marketing costs of \$12.9 million), representing nearly 50% of total project costs excluding debt service, or 40% including 15-yr debt service costs. However, most of these costs are directly related to the EDA's ability to generate revenues from land sales, building sales, and leasing. USACERL assumes that considerable study and analysis have been performed in an effort to arrive at reasonable budget levels in light of the EDA's financial constraints. USACERL does, however, take exception to the EDA's estimated yearly fixed cost of \$550,000 related to WWTP operations (line 35, Table B7). The support for this finding is grounded in the fact that WWTP requirements have been overstated by the EDA, as will be discussed in the following section. The EDA's fixed cost estimate is predicated on a larger wastewater requirement,

which USACERL was unable to independently corroborate. Therefore, in the absence of demonstrably larger WWTP requirements, USACERL has determined it reasonable to reduce WWTP fixed operating costs by a conservative 25% (\$412,500) to better reflect reduced requirements.

Similar redevelopment projects, both in terms of proposed reuse and scope, such as Fort Devens, MA, and Fort Benjamin Harrison, IN, suggest that the EDA's estimated cost of \$1.15 million for building and utility expenses (building maintenance + electrical + heating) is within the range of reasonableness. Finally, anecdotal evidence from USACERL's lessons learned efforts suggest that redevelopment operating costs are typically underestimated when actuals are benchmarked against projected because of the substantial overhead structure that must be maintained to redevelop large and diverse properties. Because of this, USACERL is generally deferential to LRAs in terms of redevelopment operating expenses.

Overall, operating costs represent 43.5% of total revenues generated. Standard financial ratio analysis suggests that an "operating expense ratio" (operating expenses divided by total projected income) in the range of 35 to 50% is reasonable (Wurtzebach 1994). Furthermore, the EDA projects a 15-yr operation surplus of \$46.7 million before debt service and capital costs (line 50, Table B11). Over half of the operational surplus is projected to be accumulated between Years 1 and 5. However, as will be discussed in the Financial Feasibility Analysis section of this report, the EDA's total projected revenues of \$82.8 million likely overstates the revenue-generating capacity of the property at VHFS.

Infrastructure Improvements (EDA Business Plan, Chapter 10.3.4)

To encourage the development and support of an estimated 4,800 jobs and nearly 800 new residents, the EDA has proposed \$37.1 million in infrastructure improvements. The major categories of improvements include road and utility distribution improvements costing \$12 million, water and sewage treatment plant upgrades of \$8.2 million, building demolition costing \$6.0 million, and golf course construction costing \$3.9 million. The EDA projects that 71% of infrastructure program costs will be incurred within the first 5 years of redevelopment. Also, within the business plan, 3.0 and 3.5% inflation factors per year are applied to soft costs and hard costs, respectively. A more extensive discussion can be found in Chapter 5, **Need and Extent of Proposed Infrastructure Improvements**.

USACERL Infrastructure Improvements Findings

USACERL expended considerable effort validating both the cost and need and extent of the EDA's proposed capital improvement program. It was found that the EDA's costs were within the USACERL-developed range of reasonableness, suggesting that USACERL and the EDA consultant used similar project cost estimation methodologies and identified comparable repair and construction scenarios. However, USACERL takes exception to the need and extent of several substantial infrastructure improvements.

Pegging infrastructure requirements to USACERL's reduced full build-out, which stems from the findings of the previous Office/Industrial/R&D analysis, wastewater treatment plant and road and utilities improvement costs are reduced. Wastewater treatment plant expansion costs decrease from \$7.3 million to a range between \$1.1 and \$1.3 million. Likewise, road and utility improvements programmed over 15 years decrease from \$12 million to a range between \$9.9 million and \$11.7 million. Overall, based on USACERL's need and extent analysis, the EDA's infrastructure improvement program decreases in cost from \$37.1 million to a range between \$24.2 million and \$27.5 million.

Although the EDA's infrastructure improvement plan suffers from the "frontloading" of capital costs in the early years of development, it is expected that rapid redevelopment of VHFS from an infrastructure viewpoint is a prerequisite for successful marketing and business attraction campaigns. However, the EDA runs the risk of over-investing in the site if market demand for VHFS land and buildings is insufficient. Because the EDA intends to finance \$27.1 million of the \$37.1 million infrastructure improvement plan through bond instruments, it is unlikely that premature investment or over-investment will occur because of stringent underwriting requirements and high interest costs. A further discussion of infrastructure debt financing can be found in the Financial Feasibility Analysis section of this chapter.

Debt Service (EDA Business Plan, Chapter 10.3.4)

According to the EDA, annual debt service costs are calculated on the assumption that all required capital expenditures, over and above expenses that could be paid for out of project cash flow, would be financed using 20-yr bond instruments, with an average interest rate of 7%. The ability of the EDA to secure bonding rests with adequate backing from Federal, state, private, and county sources to enable it to issue rated public offerings or obtain equivalent financing terms. The EDA's annual and cumulative capital expenditures and

debt service costs are recast in Table B10. Key debt service assumptions include:

- 20-yr bond instruments would be borrowed on an as-needed basis through Year 7 (2003)
- A 9% debt service reserve would be added to total yearly borrowing requirements consistent with Virginia financing practice for rated public offerings
- Over the 15-yr business plan pro forma, roughly \$12.1 million in project cash flow would be applied to reduce borrowing requirements, leaving a balance of just over \$27.1 million that must be financed through bond issues*
- Cumulative 15-yr debt service costs equal \$31 million (principal plus interest)
- Cumulative 26-yr debt service costs† are projected to be \$47.0 million consisting of \$27.1 million in principal and \$19.9 million in interest
- At the conclusion of Year 15, the EDA is projected to carry an additional 11 years of total debt service costs, or \$14.0 million.

USACERL Debt Service Findings

Table B11 contains the EDA's 15-yr business plan pro forma. According to the EDA, \$46.7 million in project cash flow is available for debt service and capital improvements (line 50, Table B11). Recall that the EDA has programmed \$37.1 million in infrastructure improvements over 15 years (line 52, Table B11). Based on this fact alone, it would appear as if a \$9.6 million operational surplus would exist when infrastructure improvements are subtracted from project cash flow. Further analysis reveals that \$23.7 million in cash flow would be available for \$26.4 million in infrastructure improvements for Years 1 through 5, \$34.0

* This figure is calculated by simply subtracting the \$12 million dedicated to direct pay-down of infrastructure investments from the EDA's projected \$37.1 million infrastructure program, plus the required 9% debt service reserve.

† Debt amortization will likely extend 26 years from the first bond offering in Year 1 (1997) because of the nature of the proposed 20-yr bond instrument. If Year 7 (2003) is in fact the last year the EDA issues its final public offering, the amortization on that issue would extend 20 years into Year 26 (2022).

million in cash would be available for \$36.5 million in infrastructure improvements for Years 1 through 10.

Based on the foregoing, it is unclear to USACERL why \$47.0 million in debt service costs would be incurred when \$46.7 million in project cash flow is projected for \$37.1 million in infrastructure improvements over 15 years. Standard financial ratio analysis suggests that the industry range for debt coverage ratios (cash flow available for debt service or NOI divided by debt service) falls between 1.25 and 1.50 (Wurtzebach 1994). Yet, EDA's yearly debt coverage ratio ranges between a high of 4.7 for Year 2 (Year 1 yielded a calculation of 33 which was considered extremely anomalous and was therefore excluded from the analysis) and a low of 0.32 for Year 8. The calculated 15-yr project average was calculated to be 4.6, well above the industry range of reasonableness. Perhaps higher-than-average debt coverage ratios were intentionally developed to demonstrate adequate cash flows to cover debt service within the context of stringent debt service and financial feasibility requirements.

To better understand the EDA's application of project debt service to the 15-yr pro forma, USACERL requested additional support for debt service assumptions in its 8 July 1997 memorandum submitted to the EDA (Appendix C). Follow-up phone conversations with the EDA's business plan consultant, RKG and Associates, revealed that substantial debt service is projected early in the redevelopment so that cumulative *positive* cash flows may be carried out to the later years of the project to ensure long-term financial feasibility.

In the opinion of USACERL, the EDA will be exposed from a financial feasibility standpoint because of what may be termed as "over-borrowing" or excessive financial leveraging. In general, liberal borrowing or financial leveraging is considered positive within the context of *standard* real estate investment because an investor's risk exposure is reduced commensurately with project equity requirements. Additionally, the investor's property serves as collateral and project cash flows are typically stabilized and fairly certain throughout time. However, in the case of the EDA, the ability to issue bond offerings and likewise amortize offerings over 26 years as projected in Table B10 is uncertain. This conclusion is based on the following considerations:

- As demonstrated in *USACERL's Office/Industrial/R&D Findings*, projected project cash flows, which would be applied to debt amortization requirements, are likely overstated due to locational, site, transportation, market, and political constraints.

- Because the EDA is not a taxing body, and therefore cannot pledge future tax revenues to the retirement of bond offerings, the EDA must rely on project revenues from the sales of land and buildings and leasing income. As demonstrated by USACERL, revenues from real estate activities are likely overstated.
- It is likely that the Vint Hill Farms property will not adequately fulfill lending collateral requirements based on the current functional and economic obsolescence of the site.
- Under Virginia law, Fauquier County is not required to provide a "full faith and credit" backing for the debt incurred by the EDA. However, the county may voluntarily choose to back the EDA's redevelopment bonds through a "moral obligation." Simply put, if the County Board of Supervisors endorses a moral obligation to the EDA, the county would be required by Virginia law to replenish the EDA's debt reserve one time should the EDA fall short of required annual debt service payments and be required to draw down against the reserve.
- County payments to the EDA's debt reserve fund are subject to annual appropriations, and the county would not be legally liable after the first year in which payment is made on behalf of the EDA. Therefore, failing to honor the moral obligation could have a negative impact on the county's current bond rating. By the EDA's own admission, "because of this potential, the county will be hesitant to give its moral obligation backing." It can only be assumed by USACERL that, in the absence of a moral obligation from the county, the EDA will be forced to borrow less in order to satisfy bond offering backing and collateral requirements.

Amount and Terms of the EDC Offer (EDA Business Plan, Chapter 11)

Based on projected 15-yr project revenues, expenditures, and cash flows, the EDA offers the Army a revised amount of \$300,000 for the property contained within the EDC parcel. The revised offer was made to the Army in the 10 October 1997 EDC Application Amendment and contrasts with the EDA's original offer of \$800,000 (Appendix D). Unfortunately, the EDA provided no financial pro formas in the amendment to support the revised offer, thus complicating USACERL's efforts to independently validate the proposed consideration to the Army.

Based on the business plan revisions contained in the Amendment and the EDA's original EDC submission, USACERL calculated a project NPV of \$1.8 million for the 15-yr pro forma at a 9% discount rate (Table B11, line 68). This higher value includes the EDA's debt service plan, which increases financial feasibility but, for the reasons discussed above, is most likely overstated throughout this chapter.

Market Feasibility Analysis

To determine the ultimate financial feasibility of a development, it is critical to first establish market feasibility (i.e., whether there is sufficient market demand to absorb the development's offered space within the projected time frame and at pro forma market rates). Sufficient evidence exists to support the finding that the EDA's projected 15-yr absorption of 1.8 million SF of commercial space is an overly optimistic target given the site's locational constraints and current regional development patterns. The following discussion synthesizes the USACERL office/industrial/R&D findings (discussed at length earlier in this chapter) within the context of market feasibility and scenario development.

Determining the potential market for any property the size of VHFS is difficult. However, LMRG concentrated its market research within the I-66/Rt 29 Corridor (see Figure 3). This geographic area was selected because of its proximity to VHFS, common transportation attributes, and similar types of development (i.e., what is proposed by the EDA and what currently exists within the submarket). USACERL finds this submarket delineation to be reasonable.

USACERL Findings

USACERL finds LMRG's basic market research methodology to be generally reasonable, but takes exception to a lack of necessary detail required to reconcile market demand and supply within the frame work of Vint Hill Farms' reuse constraints and regional development patterns. Given the comparable size of the proposed development relative to other developments in the I-66/Rt 29 Corridor, the number of similar developments in the production pipeline (3 to 4 million SF proposed), and modest marketing efforts of roughly \$100,000 a year (Table B11, line 40), it is reasonable to conclude that a market demand and supply reconciliation of 100,000 SF per year for VHFS is overstated.

The next step was to quantify the likely effects of redevelopment constraints and strong regional competition in terms of property absorption rates. LMRG

estimates a range of 75,000 to 100,000 SF per year of office/industrial/R&D space, which represents a 25% reduction in project absorption, but develops business plan scenarios with the 100,000 SF per year projection. USACERL developed a range of absorption reductions, with the high end of the range representing a 25% reduction, and the low end representing a 40% reduction. USACERL held land pricing and building pricing constant, determining that pricing strategies were within a range of reasonableness when evaluated within the context of strong competition and the need to maintain local property value levels. The results of the application of 25 and 40% reductions in absorption are contained in Table 4.4.

Based on the foregoing, a range of 1.3 to 1.0 million SF of absorption is calculated for the 15-yr business plan pro forma. This range represents an average yearly absorption of 88,000 to 70,000 SF, compared with the EDA's projected 118,362 SF per year (includes office/industrial/R&D and retail property). As discussed in the following sections, the lack of robust demand, or market feasibility, for properties at Vint Hill Farms will likely have a detrimental impact on project financial feasibility.

USACERL-Developed Scenario

Based on conclusions and findings discussed at length earlier in this chapter, USACERL developed the CERL1 Scenario to provide an analysis of the impact to the income streams and the resulting NPV changes. CERL1 was developed using five major assumptions discussed below, in addition to two project views. The first project view (*25% reduction in absorption*) reflects LMRG's low range of annual property absorption (Table B12). The second project view (*40% reduction in absorption*) reflects USACERL's detailed market analysis, which concludes that 15-yr property absorption could likely fall below LMRG's low range (Table B13). The impacts of these project views, shown in Table 4.5, include revenues, total cash flows and NPV calculations for 15 and 9% discount rates.

* Note that the numbers contained in Table 4.4 do not incorporate leasing income because all leasing income accrual ends in Year 6 (2002) as a result of the EDA's development strategy to demolish interim-use buildings and sell those that have long-term reuse potential.

Table 4.4. Property absorption rates with 25 and 40% reductions.

Property Type	EDA Baseline (SF)	25% Reduction (SF)	40% Reduction (SF)
Retail/Service	295,301	221,476	177,181
Research & Développement	239,076	179,308	143,446
Office/Service	194,918	146,189	116,951
Innovative Technology	1,041,257	780,943	624,753
Yearly Absorption	118,036	88,527	70,822
Totals	1,770,552	1,327,915	1,062,331

Table 4.5. Summary of USACERL project view impacts.

Project View	Revenues (\$)	15-yr Total (\$)	NPV @ 15% (\$)	NPV @ 9% (\$)
EDA Total Project Analysis View	82,843,772	1,694,091	1,831,062	1,863,403
25% Reduction in Absorption	70,727,762	(8,536,416)	(1,670,314)	(3,248,526)
40% Reduction in Absorption	63,458,829	(14,673,805)	(3,770,291)	(6,314,802)

Table 4.5 demonstrates that the EDC application's 25 and 40% reductions in property absorption result in a business plan which is not financially feasible as evidenced by *negative* project NPVs under both project views and 15 and 9% discount rates. In fact, a significant *negative* project NPV of over \$6 million was calculated under the 40% project view. These findings are of great concern to USACERL, and serve as the basis for alternative scenario development, which will result in a financially feasible business plan.

CERL1 Scenario Development

Tables B12 and B13 summarize USACERL calculations for 25 and 40% project views, respectively, in addition to the five developed scenarios.

1. Reduces the EDA's projected wastewater treatment plant (WWTP) projected full build-out requirements of 700,000 gallons per day (gpd) to 351,000 gpd based on USACERL's reduced absorption assumptions. Maximum and minimum costs were developed to reflect the reduced requirements, and applied to 25 and 40% property absorption project views, respectively. Costs were reduced from the EDA's estimated \$6.3 million for a new WWTP, to a range of \$1,157,000 to \$979,000 for upgrades to the existing plant based upon maximum and minimum scenarios, respectively (1997 dollars). See Chapter 5, **Need and Extent of Proposed Infrastructure Improvements** for a detailed discussion.
 - all other hard and soft infrastructure improvement costs held constant
 - all operating costs held constant

- maximum and minimum cost scenarios applied to 25 and 40% absorption reduction scenarios, respectively
 - *capital cost impact* - total 15-yr capital costs decrease from the EDA's baseline of \$37.1 million to a range of \$30.7 to \$30.5 million for 25 and 40% project views, respectively
 - *debt service impact* - total 15-year debt service costs decrease from the EDA's baseline of \$32.9 million to a range of \$29.4 to \$29.3 million for 25 and 40% project views, respectively.
2. Application of USACERL-developed infrastructure costs based on reduced absorption and subsequent full build-out requirements. Including USACERL WWTP cost estimates, total infrastructure improvement costs range from \$27.5 to \$24.2 million for 25 and 40% project views over the life of the business plan. See Chapter 5, **Need and Extent of Proposed Infrastructure Improvements** for a detailed discussion.
- revenue held constant for 25 and 40% project views
 - operating costs, which include O&M, administration, and marketing, are held constant
 - *capital cost impact* - reductions of \$9.6 and \$12.7 million for maximum and minimum project views are calculated over 15 years from the EDA's baseline of \$37.1
 - *debt service impact* - reductions of \$6.7 and \$10.4 million are calculated from the EDA's 15-yr projection of \$32.9.
3. Because of the lack of any substantive commitments from Fauquier County in terms of investment in VHFS, a project scenario removing the County's unconfirmed financial contribution of \$250,000 a year (\$3.75 million over 15 years) was developed. This scenario was applied to the reduced infrastructure program developed in Scenario 2 above.
- all capital cost, debt service, and operating cost assumptions held constant
 - *revenue impact* - 15-yr revenue is reduced from \$70.7 and \$63.4 million for 25 and 40% project views to \$66.9 and \$59.7 million.

4. For the sake of comparison, Fauquier County's unconfirmed financial contributions are doubled from \$250,000 a year to \$500,000 a year over 15 years. No evidence suggests that Fauquier County will contribute to the redevelopment of VHFS or actively support the EDA financially outside of a potential "moral obligation" against the EDA's debt repayments. However, this scenario was developed for the expressed purpose of demonstrating that increased county participation results in a higher degree of project financial feasibility.
 - all capital cost, debt service, and operating cost assumptions held constant
 - *revenue impact* - 15-yr revenue is increased from \$70.7 and \$63.4 million for 25 and 40% project views to \$74.5 and \$67.2 million.
5. Reduces estimated costs for the operations and maintenance of the WWTP. Specifically, the EDA's estimated yearly fixed operating cost of \$500,000 is reduced by 25% to better reflect USACERL's reduced WWTP requirements. See Chapter 5, **Need and Extent of Proposed Infrastructure Improvements** for a more detailed discussion.
 - Fauquier County financial contributions held constant at \$250,000 year
 - capital costs are based on USACERL-developed reduced requirements
 - *operating cost impact* - reduction of nearly \$2.0 million for 25 and 40% project views.

Table B14 summarizes USACERL's scenario impact findings for (1) total project analysis view, (2) project analysis with 25% reduction in property absorption view, and (3) project analysis with 40% reduction in property absorption view. The table summarizes the impacts to revenues, operating costs, cash flow available for debt service (operating cash flow), capital costs, debt service, total cash flows, and NPVs of the USACERL assumptions for the three views. The NPV calculations are for 15 and 9% discount rates over the total 15-yr project analysis period. The sensitivity of the assumptions represented in CERL1 was compared with USACERL's recast of the EDA business plan. The change in cash flows reflects the corresponding change in the range of NPVs for each assumption identified and compared in Table 4.5. (Compare CERL1's alternative assumptions with the EDA's business plan.)

USACERL Findings

The sensitivity of changes to the EDA's business plan assumptions can best be summarized using Tables 4.6 and B14. As detailed in these tables, the CERL1 Scenario significantly impacted the EDA's business plan pro forma. The most sensitive business plan variable is absorption, which yields the largest impacts to project NPV, as demonstrated in Table 4.5. Project NPV as calculated from the recast of the EDA business plan ranges around \$1.8 million for 15 and 9% discount rates, but is reduced precipitously to a range of *negative* \$1.6 to \$6.3 million when 25 and 40% project views are applied. To achieve financial feasibility in terms of *positive* project NPV, the five scenario changes above were developed.

Table 4.6 shows that many conditions must be satisfied for the EDA to achieve financial feasibility. Scenario 1 indicates that, even when a WWTP is not programmed within the infrastructure improvement program, financial feasibility cannot be achieved under both project views. When USACERL's infrastructure improvement program is applied (WWTP plus all other capital costs), financial feasibility is only achieved under the 25% project view as indicated by a project NPV range of \$535,487 to \$26,628 at 15 and 9% discount rates, respectively. When financial assistance is withdrawn by Fauquier County, project NPV turns negative again under both views, indicating that the absence of project funding from the county in relative terms is less sensitive than other variables. However, if Fauquier County's financial assistance is doubled from EDA's current estimates, robust financial feasibility is achieved under both views, indicating a sensitive variable. It is worth noting that the range of project NPVs calculated under this scenario, \$2.5 to \$3.1 million, is extremely close to the EDA's so-called "best case" valuation from a "sellers" perspective of \$2.3 million (EDC application, p 10-77). Finally, when Fauquier County funding is held at business plan levels and WWTP operating costs are reduced, financial feasibility is once again achieved under both scenarios with the exception of the 40% view as calculated by a 9% discount rate. Scenario 5 yields an NPV of \$998,568 and \$810,410 million for the 25% view and \$159,154 and *negative* \$397,034 for the 40% scenario.

Because positive NPV and financial feasibility can only be achieved when many project assumptions are applied to the highly sensitive pro forma, it is the conclusion of USACERL that the EDA's proposed business plan is exceptionally risky when evaluated independently and against other risky EDC business plans.

Table 4.6. Impact of individual scenario assumptions.

Scenario Assumption	Project View (\$)		NPV for 25% View (\$)		NPV for 40% View (\$)	
	25% View	40% View	15%	9%	15%	9%
<i>CERL1 Baseline</i>	(8,536,416)	(14,673,805)	(1,670,314)	(3,248,526)	(3,770,291)	(6,314,802)
1. WWTP reduction	(5,013,872)	(11,151,261)	(758,408)	(1,744,620)	(2,826,823)	(4,758,845)
2. Infrastructure reduction	(1,835,290)	(4,210,692)	535,487	26,628	(303,927)	(1,180,815)
3. Withdrawn funding from Fauquier Co.	(5,585,290)	(7,960,692)	(926,355)	(1,988,544)	(1,755,769)	(3,195,987)
4. Increased funding from Fauquier Co.	1,914,710	(460,692)	1,997,330	2,041,800	1,157,916	834,357
5. Reduced sewer O&M	79,971	(1,426,160)	998,568	810,410	159,154	(397,034)

Financial Feasibility Analysis

Traditional commercial real estate investment financial feasibility analysis requires investors to make reasonable forecasts of potential gains and exercise sound judgment as to the level of risk to which they are exposed. A technique to assist in this evaluation is the discounting, back to NPV, of the forecasted future cash flows and estimated residual value of the development at the end of the investment period. The discount rate is determined by an assessment of the level of risk, and can be equated to the required rate of return the investor seeks with similar investments. The EDA's cost of capital has been estimated at 7%, resulting in a project discount rate of 9% when a 2% risk premium is assigned to the cost of capital. The EDA has estimated that the (tax-free) bond market will determine this borrowing cost from past experience with other projects with similar infrastructure requirements. However, the risk associated with payback essentially lies with the project itself as opposed to Fauquier County or the Commonwealth of Virginia. A bond investor will most likely consider this risk when evaluating bond-offering packages. USACERL has taken this risk into account by implicitly reducing 15-yr debt service costs by nearly \$10.0 million from the EDA baseline scenario based on a scaled back capital improvement plan.

Additionally, USACERL analysis determined that using a discount rate of 15% was warranted due to the high level of risk and investment the EDA is proposing to underwrite. A 15% discount rate is more reflective of private sector rates of return, but it is important from an analysis standpoint that the high degree of project risk be captured through a higher discount rate despite the fact that the EDA is a public body that does not maximize profit.

However, it should be noted that project cash flows suffer "reversals," which is a negative cash flow that occurs in an out-year (i.e., Year 1 and beyond) of a pro

forma. If reversals occur frequently enough or are large enough in magnitude, they can produce counterintuitive project NPVs. In other words, where a "standard" project cash flow would be marked by an inverse relationship with a higher discount rate yielding a lower calculated NPV, a reversal, in effect, produces a positive relationship with higher discount rates generally yielding higher NPVs. The results can often be misleading, but for the sake of USACERL's business plan review, and despite the presence of reversals, a range of NPVs can still be calculated for different scenarios which can in turn be compared to other sets of scenario NPVs.

USACERL's financial feasibility concerns were addressed by the EDA in the 10 October 1997 EDC Application Amendment (Appendix D). Although the EDA did not recast the Vint Hill Farms financial pro forma under alternative project scenarios, an array of "proactive" and "reactive" business plan strategies were proffered in an attempt to demonstrate sustained financial feasibility. Accordingly, USACERL was tasked by DAIM-BO to review these strategies for reasonableness. USACERL generally found that a prudent mixture of proactive and reactive strategies, which serve to augment the business plan over the course of 15 years, would go a long way toward ensuring financial feasibility by reducing capital and borrowing costs, increasing project exposure, and generally reducing operational and financial risk. USACERL's full review of the EDA's strategies follows the EDC amendment in Appendix D.

Conclusion

USACERL finds that the EDA's business plan has a low probability of achieving market and financial feasibility as proposed in the EDA's EDC application. Only when substantial reductions in costs are applied to the business plan does it achieve financial feasibility. The range of NPV for the business as recast by USACERL from the EDA's business plan falls around \$1.8 million. Because the EDA forecasts a positive project NPV, the EDA has made an offer to the Army of \$300,000 for the EDC parcel at Vint Hill Farms Station, VA. USACERL's calculated range of NPV of \$160,000 and \$1.0 million captures the EDA's offer of \$300,000, but under decidedly disparate assumptions. USACERL's estimated range of NPV can only be achieved under particular investment conditions, and was selected because it represents the high end of the conservative range (i.e., 40% view) and the low end of the more optimistic range (i.e., 25% view) to better balance Army and EDA interests. Therefore, it is USACERL's recommendation that the Department of the Army consider that negotiations begin with the USACERL recommended range and strongly urge the EDA to consider the

proactive and reactive strategies outlined in the EDC application amendment, if only in concept, to account for the overstated market feasibility inherent throughout the EDA's business plan. USACERL's estimated range of project NPV is contained in Table 4.7.

Table 4.7. USACERL's estimated range of present value for the EDA business plan.

Estimated Business Plan Valuation	15.0% Discount Rate	
40% project view with reduced infrastructure and WWTP O&M costs	\$160,000	
25% project view with reduced infrastructure and WWTP O&M costs		\$1,000,000
USACERL's Estimation of Present Value for Business Plan	\$160,000	\$1,000,000

5 Need and Extent of Proposed Infrastructure Improvements

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Objective

The objective of this chapter is to evaluate the need for and accuracy of the proposed infrastructure improvements contained in the Vint Hill Farms EDA EDC business plan and 1995 Preferred Reuse Plan. USACERL accomplished this objective by examining proposed improvement cost estimates to determine reasonableness and if there was a clear relationship between capital investments and the EDA's desired goal of job creation. In addition to the evaluation

of the full build-out proposed in the Preferred Reuse Plan, USACERL considered two other alternatives to test the sensitivity of the Reuse Plan: a 25% Reduction in Absorption Scenario and a 40% Reduction in Absorption Scenario.

Background and Approach

USACERL engineers conducted a site visit to VHFS during the week of 19 May 1997 to perform the necessary condition assessment of facilities contained within the 680 acres of the EDC parcel. The USACERL infrastructure team evaluated the condition of the installation's infrastructure and noted any observed distresses. From this evaluation, the team established the current carrying capacity benchmark based upon the physical inspection and historical records. With this information in hand, the team determined the current and future condition of the infrastructure, essential infrastructure repairs, estimated infrastructure deterioration rates, and then evaluated different infrastructure future capacity scenarios. USACERL made cost estimates for the improvements to the infrastructure that would be necessary to encourage economic growth considering both condition improvement and increased capacity alternatives, and compared these costs with those proposed by the EDA to determine reasonableness.

Infrastructure Assessment

Need and Extent of Infrastructure Improvements

USACERL's general approach to determining infrastructure condition and validity of proposed capital improvements was similar to other EDC reviews. As a starting point, USACERL first determined the current condition of the infrastructure. This baseline was then compared against future requirements and current carrying capacity of the infrastructure. If the current condition or improving the current condition could meet future requirements, then USACERL used that scenario as the benchmark. If the future requirements exceed the current condition or possible capacity, then USACERL developed and evaluated different expansion alternatives.

Condition Assessment

Infrastructure condition assessment is a multi-step process as follows:

1. The infrastructure is separated into groups of related divisions and systems (e.g., roads or utilities - water) and an inventory taken of those divisions and systems. (Appendix C contains a breakdown of all the infrastructure divisions and systems that USACERL evaluated at Vint Hill Farms Station.) This inventory can come through direct measurement of the installation master planning maps or information provided from previous inventory surveys.
2. Information on each of the infrastructure's divisions and systems is gathered through visual inspection, interviewing shop personnel, mechanics, or repair personnel, gleaning information from previously conducted surveys, and the EDC reuse plan.
3. The present condition of each of the systems is determined using USACERL's Engineering Management System (EMS) condition assessment standard as shown in Appendix C.
4. A repair scenario is determined that *could* be required to improve the current condition of the system. Sources of information to determine possible repair scenarios include previous engineering surveys, interviewing facility personnel, and engineering judgment.
5. From the repair scenario, a proposed cost estimate (given as a range of dollars) is determined. Sources of information to determine possible cost estimates include cost estimates from previous engineering surveys, interviewing facility personnel, and professional engineering judgment.

Appendix C presents the results of the condition assessment of the different infrastructure divisions and systems at Vint Hill Farms Station.

Functionality/Capacity/Capability Assessment

This assessment procedure is also a multi-step process as follows:

1. As with the first step of the condition assessment procedure, the infrastructure is separated into groups of related divisions and systems. This inventory

can be derived from direct measurement of the installation master planning maps or information provided from previous inventory surveys.

2. The current capacities of the infrastructure's systems are then calculated. Information to calculate the current capacity comes from city, county, state, and Federal code books, engineering handbooks, previous engineering surveys, interviewing facility personnel, and professional engineering judgment.
3. The future requirements or capacity of the infrastructure's systems are calculated based on using information from the Reuse Plan. For example, using informational sources from step two, the total sewage generated for the redeveloped installation is calculated per land parcel based upon the parcel's functionality identified in the Reuse plan.
4. The functionality/capacity/capability of the systems is determined using USACERL's assessment standard as shown in Appendix C.
5. A repair or alteration scenario is determined that *could* be required to improve the current capacity of the system to meet future requirements. Sources of information to determine possible scenarios include previous engineering surveys, interviewing facility personnel, informational sources referenced in step 2, and engineering judgment.
6. From the repair or alteration scenario, a proposed cost estimate (given as a range of dollars) is determined. Sources of information to determine possible cost estimates include cost estimates from previous engineering surveys, interviewing facility personnel, and engineering judgment.

Appendix C presents the functional assessment of VHFS's different infrastructure divisions and systems.

EDA Assessment

If the EDA correctly determined the infrastructure requirements of the Reuse Plan, then the total cost of the capital improvements should match the estimated values from this evaluation. If not, USACERL does the following:

1. Review all information from the Reuse Plan and any additional information that the EDA might provide to determine how the scope of work for each of the capital improvements mentioned in the plan was determined. To this end, USACERL raised several concerns in its 8 July 1997 memorandum to

the EDA with the intent of corroborating proffered engineering assumptions and costs (Appendix A).

2. USACERL uses the best information possible and calculates a cost range for the aforementioned capital improvements.
3. Then USACERL compares this cost range with that proposed by the EDA in the Reuse Plan. A side-by-side line item comparison is made of each capital project and USACERL notes the differences.

Appendix C shows the results of the EDA assessment of Vint Hill Farms Station's different infrastructure divisions and systems.

Comparison and Findings Between USACERL and EDA Assessments

While some individual cost estimate differences exist with the full build-out scenario, the total EDA estimate of \$33.8 million falls within the USACERL estimated range of \$32.6 million and \$37.7 million. Since the total falls within the acceptable range and there are no significant differences, USACERL concurs with the cost estimate for full build-out for the EDA's Preferred Alternative.

As noted earlier, besides developing an infrastructure cost estimate for full build-out, USACERL considered two other alternatives: a 25% Reduction in Absorption Scenario and a 40% Reduction in Absorption Scenario. The 25% reduction scenario reduces the infrastructure requirements necessary to support 75% absorption from total build-out. This scenario reduces the road network upgrade and the need to construct a new WWTP. Instead of building a new 700,000 gpd WWTP for \$6.3 million, to meet future demands the current capacity can be increased to 351,000 gpd for \$1.17 million. The construction of new roads and utilities for both Phase I and II can be reduced from \$11.1 million to \$9.6 million. Capital investment required by the EDA would be reduced by 27% with this scenario.

An interesting finding while considering the 40% reduction scenario is that the current facility condition and functionality can, for the most part, support this level of redevelopment and hence the infrastructure requirement is reduced to between \$14.4 million and \$16.1 million. With this scenario, the EDA's capital investment is reduced by 55%.

Table 5.1 compares the EDA full build-out versus the USACERL-developed estimates for full build-out, the 25% reduction, and the 40% reduction.

Table 5.1. Cost comparisons for improvements in the business plan.

Project Description	EDA Cost	USACERL Cost		40% Reduction in absorption		25% Reduction in absorption	
		(Maximum Scenario)		(Minimum Scenario)		(Alternative Scenario)	
		Low	High	Low	High	Low	High
COST ITEMS FOR SOFT COSTS							
Engineering for roads and utilities	\$159,000	\$160,000	\$189,000	\$60,000	\$71,000	\$114,000	\$135,000
Engineering for sewage treatment	\$650,000	\$410,000	\$484,000	\$175,000	\$207,000	\$308,000	\$364,000
Engineering for golf course reconstruction and design	\$515,000	\$349,000	\$413,000	\$223,000	\$264,000	\$301,000	\$356,000
Engineering for architectural services	\$86,000	\$35,000	\$42,000	\$35,000	\$42,000	\$35,000	\$42,000
Construction management (@1.5% of construction costs)	\$200,000	\$437,535	\$505,740	\$192,225	\$215,985	\$309,285	\$354,285
Financing costs	\$490,000	\$490,000	\$490,000	\$147,000	\$147,000	\$294,000	\$294,000
Traffic studies	\$35,000	\$26,000	\$31,000	\$21,000	\$25,000	\$24,000	\$28,000
TOTAL SOFT COSTS	\$2,135,000	\$1,907,535	\$2,154,740	\$853,225	\$971,985	\$1,385,285	\$1,573,285
COST ITEMS FOR HARD COSTS							
Maintenance to existing WWTP	\$300,000	\$968,000	\$1,144,000	\$968,000	\$1,144,000	\$968,000	\$1,144,000
Treatment plant expansion (installation)	\$6,300,000	\$6,286,000	\$7,428,000	\$979,000	\$1,157,000	\$979,000	\$1,157,000
Elevated water tank	\$800,000	\$622,000	\$735,000	\$253,000	\$299,000	\$253,000	\$299,000
Maintenance of existing tank	\$75,000	\$84,000	\$99,000	\$84,000	\$99,000	\$84,000	\$99,000
Road and utilities - Phase 1	\$7,940,000	\$6,554,000	\$7,740,000	\$1,136,000	\$1,342,000	\$5,490,000	\$6,485,000
Road and utilities - Phase 1	\$3,091,000	\$4,186,000	\$4,944,000	\$470,000	\$555,000	\$3,507,000	\$4,144,000
Electrical distribution system	\$439,000	\$354,000	\$418,000	\$119,000	\$141,000	\$119,000	\$141,000
Gas distribution system	\$250,000	\$222,000	\$263,000	\$202,000	\$239,000	\$202,000	\$239,000
Golf course construction & grow in	\$2,925,000	\$2,592,000	\$3,063,000	\$1,941,000	\$2,294,000	\$2,035,000	\$2,405,000
Golf course buildings, furnishings and equipment	\$1,000,000	\$986,000	\$1,165,000	\$673,000	\$796,000	\$817,000	\$966,000
Tenant fit up allowances	\$288,000	\$367,000	\$433,000	\$367,000	\$433,000	\$367,000	\$433,000
Entrance signage	\$300,000	\$150,000	\$177,000	\$124,000	\$147,000	\$150,000	\$177,000
Traffic signalization	\$1,050,000	\$598,000	\$707,000	\$299,000	\$353,000	\$448,000	\$530,000
Building demolition and disposal	\$5,300,000	\$5,200,000	\$5,400,000	\$5,200,000	\$5,400,000	\$5,200,000	\$5,400,000
Contingency	\$1,610,000	\$1,553,827	\$1,793,537	\$683,411	\$768,549	\$1,100,214	\$1,259,614
TOTAL HARD COSTS	\$31,668,000	\$30,722,827	\$35,509,537	\$13,498,411	\$15,167,549	\$21,719,214	\$24,878,614
TOTAL OF HARD AND SOFT COSTS	\$33,803,000	\$32,630,362	\$37,664,277	\$14,351,636	\$16,139,534	\$23,104,499	\$26,451,899

USACERL identified three key findings from the assessment process:

1. USACERL found no significant differences between the EDA Preferred Alternative and the functional assessment of the infrastructure at full build out.
2. If the absorption rate is reduced by 25% the following cost differences are noted:
 - A. Maintenance of the existing WWTP from \$300,000 (EDA's estimate) to a maximum of \$1,144,000 (USACERL's estimate).
 - B. Construction of a new 700,000 gpd WWTP for \$6,300,000 (EDA's estimate) versus expanding and modifying the existing to 351,000 gpd for a maximum of \$1,157,000 (USACERL's estimate).
 - C. Construction of new roads and utilities during Phase I for \$7,940,000 (EDA's estimate) to a maximum of \$5,490,000 (USACERL's estimate).
 - D. Construction of new roads and utilities during Phase II for \$3,091,000 (EDA's estimate) to a maximum of \$4,144,000 (USACERL's estimate).
3. A 40% reduction in absorption can be met by simply addressing all of the current condition assessment shortfalls. Therefore, no infrastructure capacity increases would be required to support this scenario.

The cost differences outlined in Section 2 A and B are contained in an expanded discussion in the following sections.

Maintenance of the Existing Wastewater Treatment Plant

The WWTP at VHFS dates back to the early 1940s when the treatment facility was initially designed and constructed as an Imhoff tank and trickling filter system. The installation has retrofitted and refined the plant over the years, especially in the last 5 years to accommodate stricter discharge limits and greater flows. New technology, old age, stricter discharge limits, and increasing inflows to the plant are overtaking this facility and it now needs to have additional maintenance and minor modifications to meet those demands.

It appears that the EDA feels that the plant only needs minor maintenance to meet the increased demands. USACERL studied the Reuse Plan and could not find any mention of how the EDA is planning to maintain the plant. USACERL then studied several other engineering studies on the WWTP and used the results of these studies as a basis for comparing the cost estimate of improvements. Some of the improvements mentioned included replacing recirculation pumps, piping, and preventing the flow of storm water into the Imhoff and trickling filters. USACERL generally agrees with these modifications and the cost to do the work.

Additional research by USACERL found that a supplemental modification to the plant will be required in the near future to meet stricter ammonia effluent discharge limits. The reduction of ammonia effluent can be accomplished through a process called nitrification, or the biological oxidation (bacteria) of ammonia to nitrate with an intermediate nitrite formation. The nitrifying bacteria can either be attached as in a fixed film immersed in an aeration basin, or attached to a rock or plastic media as in a trickling filter; or the bacteria can be non-attached as in a waste-activated sludge system. After looking at all the available information, USACERL concurs that replacing the existing rock in the trickling filter with plastic media and the construction of a high rate, plastic media filter (tower) in series with the existing filter would be the most likely method (and least expensive) of modifying the plant to meet the stricter discharge limits.

USACERL then developed cost estimates to modify the existing plant to meet the stricter ammonia effluent discharge limits and combined them with the maintenance costs to arrive at a range of \$968,000 to \$1,144,000 versus the \$300,000 proposed by the EDA.

Construction of a New WWTP Versus Modifying the Existing Plant

The issue of the WWTP at VHFS is important due to a lack of sites that possess wastewater service in the NBSD and Fauquier County, so USACERL will briefly discuss the generation of wastewater flow rates. A brief discussion of the different calculation methodologies will then follow.

Determining the rates of wastewater flow is the first step in the design of wastewater collection and treatment facilities. Reliable data on existing and projected flows must be available if these facilities are to be designed properly and minimize associated construction costs.

Components of Wastewater Flows

The components that make up the wastewater flow may include the following:

1. *Domestic (also called sanitary) wastewater* is discharged from residences, commercial, institutional, recreational, and similar facilities.
2. *Industrial wastewater* is wastewater in which industrial wastes predominate.
3. *Infiltration / Inflow (I/I)* water enters the sewer system through indirect and direct means. Infiltration is extraneous water that enters the sewer system through leaking joints, cracks, and breaks. Inflow is storm water that enters the sewer system from storm water connections (catch basins), roof gutters and downspouts, foundation and basement drains, or through manhole covers.
4. *Storm water* is runoff resulting from rainfall and snow melt.

Flow Rates

The principal sources of domestic wastewater in a community are the residential areas, commercial districts, institutional, and recreational facilities.

Residential area. The residential or domestic wastewater comes from single and multi-dwelling housing units and includes toilet flushing, cooking, drinking, washing, bathing, watering yards and gardens, laundry, and other uses. For many residential areas, engineers and planners commonly develop wastewater flow rates per person. For large residential areas or high-density population, planners typically develop flow rates from land use areas and anticipated population densities. Engineers and planners should base actual wastewater flow rates on similar residential areas, preferably in the same locale. In the absence of such data, engineers and planners should use design handbooks with predetermined "rules of thumb" and wastewater flow rates from local, regional, and state planning agencies to guide them in the selection of appropriate flow factors.

Commercial districts. Commercial establishments include motels, hotels, office buildings, shopping centers, service stations, movie houses, airports, and the like. Commercial wastewater flow rates are generally expressed based on existing development requirements, anticipated future development, or

comparative data. Because unit flow rates can vary widely for commercial facilities, engineers and planners should try to obtain information from similar facilities to guide them in the selection of appropriate flow factors.

Institutional facilities. Institutional facilities include wastewater flow from hospitals, prisons, rest homes, schools, and the like. Flow rates for institutional-type facilities vary with region, climate, and type of facility. The records of similar facilities are the best source of flow data for design purposes.

Recreational facilities. Wastewater flows generated from recreational facilities include such facilities as resort cabins, cafeterias, country clubs, swimming pools, theaters, and the like. Wastewater flow rates from many recreational facilities are highly seasonal.

Industrial facilities. Wastewater flows generated from industrial facilities include the process water used in the industrial application. Because of the nature of the wastes from industrial uses, they are treated separately from any sanitary wastewater treatment plants.

The existing industrial wastewater system at VHFS will be abandoned in place because it was site-specific to the installation. Any new tenants of the redeveloped VHFS will be responsible for their own industrial wastewater.

Infiltration and inflow (I/I) and storm water . The discharge monitoring reports (DMR) for VHFS show an extreme amount of I/I percolating into the wastewater system and treatment plant. The higher the amount of I/I the more difficult it becomes for the plant to operate efficiently. Information from these reports show that the I/I could be as much as 50% of the total inflow into the plant. Both USACERL and the EDA agree that the storm water collection system at VHFS should be replaced to reduce the amount of I&I into the system and to help the plant operate efficiently.

Flow Rates at VHFS

VHFS flow rates. Before designing a wastewater treatment plant at VHFS, engineers must study the Preferred Reuse Plan for estimating the type and quantity of flow. Unfortunately, many different data sources had to be used because of the wide range of anticipated requirements within the Preferred Reuse Plan. Such sources include the state code requirements from the Virginia Department of Health, wastewater design handbooks, and discussions with professional engineering firms. (Appendix C shows the wastewater flow rates

from the Virginia Department of Health and from a wastewater design handbook.) Design is based on the flow estimated at the end of the development period or 15 years from now. For the Preferred Reuse Plan, the EDA considered the following different types of uses:

- residential
- retail services/shopping centers
- office/services
- gym and ballfields
- swimming pool
- theater
- innovative technology
- golf course
- research and development
- community
- school.

The flow patterns of domestic sewage are affected principally by resident population and population density (shown in parcels 3, 11, and 28 of Figure 1); industrial requirements (shown in parcels 25A, 25B, 25C, and 27 of Figure 1); commercial requirements (shown in parcels 2, 4, 5A, 5B, 5C, 6, 7, 8, 9, 12, 14, 18, 20, 21, 22, 23, and 29 of Figure 1); institutional requirements (shown in parcels 10 and 20 of Figure 1), public and community use (shown in parcels 1, 13, 16, and 24 Figure 1), groundwater geology, and topography of the area (which cases I/I).

For VHFS, I/I is a serious problem. In some cases, the I/I can represent up to 50% of the input into the WWTP. When this happens, the processing limit is exceeded and unprocessed water flows through the WWTP, which in turn causes the installation to receive a Notice of Violation (NOV) from the state Department of Health.

Based on the Preferred Reuse Plan and wastewater flow rates supplied by the EDA, USACERL regenerated the following summary chart (Table 5.2) to validate their calculations (the full chart is in Appendix C).

Table 5.2. Review of EDA full build-out WWTP requirement.

Source	Estimated Low Flowrate	Estimated High Flowrate
Dewberry & Davis	477 MGD	657 MGD
USACERL	425 MGD	640 MGD

USACERL researchers feel that the EDA's engineers, Dewberry and Davis, used the following logic to arrive at the wastewater flow factors: The Virginia Department of Health does not give wastewater factors for R&D space, innovative technology, and office-type facilities, which are a very large portion of the redevelopment of the installation (see Appendix C). The state code does, however, give flow factors for shopping center/retail centers per 1,000 SF of floor space. Without additional information, the EDA researched other possible sources of wastewater flow factors. One source gave wastewater factors for all of the required usages at VHFS per person (see Appendix C). This same source gave very similar flow rates for innovative technology, office space, R&D space, and shopping centers per person. Since the state code gave a factor for shopping centers and because the rates given in the design handbook are similar, it appears that the EDA equated all flow rates to the standard set forth by the state (even though the units of measure are different).

The capital improvement plan indicates that the EDA will maintain the existing plant and construct a new plant. However, the EDA makes no mention of what will happen to the old plant after the new one is constructed. USACERL came up with possible alternatives for the fate of the old plant. One possibility would be that the old plant will be abandoned in place after the new one is built. Another possibility is that the old plant will be demolished in conjunction with the construction of the new plant. A third possibility is that the old plant will continue to run after the new plant is constructed. A WWTP that is under 1 MGD is considered by the state to be "grandfathered" and does not have to meet very strict discharge requirements. The two plants will have a total capacity of 0.95 MGD (0.7 MGD plus 0.246 MGD), will therefore be under 1 MGD, and will not have to meet those strict requirements. This alternative in turn will yield excess capacity which could then be used for the wastewater treatment of a proposed 1,600 dwelling unit next to the installation.

USACERL flow rates. It is important to note that the units for wastewater flow from the two sources (one is for 1,000 SF of building and the other is per person) are different and that equating them may not be appropriate. It should also be

noted that the methodology varies on how to compute the flow factors per person.

Using the square footage to determine the wastewater flow for a shopping center is a good estimating technique because a shopping center does not have a large number of employees, but a large number of customers can and do flow through a center. To say that an office or light industry has a small number of employees and that a large number of customers flows through is not correct. The number of employees in an office type environment is fairly constant and can be determined with a reasonable amount of accuracy. The number of employees within a light industry can also be determined and the amount of processed water that they might use can also be determined. Hence, using the number of gallons per day per employee is a better predictor of wastewater flow.

If the EDA used a wastewater flow rate per person, they would have to use a range of 75 to 105 gpd to arrive at the same flow rate that they are predicting using building floor space. This might make sense if it were to be used for a heavy water user such as in heavy industry (a steel mill, computer software chip factory, etc). To use 75 to 105 gpd per employee in an office-type setting or light industry would mean that the employee would use more water at work than at home, which is highly unlikely.

USACERL performed detailed evaluations to determine if these factors could be refined in some way. It appeared very quickly that the four biggest generators of wastewater would be the innovative technologies parcels of 25A, 25B, 25C, and 27. Although the amount of wastewater flow for this type of industry can vary greatly, research showed it unlikely to approach the maximum flow rate of 75 to 100 gpd. For example, if the innovative technology were more office-type facilities such as computer programming or communications, USACERL found that the average gpd per person could be as low as 16. On the other end of the spectrum, USACERL found that heavy water users such as a vehicle rebuild shop or a computer chip manufacturing shop could use 80 gpd per employee (this number includes both process and sanitary wastewater). Hence, 80 gpd would represent the highest wastewater production that could be expected.

The business plan does not indicate any potential companies that might be heavy wastewater generators for the above mentioned parcels. Therefore, USACERL calculated the wastewater generation estimate based on the average of the range for 25% and 40% reductions in absorption and used this value as a basis of the cost estimates. Table 5.3 is a comparison of the EDA's flow rates and USACERL's flow rates for the three different scenarios.

Table 5.3. Wastewater treatment requirements estimate comparison.

Source of Estimate	Wastewater generation		
	Average GPD		
	100% Build-Out	25% Build-Out Reduction	40% Build-Out Reduction
Dewberry & Davis	533,000	----	----
USACERL	506,472	270,958	191,016

Other flow rate considerations. The Army Environmental Impact Statement (EIS) also addresses the sewage generation problem (Reproduced in Appendix C). The EIS demonstrates that, with a medium intensity reuse of the VHFS property, 198,095 gpd of sewage will be generated. At a high intensity reuse, 343,048 gpd will be generated. Both of these numbers fall within USACERL's range of values from 158,000 to 384,000 with an average generation of 271,000 gpd on a 25% reduction in absorption scenario. Even though these numbers are significantly different, it should be noted that the EIS develops the same conclusion as USACERL, that a new 700,000 gpd WWTP is not needed and that upgrading the existing plant would satisfy projected demands.

Construction of Roads and Utilities, Phases I and II

The scope of work for these projects includes the construction of several new roads, new storm sewer lines, sanitary sewer lines, and domestic water lines. USACERL found that the EDA's scope of work proposed for the utilities falls in line with USACERL's engineering analysis; therefore, no exceptions are taken. However, the suggested 25% reduction in absorption will reduce the extent of the required road improvements.

USACERL will present a brief review on how to figure trip generation, which in turn determines the width and depth of the road. A brief discussion of the different calculation methodologies will then follow.

Trip Generation

The principal sources of trip generation are: residential, commercial/retail, administrative/office, industrial/commercial, and public/quasi-public land uses explained below.

Residential area. Residential trip generation is the portion of total trip generation that is used by families. It includes such things as trips to the supermarket, job, shopping center, church services, etc. Traffic generation

varies directly with the number of persons living within a particular area. Trips can also vary with family income, car ownership, and family composition and are usually divided into three types: Low density (single family houses), medium density (patio houses, duplexes, and town houses), and high density (apartments.). Trips performed in residential areas run from 5 to 8 average daily trips (ADT) with 7 trips per household as the typical value.

Retail area. Retail trip generation is the portion of total trip generation used by retail services to perform their duties. It includes trips performed by as supermarkets, department stores, regional shopping centers, motels/service stations/convenience stores in the performance of their duties. Unlike the generation rate for residences, the generation rates are based on per 1,000 SF of floor area. This accounts for both the retail employees and customers. Trips in a commercial or retail area range from 60 to 140 ADT with 80 ADT as a typical value. This type of land usage has the largest range of vehicle trips.

Office area. The office area includes five different categories of buildings that are related to the number of stories in the office building, from a single story, 2 stories, 3 to 4 stories, 3 to 6 stories, to over 10 stories. Most of the trips generated here are for errands such as taking the mail to the post office, visitors, etc. As with the retail area, the office area trip generation is calculated on 1,000 SF of floor area. Trips in an administrative area range from 6 to 60 ADT with 14 ADT as a typical value.

Industrial area. The number of trips for this area include those required for a highly automated industry with low employee density (such as in a refinery or warehouse), light service industry in a single lot (such as in a lumberyard), an industrial tract in 5-acre lots (such as with a machinery factory), and office, campus, R&D, and mixed central area industry with small industrial type plants. This type of area is also calculated per 1,000 SF of floor area, but the number of trips ranges from 0.4 to 1.2 ADT with 0.8 ADT as a typical value.

Public areas. The number of trips for this type include schools and colleges, places of public assembly (theaters, stadiums, convention centers) administration facilities (city hall, state offices, post offices), recreation facilities (parks zoos, beaches, golf courses), terminals (bus terminals, airports) and hospitals. This type of generation has the most caveats on it and is the toughest to estimate.

Trip Generation at VHFS

VHFS trip generation. The proposed land uses that served as the basis for trip-generation modeling are as follows:

- regional shopping center
- medium density housing
- single story office
- offices
- research and development facilities
- schools and school offices
- theater
- golf course.

USACERL trip generation. In recasting the trip generation from the proposed reuse of the installation, USACERL determined that the proposed road improvements could be required. However, by reducing the absorption by 25%, requirements are reduced as well. USACERL calculated the trip generation estimate based on the average of the range for 25 and 40% reductions in absorption and used this value as a basis of transportation requirements and cost estimates. Table 5.4 compares the EDA's trip generation and USACERL's trip generation for the three different scenarios.

Table 5.4. Trip generation estimate comparison.

Source of Estimate	Trip generation		
	Typical ADT*		
	100% Build-Out	25% Build-Out Reduction	40% Build-Out Reduction
Dewberry & Davis	35,071	-	-
USACERL	33,285	22,246	18,217

*ADT = average daily trips

Road design. The amount of traffic on a road will determine the width and depth of the road as shown in Appendix C, Section 10. The current designs of the road improvements on VHFS call for a majority of four-lane divided roadways with 8 in. of gravel base, 8 in. of asphalt base, and 2 in. of asphalt surface. The 25% reduction in absorption calls for a majority of two-lane roads with 8 in. of gravel base, 4 in. of asphalt base, and 2 in. of asphalt surface. The existing roads are two-lane roads with 6 in. of gravel base, 4 in. of asphalt base, and 2 in. of asphalt surface. Telephonic communications from the Virginia Department of Transportation (VDOT) have indicated that VDOT is liberal in terms of accepting roads "as is" and foregoing full upgrade mandates.

Traffic flow offsite. The EIS points out specifically that a number of roads could require off-site mitigations. These improvements will enhance/encourage the redevelopment of the installation. Such roads include Highway 215 from Rt 29 to the installation; Highway 793 from Rt 29 to the installation; and Highway 602 along the eastern borders of the installation. USACERL strongly encourages the EDA to consider off-site road improvements to enhance the marketability and functionality of the site.

Findings

1. USACERL concludes that the costs of the EDA's infrastructure program are within a range of reasonableness when the EDA's full build-out requirements are assumed. This conclusion suggests that USACERL and the EDA's consultant, Dewberry and Davis, developed comparable assessments of facility condition and used similar cost estimating techniques.
2. At full build-out, the EDA estimates total capital improvements to be at \$33 million. USACERL estimates these capital improvements to be between \$32 million and \$37 million. Since the EDA estimate falls in the range of USACERL's estimate, it is felt that their cost estimate is reasonable.
3. A 40% reduction in absorption scenario can be met by simply addressing all the current condition assessment shortfalls. No infrastructure capacity increases would be required to support this scenario.
4. Under a 25% reduction in absorption from full build-out, USACERL believes that the capital improvements required to meet projected requirements would range from \$23.1 million to \$26.5 million.

5. The largest differences of costs between USACERL and the EDA estimates relate to the capacity of the wastewater treatment plant. A 25% reduction in absorption will require a 0.283 MGD plant, which can be accomplished through the modification of the existing plant to 0.351 MGD as opposed to constructing a whole new plant for 0.7 MGD. The cost of building a new plant would range from \$6.6 million to \$7.4 million, while the cost to upgrade the existing plant would range from \$980 thousand to \$1.2 million.
6. The next largest difference in cost between USACERL and the EDA estimates are with the road network. A 25% reduction in absorption from full build out will reduce the average number of daily trips from 33,000 to 22,000 ADT. This reduction, in turn, will reduce the required width and depth of road surface to support daily traffic generation.
7. Some items of the installation's infrastructure were not addressed in the Reuse Plan. One item in particular was the required parking to support the reuse. USACERL recommends that the EDA initiate planning to include parking in the Reuse Plan.
8. Better access to VHFS will require the improvement of several off-site roads. USACERL recommends that the EDA initiate planning to accomplish these projects.

6 Extent of State and Local Investment and Risk

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Background

Local investment in the redevelopment of VHFS will involve significant development costs, including high capital expenditures, the majority of which arise from road and utility improvements. Chapters 5 and 10 of the EDC application estimate total capital costs of \$37.1 million for fiscal years 1997 through 2011 and are projected to be met partly (\$12 million) through supportable real estate and golf course revenues. The balance is proposed to be met with 20-yr tax-free development bonds. In addition to real estate revenues and debt financing, the EDA has identified potential financial commitments from the Economic Development Administration, the DoD Office of Economic Adjustment, Fauquier County, and the Virginia Rural Development Administration totaling \$9.9 million.

Despite these financial commitments, it is the opinion of USACERL that the Vint Hill Farms EDA EDC business plan suffers from an undue level of risk based on the extent of proposed capital improvements, regional real estate market conditions, locational characteristics of the site, and the distinct absence of substantive investment from other municipalities.

Approach

USACERL will discuss the extent of state and local investment risk associated with the redevelopment of VHFS, as well as the ability of the EDA to implement the June 1995 Preferred Reuse Plan as proposed in the EDC application.

Operational Investment and Risk

Investment

According to the EDA, the business plan pro forma effectively projects adequate revenues of \$82.8 million from real estate and grant funding sources to offset operational expenditures of \$36.1 million throughout the 15-yr redevelopment period. This projection results in a 15-yr cumulative *positive* cash flow of \$46.7 million, which is dedicated to debt service and capital improvements. The proposed level of operational investment is indeed substantial but, in most cases, a prerequisite for the successful redevelopment of VHFS.

Risk

The EDA's operational investments attempt to ensure that adequate resources will be available to meet the short- and long-term challenges of marketing the property to developers and instilling the necessary level of confidence required by investors to locate at VHFS knowing the site will be supported by municipal services. However, although the EDA has demonstrated in its business plan pro forma that adequate revenues will be available to offset operational costs, it is the belief of USACERL that the EDA's revenues are overstated based on locational constraints, site characteristics, and robust regional real estate competition. The ability to attract and ultimately support end users at VHFS rests largely with the level of operational investments the EDA can make into the site. It is USACERL's conclusion that the EDA's revenue stream is marked by high risk, thus creating a high level of risk associated with operational investments and financial feasibility.

Capital Improvements

Investment

Chapter 5, **Need and Extent of Proposed Infrastructure Improvements**, provides an in-depth discussion of the EDA's proposed capital improvement

program provided in the EDC application and reflected in the business plan pro forma. To summarize, the EDA proposes the following major improvements:

- \$6.3 million for a 700,000 gallon per day (gpd) wastewater treatment plant (WWTP)
- \$11.0 million in road and utility upgrades
- \$6.0 million in building demolition costs
- \$3.0 million for a new golf course development
- \$2.2 million in soft costs.

In total, the EDA proposed over \$34 million in capital improvements, or \$37.1 million when growth rates of 3 and 3.5% are applied over 15 years.

Although USACERL was able to independently verify project infrastructure costs, some improvements were not found to be uniquely and specifically attributable to the redevelopment of VHFS or were overstated based on full build-out requirements. USACERL takes exception to the EDA's purported need for a 700,000 gpd WWTP when the EDA's own full build-out requirements do not support such a requirement. When USACERL-developed property absorption and full build-out densities are applied, requirements further decrease. Even if the EDA achieved its proposed level of redevelopment, a significant excess WWTP capacity would exist that could benefit users off-site. In terms of on-site road and utilities, USACERL found some costs to be overstated within the context of more realistic reduced full-build out requirements.

USACERL finds that the timing of these improvements suffers from heavy investment in the early years of investment as is so often the case with similar projects. A project trade-off exists between the need to make appropriate investments in the site to attract and support end users, and the need to remain financially solvent. Many improvements could be delayed due to existing infrastructure conditions and lower short-term requirements. However, the timing of building demolition will enhance safety, reduce maintenance costs, and improve the marketability and job creation potential of the site.

In addition to the \$37.1 million in capital improvements that are reflected in the business plan, the EDA has suggested making additional investments in off-site road improvements to better integrate the infrastructure at VHFS into the local

communities. The Army's Reuse and Disposal Environmental Impact Statement (EIS) actually specifies several required off-site transportation improvements to enhance the marketability and functionality of the site. These proposed expenditures would substantially improve the infrastructure in the area, but are not reflected in the business plan pro forma and would require additional financing. It is the opinion of USACERL that some off-site road improvements should be considered in lieu of some less necessary on-site improvements to increase the market feasibility of the business plan.

The EDA proposes to finance these capital improvements using a combination of bonds, grants, and net operating proceeds. As mentioned elsewhere in this report, the EDA has the authority to issue tax-free development bonds in support of the VHFS redevelopment effort. In fact, the EDA proposes to fund \$27.1 million of the projected \$37.1 million in capital improvement costs with bond instruments. This results in a total 26-yr debt service cost of over \$47 million. The remainder of capital improvements will be funded through a mixture of grant funding and net operating proceeds.

Risk

The EDA has proposed to underwrite a substantial portion of the project risk by incurring over \$47 million in debt service costs. Furthermore, because the EDA does not possess the power of taxation, it does not have the ability to pledge future tax revenues generated against debt retirement responsibilities. This inability to tax becomes a critical issue when the EDA's risky revenue stream is factored into the equation. As demonstrated throughout this report, USACERL was unable to independently validate the EDA's projected property absorption of over 100,000 SF. When absorption is reduced to more reasonable levels, the business plan does not remain financially feasible. It is likely that, if bond investors identify the high level of market risk, a higher interest rate will be assigned or allowable bond issues will be reduced.

In addition, the EDA is receiving very little assistance from the Commonwealth of Virginia and Fauquier County. The EDA should be commended for undertaking such a challenging economic development project with so little support from other government agencies. However, the ability to fund infrastructure improvements becomes constrained when Fauquier County has not committed

itself financially to the redevelopment of VHFS, other than a potential "moral obligation" which would replenish the EDA's debt reserve once if bond repayment requirements are not satisfied, and \$250,000 a year for capital costs.*

Conclusions

Compared to the level of risk USACERL has observed from previously granted EDC requests, the EDA's project risk exposure is substantially higher. Unlike other redevelopment enterprises which receive financial and in-kind assistance from state and local sources, the EDA is, by its own admission, "financially independent" in that it enjoys little or no financial commitments from other sources. This independence has obvious implications in terms of the EDA's ability to fund operating and capital improvement costs and, ultimately, attracting new tenants and end users. This problem is further compounded because the EDA's projected revenue stream from real estate activities is highly risky due to the rural nature of the site, transportation constraints, robust regional competition, and Fauquier County's reputation as a "slow growth" community. In USACERL's preferred alternative scenario, it is estimated that in the absence of additional financial support, the EDA would be required to reduce capital improvement costs by \$10 million, operating costs by \$2 to \$3 million, and debt service by \$10 to \$15 million in order to achieve a business plan which is financially feasible within the context of more realistic market assumptions.

* At the time of this writing, no commitment from Fauquier County has been given to the EDA for this amount. It is an estimation developed by the EDA that is based on previous commitments from the County and current interest in the VHFS redevelopment project.

7 Local and Regional Real Estate Market Conditions

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Methodology

Local and regional residential, office, and industrial real estate market data were gathered and compared to real estate market information given in the VHFS EDC application and Reuse Plan. Real estate market data were collected from a variety of sources including real estate research firms, Urban Land Institute "Market Profiles," government studies conducted in conjunction with base realignment and closure (BRAC) initiatives, and other market sources. Independently gathered data were used, in part, to confirm or dispute claims made in the EDC application and reuse plan regarding real estate conditions, impacts due to base closure, and anticipated economic redevelopment from an EDC.

Background

VHFS is about 7 miles west of Manassas, VA, within eastern-central Fauquier County, about 38 miles west of Washington, DC, and about 95 miles northwest of Richmond, VA. The eastern border of the facility also lies within several hundred feet of Prince William County, VA, and is within the economic reach of

several other counties that form the greater DC Metropolitan area.* Figure 3 shows the geographical relationship between VHFS, the Greater Washington urban area (including DC), and major transportation corridors.

Site Configuration

The entire VHFS facility covers about 701 acres, including about 365 structures and facilities with approximately 1,069,000 gross square feet of space.† The mission of VHFS has been relocated to other bases, so the entire facility is available for reuse. As of 1 July 1997, all realignment activities were scheduled for completion by 30 September 1997.

The VHFS facility is situated near the central-eastern edge of Fauquier County near the border of Prince William County. As the EDC application concedes, "the access and visibility characteristics of the property remain inferior compared to the majority of competitors for industrial, office, and retail uses." Although the facility enjoys the use of Route 29 as a connection to its primary access point along secondary State Road 652 and Route 215 and its secondary access point along secondary State Road 602, much of this roadway is unshouldered, two-lane, and may be difficult to expand. Although no significant off-site roadway improvements are programmed in the reuse plan or EDC application (nor is there any direct rail or port access), the comprehensive plan for the county does program improvements to several area roads, including Routes 602, 215, and 793. The likely significance of these programmed improvements is unclear at this point, however, since no likely completion date has yet been forecast in the plan. (The EDC application notes that the county will be fiscally constrained for at least the next several years as it completes "several high-priority projects," including a new jail, courthouse, and new school facilities.)‡ It is also not clear how much area levels of service (LOS) will be impacted, since the comprehensive plan does not offer specific guidance on what LOS will be achieved with each improvement, although it does program Route 793 as a four lane "Urban Collector." The remaining improvements are all two-lane "Rural Major Collectors." Overall, the access characteristics of the facility are fairly

* The DEIS defines the secondary ROI as both Prince William and Fauquier counties, as well as several other contiguous counties: Culpeper, Fairfax, Warren, Stafford, and Rappahannock.

† See page 2-1 of the DEIS.

‡ See page 1-6 of the EDC application.

limited, and it is not clear that these impediments will be rectified over the short term.

The vast majority of Fauquier County is best characterized as rural and low-density, while the area directly surrounding VHFS is composed almost entirely of agricultural and low-density residential development.* No less than eight major subdivisions are within a 5-mile radius of the facility, and the nearest commercial development is more than 6 miles away in the Town of Warrenton (population of about 5,000); the Town of Haymarket (total population of about 500) is 6 miles to the east. Most of the larger parcels of land in the area are zoned for low-density residential use and are controlled by speculative developers awaiting public sanitary sewer service to the area. To date, the service district bordering the western edge of the site has been a preferred residential area for Fauquier residents.

Regional Markets

For commercial uses, the primary regional submarket in the general area of VHFS is along the I-66 and Route 29 transportation corridors, 3 to 5 miles from the facility (see Figure 3[†]), although another small local market exists within Warrenton, about 6 miles to the west of the facility. Because development in the area surrounding VHFS is constrained by a current lack of available public sewer and water facilities, and development along the I-66 corridor between Haymarket and Gainesville and along Route 29 between Manassas and Warrenton generally is not constrained, it appears unlikely that future development will extend out along these corridors and south toward VHFS until additional services become available.[‡] Of course, some of these necessary improvements are planned to coincide with the redevelopment of VHFS itself;

* According to the Fauquier County comprehensive plan, approximately 46% of Fauquier County is unimproved forest land, 33.5% is open pasture, and 14.2% is agricultural crop land. Of the 17,188 total acres in the county, about 66% are devoted to residential or agricultural uses, while only 5.5% are devoted to commercial uses; industrial uses cover about 12.5% of total acreage.

[†] DEIS, page 2-2.

[‡] The Fauquier County comprehensive plan, in particular, notes that much of the area surrounding VHFS (termed the "New Baltimore Service District") currently has limited sanitary sewer and water service. In particular, the plan notes that "it can be concluded that groundwater resources for the New Baltimore area appear to be less abundant and may require augmentation from developed surface water sources to meet demand in the service district." In addition, the plan recognizes a need for additional sanitary sewer services, and notes that a local Task Force recommended that existing services be expanded to provide a capacity of 1.15 million gallons per day (MGD). See pages 6-26 and 6-27 of the comprehensive plan.

however, because such services are readily available in other local markets, VHFS area development will probably be less robust until service upgrades are completed. Finally, other more distant (and sizeable) markets exist in the surrounding counties, particularly in Fairfax and Loudoun counties, are also able to provide necessary services immediately.

For residential uses, the primary regional submarket includes most of Fauquier County and much of Prince William County. As a growing bedroom/commuter community, Fauquier County's historic development emphasis has been on providing quiet and scenic low-density housing facilities.

Regional Economic and Demographic Trends

In general, the greater economic area surrounding VHFS is undergoing a steady recovery from the overbuilding, recessionary conditions that occurred during the late 1980s, and this trend is generally projected to continue during the next several years. Unemployment, in particular, has been markedly low within Fauquier and Prince William counties, with a rate of only 3.2 and 3.1%, respectively, versus a state rate of about 4.9%. Fauquier and Prince William counties also enjoy higher per capita incomes than surrounding counties (and the state in general), with the exception of Fairfax County, which has a considerably higher per capita income.*

Demographic trends in the area also suggest continued moderate and stable growth in the area. Annual population growth in the Fauquier and Prince William counties region has been averaging about 3% per year, with most of the increases in population occurring because of in-migration rather than births. Prince William County has recently experienced a slightly higher growth rate than Fauquier County, with an annual rate of about 3%. Current projections suggest that growth in the region will continue at about the same rates through the year 2000, when it should level off to a rate of about 2% through the year 2010.

* According to Table 4-10 of the DEIS, 1989 per capita incomes for Fauquier and Prince William counties ranged from \$17,800 to \$19,200, while surrounding counties ranged from \$17,300 to \$13,600. Fairfax County was an exception, with a per capita income of over \$24,800.

Planned Uses

The VHFS reuse plan positions the facility to access several regional markets, including office and light industrial uses with an emphasis on R&D and specialized manufacturing, as well as residential, small-scale retail, and recreational uses. However, the most risky aspects of the reuse plan concern the commercial uses, so the primary focus of this analysis has been upon the local commercial and industrial markets.

Market Analysis Approach and Considerations

Because of the unique redevelopment opportunities and constraints associated with VHFS, USACERL elected to use a two-part analysis to examine the market aspects of the uses proposed in the EDC application. As is the case with the typical market analysis, USACERL first examined the local and regional market conditions in the area surrounding VHFS. For the second part of the analysis, USACERL approached the more problematic question of how these local market conditions are likely to link to the marketing and development of the facility itself, particularly with regard to the planned commercial aspects of the development.

This approach was selected because, despite the positive tone of the EDC application, it is not particularly clear that the commercial market conditions in the surrounding submarkets will necessarily have any significant immediate impact on the VHFS development. Although regional market conditions are generally on an upward trend as the post-recessionary recovery matures, the facility itself is essentially an island within a sea of agricultural and residential uses and is some distance away from other markets and regional transportation corridors. (No off-site transportation improvements are programmed in the application).

As an example of this isolation, consider that neither USACERL nor the EDA was able to generate reliably specific statistics for either vacancy rates or absorption rates of nonretail commercial property within Fauquier County, due to the "small size and scattered nature of the market." This distinct absence of

* Economic and Market analysis from EDC application, p 22.

any discernible or potential linkage effects between VHFS and the surrounding industrial markets can also be demonstrated by the fact that only about 6% of area residents have jobs that relate to manufacturing or wholesale activities, while a total of 49% work in the retail or services sectors. According to 1990 census data, just over half of the residents of Fauquier County commute outside the county to work, while only about half this number of people commute into the area to work. Additionally, there are ample (if not over-abundant) existing or planned commercial facilities in several of the more desirable surrounding markets, as shown by the fact that some area developers are now attempting to reprogram projects to include less commercial space. Finally, as the EDC application recognizes, the "Vint Hill project is located in one of the most competitive development corridors in the Greater Washington region."

Despite these facts, the EDC application suggests that "even with its locational disadvantages, the property's unique attributes, planned amenities, and potential price competitiveness will allow it to capture a significantly higher market share than its statistical average" and forecasts annual absorption rate of 75,000 to 100,000 square feet per year. Note that the EDC application generally prescribes a maximum real estate rental and price discount of only about 20% to achieve these results.

While the EDC application is correct in asserting that market conditions are generally improving and that regional economic and demographic trends suggest future growth, there is no particular incentive or other specific reason to immediately link these growth forces to Vint Hill and explain why they would elect to locate there. Although these linkage forces may materialize over the mid- to long-term, as area markets mature and continue to expand outward, USACERL was unable to find any evidence suggesting that such forces exist at the moment. Since, at this point, available information is simply too incomplete to offer a complete view of the potential market risks that will likely accompany the proposed redevelopment, it is USACERL's conclusion that the commercial component of the proposed reuse is highly speculative, and bears the risk of requiring a lengthy marketing effort combined with significant tenant incentives to be absorbed fully into the local market.

Office/R&D Market Analysis

Office and R&D market conditions in the greater area surrounding VHFS are still recovering from overbuilding in the 1980s and have yet to heat to a point where they will support significant speculative development. Although the

structural vacancy rate in most of the Northern Virginia office market is believed to be less than 10%, demand for new facilities has not increased to a point above land development costs, as evidenced by the substantial inventory of repossessed property that is being carried by lenders. Additionally, Virginia's policy of passing the need for public capital improvements onto developers through the use of proffers, and of requiring that construction of these improvements be completed before allowing site development to take place, has somewhat chilled development.

Office market conditions within the regional submarkets nearest VHFS have generally been flat or drifting upward, with vacancy rates ranging from 8.5% to over 19% over a total inventory of about 42 million SF. (See Table 7.1 Office Vacancy Rates for 1996.) USACERL was unable to develop reliable absorption estimates because of a lack of source data.

Table 7.1. Office vacancy rates for 1996.

Market	Available Space (SF)	Vacancy Rate (%)
Loudoun County	224,000	8.55
Prince William County	328,000	19.0

Source: Black's Guide, 1996.

Similarly, office rents within Prince William County are currently ranging from \$5.00 to \$10.00 per square foot (NNN—lessee pays for insurance, taxes, and maintenance), while rents for similar facilities in Loudoun County are ranging from \$6.50 to \$12.00 per square foot (NNN). Note that the substantial inventory of available space in coterminous areas, along with Vint Hill's locational disadvantages, would likely preclude it from achieving market-level rents for buildings designated for reuse.

Industrial Market Analysis

As with the office market, the industrial market conditions for the greater Northern Virginia area are still recovering from recent overbuilding and have yet to heat to pre-1990s levels. However, vacancy rates have declined to about 10 to 15%, while rents have matured to \$2.50 to \$6.00 per square foot (NNN) for many areas. Like the office market, the industrial market is subject to lengthy pre-build proffer and construction requirements.

Vacancy and rental rates for areas near VHFS have been similar, with manufacturing rates ranging from \$2.50 to \$4.50 per square foot (NNN) and industrial

space rates ranging from \$2.50 to \$6.00 per square foot (NNN). Note that the locational caveats that apply to office space at VHFS would also apply to industrial space.

Residential Market Analysis

The residential market within Fauquier County and west Prince William County has been fairly robust for at least the last 5 years, with sales increasing at about 8% per year from 1991 to 1995. Since current market prices per unit are trending toward \$35,000 to \$50,000 per finished lot, depending on location and amenities, USACERL concurs with information in the EDC application suggesting that a sale price of \$25,000 to \$45,000 per unit would allow for rapid absorption. Finally, note that, although the development of the housing market in the area immediately surrounding VHFS is limited in that it is not currently supplied with sewer or water facilities, the fact that most lots in the area are zoned for larger sizes (over 1/2 acre) frequently precludes the need for a public sewer. In any case, this fact is not likely to limit on-site housing development, since the residences would probably be served by on-site sewer facilities.

Recreational Market Analysis

The golf market within the analysis area also appears healthy and poised for robust future growth. As the EDC application notes, demand for golf course developments in counties surrounding VHFS is currently experiencing consistent growth which parallels current and projected increases in population in the greater Northern Virginia area. Prince William County, in particular, has several golf course developments in the planning stages, and several more are open for business, suggesting that demand for golf services has not reached saturation, although it may have become more competitive. Furthermore, most of these other area courses lie some distance north of VHFS, suggesting that an opportunity may exist for an on-site golf course to capture play originating from within Fauquier County or areas further south. A golf course at VHFS would also be well positioned to capture the increasing market growth that will likely mature as more intensive development continues to move south from larger northern population centers.

The golf course market study presented in the EDC application presents a cogent reconciliation of potential demand for golf services and available supply as part of its analysis, to which USACERL does not take exception. Although

USACERL did not attempt to verify all supporting facts within this analysis, USACERL's market analysis generally supports the conclusions drawn from these facts, particularly those regarding projected population growth, median income of area residents, and area population densities.

Finally, the market risk associated with an on-site golf course would probably be lower than the risks borne by a similar privately developed course. In particular, note that the EDC application programs golf course construction costs as a capital improvement to be covered by the EDA, rather than by a private developer, as part of the total VHFS redevelopment. Note also that a private golf course developer can typically only finance about 60% of the development costs, and would have to pay a higher interest rate than the EDA will pay for its loans. Because of this preferential borrowing mechanism, it appears likely that a course built at VHFS would be able to charge lower fees than a comparable privately developed course, which will ultimately further increase its viability.

8 Army Disposal Plan, Other Federal Agency Concerns, and Other Property Disposal Authorities

As part of the EDC application review process adopted by the BRAC office at HQUSACE and presented at the Corps of Engineers Real Estate Workshop in Denver, CO, in December 1995, USACERL has been asked to defer comment on these issues to the Real Estate Directorate at HQUSACE and the Corps of Engineers District, Baltimore. In addition, both the negotiation process leading up to the submittal of the formal EDC application and review of the legal environment related to real and personal property disposal are beyond the scope of USACERL's technical review.

Future EDC reviews will continue to explore these issues insofar as they pertain to other elements of the technical review. Summaries of USACERL's findings on these matters will be documented when appropriate and when requested by Army decision-makers.

9 Economic Benefit to the Federal Government

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Introduction

One of the criteria for EDC applicant eligibility that may be considered by the military department is the economic benefit to the Federal Government that will be derived from the proposed EDC. The military department is asked to consider the protection and maintenance cost savings that would be avoided by a swift conveyance of the EDC parcel, as well as the anticipated consideration from the transfer. In the EDC application at VHFS, the EDA has requested the EDC parcel for \$300,000. In addition, the applicant argues that, by rapidly assuming responsibility for the VHFS property, the Army may realize substantial operations and maintenance cost savings. In independently evaluating these claims, USACERL calculated the one-time layaway costs and annual maintenance and repair (M&R) costs associated with "mothballing" the facilities in the absence of an EDC. Also discussed here is the potential consideration for the property that could be defended in negotiated arrangement.

Conclusions

Layaway and Annual M&R Cost Savings

Without a timely conveyance of the EDC parcel after all Army uses for the property cease, USACERL assumed that the Army would be compelled to mothball or "layaway" the facilities and infrastructure at VHFS except for those spaces being retained by the Federal Government (i.e., Army Caretaker Force

and the BRAC environmental clean-up team). In addition, USACERL assumed that M&R costs would be incurred to operate the existing utilities that support those Federal tenants. USACERL estimated the cost of this layaway program using guidance spelled out in the U.S. Army Center for Public Works (USACPW) Technical Note 420-10-08 and USACERL Technical Report M-91/23, "Layaway Procedures for Facilities, Volume II: Inspection and Maintenance Repair Checklists." The cost estimating procedures were supplemented with information USACERL gained from conversations with several Army installation facilities engineers and the experience of USACERL researchers.

USACERL estimated the layaway and annual M&R costs for the buildings and supporting infrastructure at VHFS based on three levels of layaway: Levels 1, 2, and 3. Each of these layaway levels corresponds to a decreasing level of care. For example, Layaway Level 1 would be used when the intent is to revive the facility at a later time with as little effort as possible (i.e., to support reuse by an LRA); whereas Level 3 assumes the building will be more or less abandoned (i.e., an approved reuse plan contemplates demolition or no reuse for the property is obvious). Tables 9.1 and 9.2 provide a range of values for the cost of one-time layaway followed by annual M&R for each of the described layaway levels. An expanded discussion of these one-time layaway costs and annual M&R costs follows.

Table 9. 1. One-time layaway cost estimates for Vint Hill Farms Station.

<i>One-time Layaway Costs</i>					
Layaway Level Three		Layaway Level Two		Layaway Level One	
Total min	Total high	Total min	Total high	Total min	Total high
\$235,256	\$470,513	\$617,548	\$1,080,709	\$430,891	\$862,041

Table 9. 2. Annual M&R cost estimates for Vint Hill Farms Station.

<i>Annual M&R Costs</i>					
M&R Level Three		M&R Level Two		M&R Level One	
Total min	Total high	Total min	Total high	Total min	Total high
\$150,707	\$301,415	\$497,334	\$870,335	\$869,340	\$1,564,812

Layaway Level One. In this layaway level, buildings are laid away, secured, frequently inspected, repaired, and have most utilities active. The intent of this level of layaway is to reactivate the facility at a later date with as little effort as possible. Buildings are heated at 55 °F in the winter and cooled to 80 °F in the summer.

Annual M&R in the years following the one-time layaway would include a security force patrolling the area, a small interdisciplinary workforce to inspect

the infrastructure systems frequently and make necessary repairs, and a regular landscape and maintenance schedule.

Layaway Level Two. In this level of layaway, buildings are laid away, secured, frequently inspected, repaired, and have most utilities shut off. The intent of this level of layaway is to simply have the facility available for future use. Utilities will be maintained on an "as-needed" basis by the security force, inspectors, and caretaker force.

Annual maintenance and repair in the years following the one-time layaway would include a security force patrolling the area, a small interdisciplinary caretaker force that would inspect the infrastructure systems annually and make minor repairs, and a regular landscape maintenance schedule.

Layaway Level Three. This level of layaway is called the "do nothing" level as outlined in USACERL Technical Report M-91/23, "Layaway Procedures for US Army Facilities, Volume 1: Decision Criteria and Economics." Simply put, the installation personnel will "lock the door as they leave the building," abandon the facility, and do no maintenance on the infrastructure. Buildings will have the personal items removed, be cleaned (swept/mopped), and be secured. Utilities will be abandoned or cut in place.

Level Three annual maintenance and repair is minimal. However, security for the installation will still be required with some facilities to house the security force and with minor landscape maintenance.

Probable Layaway and M&R Program in the Absence of an EDC

If the EDC is not approved and the Army is forced to continue its caretaker function at VHFS, it is likely that the Army would be required to maintain the property so as to allow for parcelization and redevelopment of the base in accordance with the approved reuse plan for VHFS. Therefore, the probable layaway and M&R program for the EDC parcel would likely include layaway and M&R consistent with the requirements of Level One to ensure rapid property transfer through willing buyers. Table 9.3 provides a range of costs for this scenario.

Table 9.3. Likely Army layaway and M&R commitments.

	Layaway Level One	
	Total min	Total high
For EDC parcel and Federal uses	\$430,891	\$862,041
	M&R Level One	
	Total min	Total high
For EDC parcel and Federal uses	\$869,340	\$1,564,812
Total	\$1,300,231	\$2,426,853

Based on these projected costs and the costs discussed in Table 9.2, the Army could expect to incur at least \$1.3 million in annual carrying costs for VHFS in the absence of an EDC conveyance. Since the EDA is prepared to assume responsibility for VHFS by 30 September 1997, which is the Federally-mandated closure date, the Army should consider an O&M cost avoidance to the extent that a successful conveyance cannot be achieved by that date.

Anticipated Consideration from the Conveyance

Summary of EDA Proposal

The EDA application proposes monetary consideration of \$300,000 to the Army for the EDC parcel being requested. Payments would begin the year 2007 and end in year 2011.

USACERL Findings

USACERL provided extensive discussion in Chapter 4, **Business Plan Review and Market and Financial Feasibility Analysis**, regarding the analysis and the NPV of the applicant's business plan. In summary, USACERL concluded that the applicant failed to adequately support its finding of business plan value (also considered the ability of the applicant to pay the Army). When USACERL recasted the business plan using available supporting market studies, appraisal reports, and other documents, the NPV of the business plan ranged from *negative* \$1.6 to *negative* \$6.3 million. However, USACERL was able to independently support a range of project NPVs for the business plan of *positive* \$160,000 to *positive* \$1.0 million when infrastructure improvement, operating, and debt service costs were reduced in magnitude as a consequence of being grounded in market realities. The EDA's offer of \$300,000 to the Army falls within USACERL's independently developed range of NPV. Of course, the final negotiated consideration for the parcel must consider the Army's fair market value appraisal for the EDC property.

Level of investment. The EDA has proposed to underwrite a majority of the costs associated with the redevelopment of VHFS, including \$36.1 million in operating expenditures and \$37.1 million capital improvements. These costs are to be offset with real estate revenues, grants, and development bonds. However, as demonstrated throughout this review, the EDA's revenue stream is highly risky and is marked by a high probability of not meeting operating, capital, and debt service obligations. The EDA is currently in the process of identifying other underwriters for the project, and increasing support from logical contributors such as Fauquier County and the Commonwealth of Virginia. It is USACERL's belief, in the absence of substantive financial support from other government or nonprofit agencies, that proposed operating and capital costs be reduced and phased over a longer timeframe in order to minimize overall risk exposure. If the EDA's proposed offer falls below fair market value, the Army should consider a discount justified for the enormous amount of risk the EDA is willing to undertake because of the lack of investment from other sources. But again, the EDA should strongly consider reductions in project costs, if only in concept, to ensure financial feasibility over the short- and long-term.

Indirect monetary benefit to the Army. If the EDA's offer falls below estimated fair market value, additional support for a discount may be found in the Army's cost avoidance as a result of the rapid transfer of property. This cost avoidance could be as high as \$2.4 million (one-time layaway and M&R) over the next 12 months if negotiations for transfer are not successful.

Based on the eligibility factors/criteria reviewed for this report, it is the opinion of USACERL that the applicant is eligible for an EDC as long as reductions in redevelopment costs and/or compelling support for project revenues (i.e., tenants/ developers have expressed a firm commitment to the EDA, Fauquier County increases project financial support, etc.) maintain a reasonable level of financial feasibility. The Army's final determination of value and possible consideration must rest largely on the results of a negotiation process between the Army and the EDA and the Army's fair market value appraisal results.

10 Review of Application for Completeness

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This chapter summarizes USACERL's review of the VHFS EDC for completeness as required by 32 CFR Part 91.7(e)(5). The contents of the requirements are listed below in italics, followed by USACERL's findings.

1. *Copy of the adopted Reuse Plan.* A copy of the plan is included.
2. *Project narrative, including:*
 - a. *General description of the property requested.* A description is provided.
 - b. *Description of intended uses.* A description is provided.
 - c. *Description of the economic impact of the closure on local communities.* A superficial description is provided, although inconsistencies, methodological omissions, and other limitations complicated USACERL's technical review.
 - d. *Description of the financial condition of the community.* A descriptive fiscal and economic analysis for Fauquier County is provided.
 - e. *Statement of how the EDC is consistent with the overall Reuse Plan.* The application provides a brief discussion of consistency with the adopted Reuse Plan.
3. *Description of how the EDC will contribute to short- and long-term job creation and economic redevelopment.* A cursory analysis is provided but was limited in that its conclusions were generally unsupported by referenced material or source data, in that it suffered from multiple methodological omissions, and in

that many of the conclusions were either contradictory or unexplained. Although USACERL was able to develop an alternative review methodology, the application should be supplemented with consistent projections and a more conclusive description of the methodology used to develop its conclusions.

4. Business and development plan for the EDC parcel, including:

- a. Development plan, timetable, phasing plan, and cash flow analysis
- b. Market and financial feasibility analysis
- c. Cost estimate or justification for infrastructure and other investments needed for development of the EDC parcel
- d. Local investment and proposed financing strategies for the development.

A development plan, timetable, phasing plan, and cash flow analysis were provided for under 4.a. A market and financial feasibility analysis (4.b) was provided, but key market findings such as commercial property absorption were wholly unsupported. When more realistic and defensible project absorption was applied to the EDA's business plan pro forma, NPV turned negative, indicating a plan that was not financially feasible. USACERL developed numerous project scenarios in an attempt to demonstrate financial feasibility. In terms of need and extent of infrastructure improvement (4.c), the EDA provides a description of proposed improvement and supporting cost analyses. However, when USACERL's more realistic property absorption views are applied, infrastructure requirements and cost are greatly reduced. Local investment and financing strategies (4.d) are provided within the EDC application, but it remains unclear if the EDA will receive additional financial assistance from other government agencies which stand to benefit from the redevelopment of VHFS.

5. Statement describing why other authorities - such as negotiated or public sale cannot be used to accomplish the economic development and job-creation goals. A statement is provided.

6. If a transfer is requested for less than fair market value...then a statement should be provided justifying a discount. The applicant argues that the fair market value of the EDC parcel is approximately \$300,000, and does not attempt to argue for a discount from this value.

7. Statement of the LRA's legal authority to acquire and dispose of the property. A statement of legal authority is provided.

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Appendix A: Vint Hill Farms EDA Response of July 25, 1997

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VINT HILL

July 25, 1997

Mr. Paul W. Johnson
Deputy Assistant Secretary of the Army (I&H)
Office of Assistant Secretary of the Army (I,L&E)
Army Pentagon
Washington, DC 20310-0110

Re: Response to USACERL's Data Call dated 8 July 1997

Dear Secretary Johnson:

The Vint Hill Farms Economic Development Authority (VHFEDA) received the referenced request for additional data and/or clarification to items in our Economic Development Conveyance (EDC) request. The responses contained below have been returned to USACERL in order to assist them in evaluation of our EDC request.

Three issues have arisen since the EDC was submitted on 30 April to which we wish to call your attention during consideration of the EDC. The issues involve: 1) Public Benefit Conveyance for education to the Fauquier County School Board; 2) water and wastewater system transfer, and 3) cost of personal property. Each issue and or change in status from the EDC application is discussed below.

Public Benefit Conveyance for education to the Fauquier County School Board – After the EDC was completed, the Fauquier County School Board voted to change its construction schedule for the Vint Hill site (parcel 10). Instead of constructing a new 600-student middle school at Vint Hill to open in 2000-2001 as planned, the School Board voted to expand three existing middle schools in order to move overflow students at each of the schools from modular classrooms to permanent classrooms. This project will cost approximately \$6.5 million. The project will provide very little capacity for future student population growth, but it more rapidly can place some students into better classroom facilities. This decision caused the proposed Vint Hill middle school construction to be deferred until at least 2005 or beyond.

The VHFEDA has discussed this decision with Ms. Felicia Snowden of the US Department of Education, who works with BRAC Public Benefit Conveyances. She expressed some concern about sponsoring a conveyance which does not result in more rapid use of the site and facilities for educational purposes. However, if the Board of Education satisfactorily justifies the delay in



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its application and agrees to pay a pro-rata share of the site/facilities' appraised value until used, then the application may well be sponsored by the Department of Education.

The possibility that parcel 10 might not transfer for educational purposes worries the VHFEDA. The VHFEDA does not want the approximately 28.3 acre site for the school to be excluded from the EDC if the Department of Education fails to sponsor the Public Benefit Conveyance to the School Board. While the VHFEDA had no uses, costs or income in the Operations and Business Plan for the site, we feel that any other disposal action would seriously detract from the Reuse Plan implementation efforts and cause loss of control over a portion of the plan that must remain a part of the whole redevelopment effort.

Water and Wastewater Systems – The EDC application calls for Vint Hill's water and wastewater systems to be acquired by the VHFEDA under a Public Health Conveyance sponsored by the Department of Health and Human Services. This mechanism was selected solely because it allows the systems to be obtained at no cost. And the VHFEDA had to minimize its costs as much as possible to "make the numbers work," as the EDC shows. The negatives to this mechanism is the time necessary to accomplish a Public Health Conveyance transfer and the assurance of continued Army operations of the systems during the process.

If the conveyance value of Vint Hill Farms Station is determined based on the discounted cash flow analysis, and the two utility systems can be included within that overall value without significantly changing the discounted cash flow value, we would be willing to discuss having the two utility systems transferred as part of the EDC instead of under the Public Health Conveyance. This may allow for more rapid turnover of the systems than under the Public Health Conveyance.

Cost of Personal Property – On 22 July, the VHFEDA had a discussion with Vint Hill's Logistics Division Chief which disclosed a different process by which personal property will be transferred. Until that meeting, the VHFEDA had been told by Vint Hill BRAC staff that all personal property requested for retention for economic development purposes would be valued with the real estate and transferred as part of the real estate.

At the 22 July meeting, we were told that now we would be charged a separate price for the personal property, and that price would not be part of the value for Vint Hill. That is a radical departure from our previous understanding of the issue and how it was treated in our EDC application. As will be noted, our Operations and Business Plan has no line items for personal property acquisition or lease/sale. We regarded the need to furnish some buildings as a marketing necessity to attract small businesses. We believed any cost of retained personal property would be included as part of the discounted cash flow value determination for the EDC.

If this is not to be the case, the VHFEDA needs to know that immediately so that we can reconsider our personal property requests and whether we have any way to pay for personal property separately from the real estate. An answer to how Vint Hill's retained personal property is proposed for transfer is needed by the VHFEDA prior to entering into EDC negotiations.



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I. Final Information and Data Call Elements

I-1. *It is unclear from Table D-2 contained in Chapter 10 of the Operations and Business Plan whether the projected sale of parcel 25B (Bldg. 260 Complex) is in Year 2 (1998) as the "Building Sale Assumptions" suggest, or alternatively, if the sale is timed from Year 6 (2002) to Year 15 (2011) as the "Building Sale Revenue" suggests. It has typically been USACERL's practice to recognize a payment to the LRA from a developer in the year of projected sale. However, this issue is confounded because water and wastewater projections contained in Table D-4 program full sale and occupancy in Year 2 (1998) which increases overall water and wastewater revenue by over \$2M over 15 years relative to a timed sale as from Year 6 to 15.*

VHFEDA RESPONSE: The VHFEDA regards the Building 260 complex on parcel 25B as a major "sinkhole" for O&M expenditures. The cost evaluation study by Project Cost, Inc. entitled "Estimate of Probable Construction Cost – Vint Hill Farms Station Reuse Plan Building Code and ADA Compliance," dated November 7, 1996 (copy previously provided to USACERL) estimates that \$2,636,177 is needed to bring Building 260 into code compliance. That amount is equal to \$32.55 per square foot. That does not include the monthly cost of utilities and normal grounds and operating maintenance. There is no way the market will support the rental amounts needed for the VHFEDA to make these improvements and maintain the grounds and Building 260 complex.

The Fauquier County Zoning Ordinance requires that each industrial and commercial site approved for subdivision must front on a state-maintained highway or street. The new parkway proposed for the current antenna field, and which would provide state-maintained highway frontage for parcel 25B, after it is accepted into the VDOT system, is not proposed for construction until Year 6 (see Chapter 10, Table D-6, Projected Capital Expenditures for Roads and Utilities - Phase II). Therefore, parcel 25B cannot be offered for sale until the road is constructed to serve the site.

The VHFEDA's strategy is to get the complex and parcel 25B into private sector hands as quickly as possible. To do this, we are prepared to joint-venture or lease-with-an-option-to-purchase to a user as soon as possible for token cost in exchange for the user maintaining the complex and making necessary building and code compliance repairs.

That is why no income is shown for parcel 25B on either Table D-3 - Leasing of Interim Use Buildings or Table D-2 - Sales of Existing Facilities. We are willing to accept no rent until the new road is in and the building can be sold in exchange for avoiding the cost of code compliance and for having a building user absorb the complex's O&M costs.

To further "sweeten the deal" to obtain an early user willing to finance repairs and O&M, the VHFEDA will finance the eventual sale of parcel 25B and the 260 complex for a baseline price



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of \$1.047 million, with annual payments of \$104,719 beginning in Year 6, when the parcel can be legally sold because the new street frontage is in-place, and running beyond Year 15.

Under this early occupancy and reuse strategy, while no interim lease income is derived, the complex will still need water and wastewater connections and service to be paid by the user. Thus, income is projected from parcel 25B for the connection fees and for monthly water and wastewater usage fees from the time of projected occupancy in Year 2.

I-2. USACERL has been unable to reproduce VHFEDA's business plan net present value of \$800,000 at a 9% discount rate. Table 10.12 of Chapter 10 yields a net present value calculation of \$3.7M at 9%, \$1.4M at 12%, and -\$210K at 15%. USACERL is currently assuming that the proposed consideration to the Army is less than the estimated \$3.7M so positive cash flows are not completely depleted during project implementation. As a corollary to the aforesaid information gap, it is unclear why debt service was excluded from cash flow and cumulative cash flow calculations when considerable effort was expended on Tables D-7 and 10-10.

VHFEDA RESPONSE: In a phone conversation on 23 July 1997 between Jeff Bogg of USACERL and Gary Monegon and Craig Seymour of RKG Associates, the VHFEDA's financial advisor, Jeff Bogg indicated that discussion of this question clarified the methodology used and that no written response was necessary.

I-3. USACERL's recast of Table 10-10 resulted in a net present value calculation of \$2.6M based upon annual cash flows (including debt service). Table 10-10, unlike Table 10.12, indicates positive cash flows four out of the first five years of redevelopment. USACERL was unable to identify the underlying rationale supporting the removal of debt service in Table 10.12 from the cash flows projected in Table 10-10.

VHFEDA RESPONSE: In a phone conversation on 23 July 1997 between Jeff Bogg of USACERL and Gary Monegon and Craig Seymour of RKG Associates, the VHFEDA's financial advisor, Jeff Bogg indicated that discussion of this question clarified the methodology used and that no written response was necessary.

I-4. USACERL has not been able to determine the need for \$26M in debt service (and \$19M in interest costs) when Table 10-10 demonstrates sufficient revenues in the "Cash Flow Available for Debt Service" line (\$48M over 15 years) to offset \$36M in capital improvements, especially in light of the Preferred Reuse Plan which argues that, "reducing debt service burdens to the LRA will be the most effective strategy available to enhance the financial feasibility of the redevelopment effort (P. II-66).

VHFEDA RESPONSE: It is the VHFEDA's understanding that in the phone conversation on 23 July 1997 between Jeff Bogg of USACERL and Gary Monegon and Craig Seymour of RKG Associates, that it was explained that projected sales in the initial years would produce cash amounts that could be applied to reduce the need for debt. However, projected sales do not



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remain at those early year levels, and cash amounts are retained from the initial years to provide sufficient funds to carry the VHFEDA through the more variable cash flows in following years. Without the reserves from the initial sales, the VHFEDA is projected to have cash flow shortfalls in subsequent years and would have to borrow to provide sufficient funds to operate, maintain and market Vint Hill during those more turbulent cash flow periods. The amounts of available cash which should be applied to reduce debt or which should be reserved to protect against projected shortfalls will be continually evaluated to determine the best financial use of available funds.

I-5. More market support would be helpful in understanding the following: "The opportunity to attract high-tech electronics and telecommunications industries to the site continues to be excellent based upon the unique electromagnetic and satellite "view" characteristics of the property. These two unique characteristics are the key to attracting new industry to the property and should result in the property capturing a higher than normal "market share" of high tech companies moving into the region and the I-66 corridor. However, these characteristics need to be marketed to a target audience of companies in order for the property to be absorbed." (Preferred Reuse Plan, P II-28). USACERL has been unable to corroborate projected absorption of 100,000 SF/Year based on the unique attributes of the site other than the presence of wastewater and water service.

VHFEDA RESPONSE: See Attachment A, pages 1 and 2, for response to Item I-5 from John Walker, Legg Mason Real Estate Services.

I-5.A A list of prospective tenants, investors, and developers would be useful in terms of gauging market demand for the facilities at Vint Hill Farms, and forecasting the composition of tenant- and industry-mix.

VHFEDA RESPONSE: In the past 12 months, Ms. Patricia White, the VHFEDA's Director of Economic Development, has conducted over 90 site and building tours for prospective tenants. These prospective tenants have covered a wide range of use interests, from child care providers to major office users. The lack of available spaces and or the uncertainty of occupancy have caused some interested parties to abandon consideration of Vint Hill. They had much shorter time frames in which they had to occupy new space. Many prospects could not find accommodations that suited their needs. And the VHFEDA rejected some willing tenants as not meeting the employment standards which have been set for future occupants for Vint Hill.

The VHFEDA has not had any strict real estate investors meet with us or ask for tours. We have met with a number of major Northern Virginia developers, either at their request to tour the facilities, or at our invitation to discuss and react to our reuse plan. These meetings have not resulted in any offers to purchase all or parcels; nor have they resulted in any contracts to joint venture all or parcels of the base. However, the VHFEDA has not been able to tell these parties what the price of land or buildings would be because negotiations have not been undertaken.



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The VHFEDA has had inquiries and provided tours for four (4) companies which specifically sought to inquire about the electro-magnetic free or interference free characteristics of the base. They were telecommunications companies which used satellite transmissions. Again, they could not be provided firm details on site availability or site costs. We hope to market aggressively to the same and similar companies when the details of negotiations have been concluded.

I-6. Map 10.5 from the Fauquier County Comprehensive Plan would assist with USACERL's understanding of transportation trends, and Vint Hill's relationship with the overall New Baltimore District transportation network.

VHFEDA RESPONSE: Enclosed are maps of: (1) proposed land use for the New Baltimore Service District (NBSD) with route designations of the major existing roads, and (2) the NBSD Transportation Plan for future improvements. Both maps come from the County's Comprehensive Plan. The Comprehensive Plan is a land use and development guideline for the period 1992-2010. The Comprehensive Plan projected the County population to grow to 62,500 in 2000 and 80,000 by 2010. The estimated current population is about 53,000, up from 48,800 in 1990. The County has only been growing at about one (1) percent annually, which is well below the 2.5 percent and 1.5 percent annual growth projected for the 1990-2000 and 2000-2010 decades respectively.

At the current growth rate of under two (2) percent, many of the highway improvements shown for the NBSD may not be needed or implemented before 2010.

Route 29 is currently the only four-lane road in the NBSD. The Virginia Department of Transportation (VDOT) is studying improving Route 29 into a limited access freeway. Interchanges would be reduced in number and improved in quality. Frontage roads would be built to serve adjacent properties. Eventually it may become a six-lane facility. These improvements are years away. The studies are on-going and no funding has been added to the VDOT 6-Year Plan for future.

The existing roads providing access to Vint Hill are Routes 215/652, 602 and 793. The gate to Route 793 has not been opened for years. Routes 215, 602, 793, 676 and 605 are all two-lane roads. None of these routes has the right-of-way width required to expand to four lanes. Route 652 through Vint Hill currently serves as a "short-cut" connecting traffic from 605 to 602 to 215 to Route 29. This is a shorter route toward Northern Virginia for commuters than following 605 to its intersection with Route 29.

The County has targeted the NBSD for public sewer and water service to allow for concentrating growth in this, the largest of the County's nine service districts. The NBSD Transportation Plan identifies the highway improvements which would support the population projections cited for 2010 and beyond. The proposed improvements are shown on map 10.5.



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The plans call for improving Route 29 to serve as a limited access freeway. It would remain the main arterial route through the County from south to northeast. It would remain one of three major radial commuting routes into Northern Virginia. The others are I-66 and Route 28. Route 605 is proposed for widening to a four-lane route to serve NBSD residents and those from farther south. The County has proposed a major new four-lane route to serve as the connector between 605 and 29 farther east of the current 605-29 interchange. That route uses part of existing 676 from 605. It then shifts eastward on a new alignment to connect to existing 793 near the northern boundary of Vint Hill. Route 793 would be expanded into a four-lane route which borders Vint Hill, turns northward and intersects Route 29 at a new interchange.

Route 602 would remain a two-lane road to encourage commuters to use the new 676/793 four-lane "short-cut." Although it is not stated in the Plan, this new route would be built by a combination of County, State and large property owner funds. However, this route is also not yet included in the VDOT's 6-Year Plan, nor is it one of the County's highway improvement priorities which are submitted to VDOT to help in formulating the 6-Year Plan.

The NBSD Land Use shows a proposed "town center" area to be developed around the intersections of 600 with 676. Routes 676 and 793 would also serve local traffic to the town center and the residential areas of south and west NBSD.

Route 215 would remain a two-lane road, unless traffic from the south (mostly in Prince William County) and from Vint Hill picked up significantly as a result of new development. Prince William County has zoned most of its western boundary area for agriculture and very low density rural residential.

If opposition to more concentrated residential development in the NBSD is successful in keeping the remaining undeveloped 45 percent of NBSD as low density (1-acre lots or larger), then the new 676-793 connector may not be built, or may only be built as a two-lane route. As Vint Hill developed, especially if it developed at a population of workers and residents which exceeded that which was here with the Army, then Route 215 would have to be widened for improved access to Route 29. A much improved interchange would also be needed at 29/215.

Improvements to the 29/215 interchange are on the County's list of top priority highway improvements, but not funding has yet been allocated for the project, nor has any time schedule for its re-construction been projected.

II. EDC Business Plan Review Issues

The following discussion highlights USACERL's concerns with the financial feasibility of the Operations and Business Plan, and the substantial amount of risk to be underwritten by VHFEDA in the absence of "full faith and credit" backing from Fauquier County and the Commonwealth of Virginia.



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II-1. *Perhaps the most critical issue identified thus far is the level of market risk the VHFEDA is proposing to undertake. Although the pricing strategy for real estate products developed in the operations and business plan appears to be competitive without undermining local property values, VHFEDA's market capture rate of 20% of the I-66/Rt. 29, or 100,000 SF/yr, is highly aggressive. The reasons are as follows:*

II-1.A *There is no apparent market demand for the satellite "view" and "radio non-interference zone" attributes, other than by military type users, which would indicate a "higher than normal market share" of among specific technology companies, although FAA has indicated interest the site. However, USACERL believes than an Internet Service Provider (ISP), or related industry may be a possibility due to increasing demand for Internet services in the Washington D.C. MSA and the technological and business opportunities a Sensitive Compartmented Information Facility (SCIF) or modification thereof offers.*

VHFEDA RESPONSE: See Attachment A, page 3, for response to Item II-1.A by John Walker of Legg Mason Real Estate Services.

II-1.B *There appears to be an internal inconsistency between the O/B Plan which demonstrates optimism for robust property absorption and the Preferred Reuse Plan which signals market threats as supported by the following quote: "None of the business parks in the County can compete effectively in the industrial and R&D markets with those located along the I-66 corridor in Prince William Co. and they have services and access generally unavailable in Fauquier County" (P II-32).*

VHFEDA RESPONSE: See Attachment A, page 4, for response to Item II-1.B by John Walker of Legg Mason Real Estate Services.

II-1.C *Fauquier County has no demonstrable industrial/R&D/innovative technology cluster. Although markets for these types of uses can in effect be created as demonstrated by the successful reuse of Fort Devens, a concerted marketing and redevelopment effort is not only a requisite for the LRA, but neighboring municipalities and the state as well.*

VHFEDA RESPONSE: USACERL is correct in stating that Fauquier County has no demonstrable industrial/R&D/innovative technology cluster. The following are some of the reasons this is so.

- Until recently, Fauquier County did not seek industry.
- The lack of sites served by public sewer and water provided limited opportunities for companies to locate in Fauquier County. Those that did had to be served by well and septic systems. Well and septic systems limit the size of plants due primarily to soil absorption problems from large daily flows. The County has several examples of existing plants which desire to expand but cannot do so due to limitations on septic field absorption.
- Fauquier County is a rural-to-fringe county. Growth from the central core of Washington and Northern Virginia had plenty of sites and available building space to



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choose from without having to go out to Fauquier County. That has and continues to change. Office availability is very low due to recovery from the recession and a lack of speculative office construction during the recession. Northern Virginia continues to grow. This growth is filling the secondary counties (Prince William and eastern Loudoun) and making the tertiary ring of counties (which includes Fauquier) more attractive. Also, traffic problems with going into Northern Virginia make sites such as Fauquier increasingly attractive. Northern Virginia residents can easily commute outward with ease and without having to relocate.

The VHFEDA believes that Vint Hill provides the location, size and existing base of infrastructure to develop an industrial cluster. We also believe that aggressive marketing can make that vision a reality.

Northern Virginia is the industry cluster of which we are seeking to become a part. The July, 1997 issue of *Virginia Business*, page 17, (see attached) cited the following: "A study by the Center for Regional Analysis at George Mason University estimates that 65 percent of the state's (Virginia) 2,450 technology firms are based in the lieutenant governor's native Northern Virginia. Statewide, the \$10 billion-a-year industry employs more than 290,000 people." Using the cited percentage, Northern Virginia has nearly 1600 technology companies which earn \$6.5 billion-a-year and employ 188,500 people.

Northern Virginia already is the center of the fast growing Internet industry, with its many supplier and support companies. Northern Virginia's technology companies tend to be concentrated in fast growth products. As these companies grow and new ones develop, the VHFEDA intends to position and market Vint Hill to attract some of them to locate here. This is not an impossible task. Vint Hill will offer a campus environment with attendant activities which is very conducive and attractive to technology companies. These companies rely less on closeness to Washington agencies or the Pentagon than do defense suppliers. Quality of life issues are major locational decision factors, as was the case in the growth of the Silicon Valley and similar industrial/R&D/technology clusters. We believe that Vint Hill is not such a fringe location now that it will not be attractive to companies who employ highly skilled people who often need a break from the intensity of their work. The Vint Hill campus atmosphere will be very conducive to providing that walk, or jog, or round of golf needed to "clear the cobwebs."

II.D. USACERL concurs with the VHFEDA's market finding that competition for industrial land bays and buildings will be ostensibly from Prince William County. However, upon further analysis it appears that the relative economic strength of Prince William County was discounted relative to VHFEDA projected property absorption. The basis for this conclusion is grounded in the following considerations:

II.D.i Prince William Institute which offers innovative technology training and education is only 15 miles away (Reuse Plan, P II-28).

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VHFEDA RESPONSE: See Attachment A, page 4, for response to Item II.D.i, by John Walker of Legg Mason Real Estate Services.

II.D.ii Prince William County has adopted an aggressive marketing program targeted at industrial-type users. For example, the County allocates over \$300,000 a year in marketing for one industrial park alone compared with VHFEDA's maximum marketing budget of \$120,000/yr.

VHFEDA RESPONSE: See Attachment A, pages 4 and 5, for response to Item II.D.ii, by John Walker of Legg Mason Real Estate Services.

II.D.iii According to the 1996 Development Guide and Prince William Newsletter, over 3.0M square feet of office/industrial/R&D is in various stages of development in Haymarket/Gainesville submarket alone, which is roughly 6-7 miles from VHFS. In all fairness, economic development organizations tend to overstate development activity, but it is an undeniable fact that northern Virginia is experiencing a surge in industrial development.

VHFEDA RESPONSE: See Attachment A, page 5, for response to Item II.D.iii, by John Walker of Legg Mason Real Estate Services.

II.D.iv Fauquier County's weak industrial market is evidenced by a 25-acre, eight-site industrial park with appropriate zoning and utilities which has only sold 3 of 8 sites since 1994.

VHFEDA RESPONSE: See Attachment A, page 6, for response to Item II.D.iv, by John Walker of Legg Mason Real Estate Services.

II.D.v Unlike the VHFEDA, Prince William County is able to provide development incentives such as property tax abatement (although VHFEDA will fund infrastructure improvements) and superior site locations.

VHFEDA RESPONSE: See Attachment A, page 7, for response to Item II.D.v, by John Walker of Legg Mason Real Estate Services.

II.E Although relatively strong job growth is projected for Fauquier County in the near- and mid-term, employment concentrations appear to be in non-industrial sectors. The Reuse Plan notes, "at place employment projections from the Virginia Employment Commission for Fauquier County indicate a surge of 3500 new jobs between 1995 and 2000 and another 5800 jobs between 2000 and 2010. The surge in jobs are likely to be in the retail, services, and wholesale trade categories (P II-31). According to these projections and the Reuse Plan, nearly 50% of County job growth would occur at Vint Hill Farms, and a majority of job creation would be in non-industrial/R&D sectors."



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VHFEDA RESPONSE: There is not a real conflict between what the VHFEDA has projected in the EDC and what the Virginia Economic Commission has projected when you understand that the two have not been related.

Fauquier County currently has a very small industrial job base. The historic reasons for the limited size of that base has been discussed in the EDC application. They relate to lack of useable industrial sites served by good access, public water and public wastewater and lack of physical expansion opportunities by existing businesses related to the same utility limitations.

The Virginia Employment Commission's (VEC) projections are based on existing job segment sizes and their historic growth patterns. Fauquier County's small industrial employment base means there is not a large percentage of existing industrial jobs and only small, historic, industrial growth patterns on which VEC can base new industrial-sector job growth for Fauquier County. Past VEC employment information for Fauquier County did not even list Vint Hill's jobs as "industrial;" they were listed as "government" or "Federal." So the County did not even have Vint Hill's jobs in its "industrial" job base.

VEC does not go out and examine site availability or planned land uses when making their projections. Thus, the VHFEDCA's plans for Vint Hill are not factored into the VEC's projections. Similarly, the VHFEDA did not use the VEC numbers in projecting the Reuse Plan's capability to attract new jobs. We will be creating a large, new industrial site for Fauquier County. New industrial jobs will be classified as additions to the County's industrial job base, not just replacements for jobs previously classified as industrial which will be lost with the base closure.

Many non-industrial jobs will also be created at Vint Hill in the mid-term. Those jobs will include the teachers and staff for a new 600-student middle school. New commercial jobs will soon replace those lost through closure and increase as designated acreage is developed into a neighborhood commercial center. We plan for new and/or replacement service jobs at the restaurant in the Inn, the childcare center, the new golf course and in similar service activities.

II.F Aside from the locational and competitive advantages associated with Vint Hill, USACERL has identified Fauquier County itself as a potential obstacle to successful redevelopment. Based on the EDC application, it appears as if Fauquier County stands to gain the benefits of, and control redevelopment while incurring very little investment costs or risk. One of the critical factors driving successful military base reuse is approved zoning which creates a stable and predictable development environment for the private sector. However, the County has traditionally embraced a "slow growth" posture to development. The greatest possibility of detrimental manifestation may be when, "the Operations and Business Plan will face renewed opportunity for citizen scrutiny by opponents to development when a rezoning application to implement the Reuse Plan is filed". Moreover, under the current development strategy, the County will maintain subdivision and permitting authority throughout the redevelopment of Vint Hill. However, in all fairness, the current County Board is more "pro growth" in terms of ideology and as evidenced by the recent approval of Wal-Mart.



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VHFEDA RESPONSE: If the Army judged the future success of redevelopment of Vint Hill strictly upon the County's history prior to the election of the current Board of Supervisors in 1996, the Army would have every right to feel pessimistic. However, the VHFEDA challenges some of the statements in II.F; especially that the County stands to gain greatly, while controlling redevelopment and incurring very little investment or risk.

By state law, zoning, subdivision approval and building permitting functions are restricted to either counties, cities or town governments. No authorities have these types of powers. That Fauquier County will retain them is a matter of law. The County cannot delegate them away. It would take an act of the Legislature to do so, and any shifting of these critical land use control powers from local governments would be a precedent fought so vigorously by all local governments that there would be absolutely no chance that such legislation could pass.

Yes, Fauquier County does stand to be the big beneficiary if Vint Hill is successfully redeveloped. That benefit will be from increased employment and tax base and from the Public Benefit Conveyances for recreation and education. But the Public Benefit Conveyances will require new and large investments by the County to fully utilize them. Projected capital improvements to the recreation area and buildings alone in the first five years is projected at \$3,539,400 (as per the draft Public Benefit Conveyance application being finalized by the Parks and Recreation Board). The proposed middle school is projected to cost \$12,000,000, without including the cost of existing building demolition. Facing \$15,000,000 just to improve and utilize the "free" facilities, it is not surprising that the County has not accepted the added burden of \$36 million in improvements to the remainder of the site. The sums would greatly exceed the County's available debt service limits and its ability to pay for these from its operational budget.

The County Board of Supervisors is being asked to accept a very big political risk with big financial risk implications. That risk is guaranteeing repayment of the VHFEDA's tax-exempt bonds. That risk is projected at approximately \$26 million in bond face value, plus \$19 million in bond interest payments. If the VHFEDA cannot make any of the annual payments against these debts, the County must do so at least once. But if it does not do so every time there is a shortfall in payment ability by the VHFEDA, the County stands to have its bond rating reduced. That too results in higher interest payments thereafter when it goes to the bond market. That added interest penalty can be significant if a point or more is added to multi-millions in bonded debt.

The reasons for Fauquier County not to zone Vint Hill prior to conclusion of negotiations with the VHFEDA have been discussed in the EDC. Until it is known that the VHFEDA will obtain Vint Hill, any rezoning could benefit a future purchaser should the Army and the VHFEDA not be able to reach a satisfactory acquisition agreement. No future purchaser would propose to provide as much in "proffers" as the VHFEDA has proposed in infrastructure improvements, support for the education and recreation Public Benefit Conveyances, token lease of 24 units for transitional housing, donation of a prime site for a public swimming pool, etc.



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The VHFEDA feels that the current Board of Supervisors will rezone Vint Hill in the manner desired to accomplish the Reuse Plan. We are realistic enough to expect some vocal opposition from the no-growth segments of the community; however, we are confident that the pro-economic development position of this Board will not be deterred. As a very recent example of the Board's willingness to vote in opposition to intense vocal opposition, after a very long, very loud, very heated and orchestrated opposition campaign to a rezoning for Wal-Mart on a county site, the Board voted 4-1 to approve the rezoning. The VHFEDA has no reason to expect anywhere near a similar level of opposition to its rezoning application. We believe that most citizens regard Vint Hill as having already been developed, and that our Reuse Plan has tried to keep a similar community feel and density in redeveloping replacements for lost economic activity.

III. EDC Capital Improvement Plan Review Issues

USACERL would like to make the following preliminary engineering findings concerning the "need and extent" of the capital improvements contained in the application. Reductions in property absorption and ultimately full build out supported in Section II above will warrant commensurate decreases in infrastructure in order to maintain a financially feasible business plan. A discussion of potential capital improvement program reductions follows.

III.1 Road costs.

III.1.A Traffic flow. The application shows a very aggressive increase in traffic flow to be slightly more than 35,000 vehicles per day (vpd) at full build out. This will equate to approximately six trips per person on the installation and justify the amount of road improvements outlined. However, USACERL forecasts 28,340 vpd based on Table D-1 and D-2 of the EDC application and Institute of Transportation Engineers trip generation factors.

<u>Land Use</u>	<u>Amount</u>	<u>Flow Factor</u>	<u>Total</u>
Community	9,556 sf.	8 trips per 1000	76 vpd
Technology	1,174,054 sf.	0.8 trips per 1000	939 vpd
Office	45,757 sf.	14 trips per 1000 sf.	641 vpd
R&D	240,470 sf.	4 trips per 1000 sf.	962 vpd
Resident	300 Homes	7 trips per unit	2,100 vpd
Retail	295,276 sf.	80 trips/1000 sf.	23,622 vpd
TOTAL			28,340 trips

VHFEDA RESPONSE: USACERL's land uses for traffic flow omit the following from trip generation figures:

- a new 600 student school (parcel 10)
- a consolidated public school book depository building (Building 158) (parcel 10)



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- a new consolidated office (Building 162) for various school activities now located in school buildings throughout the County (parcel 10)
- public traffic to an enclosed swimming facility now on parcel 18 and to be moved to parcel 14 when parcel 18 sells
- public traffic to a public gymnasium (parcel 13)
- public traffic to a live performance theater currently providing performances at the rate of approximately 80 per year (parcel 13)
- public traffic to the soccer fields, softball fields, tennis courts, and other recreational fields to be added to the existing Village Green area and shared school recreation fields and facilities; these are now heavily used by various soccer and softball leagues throughout the Spring-to-Fall seasons. That public use activity will only increase. (parcel 13)
- through traffic taking a short-cut from VA. Rt. 605 through 602 and 652 to 215 and 29 North (see discussion to data call question I.6)

III.1.B Road Design. Not only is it important to know the average daily traffic count at full build out it, is also very important to know the location of the parcels generating traffic. The amount of traffic on a road will determine the width and depth of the road. The current designs of the road improvements on Vint Hill Farm Station call for 8 inches of gravel base, 8 inches of asphalt base, and 2 inches of asphalt surface. The rationale for this is based on Virginia Department of Transportation (VDOT) road design criteria. Telephonic communications with VDOT have indicated that VDOT is liberal in terms of accepting roads "as is" and not requiring a full upgrade. Furthermore, the information contained Section II. above demonstrates that full build out is overstated within the 15 year planning horizon, resulting in reduced on-site road requirements. Therefore, the design of road improvements can be reduced to some extent, which will in turn reduce capital improvement costs and increase financial feasibility.

VHFEDA RESPONSE: The VHFEDA and its engineers, Dewberry & Davis, would be delighted to have in writing a commitment from VDOT to be "liberal" in terms of accepting Vint Hills major roads "as is" and not requiring a full upgrade. If USACERL can obtain this for us, we would be willing to consider reducing projected street improvement costs. Dewberry & Davis have not been able to get a written commitment from VDOT in their regional Culpeper office to accept even our proposed design plans as acceptable, much less plans for reduced designs.

Dewberry & Davis' long-term experiences with VDOT, which the VHFEDA has confirmed from discussions with Carolyn Bowen, Fauquier County's Zoning Director for 20 years who works closely with VDOT on all rezoning issues, is that VDOT will not commit in writing to any plan until the zoning application or permit application is formally submitted. Carolyn Bowen states that sometimes VDOT has been liberal, but more often it is not. Any their position is not consistent. It seems to vary depending upon the VDOT person involved. That has been

Mr. Paul W. Johnson

July 25, 1997

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VINT HILL

Dewberry & Davis' experience in working with many VDOT offices throughout Northern Virginia and in the Richmond area.

The uncertainty of not having a written commitment by to accept the Vint Hill streets "as is" requires that we plan for the probable case; i.e., that VDOT will require upgrades to full projected build-out requirements.

The land uses which were not included in USACERL's traffic generation factors have been cited in III.1.A above and need to be included before recommending if the 35,000 trips per day can be reduced.

III.1.C Traffic flow offsite. The Environmental Impact Statement (EIS) points out specifically that there are a number of roads that could require off site improvements. These improvements will enhance/encourage the redevelopment of the installation. Such roads include Highway 215 from Highway 29 to the installation; Highway 793 from Highway 29 to the installation; Highway 602 along the eastern borders of the installation. USACERL strongly encourages the VHFEDA to consider these potential improvements.

VHFEDA RESPONSE: The VHFEDA concurs with USACERL's identification of future off-site road improvement needs to make Vint Hill more accessible and to carry the projected build-out traffic flows. A discussion of the County's proposed transportation improvement plans for the New Baltimore Service District which affect Vint Hill are discussed in our response to Item I.6.

The off-site improvements identified by USACERL will be very high cost items. The VHFEDA does not know what the costs would be to build the proposed Rt. 793 parkway from the rear of Vint Hill to a new intersection with Rt. 29. Nor does the VHFEDA know the cost of 4-laning Rt. 215 from Vint Hill to Rt. 29 and improving the 29/215 intersection (as a grade-separated interchange) as would be needed. However, if the VHFEDA, as owner of Vint Hill Farms, has to bear other than a minor portion of such costs, Vint Hill's redevelopment would not be financially feasible—either for the VHFEDA or for a private-sector owner .

The EDC specifically states that we have included no off-site improvements in our financial plans (other than a traffic signal on Rt. 215 at the new street intersection). Any off-site transportation improvements will have to be financed by the state or by a combination of state-county-adjacent property owners. Until such plans are prepared and identify the costs necessary for Vint Hill as one of many participants, we are asking the County Board of Supervisors to avoid including any off-site improvements as a rezoning proffer requirement. We are basing this request on the fact that the existing transportation network at one time was adequate to handle the daily traffic flows from 3,500 jobs and 1,100 residents. With base closure initially reducing traffic generation to minimal daily trips, we should be able to rebuild to the daily trip generation equivalent of 3,500 jobs and 1,100 residents before any off-site improvements are required based solely on Vint Hill's traffic generation.



VINT HILL

III.2 Wastewater treatment costs. USACERL spent a considerable amount of effort reviewing relevant wastewater reports, studies, and analyses. This included the application, a study by RK&K engineering, a study by Dewberry and Davis, and interviews with DPW personnel. Since each one of these sources provided a different viewpoint of the problem, there was no way to determine how these reports correlate.

III.2.A. Wastewater Flow predictions. The application shows a wastewater flow at full build out to be 0.657 MGD. The Virginia Department of Health guidance was used by all the reports mentioned above to calculate the amount of waste water. This same information was provided to USACERL. Using the Virginia Department of Health guidance, projected Vint Hill populations and work force, USACERL has prepared a conflicting estimate of total peak flow which is as follows:

Source of wastewater	Flow factor	Flow (gpd)
Technology/office - 4,859 employees	35 gpd/per person	170,000
Retail of 200,000 sf.	35 gpd/per person	60,000
School — 600 students	6 gpd/per person	10,000
Other — Pool, Inn etc.	(Per reuse plan)	33,000
Housing — 777 Residents	100 gpd/per person	78,000
Total		351,000

Since a plant must be running at 95% capacity to support this total amount, the capacity needs to be $351,000/95\% = 370,000$ gpd.

VHFEDA RESPONSE: The VHFEDA and Dewberry & Davis our engineering consultants believe that the USACERL calculations of projected wastewater need at full buildout understate demand based on Virginia Department of Health guidance. See Appendix B for the Dewberry & Davis response to Item III.2.A.

Dewberry and Davis has re-calculated the projected wastewater demands for full buildout under the EDC reuse plan to see if the work initially done for the Reuse Plan could be reduced. Their re-calculations are attached. These recalculations—based on the EDC plan and the Reuse Plan's FAR projections—show that treatment demand at full buildout will range from a low of 504,000 gpd to a high of 750,000 gpd. Both of these figures are slightly above the calculations contained in the Reuse Plan and reflect more accurate square footage numbers for proposed construction and retained buildings.

The VHFEDA believes that the Dewberry & Davis re-calculations are based on sound engineering methodology and represent Dewberry & Davis' extensive experience in following the requirements of the Virginia Department of Health procedures. The VHFEDA concurs with Dewberry & Davis' projected flows as the basis on which to plan both wastewater treatment plant sizing and collection system sizing.



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III.2.B. *Wastewater Treatment Portion of the Redevelopment Costs.* Assuming that the flow calculated by USACERL is accurate, a minimum capacity of 0.370 MGD plant must be available to support the current plan. However, Section II. argues that EDA's full build-out scenario contained in the table above is highly aggressive and most likely an overstatement of market strength. A reduction in 15 year absorption of commercial and retail space will also reduce wastewater treatment requirements, to a potential level where a new WWTP requirement is not necessitated.

VHFEDA RESPONSE: Based on Dewberry & Davis' recalculations of projected wastewater needs discussed in III.2.A above, the VHFEDA does not concur with USACERL's statement that we can redevelop Vint Hill with a wastewater treatment plant of 370,000 gpd. The VHFEDA stands by Dewberry & Davis' earlier projection that, at this time, we should plan for a wastewater treatment plant of 700,000 gpd. As absorption occurs and prior to start of new plant design, actual flow history can be used to help determine if the 700,000 gpd size can be reduced.

The VHFEDA does not agree that the existing plant is capable of meeting the long-term wastewater treatment needs of the Reuse Plan. The only issue is one of timing of its replacement. If absorption occurs slower than projected, the VHFEDA can extend use of the existing plant, if it receives the concurrence of the Virginia Department of Environmental Quality. However, to keep from having to install ammonia treatment to the existing plant until flows show that the plant is approaching violation of its discharge permit, we may have to enter into a Consent Decree to replace the existing plant before the scheduled permit renewal in 2003.

IV. EDC Review Assumptions

IV.1 *Based upon USACERL's market findings, alternative technical review scenarios were developed on 25 and 40 percent deductions in commercial absorption. For a frame of reference, a 40 percent reduction in property absorption results in a 15-year full build out with similar employment and population levels as when the Army occupied the site.*

VHFEDA RESPONSE: See previous responses to questions regarding market absorption projections.

IV.2 *Based on USACERL's full build out, infrastructure improvements have been commensurately reduced to satisfy projected site requirements and financial feasibility requirements.*

VHFEDA RESPONSE: See previous responses to questions regarding market absorption projections.



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IV.3 Debt service will only be incurred when negative cash flows are forecasted, and only in the amount necessary to cover operational shortfalls.

VHFEDA RESPONSE: See previous response to question I.4 regarding reasons for retaining some initial cash flow to cover projected shortfalls in future years. Until it sees USACERL's recasting of the Business Plan, the VHFEDA does not know the timing or the projected amounts of negative cash flows incurred by USACERL's projection. The strategy shown in the EDC is to use "excess" cash flow to avoid debt, but not to deplete cash accounts to the point that the VHFEDA cannot cover for projected shortfall years. When cash flow amounts exceeds projected operational and reserve needs, the excess has been applied to capital costs in the Business Plan. That is why \$12 million in capital costs are projected as being funded through cash flow.

The use of bonded debt by the VHFEDA should be tied to specific capital projects legally considered to be "in the public interest." That allows the bonds to be tax free bonds. "In the public interest" typically means public infrastructure, education, recreation or similar types of "brick and mortar" projects. Tax anticipation bonds are available to local governments to cover cash flow shortfalls until new taxes are collected. The VHFEDA does not have taxing power. Therefore, the VHFEDA may not be able to use anticipation bonds to cover cash flow shortfalls. If the VHFEDA borrows only to cover negative cash flows, then commercial borrowing will be necessary. Commercial borrowing will demand higher interest rates than the VHFEDA can obtain for bonded debt to pay for capital improvements.

IV.4 The sale of off-site wastewater treatment is not assumed because it is not articulated in the business plan as a revenue generating strategy and the County would most likely retain final approval authority of service extensions within the New Baltimore District. This results in a required WWTP capacity which is substantially less than 0.7 MGD.

VHFEDA RESPONSE: USACERL is correct in stating that no income or expenses were included in the Business Plan relating to off-site sales of wastewater treatment capacity. The decision on off-site sale of treatment capacity will only arise if the County Board of Supervisors approves wastewater treatment services within the New Baltimore Service District and requests that it be treated in the Vint Hill wastewater treatment plant. Wastewater treatment service in the New Baltimore Service District is a local political decision in which the VHFEDA does not intent to become involved, unless specifically requested to by the Board of Supervisors. The VHFEDA will respond, as a civic support gesture, in working with the County Board to provide any off-site services which Vint Hill may be capable of doing without diminishing its capacity to provide for its own projected on-site development needs. Any off-site services requested by the County Board will have to be funded by the off-site user base and/or the County.

IV.5 Road/utility costs will be pegged to USACERL's full build out scenarios and subsequent demand requirement calculations. It is understood that investment must be made up front (e.g.



VINT HILL

demolition of obsolete buildings) for most economic development projects in order to attract the private sector, but major capital improvements and subsequent debt should not be incurred until viable markets and end users have been identified and secured.

VHFEDA RESPONSE: Some required capital improvements can be phased; others should be made up-front to encourage early sales or leases to occur. In some ways, this is a "chicken and the egg situation." Without some of the needed improvements being made up-front, you cannot sell the land, and without sale of sites you cannot make further infrastructure improvements. When major distribution system improvements are going to be required, it is less expensive to put them in all at once than pay the multiple mobilization costs of bringing in contractors at different times. It is also more efficient to have one contractor put in a system than to have multiple contractors working on the system in phases.

The VHFEDA is proposing to phase street improvements in two increments. We want to make the necessary improvements to Harrison Street soon after we have completed the new gas interceptor and the new wastewater interceptor, which will require tearing up Harrison Street. We want to complete this work while the base population is at its lowest so as to create as little traffic disruption as possible. The second phase of street construction is planned for Year 6.

Fauquier County's Zoning Ordinance requires that most lots, with the exception of some rural residential lots, must front onto state-maintained roads or streets or onto those proposed for acceptance into the VDOT system. Until that condition is met, site subdivision will not be approved and lot sales cannot take place.

Up-front investments must be made early to many of the infrastructure systems to allow sales occur whenever a desirable purchaser becomes available. It would drive off potential purchasers if the VHFEDA waited until it had an interested purchaser before beginning street or utility system construction and getting them accepted into the VDOT system. The VHFEDA plans apply for EDA grants to make some of the initial improvements. Therefore, we want to seek these grants early while funds may still be available and use them as soon as they are obtained.

Replacement of the wastewater collection system, construction of the new gas interceptor, and enlargement of some water distribution lines should be coordinated to occur just prior to street improvements to avoid having to dig up and patch new streets to make these utility system improvements.

IV.6 No alternative assumptions for residential or golf course development have been formulated other than a possible reversion of the golf course to accelerate the retirement of debt service.

VHFEDA RESPONSE: The VHFEDA has considered early transfer of the golf course to Fauquier County in exchange for debt assumption. This has not been included as a recommended action in the Business and Operations Plan. Golf course profits will result after

Mr. Paul W. Johnson
July 25, 1997
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payment of golf course debt. The golf course profits are planned to help retire non-golf course infrastructure debts.

If golf course profits become adequate to repay any remaining total debt service at some point, then it makes sense to transfer the golf course to Fauquier County if the VHFEDA is the sole golf course owner and if remaining debts are transferable.

If, however, the VHFEDA enters into a public-private partnership for development of the golf course, then the terms of that partnership agreement will dictate the disposition of the golf course and the timing of that disposition. The VHFEDA is open to joint-venture partnerships for development of any of the Reuse Plan parcels if that will expedite their redevelopment and bring investment into the process to possibly reduce the financial obligations of the VHFEDA.

IV.7 Development "proffers" are currently assumed to be satisfied by the VHFEDA's capital improvement program.

VHFEDA RESPONSE: It is the VHFEDA's assumption also that development proffers will be satisfied by its proposed capital improvement program. No off-site improvements have been included in the calculation of proffers proposed by the VHFEDA (see response to question III.C).

The VHFEDA sincerely appreciates the opportunity to respond to USACERL's issues, questions and concerns. We hope the information provided herein proves helpful in clarifying the VHFEDA's reasoning on those issues.

Sincerely,

A handwritten signature in cursive script, reading "Owen W. Bludau", followed by a long horizontal flourish line.

Owen W. Bludau
Executive Director

Encl.

cc: Susan Bower Nancy Inger
Joan Sigler Jeff Bogg



Real Estate Services

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Capital Office Park
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301 • 486 • 0800 Fax: 301 • 486 • 3750

To: Mr. Owen Bludau, Director
Vint Hill Economic Development Authority

From: John Walker, Vice President
Legg Mason Real Estate Services, Inc. 

Date: July 21, 1997

RE: Response to July 8, 1997 Memorandum from Jeff Bogg, CERL EDC Project
Leader, to Susan Bauer (DAIM-BO) Regarding Vint Hill Farms EDC

At your request, we have reviewed the above noted memorandum regarding the market and financial information as provided as part of the Vint Hill Farms EDC. Specifically, Legg Mason Real Estate Services, Inc. (LMRES) has reviewed the memorandum to identify and respond to the market related issues.

The following provides the issue as presented in the memorandum (*in italics*) and our response:

USACERL Issue: *Item I-5 More market support would be helpful in understanding the following: "The opportunity to attract high-tech electronics and telecommunications industries to the site continues to be excellent based upon the unique electromagnetic and satellite "view" characteristics of the property. These two unique characteristics are the key to attracting new industry to the property and should result in the property capturing a higher than normal "market share" of high tech companies moving into the region and the I-66 corridor. However, these characteristics need to be marketed to a target audience of companies in order for the property to be absorbed." (Preferred Reuse Plan, P II-28). USACERL has been unable to corroborate projected absorption of 100,000 SF/Year based upon the unique attributes of the site other than the presence of wastewater and water service.*

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MASON**

LMRES Response: In the original analysis of the Vint Hill property, LMRES interviewed Mantech Corp. and Hughes Communications regarding the importance or marketability of the Vint Hill property attributable to the unique electromagnetic and satellite view characteristics of the site. In those discussions, both companies indicated that industries involved in communications and electronic equipment testing would be interested in the characteristics of the site. Due to the property's location in one of the largest concentrations of communications and electronics companies in the U.S., LMRES projected that, assuming a significant marketing effort targeted to those companies, the Vint Hill property could capture a higher than normal "market share" in the I-66/Route 29 corridor. Subsequent events in the adjacent Manassas area including the development of the \$1.2 billion Dominion Semiconductor electronics facility and the growth of communications companies in Northern Virginia in general, we are even more confident that, if properly marketed, Vint Hill can capture a higher than average market share of absorption in this corridor.

The presence of wastewater and water service are also attributes that will be beneficial in attracting employers to the facility.

In the most recent information available from COSTAR, the I-66/Route 29/Manassas market has seen industrial and office absorption of 428,191 square feet of space over the last 12 months (See attached Tables). This does not even account for the build-to-suit construction underway in the area which has been estimated at over 250,000 square feet.

Based upon the continuing market trends in the region, LMRES believes that the average absorption projection of between 75,000 and 100,000 square feet annually (included on Page 10-13 in the Vint Hill EDC) continues to be an accurate reflection of the market potential for the property.

USACERL Issue: *Item II-1 Perhaps the most critical issue identified thus far is the level of market risk the VHFEDA is proposing to undertake. Although the pricing strategy for real estate products developed in the operations and business plan appears to be competitive without undermining local property values, VHFEDA's market capture rate of 20% of the I-66/Rt. 29, or 100,000 SF/yr, is highly aggressive. The reasons are as follows:*

**LEGG
MASON**

A.) There is no apparent market demand for the satellite view and "radio non-interference zone" attributes other than by military type users, which would indicate a "higher than normal market share" of among specific technology companies, although FAA has indicated interest in the site. However, USACERL believes that an Internet Service Provider (ISP) , or related industry may be a possibility due to increasing demand for internet services in the Washington, D.C. MSA and the technological and business opportunities a Sensitive Compartmented Information Facility (SCIF) or modification thereof offers.

LMRES Response: How many companies did USACERL interview before concluding that there is "no apparent market demand" for the unique characteristics of the site? LMRES discussed the issue with two of the leading companies in the military consulting and communications fields in the region and those discussions led us to believe that, if property marketed, there is market demand for these unique attributes.

In addition, it appears that USACERL has identified (in the issue paragraph above) several other uses or users that would be interested in the site based upon its unique characteristics or specialized type of space. The interest in the site by the FAA is an excellent example of a technology or communications user being interested in the site due to its unique characteristics. With the proper marketing program, LMRES believes that companies interested in the unique characteristics of the site can be identified and attracted to the property.

USACERL Issue: *B.) There appears to be an internal inconsistency between the O/B Plan which demonstrates optimism for robust property absorption and the Preferred Reuse Plan which signals market threats as supported by the following quote: "None of the business parks in the County can compete effectively in the industrial and R&D markets with those located along the I-66 corridor in Prince William County and they have services and access generally unavailable in Fauquier County" (P II-32).*

LMRES Response: The word "existing" was inadvertently left out of the text of the report. The sentence should have read .. "None of the **existing** business parks in the County can compete effectively with..." This does not refer to our opinion of the Vint Hill property. LMRES believes that, with proper improvements to access via Route 215, the infrastructure, amenities and competitive pricing position proposed for the Vint Hill property will allow it to compete very effectively with Prince William County parks for industrial and R&D users.

USACERL Issue: *D.) USACERL concurs with the VHFEDA's market finding that competition for industrial land bays and buildings will be ostensibly from Prince William County. However, upon further analysis, it appears that the relative economic strength of Prince William County was discounted relative to VHFEDA projected property absorption. The basis for this conclusion is grounded in the following considerations:*

- i. Prince William Institute which offers innovative technology training and education is only 15 miles away (Reuse Plan, P II-28).*

LMRES Response: The activity generated by the Prince William Institute and other high technology users in western Prince William County (IBM/Toshiba, ATCC, etc.) will attract suppliers, contractors, and spin-off companies. The relatively close location to Vint Hill is seen as a benefit to the potential absorption as these users will be generating additional demand for space in the area. LMRES believes that a portion of the demand from this adjacent industry cluster can be captured and accommodated at Vint Hill.

USACERL Issue: *ii. Prince William County has adopted an aggressive marketing program targeted at industrial-type users. For example, the County allocates over \$300,000 a year in marketing for one industrial park alone compared with VHFEDA's maximum marketing budget of \$120,000 per year.*

LMRES response: The interest in the area generated by a \$300,000 marketing budget will, in our opinion, produce a substantial number of users that will not focus solely on the Prince William County property. In performing site selection analyses for several dozen companies over the past 20 years,



LMRES has always prepared a comprehensive analysis of all competitive properties in specific areas, especially in adjacent counties. In many cases, counties adjacent to the targeted community offered tax and land price savings that led to the companies' choosing a location in their communities.

An excellent example of this phenomenon locally is the industrial and office development history in nearby Loudoun County, Virginia. During the 1980's, Fairfax County, Virginia (immediately east of Loudoun) had an economic development budget of over \$1.0 million annually while Loudoun's was in the \$100,000 to \$250,000 range. During that period, several large corporations that were originally attracted to the region by Fairfax County's marketing program eventually located in Loudoun due to the land cost savings provided by competitive sites. Examples include companies such as British Airways and Star Technologies. Therefore, we view Prince William County's marketing budget as a plus for the potential reuse of Vint Hill.

USACERL Issue:

- iii. *According to the 1996 Development Guide and Prince William Newsletter, over 3.0 million square feet of office/industrial/R&D is in various stages of development in Haymarket/Gainesville submarket alone, which is roughly 6-7 miles from VHFS. In all fairness, economic development organizations tend to overstate development activity, but it is an undeniable fact that Northern Virginia is experiencing a surge in industrial development.*

LMRES Response: The development activity in the Haymarket/Gainesville submarket taken from the 1996 Development Guide is a compilation of all proposed space in the submarket and does not include a reference to the potential phasing of such projects. The three million square feet of space planned will, in all likelihood, occur over a 7 to 10 year period according to local brokers. In addition, several of the projects identified include build-to-suit space which is not included in the historic absorption figures shown in the market analysis provided as part of the Preferred Reuse Plan for Vint Hill.

In our opinion, the surge in industrial development in Northern Virginia is an excellent indicator that market support for Vint Hill is increasing. As demand for closer-in industrial space begins to push land and building prices higher, and the supply of land available for industrial development declines, the Vint Hill property will be in an excellent position to capture users.

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MASON**

USACERL Issue: iv. *Fauquier County's weak industrial market is evidenced by a 25-acre, eight site industrial park with appropriate zoning and utilities which has only sold 3 of 8 sites since 1994.*

LMRES Response: LMRES believes that drawing a conclusion regarding the "weak" industrial market in Fauquier County based upon the experience of the Town of Warrenton's 25 acre industrial park is inappropriate. To suggest that the absorption experience of a small, 25 acre industrial park (with maximum lot size of 5.0 acres) should guide the community in its decision to redevelop the Vint Hill property completely disregards the following:

1. larger users (those needing more than 5.0 acres) could not be accommodated on the site and had to choose locations outside of the County.
2. the Town of Warrenton's marketing budget for the park was less than \$10,000.
3. there were no existing buildings on the site that could accommodate a user that might later build their own facility.
4. the Town initiated its marketing effort as Northern Virginia was just beginning to emerge from industrial and office vacancy rates in the 20 to 40 percent range.

LMRES believes that the strong industrial market in Northern Virginia will apply to the Vint Hill property as developers and users look for new opportunities.

USACERL Issue: v. *Unlike the VHFEDA, Prince William County is able to provide development incentives such as property tax abatement (although VHFEDA will fund infrastructure improvements) and superior site locations.*



LMRES Response: Both Prince William County and Fauquier County operate under the law of the Commonwealth of Virginia and can generally offer the same incentives. While some require enabling legislation, LMRES believes that Fauquier County can offer an incentive package that will match any offered by other jurisdictions.

LMRES also believes that the Vint Hill property's location, while not on a main artery, will be attractive to many corporations looking for industrial, R&D, and office sites that are in a more rural setting, surrounded by a golf course, and served by a day care center and small village retail center. This type of mixed-use project is becoming more attractive to employers as they acknowledge the need to provide a wide range of services for their employees. This type of business park can be "superior" in the minds of corporate decision-makers compared to the existing sterile, single use business parks located in nearby jurisdictions.

Based upon the issues and responses included above, LMRES concludes that the basis for the market support and absorption pace included in the VHFEDC application continue to hold true and that market trends since the publication of the study continue to improve.

Please call me if you have any questions.

Vint Hill Market Area

ABSORPTION REPORT

07/22/1997

	Last 4 Qtrs	2nd Q 1997	1st Q 1997	4th Q 1996	3rd Q 1996
Gross Absorption:	428,191	94,263	107,812	156,385	69,731
Net Absorption:	100,685	35,301	43,828	37,137	-15,581

Vint Hill Market Area

07/22/1997

COMPREHENSIVE ANALYSIS**AVAILABILITY and VACANCY REPORT 1**

Bldgs	Listgs	Total Rentable SF	Vacancy Rate*	Relat & New Immed Avail	SF Available Total	SF Available 90 Days Ago	SF Available 180 Days Ago	SF Available 360 Days Ago
277	75	19,727,229	5.6%	654,814	10,454,375	10,465,000	10,525,000	10,618,000
208	0	8,128,574			0	215,000	271,000	348,000
22 46 3	26 48 3	9,769,986 1,649,372 302,320		13,800 509,322 6,886	9,751,663 695,826 6,886	9,889,000 552,000 24,000	9,902,000 582,000 41,000	9,874,000 605,000 39,000
69	75	11,598,655			10,454,375	10,250,000	10,254,000	10,170,000
255 2 0 20 0	52 3 0 20 0	9,884,254 69,000 0 9,773,975 0	5.6%	554,814	748,204 69,000 0 9,637,171	622,000 69,000 0 9,774,000	682,000 69,000 0 9,774,000	675,000 69,000 0 9,774,000

Total:

Fully Leased
Buildings:New Space:
Relat Space:
Sublet Space:Buildings with
Space Available:Existing:
Under Construction:
Under Renovation:
Proposed:
Demolished:

* Vacancy Rate is the total new and relat square feet available immediately divided by the total rentable square feet of all existing buildings.



Architects
Engineers
Planners
Surveyors

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703 849-0100
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July 18, 1997

Mr. Owen Bludau
Vint Hill Farms EDA
Bldg. 502, Stop 117, VHFS
Warrenton, Virginia 22186

RE: Wastewater Flow Projections
Vint Hills Farm Development

Dear Mr. Bludau:

Dewberry & Davis, at your request, has reviewed and updated the projected wastewater flows for the proposed buildout program of the Vint Hill Farms Station. Our current projection effort is based on a conceptual parcelization plan prepared by Dewberry & Davis in November 1996 and revised January 8, 1997. The acreage and land uses for each land bay were taken from this plan.

Attached is our resulting projected sewage generation table (Table 1) with attachments showing where we got each of the assumed wastewater flow generation rates. Floor area ratios (F.A.R.) were maintained as determined by the Fauquier County Economic Adjustment Task Force when it adopted the Reuse Plan to create ".....a variety of unique employment enterprises in a moderately low density campus setting." The resulting low and high average daily wastewater generation rates are 504,000 and 750,000 gallons per day, respectively. We maintain this projection to be sound and based on good engineering practice.

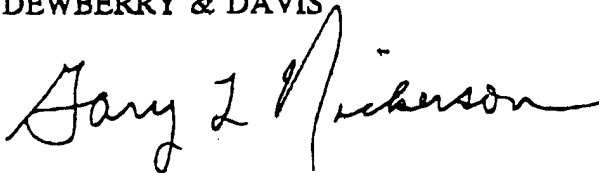
We have also taken the liberty to review the USA CERL projections that you recently gave to us. Our (Table 2) attached compares their analysis to ours. The projections relate favorably except in the category of "Technology/Office". USA CERL has apparently projected the technology/office flow as generated only from the domestic waste of the associated employees. D&D feels that technology/office may include some light industrial activities that generate wastewater beyond what can be expected from the domestic waste of the employees alone. This appears to be the only difference in the two flow projections.

Mr. Owen Bludau
Vint Hill Farms EDA
Page Two - July 18, 1997

We trust this analysis is useful to the Vint Hill Farms EDA. Please reach me at (703) 849-0310 with any questions.

Sincerely,

DEWBERRY & DAVIS

A handwritten signature in cursive script that reads "Gary L. Nickerson". The signature is written in dark ink and is positioned above the printed name and title.

Gary L. Nickerson, P.E.
Senior Associate

GLN:jlh

Enclosures

VINT HILL FARMS
PROJECTED SEWAGE GENERATION

JULY 18, 1997

TABLE 1

Land Bay	Land Use	Land Area (Acres)	F.A.R.	Bld. Area (Sq. Feet)	Flow/area (GPD/Sq. Feet)		Total Flow (GPD)	
					Low	High	Low	High
2	Retail Service	7.5	0.2	65,340	0.20	0.30	13,068	19,602
4	Retail Service	6.3	0.2	54,886	0.20	0.30	10,977	16,466
5	R&D	28.6	0.19	236,705	0.20	0.30	47,341	71,012
6	R&D (PARKING)	4.3	0	0	0.20	0.30	0	0
7	R&D (PARKING)	6	0	0	0.20	0.30	0	0
8	R&D	1.3	0.36	20,386	0.20	0.30	4,077	6,116
9	R&D	2.4	0.39	40,772	0.20	0.30	8,154	12,232
12	Office/Service	3.3	0.1	14,375	0.20	0.30	2,875	4,312
14	Retail Service	2.4	0.2	20,909	0.20	0.30	4,182	6,273
18	Retail Service	16	0.2	139,392	0.20	0.30	27,878	41,818
20	Office/Service	5.5	0.15	35,937	0.20	0.30	7,187	10,781
21	Office/Service	0.6	0.29	7,579	0.20	0.30	1,516	2,274
22	Office/Service	1.7	0.2	14,810	0.20	0.30	2,962	4,443
23	Office/Service	1.6	0.09	6,273	0.20	0.30	1,255	1,882
25	Innovative Technology	129.8	0.15	848,113	0.20	0.30	169,623	254,434
27	Innovative Technology	72.3	0.15	472,408	0.20	0.30	94,482	141,722
29	Office/Service	4.3	0.15	28,096	0.20	0.30	5,619	8,429
Subtotal		293.9		2,005,982			401,196	601,794
F.A.R. Avg.			0.157					

Land Bay	Facility	Units	Flow/unit (GPD/Unit)		Total Flow (GPD)	
			Low	High	Low	High
20	Child Care	75 persons	10	16	750	1,200
10	School	650 students	10	16	6,500	10,400
	Office	43,000 sq. ft	0.2	0.3	8,600	12,900
3,11,28	Residential	324 units	250	350	81,000	113,400
13	Village Green					
	Pool	200 persons	10	10	2,000	2,000
	Theater	250 seats	5	5	1,250	1,250
	gym/ballfield	50 persons	10	16	500	800
24	Golf Course	100 persons	10	50	1,000	5,000
1	WWTP	3 ERC's	250	350	750	1,050
Subtotal					102,350	148,000

Total Projected Sewage Generation = 503,546 749,794

ASSUMPTIONS:

1. The Floor Area Ratio (F.A.R.) was assigned to the various land units based on the expressed objective of the Fauquier County Economic Adjustment Task Force when it adopted the Reuse Plan to create "... a variety of unique employment enterprises in a moderately low density campus setting".
2. The Flow/area for Retail was taken from the VDH Sewage Collection & Treatment Regulations Table 3 (attached) for shopping centers.
3. The book entitled "Wastewater Engineering Treatment Disposal, and Reuse" Third Edition by Metcalf and Eddy, Inc. estimates the same range of wastewater flowrates for the sanitary waste from an Industrial Building, Office, and a Shopping Center (see Table 2-10, attached). These categories are similar to the Innovative Technology, R&D, and Office/Service Land Uses. Therefore, the same range of flow/area was assumed for these Land Uses as the Retail Land Use.
4. The number of units for Child Care, Pool, gym/ballfield, and Golf Course were assumed based on the number of proposed residential units.
5. The Flow/unit for School, Pool, and Theater were taken directly from the VDH Sewage Collection & Treatment Regulations Table 3 (attached).
6. The Child Care facility was assumed to have the same Flow/unit as a School facility.
7. The residential Flow/unit facility was based on a range of 2.5 to 3.5 persons per unit and the VDH Sewage Collection & Treatment Regulations Table 3 (attached), which specifies 100 gpd/person.
8. The gym/ballfield facility Flow/unit was taken on the low end as being similar to a swimming pool and on the high end as being similar to a school with showers and cafeteria whose values were taken from the VDH Sewage Collection & Treatment Regulations Table 3 (attached).
9. The Golf Course facility Flow/unit was taken on the low end as being similar to a swimming pool and on the high end as being similar to a restaurant, whose values were taken from the VDH Sewage Collection & Treatment Regulations Table 3 (attached).

SEWAGE COLLECTION AND TREATMENT REGULATIONS

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TABLE 3: CONTRIBUTING SEWAGE FLOW ESTIMATES TO BE USED AS A DESIGN BASIS FOR NEW SEWAGE WORKS

Discharge Facility (1)	Contributing Design Units	Flow gpd	BOD ₅ #/day	S.S. #/day	Flow Duration Hour
Dwellings	per person	100(2)	0.2	0.2	24
Schools with showers and cafeteria	per person	16	0.04	0.04	8
Schools without showers and with cafeteria	per person	10	0.025	0.025	8
Boarding Schools	per person	75	0.2	0.2	16
Motels at 65 gals/person (rooms only)	per room	130	0.26	0.26	24
Trailer Courts at 3 persons/trailer	per trailer	300	0.6	0.6	24
Restaurants	per seat	50	0.2	0.2	16
Interstate or through highway restaurants	per seat	180	0.7	0.7	16
Interstate Rest Areas	per person	5	0.01	0.01	24
Service Stations	per vehicle serviced	10	0.01	0.01	16
Factories	per person per 8-hr shift	15-35	0.03-0.07	0.03-0.07	Oper. Per.
Shopping Centers	per 1000 ft ² of ultimate floor space	200-300	0.1	0.1	12
Hospitals	per bed	300	0.6	0.6	24
Nursing Homes	per bed	200	0.3	0.3	24

SEWAGE COLLECTION AND TREATMENT REGULATIONS

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Table 3 (Continued)

Discharge Facility(1)	Design Units	Flow gpd	BOD ₅ #/day	S.S. #/day	Flow Dura- tion Hour
Homes for the Aged	per bed	100	0.2	0.2	24
Doctors Office in Medical Center	per 1000 sq. ft.	500	0.1	0.1	12
Laundromats, 9 to 12 # machines	per machine	500	0.3	0.3	16
Community Colleges	per student and faculty	15	0.03	0.03	12
Swimming Pools	per swimmer	10	0.001	0.001	12
Theaters, Drive-In Type	per car	5	0.01	0.01	4
Theaters, Auditorium Type	per seat	5	0.01	0.01	12
Picnic Areas	per person	5	0.01	0.01	12
Camps, Resort Day & Night with limited plumbing	per camp site	50	0.05	0.05	24
Luxury Camps with flush toilets	per camp site	100	0.1	0.1	24

Note: (1) Colleges, universities, and boarding institutions of special nature to be determined in accordance with Section 3.2081b.

(2) Includes minimal infiltrations/inflow (I/I) allowance and minor contributions from small commercial/industrial establishments

28 WASTEWATER FLOWRATES

TABLE 2-10
Typical wastewater flowrates from commercial
sources^a

Source	Unit	Flow, gal/unit · d	
		Range	Typical
Airport	Passenger	2-4	3
Automobile service station	Vehicle served	7-13	10
	Employee	9-15	12
Bar	Customer	1-5	3
	Employee	10-16	13
Department store	Toilet room	400-600	500
	Employee	8-12	10
Hotel	Guest	40-56	48
	Employee	7-13	10
→ Industrial building (sanitary waste only)	Employee	7-16	13
→ Laundry (self-service)	Machine	450-650	550
	Wash	45-55	50
→ Office	Employee	7-16	13
→ Restaurant	Meal	2-4	3
→ Shopping center	Employee	7-13	10
	Parking space	1-2	2

^a Adapted in part from Ref. 2.

Note: gal × 3.7854 = L

TABLE 2-11
Typical wastewater flowrates from institutional sources^a

Source	Unit	Flow, gal/unit · d	
		Range	Typical
Hospital, medical	Bed	125-240	185
	Employee	5-15	10
Hospital, mental	Bed	75-140	100
	Employee	5-15	10
Prison	Inmate	75-150	115
	Employee	5-15	10
Rest home	Resident	50-120	85
School, day			
With cafeteria, gym, and showers	Student	15-30	25
With cafeteria only	Student	10-20	15
Without cafeteria and gym	Student	5-17	11
School, boarding	Student	50-100	75

^a Adapted in part from Ref. 2.

Note: gal × 3.7854 = L

JULY 18, 1997

VINT HILL FARMS
PROJECTED SEWAGE GENERATION COMPARISON

TABLE 2

Land Use	USACERL Projected Sewage Generation		D&D Projected Sewage Generation		
	Source of Wastewater	Flow Projection	Source of Wastewater	Flow Projection (Low)	Flow Projection (High)
		(GPD)		(GPD)	(GPD)
Technology/Office	4859 Employees	170,000	1,725,455 SF	345,091	517,636
Retail	200,000 SF	60,000	280,527 SF	56,105	84,158
School	600 students	10,000	650 Students	6,500	10,400
Other		33,000		14,850	24,200
Housing	777 Residents	78,000	810 - 1134 Residents	81,000	113,400
	Total	351,000		503,546	749,794

Appendix B: Operations and Business Plan Analyses

Table B1. Vint Hill Farms Property Inventory. VHFEDA Business and Operations Plan

Vint Hill Farms Station Land Use Parcel and Building Reconciliation

Parcel ID	Proposed Reuse	Acres	Number Existing Buildings	Existing SF	SF Available for Lease	As of
1 A-D	Public Facilities	24.4	10	27,457	25,645	
2	Retail/Service	7.5	9	29,384	-	
3	Residential (100 Units)	23.7	42	204,734	-	
3A	Transitional Housing for Homeless	5.1	5	43,747	-	
4	Retail/Service	6.3	10	26,500	6,262	
5A	Research and Development	22.4	1	93	-	
5B	Research and Development	3.7	1	-	-	
5C	Research and Development	2.5	4	8,519	7,739	
6+8	Research and Development	5.6	1	22,030	-	
7	Research and Development	6	2	14,139	-	
9	Research and Development	2.4	2	21,065	4,800	
10	Training Center/Business Conference Center	28.3	12	204,679	-	
11	Residential (150 Units)	37.4	53	107,954	-	
12	Office/Service	3.3	4	16,297	16,140	
13	Village Green	15.9	16	24,254	-	
14	Retail/Service	2.4	4	13,222	12,930	
15	Microwave Tower	4.8	2	160	160	
16	Community Facilities	2.6	2	12,436	-	
18	Retail/Service	16	13	23,852	14,486	
20	Retail/Service (Inn)	5.5	6	17,760	14,776	
21	Office/Service	0.6	2	6,991	-	
22	Office/Service	1.7	0	-	-	
23	Office/Service	1.6	2	4,290	4,290	
24A+B	Golf Course	210.7	15	16,003	-	
25A	Innovative Technology (5-15 Acre Lots)	64.2	0	-	-	
25B	Innovative Technology (Building 260)	30.9	25	148,112	22,784	
25C	Innovative Technology (Building 2400)	34.7	42	236,413	171,280	
27	Innovative Technology (Large Users)	72.3	3	5,280	-	
28	Residential (50 Golf Course Lots)	24.4	0	-	-	
29	Office/Service	4.3	11	25,088	-	
	Buffer/Roads	29.8				
TOTALS		701	299	1,260,459	301,292	

①

cel

	Acres	Number Existing Buildings	Existing SF	SF Available for Lease	SF Available for Sale	SF Interim Use	SF Permanent Use	Total SF Demolition	SF Demolished by EDA	S PB Cou
	24.4	10	27,457	25,645	-	26,603	417	26,910	27,000	
	7.5	9	29,384	-	-	-	-	28,296	28,296	
	23.7	42	204,734	-	-	-	-	204,734	204,734	
	5.1	5	43,747	-	-	-	43,410	64	-	
	6.3	10	26,500	6,262	-	6,262	-	26,500	26,500	
	22.4	1	93	-	-	-	-	93	93	
	3.7	1	-	-	-	-	-	-	-	
	2.5	4	8,519	7,739	-	7,739	-	8,519	8,519	
	5.6	1	22,030	-	22,030	-	22,030	-	-	
	6	2	14,139	-	13,840	-	13,840	299	299	
	2.4	2	21,065	4,800	-	4,800	-	21,065	21,065	
nter	28.3	12	204,679	-	-	15,885	-	53,560	53,560	
	37.4	53	107,954	-	-	-	-	107,954	107,954	
	3.3	4	16,297	16,140	9,750	6,451	9,750	6,547	6,547	
	15.9	16	24,254	-	-	-	23,191	903	-	2
	2.4	4	13,222	12,930	-	12,930	-	13,222	292	
	4.8	2	160	160	160	160	160	-	-	
	2.6	2	12,436	-	9,556	2,880	9,556	2,880	-	
	16	13	23,852	14,486	-	14,486	-	23,852	23,852	
	5.5	6	17,760	14,776	14,776	-	15,019	2,184	-	
	0.6	2	6,991	-	6,991	-	6,991	-	-	
	1.7	0	-	-	-	-	-	-	-	
	1.6	2	4,290	4,290	4,290	-	4,290	-	-	
	210.7	15	16,003	-	-	-	-	6,263	6,263	
	64.2	0	-	-	-	-	-	-	-	
	30.9	25	148,112	22,784	99,732	26,384	96,132	28,536	-	
	34.7	42	236,413	171,280	191,422	10,740	191,422	33,795	33,795	
	72.3	3	5,280	-	-	-	-	5,280	5,280	
	24.4	0	-	-	-	-	-	-	-	
	4.3	11	25,088	-	24,817	-	24,917	171	-	
	29.8									
	701	299	1,260,459	301,292	397,364	135,320	461,125	601,627	554,049	2

2

SF ilable Sale	SF Interim Use	SF Permanent Use	Total SF Demolition	SF Demolished by EDA	SF PBT to County	SF Other Conveyance	SF Moved Off-Site
-	26,603	417	26,910	27,000	-	-	-
-	-	-	28,296	28,296	-	-	-
-	-	-	204,734	204,734	-	-	-
-	-	43,410	64	-	-	43,272	-
-	6,262	-	26,500	26,500	-	-	-
-	-	-	93	93	-	-	-
-	-	-	-	-	-	-	-
-	7,739	-	8,519	8,519	-	-	-
2,030	-	22,030	-	-	-	-	-
3,840	-	13,840	299	299	-	-	-
-	4,800	-	21,065	21,065	-	-	-
-	15,885	-	53,560	53,560	-	-	1,920
-	-	-	107,954	107,954	-	-	-
9,750	6,451	9,750	6,547	6,547	-	-	-
-	-	23,191	903	-	24,254	-	-
-	12,930	-	13,222	292	-	-	-
160	160	160	-	-	-	-	-
9,556	2,880	9,556	2,880	-	-	-	-
-	14,486	-	23,852	23,852	-	-	-
4,776	-	15,019	2,184	-	-	-	-
8,991	-	6,991	-	-	-	-	-
-	-	-	-	-	-	-	-
4,290	-	4,290	-	-	-	-	-
-	-	-	6,263	6,263	-	-	9,700
-	-	-	-	-	-	-	-
3,732	26,384	96,132	28,536	-	-	-	23,324
1,422	10,740	191,422	33,795	33,795	-	-	10,740
-	-	-	5,280	5,280	-	-	-
-	-	-	-	-	-	-	-
4,817	-	24,917	171	-	-	-	-
7,364	135,320	461,125	601,627	554,049	24,254	43,272	45,684

Table B2. VHFEDA Land Sales. VHFEDA Business and Operations Plan

15 Year Absorption and Income Projection: Land Sales Vint Hill Farms Station

Scenario: VHFEDA Business and

		Year 1 1997	Year 2 1998	Year 3 1999	Year 4 2000	Year 5 2001	Year 6 2002	Year 7 2003
1	ABSORPTION: LAND SALES							
2	Parcel Land/Units Absorbed this Year							
3	2 Retail/Service	0	0	0	0	0	0	0
4	3 Residential (100 Units)	0	0	0	23.7	0	0	0
5	4 Retail/Service	0	0	0	0	0	0	0
6	5A Research and Development	0	0	4.5	4.5	4.5	4.5	4.5
7	5B Research and Development	0	0	0	3.7	0	0	0
8	5C Research and Development	0	0	0	0	2.5	0	0
9	6 Research and Development	0	0	0	0	0	0	2.4
10	11 Residential (150 Units)	0	12.5	12.5	12.5	0	0	0
11	14 Retail/Service	0	0	0	0	0	0	2.4
12	18 Retail/Service	0	0	0	0	0	0	0
13	22 Office/Service	0	0	1.7	0	0	0	0
14	25A Innovative Technology (5-15 Acre Lots)	0	0	0	5.4	5.4	5.4	5.4
15	27 Innovative Technology (Large Users)	0	0	0	0	0	0	0
16	28 Residential (50 Golf Course Lots)	0	0	8.1	8.1	8.1	0	0
17								
18	Total Land/Units Absorbed	0	12.5	26.8	57.9	20.5	9.9	14.7
19	Cumulative Land/Units Absorbed	0	12.5	39.3	97.2	117.7	127.6	142.3
20	Total SF	-	-	44,213	98,842	81,022	64,687	101,277
21	Cumulative SF	-	-	44,213	133,076	214,097	278,784	380,061
22	Total Vint Hill Farms Job Creation	0	0	126	254	231	195	289
23	Cumulative Job Creation	0	0	126	380	612	797	1,086
24	Total Vint Hill Farms Residents	0	145	192	392	48		
25	Cumulative Residents	0	145	337	729	777		
26								
27	REVENUES: LAND SALES							
28	Parcel Land/Units Absorbed this Year							
29	2 Retail/Service	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
30	3 Residential (100 Units)	\$ -	\$ -	\$ -	\$ 1,592,035	\$ -	\$ -	\$ -
31	4 Retail/Service	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
32	5A Research and Development	\$ -	\$ -	\$ 407,878	\$ 416,036	\$ 424,357	\$ 432,844	\$ 441,501
33	5B Research and Development	\$ -	\$ -	\$ -	\$ 342,074	\$ -	\$ -	\$ -
34	5C Research and Development	\$ -	\$ -	\$ -	\$ -	\$ 235,754	\$ -	\$ -
35	6 Research and Development	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 235,467
36	11 Residential (150 Units)	\$ -	\$ 1,788,463	\$ 1,825,252	\$ 1,861,757	\$ -	\$ -	\$ -
37	14 Retail/Service	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
38	18 Retail/Service	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
39	22 Office/Service	\$ -	\$ -	\$ 154,087	\$ -	\$ -	\$ -	\$ -
40	25A Innovative Technology (5-15 Acre Lots)	\$ -	\$ -	\$ -	\$ 287,065	\$ 292,806	\$ 298,662	\$ 304,635
41	27 Innovative Technology (Large Users)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
42	28 Residential (50 Golf Course Lots)	\$ -	\$ -	\$ 777,413	\$ 792,961	\$ 808,820	\$ -	\$ -
43								
44	Total Land/Units Revenue	\$ -	\$ 1,788,463	\$ 3,164,830	\$ 5,291,928	\$ 1,761,737	\$ 731,506	\$ 961,603
45	Cumulative Revenue	\$ -	\$ 1,788,463	\$ 4,964,063	\$ 10,246,021	\$ 12,007,758	\$ 12,739,264	\$ 13,720,867
46								
47								
48								
49								
50	LAND SALE ASSUMPTIONS							
51	2 Retail/Service	Total Acreage 7.5	F.A.R. 0.2	Build-out Program (SF or Units) 65,340	Absorption Period Begin YR 12	End YR 12	Absorption Rate AC/UNITS/YR 7.5	Total Absorption 7.5 \$
52	3 Residential (100 Units)	23.7	4.22	100	4	4	23.7	23.7 \$
53	4 Retail/Service	6.3	0.2	54,886	10	10	6.3	6.3 \$
54	5A Research and Development	22.4	0.15	148,362	3	7	4.5	22.5 \$
55	5B Research and Development	3.7	0.15	24,176	4	4	3.7	3.7 \$
56	5C Research and Development	2.5	0.15	16,335	5	5	2.5	2.5 \$
57	6 Research and Development	2.4	0.15	15,662	7	7	2.4	2.4 \$
58	11 Residential (150 Units)	37.4	4.01	150	2	4	12.5	37.5 \$
59	14 Retail/Service	2.4	0.2	20,909	7	7	2.4	2.4 \$
60	18 Retail/Service	16	0.2	139,392	9	9	16	16 \$
61	22 Office/Service	1.7	0.2	14,810	3	3	1.7	1.7 \$
62	25A Innovative Technology (5-15 Acre Lots)	64.2	0.15	419,483	4	15	5.4	64.8 \$
63	27 Innovative Technology (Large Users)	72.3	0.15	472,408	11	15	25	50 \$
64	28 Residential (50 Golf Course Lots)	24.4	2.05	50	3	5	8.1	24.3 \$
65		<u>286.9</u>						<u>285.3</u>

Scenario: VHFEDA Business and Operations Plan

Year 2 1998	Year 3 1999	Year 4 2000	Year 5 2001	Year 6 2002	Year 7 2003	Year 8 2004	Year 9 2005	Year 10 2006	Year 11 2007	Year 12 2008	Year 13 2009	Y 2010
0	0	0	0	0	0	0	0	0	0	7.5	0	0
0	0	23.7	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	6.3	0	0	0	0
0	4.5	4.5	4.5	4.5	4.5	0	0	0	0	0	0	0
0	0	3.7	0	0	0	0	0	0	0	0	0	0
0	0	0	2.5	0	0	0	0	0	0	0	0	0
0	0	0	0	0	2.4	0	0	0	0	0	0	0
12.5	12.5	12.5	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	2.4	0	0	0	0	0	0	0
0	0	0	0	0	0	0	16	0	0	0	0	0
0	1.7	0	0	0	0	0	0	0	0	0	0	0
0	0	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4
0	0	0	0	0	0	0	0	0	25	0	0	0
0	8.1	8.1	8.1	0	0	0	0	0	0	0	0	0
12.5	26.8	57.9	20.5	9.9	14.7	5.4	21.4	11.7	30.4	12.9	5.4	20.5
12.5	39.3	97.2	117.7	127.6	142.3	147.7	169.1	180.8	211.2	224.1	229.5	234.0
-	44,213	88,862	81,022	84,667	101,277	36,284	174,676	90,169	198,634	100,824	36,284	36,284
-	44,213	133,076	214,097	278,784	380,061	418,345	680,020	680,189	878,823	979,447	1,014,730	1,050,013
0	128	264	231	185	290	101	499	258	568	287	101	3,000
0	128	380	612	797	1,066	1,187	1,666	1,943	2,511	2,798	2,899	3,000
145	192	392	48									
145	337	729	777									
-	\$	\$	\$	\$	\$	\$	\$	\$	\$	1,624,842	\$	\$
-	\$	\$	1,592,035	\$	\$	\$	\$	\$	\$	\$	\$	\$
-	\$	\$	\$	\$	\$	\$	\$	1,311,867	\$	\$	\$	\$
-	407,878	418,036	424,357	432,844	441,501	\$	\$	\$	\$	\$	\$	\$
-	\$	342,074	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$
-	\$	\$	235,754	\$	\$	\$	\$	\$	\$	\$	\$	\$
-	\$	\$	\$	\$	235,467	\$	\$	\$	\$	\$	\$	\$
89,463	\$	1,825,252	1,861,757	\$	\$	\$	\$	\$	\$	\$	\$	\$
-	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$
-	\$	\$	\$	\$	\$	\$	3,266,399	\$	\$	\$	\$	\$
-	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$
-	154,087	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$
-	\$	\$	287,065	292,806	298,662	304,635	310,728	316,943	323,282	329,747	336,342	343,069
-	\$	\$	\$	\$	\$	\$	\$	\$	1,991,227	\$	\$	\$
-	\$	777,413	792,961	808,820	\$	\$	\$	\$	\$	\$	\$	\$
89,463	\$	3,164,630	5,281,928	1,781,737	731,806	961,603	310,728	3,683,342	1,836,149	2,320,975	1,961,184	343,069
89,463	\$	4,954,083	10,348,021	12,007,768	12,739,264	13,720,867	14,031,695	17,614,937	19,290,096	21,571,060	23,532,244	23,878,313

R.	Build-out Program (SF or Units)	Absorption Period Begin YR	End YR	Absorption Rate AC/UNITS/YR	Total Absorption	Land Unit Price	Baseline Land Sales Income	Indicated Price/ Acre
0.2	65,340	12	12	7.5	7.5	\$ 4.00	\$ 1,306,800	\$ 174,240
4.22	100	4	4	23.7	23.7	\$ 15,000.00	\$ 1,500,210	\$ 63,300
0.2	54,886	10	10	6.3	6.3	\$ 4.00	\$ 1,097,712	\$ 174,240
0.15	146,362	3	7	4.5	22.5	\$ 2.00	\$ 1,951,488	\$ 87,120
0.15	24,178	4	4	3.7	3.7	\$ 2.00	\$ 322,344	\$ 87,120
0.15	16,335	5	5	2.5	2.5	\$ 2.00	\$ 217,800	\$ 87,120
0.15	15,682	7	7	2.4	2.4	\$ 2.00	\$ 209,088	\$ 87,120
4.01	150	2	4	12.5	37.5	\$ 35,000.00	\$ 5,248,090	\$ 140,350
0.2	20,909	7	7	2.4	2.4	\$ -	\$ -	\$ -
0.2	139,382	9	9	16	16	\$ 4.00	\$ 2,787,840	\$ 174,240
0.2	14,810	3	3	1.7	1.7	\$ 2.00	\$ 146,104	\$ 87,120
0.15	418,483	4	15	5.4	64.8	\$ 1.15	\$ 3,216,035	\$ 50,094
0.15	472,408	11	15	25	50	\$ 1.50	\$ 4,724,082	\$ 65,340
2.05	50	3	5	8.1	24.3	\$ 45,000.00	\$ 2,250,900	\$ 82,250
					285.3		\$ 34,861,493	\$ 87,832

ations Plan

Year 8 2004	Year 9 2005	Year 10 2006	Year 11 2007	Year 12 2008	Year 13 2009	Year 14 2010	Year 15 2011	Cumulative Forecast		
								5 Year Total	10 Year Total	15 Year Total
0	0	0	0	7.5	0	0	0	0	0	7.5
0	0	0	0	0	0	0	0	23.7	23.7	23.7
0	0	6.3	0	0	0	0	0	0	6.3	6.3
0	0	0	0	0	0	0	0	13.5	22.5	22.5
0	0	0	0	0	0	0	0	3.7	3.7	3.7
0	0	0	0	0	0	0	0	2.5	2.5	2.5
0	0	0	0	0	0	0	0	0	2.4	2.4
0	0	0	0	0	0	0	0	37.5	37.5	37.5
0	0	0	0	0	0	0	0	0	2.4	2.4
0	16	0	0	0	0	0	0	0	16	16
0	0	0	0	0	0	0	0	1.7	1.7	1.7
5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	10.6	37.8	64.9
0	0	0	25	0	0	0	25	0	0	80
0	0	0	0	0	0	0	0	24.3	24.3	24.3
5.4	21.4	11.7	30.4	12.9	6.4	6.4	30.4	117.7	180.8	265.3
147.7	160.1	180.8	211.2	224.1	229.5	234.9	265.3			
294	174,878	88,189	198,634	100,624	36,284	36,284	198,634			
345	890,020	680,180	678,823	979,447	1,014,730	1,080,014	1,248,647			
101	489	258	588	287	101	101	588			
187	1,686	1,843	2,511	2,798	2,899	3,000	3,548			
- \$	- \$	- \$	- \$	1,624,842 \$	- \$	- \$	- \$	- \$	- \$	1,624,842
- \$	- \$	- \$	- \$	- \$	- \$	- \$	- \$	1,882,036 \$	1,882,036 \$	1,882,036
- \$	- \$	1,311,867 \$	- \$	- \$	- \$	- \$	- \$	- \$	1,311,867 \$	1,311,867
- \$	- \$	- \$	- \$	- \$	- \$	- \$	- \$	1,248,271 \$	2,122,616 \$	2,122,616
- \$	- \$	- \$	- \$	- \$	- \$	- \$	- \$	342,074 \$	342,074 \$	342,074
- \$	- \$	- \$	- \$	- \$	- \$	- \$	- \$	236,764 \$	236,764 \$	236,764
- \$	- \$	- \$	- \$	- \$	- \$	- \$	- \$	236,467 \$	236,467 \$	236,467
- \$	- \$	- \$	- \$	- \$	- \$	- \$	- \$	5,478,471 \$	5,478,471 \$	5,478,471
- \$	- \$	- \$	- \$	- \$	- \$	- \$	- \$	- \$	- \$	-
- \$	3,266,399 \$	- \$	- \$	- \$	- \$	- \$	- \$	- \$	3,266,399 \$	3,266,399
- \$	- \$	- \$	- \$	- \$	- \$	- \$	- \$	184,087 \$	184,087 \$	184,087
728	316,943 \$	323,282 \$	329,747 \$	336,342 \$	343,069 \$	349,930 \$	356,929 \$	679,871 \$	2,134,121 \$	3,880,139
- \$	- \$	- \$	1,991,227 \$	- \$	- \$	- \$	2,155,369 \$	- \$	- \$	4,146,896
- \$	- \$	- \$	- \$	- \$	- \$	- \$	- \$	2,379,194 \$	2,379,194 \$	2,379,194
728 \$	3,683,342 \$	1,636,148 \$	2,320,975 \$	1,961,184 \$	343,069 \$	349,930 \$	2,512,298 \$	12,007,798 \$	19,280,086 \$	26,737,541
595 \$	17,614,937 \$	18,280,086 \$	21,571,060 \$	23,632,244 \$	23,876,313 \$	24,225,244 \$	26,737,541 \$			

	Baseline Land Sales Income	Indicated Price/ Acre
4.00 \$	1,306,800 \$	174,240
0.00 \$	1,500,210 \$	63,300
4.00 \$	1,097,712 \$	174,240
2.00 \$	1,951,488 \$	87,120
2.00 \$	322,344 \$	87,120
2.00 \$	217,800 \$	87,120
2.00 \$	209,088 \$	87,120
0.00 \$	5,248,000 \$	140,350
- \$	- \$	-
4.00 \$	2,787,840 \$	174,240
2.00 \$	148,104 \$	87,120
1.15 \$	3,216,035 \$	50,064
1.50 \$	4,724,082 \$	65,340
0.00 \$	2,250,900 \$	92,250
\$	24,961,463 \$	97,832

15 Year Absorption and Income Projection: Sales of Existing Facilities Vint Hill Farms Station

Scenario: VHFEDA Business and

	Year 1 1997	Year 2 1998	Year 3 1999	Year 4 2000	Year 5 2001	Year 6 2002	Year 7 2003
ABSORPTION: BUILDING SALES							
Parcel SF Absorbed this Year							
6-8 Research and Development	-	22,030	-	-	-	-	-
7 Research and Development	-	-	13,840	-	-	-	-
10 Training Center/Business Conference Center	-	-	-	-	-	-	44,753
12 Office/Service	-	-	-	-	-	-	9,750
15 Microwave Tower	160	-	-	-	-	-	-
16 Community Facilities	-	9,556	-	-	-	-	-
20 Retail/Service (Inn)	-	-	-	14,776	-	-	-
21 Office/Service	-	6,991	-	-	-	-	-
23 Office/Service	-	-	4,290	-	-	-	-
25B Innovative Technology (Bldg 280 Complex)	-	-	-	-	-	9,973	9,973
25C Innovative Technology (Bldg 2400 Complex)	-	-	-	-	191,422	-	-
29 Office/Service	-	-	-	24,817	-	-	-
Total Land/Units Absorbed	160	38,577	18,130	39,593	191,422	9,973	64,477
Cumulative Land/Units Absorbed	160	38,737	56,867	96,460	287,882	297,855	362,332
Remaining Inventory	-	492,887	474,767	436,164	243,742	233,769	169,292
Total Vint Hill Farms Job Creation	-	111	162	276	823	861	1,036
Total Vint Farms Residents	-	-	-	-	-	-	-
REVENUES: BUILDING SALES							
Parcel Land/Units Absorbed this Year							
6-8 Research and Development	\$ -	\$ 440,600	\$ -	\$ -	\$ -	\$ -	\$ -
7 Research and Development	\$ -	\$ -	\$ 276,800	\$ -	\$ -	\$ -	\$ -
10 Training Center/Business Conference Center	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 223,767
12 Office/Service	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 243,750
15 Microwave Tower	\$ 16,000	\$ 384,000	\$ -	\$ -	\$ -	\$ -	\$ -
16 Community Facilities	\$ -	\$ 573,360	\$ -	\$ -	\$ -	\$ -	\$ -
20 Retail/Service (Inn)	\$ -	\$ -	\$ -	\$ 250,000	\$ -	\$ -	\$ -
21 Office/Service	\$ -	\$ 174,775	\$ -	\$ -	\$ -	\$ -	\$ -
23 Office/Service	\$ -	\$ -	\$ 107,250	\$ -	\$ -	\$ -	\$ -
25B Innovative Technology (Bldg 280 Complex)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 109,705	\$ 109,705
25C Innovative Technology (Bldg 2400 Complex)	\$ -	\$ -	\$ -	\$ -	\$ 3,828,440	\$ -	\$ -
29 Office/Service	\$ -	\$ -	\$ -	\$ 496,340	\$ -	\$ -	\$ -
Total Land/Units Revenues	\$ 16,000	\$ 1,572,735	\$ 384,050	\$ 746,340	\$ 3,828,440	\$ 109,705	\$ 577,222
Cumulative Revenues	\$ 16,000	\$ 1,588,735	\$ 1,972,785	\$ 2,719,125	\$ 6,547,565	\$ 6,657,270	\$ 7,234,492

	Total Acreage	Total Existing SF	Available For Sale	Absorption Period		Absorption Rate SF/YR	Total Absorption	P
BUILDING SALE ASSUMPTIONS				Begin YR	End YR			
6-8 Research and Development	5.6	22,030	22,030	2	2	22,030	22,030	\$
7 Research and Development	6	14,139	13,840	3	3	13,840	13,840	\$
10 Training Center/Business Conference Center	28.3	204,679	134,260	7	9	44,753	134,260	\$
12 Office/Service	3.3	16,297	9,750	7	7	9,750	9,750	\$
15 Microwave Tower	4.8	160	160	1	1	160	160	\$
16 Community Facilities	2.6	12,436	9,556	2	2	9,556	9,556	\$
20 Retail/Service (Inn)	5.5	17,760	14,776	4	4	14,776	14,776	\$
21 Office/Service	0.6	6,991	6,991	2	2	6,991	6,991	\$
23 Office/Service	1.6	4,290	4,290	3	3	4,290	4,290	\$
25B Innovative Technology (Bldg 280 Complex)	30.9	148,112	99,732	6	15	9,973	99,732	\$
25C Innovative Technology (Bldg 2400 Complex)	34.7	236,413	191,422	5	5	191,422	191,422	\$
29 Office/Service	4.3	25,088	24,817	4	4	24,817	24,817	\$
	128.2	708,395	631,824				631,824	
			100%					

les of Existing Facilities

Scenario: WHFEDA Business and Operations Plan

Year	Year	Year	Year	Year	Year	Year	Year	Year	Year	Year	Year	Year
1	2	3	4	5	6	7	8	9	10	11	12	13
97	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
	22,030	-	-	-	-	-	-	-	-	-	-	-
	-	13,840	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	44,753	44,753	44,753	-	-	-	-
	-	-	-	-	-	9,750	-	-	-	-	-	-
	9,556	-	-	-	-	-	-	-	-	-	-	-
	6,991	-	14,776	-	-	-	-	-	-	-	-	-
	-	4,290	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	9,973	9,973	9,973	9,973	9,973	9,973	9,973	9,973
	-	-	24,817	191,422	-	-	-	-	-	-	-	-
	38,577	18,130	39,893	191,422	9,973	64,477	54,727	54,727	9,973	9,973	9,973	9,973
	38,737	66,867	96,480	287,882	297,855	362,332	417,058	471,785	481,758	491,731	501,704	511,678
	492,987	474,767	435,184	243,742	233,769	189,292	114,548	59,839	48,886	39,863	29,920	19,848
	111	162	276	823	851	1,036	1,192	1,348	1,376	1,406	1,433	1,462
	\$ 440,600	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	\$ -	\$ 276,800	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 223,767	\$ 223,767	\$ 223,767	\$ -	\$ -	\$ -	\$ -
	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 243,750	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	\$ 384,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	\$ 573,360	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	\$ -	\$ -	\$ 250,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	\$ 174,775	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	\$ -	\$ 107,250	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	\$ -	\$ -	\$ -	\$ -	\$ 109,705	\$ 109,705	\$ 109,705	\$ 109,705	\$ 109,705	\$ 109,705	\$ 109,705	\$ 109,705
	\$ -	\$ -	\$ -	\$ 3,828,440	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	\$ -	\$ -	\$ 496,340	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	\$ 1,572,735	\$ 394,080	\$ 746,340	\$ 3,828,440	\$ 109,705	\$ 577,222	\$ 333,472	\$ 333,472	\$ 109,705	\$ 109,705	\$ 109,705	\$ 109,705
	\$ 1,588,735	\$ 1,972,785	\$ 2,719,125	\$ 6,547,585	\$ 6,657,270	\$ 7,234,492	\$ 7,567,964	\$ 7,901,436	\$ 8,011,141	\$ 8,120,848	\$ 8,230,551	\$ 8,340,257

Total Existing SF	Available For Sale	Absorption Period		Absorption Rate SF/YR	Total Absorption	Projected Sale Price	Baseline Building Sales Income
		Begin YR	End YR				
.6	22,030	2	2	22,030	22,030	\$ 20.00	\$ 440,600
.6	14,139	3	3	13,840	13,840	\$ 20.00	\$ 276,800
.3	204,679	7	9	44,753	134,260	\$ 5.00	\$ 671,300
.3	16,297	7	7	9,750	9,750	\$ 25.00	\$ 243,750
.8	160	1	1	160	160	\$ 400,000.00	\$ 400,000
.6	12,436	2	2	9,556	9,556	\$ 60.00	\$ 573,360
.5	17,760	4	4	14,776	14,776	\$ 250,000.00	\$ 250,000
.6	6,991	2	2	6,991	6,991	\$ 25.00	\$ 174,775
.6	4,290	3	3	4,290	4,290	\$ 25.00	\$ 107,250
.9	148,112	6	15	9,973	99,732	\$ 11.00	\$ 1,097,052
.7	236,413	5	5	191,422	191,422	\$ 20.00	\$ 3,828,440
.3	25,088	4	4	24,817	24,817	\$ 20.00	\$ 496,340
2	708,395			631,824	631,824		\$ 6,589,667
							100%

rations Plan

Year 8 2004	Year 9 2005	Year 10 2006	Year 11 2007	Year 12 2008	Year 13 2009	Year 14 2010	Year 15 2011	Cumulative Forecast		
								8 Year Total	10 Year Total	15 year Total
-	-	-	-	-	-	-	-	22,030	22,030	22,030
753	44,753	-	-	-	-	-	-	13,840	13,840	13,840
-	-	-	-	-	-	-	-	-	134,280	134,280
-	-	-	-	-	-	-	-	-	8,780	8,780
-	-	-	-	-	-	-	-	180	180	180
-	-	-	-	-	-	-	-	8,864	8,864	8,864
-	-	-	-	-	-	-	-	14,776	14,776	14,776
-	-	-	-	-	-	-	-	6,981	6,981	6,981
173	9,973	9,973	9,973	9,973	9,973	9,973	9,973	4,380	4,380	4,380
-	-	-	-	-	-	-	-	-	48,868	48,868
-	-	-	-	-	-	-	-	191,422	191,422	191,422
-	-	-	-	-	-	-	-	24,817	24,817	24,817
27	54,727	9,973	9,973	9,973	9,973	9,973	9,973	287,882	481,788	631,634
158	471,785	481,788	481,731	501,704	511,678	531,651	531,634	-	-	-
144	98,839	48,868	39,863	28,920	19,944	9,973	-	-	-	-
92	1,348	1,376	1,406	1,433	1,462	1,490	1,519	-	-	-

\$	-	\$	-	\$	-	\$	-	\$	-	\$	440,800	\$	440,800	\$	440,800
\$	-	\$	-	\$	-	\$	-	\$	-	\$	276,800	\$	276,800	\$	276,800
97	223,767	-	-	-	-	-	-	-	-	-	-	\$	671,300	\$	671,300
\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	243,780	\$	243,780
\$	-	\$	-	\$	-	\$	-	\$	-	\$	400,000	\$	400,000	\$	400,000
\$	-	\$	-	\$	-	\$	-	\$	-	\$	573,360	\$	573,360	\$	573,360
\$	-	\$	-	\$	-	\$	-	\$	-	\$	280,000	\$	280,000	\$	280,000
\$	-	\$	-	\$	-	\$	-	\$	-	\$	174,775	\$	174,775	\$	174,775
15	109,705	109,705	109,705	109,705	109,705	109,705	109,705	109,705	109,705	109,705	107,250	\$	107,250	\$	107,250
\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	848,838	\$	1,087,062
\$	-	\$	-	\$	-	\$	-	\$	-	\$	3,828,440	\$	3,828,440	\$	3,828,440
\$	-	\$	-	\$	-	\$	-	\$	-	\$	496,340	\$	496,340	\$	496,340
2	333,472	189,706	189,706	189,706	189,706	189,706	189,706	189,706	189,706	189,706	6,547,548	\$	6,011,141	\$	6,898,667
4	7,891,436	8,011,141	8,129,846	8,230,551	8,340,257	8,448,962	8,558,667	8,558,667	8,558,667	8,558,667	-	-	-	-	-

Baseline
Building Sales
Income

\$	440,800
\$	276,800
\$	671,300
\$	243,780
\$	400,000
\$	573,360
\$	250,000
\$	174,775
\$	107,250
\$	1,087,062
\$	3,828,440
\$	496,340
\$	6,898,667

3

Table B4. VHFEDA Leasing Activity, VHFEDA Business and Operations Plan

15 Year Absorption and Income Projection: Leasing of Interim Use Buildings Vint Hill Farms Station

Scenario: VHFEDA Bu

		Year 1 1997	Year 2 1998	Year 3 1999	Year 4 2000	Year 5 2001	Year 6 2002
BUILDING LEASE PROJECTIONS							
INTERIM LEASE PROJECTIONS: EXISTING BUILDINGS							
AVAILABLE INVENTORY							
1 A-D	Public Facilities	25,645	25,645	25,645	25,645	25,645	25,645
4	Retail/Service	6,262	6,262	6,262	6,262	-	-
5C	Research and Development	1	7,739	7,739	7,739	7,739	7,739
9	Research and Development	4,800	4,800	4,800	4,800	4,800	4,800
10	Training Center/Business Conference Center	150,148	150,148	150,148	150,148	150,148	150,148
12	Office/Service	16,140	16,140	16,140	16,140	16,140	16,140
14	Retail/Service	-	12,930	12,930	12,930	12,930	12,930
18	Retail/Service	-	14,486	14,486	14,486	14,486	14,486
20	Retail/Service (Inn)	14,776	14,776	14,776	14,776	14,776	14,776
23	Office/Service	4,290	4,290	-	-	-	-
25B	Innovative Technology (Bldg 260 Complex)	-	99,732	99,732	99,732	99,732	99,732
25C	Innovative Technology (Bldg 2400 Complex)	-	171,280	171,280	171,280	-	-
Total Interim Lease Inventory		222,062	828,228	823,938	823,938	346,396	346,396
LEASING PROJECTIONS							
Parcel							
1 A-D	Public Facilities	3,077	5,129	7,694	10,258	10,258	10,258
4	Retail/Service	4,383	4,383	4,383	4,383	-	-
5C	Research and Development	-	7,739	7,739	7,739	7,739	7,739
9	Research and Development	-	1,920	3,840	3,840	3,840	3,840
10	Training Center/Business Conference Center	-	22,522	37,537	52,552	67,567	82,581
12	Office/Service	-	6,465	12,912	12,912	12,912	-
14	Retail/Service	-	6,465	6,465	6,465	6,465	6,465
18	Retail/Service	-	2,535	5,432	7,243	7,243	7,243
20	Retail/Service (Inn)	14,776	14,776	14,776	-	-	-
23	Office/Service	4,290	4,290	-	-	-	-
25B	Innovative Technology (Bldg 260 Complex)	-	99,732	99,732	99,732	99,732	89,759
25C	Innovative Technology (Bldg 2400 Complex)	-	30,830	61,661	87,353	-	-
Total Leased SF		28,528	206,777	282,170	292,477	215,758	207,885
Interim Jobs		76	891	749	836	816	594
Remaining Leasable Inventory		196,536	321,451	281,768	231,461	130,640	138,511
ANNUAL LEASE INCOME							
Parcel	Land/Units Absorbed this Year						
1 A-D	Public Facilities	\$ 6,154	\$ 10,258	\$ 15,387	\$ 20,516	\$ 20,516	\$ 20,516
4	Retail/Service	\$ 8,766	\$ 8,766	\$ 8,766	\$ 8,766	\$ -	\$ -
5C	Research and Development	\$ -	\$ 30,956	\$ 30,956	\$ 30,956	\$ 30,956	\$ 30,956
9	Research and Development	\$ -	\$ 7,680	\$ 15,360	\$ 15,360	\$ 15,360	\$ 15,360
10	Training Center/Business Conference Center	\$ -	\$ 45,044	\$ 75,074	\$ 105,104	\$ 135,133	\$ 165,163
12	Office/Service	\$ -	\$ 25,824	\$ 51,648	\$ 51,648	\$ 51,648	\$ -
14	Retail/Service	\$ -	\$ 25,860	\$ 25,860	\$ 25,860	\$ 25,860	\$ 25,860
18	Retail/Service	\$ -	\$ 10,140	\$ 21,728	\$ 28,972	\$ 28,972	\$ 28,972
20	Retail/Service (Inn)	\$ 277	\$ 1,108	\$ 1,108	\$ -	\$ -	\$ -
23	Office/Service	\$ 2,145	\$ 12,870	\$ -	\$ -	\$ -	\$ -
25B	Innovative Technology (Bldg 260 Complex)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
25C	Innovative Technology (Bldg 2400 Complex)	\$ -	\$ 77,075	\$ 154,152	\$ 218,382	\$ -	\$ -
Total Interim Lease Income		\$ 17,342	\$ 285,582	\$ 400,030	\$ 605,664	\$ 308,445	\$ 286,827
OCCUPANCY RATE ASSUMPTIONS							
		Year 1 1997	Year 2 1998	Year 3 1999	Year 4 2000	Year 5 2001	Year 6 2002
BUILDING LEASE ASSUMPTIONS							Rent: Rate
1 A-D	Public Facilities	12%	20%	30%	40%	40%	40%
4	Retail/Service	70%	70%	70%	70%	-	-
5C	Research and Development	-	100%	100%	100%	100%	100%
9	Research and Development	0%	40%	80%	80%	80%	80%
10	Training Center/Business Conference Center	0%	15%	25%	35%	45%	55%
12	Office/Service	0%	40%	80%	80%	80%	80%
14	Retail/Service	-	50%	50%	50%	50%	50%
18	Retail/Service	-	17%	37%	50%	50%	50%
20	Retail/Service (Inn)	100%	100%	100%	-	-	-
23	Office/Service	100%	100%	-	-	-	-
25B	Innovative Technology (Bldg 260 Complex)	0%	100%	100%	100%	100%	90%
25C	Innovative Technology (Bldg 2400 Complex)	0%	18%	36%	51%	-	-
		100%					

Interim Use Buildings

Scenario: VHFEDA Business and Operations Plan

Year	Year	Year	Year	Year	Year	Year	Year	Year	Year	Year	Year	Year
1	2	3	4	5	6	7	8	9	10	11	12	13
1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
45	25,645	25,645	25,645	25,645	25,645	-	-	-	-	-	-	-
62	6,262	6,262	6,262	-	-	-	-	-	-	-	-	-
1	7,739	7,739	7,739	7,739	7,739	-	-	-	-	-	-	-
00	4,800	4,800	4,800	4,800	4,800	-	-	-	-	-	-	-
48	150,148	150,148	150,148	150,148	150,148	-	-	-	-	-	-	-
40	16,140	16,140	16,140	16,140	16,140	-	-	-	-	-	-	-
	12,930	12,930	12,930	12,930	12,930	-	-	-	-	-	-	-
	14,486	14,486	14,486	14,486	14,486	-	-	-	-	-	-	-
76	14,776	14,776	14,776	14,776	14,776	-	-	-	-	-	-	-
90	4,290	-	-	-	-	-	-	-	-	-	-	-
	99,732	99,732	99,732	99,732	99,732	-	-	-	-	-	-	-
	171,280	171,280	171,280	-	-	-	-	-	-	-	-	-
82	528,228	523,938	523,938	348,306	348,306	-	-	-	-	-	-	-
77	5,129	7,694	10,258	10,258	10,258	-	-	-	-	-	-	-
83	4,383	4,383	4,383	-	-	-	-	-	-	-	-	-
	7,739	7,739	7,739	7,739	7,739	-	-	-	-	-	-	-
	1,920	3,840	3,840	3,840	3,840	-	-	-	-	-	-	-
	22,522	37,537	52,552	67,567	82,581	-	-	-	-	-	-	-
	6,466	12,912	12,912	12,912	-	-	-	-	-	-	-	-
	6,465	6,465	6,465	6,465	6,465	-	-	-	-	-	-	-
	2,535	5,432	7,243	7,243	7,243	-	-	-	-	-	-	-
76	14,776	14,776	-	-	-	-	-	-	-	-	-	-
90	4,290	-	-	-	-	-	-	-	-	-	-	-
	99,732	99,732	99,732	99,732	89,759	-	-	-	-	-	-	-
	30,830	61,661	87,353	-	-	-	-	-	-	-	-	-
28	206,777	282,170	292,477	215,766	207,885	-	-	-	-	-	-	-
76	891	749	836	816	594	-	-	-	-	-	-	-
36	321,481	281,788	231,481	130,840	138,511	-	-	-	-	-	-	-
54 \$	10,258 \$	15,387 \$	20,516 \$	20,516 \$	20,516	-	-	-	-	-	-	-
66 \$	8,766 \$	8,766 \$	8,766 \$	- \$	- \$	-	-	-	-	-	-	-
\$	30,956 \$	30,956 \$	30,956 \$	30,956 \$	30,956	-	-	-	-	-	-	-
\$	7,680 \$	15,360 \$	15,360 \$	15,360 \$	15,360	-	-	-	-	-	-	-
\$	45,044 \$	75,074 \$	105,104 \$	135,133 \$	165,163	-	-	-	-	-	-	-
\$	25,824 \$	51,648 \$	51,648 \$	51,648 \$	-	-	-	-	-	-	-	-
\$	25,860 \$	25,860 \$	25,860 \$	25,860 \$	25,860	-	-	-	-	-	-	-
\$	10,140 \$	21,728 \$	28,972 \$	28,972 \$	28,972	-	-	-	-	-	-	-
77 \$	1,108 \$	1,108 \$	- \$	- \$	-	-	-	-	-	-	-	-
45 \$	12,870 \$	- \$	- \$	- \$	-	-	-	-	-	-	-	-
\$	77,075 \$	154,152 \$	218,382 \$	- \$	-	-	-	-	-	-	-	-
42 \$	255,582 \$	400,639 \$	605,644 \$	306,445 \$	286,827 \$	- \$	- \$	- \$	- \$	- \$	- \$	- \$
OCCUPANCY RATE ASSUMPTIONS												
Year	Year	Year	Year	Year	Year	Rental						
1	2	3	4	5	6	Rate						
1997	1998	1999	2000	2001	2002							
2%	20%	30%	40%	40%	40%	\$ 2.00						
7%	70%	70%	70%			\$ 2.00						
	100%	100%	100%	100%	100%	\$ 4.00						
0%	40%	80%	80%	80%	80%	\$ 4.00						
0%	15%	25%	35%	45%	55%	\$ 2.00						
0%	40%	80%	80%	80%		\$ 4.00						
	50%	50%	50%	50%	50%	\$ 4.00						
	17%	37%	50%	50%	50%	\$ 4.00						
7%	100%	100%				\$ 0.02	\$ 0.08					
7%	100%					\$ 0.50	\$ 3.00					
7%	100%	100%	100%	100%	90%							
7%	18%	36%	51%			\$ 2.50						
7%												

Table B5. Golf Course Assumptions. VHFEDA Business and Operations Plan.

10 Year Golf Course Demand and Fees Vint Hill Farms Station

Scenario: VHFEDA Business and Operations Plan

	Year	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
1 ASSUMPTIONS																
2																
3 Estimated Annual Rounds		-	-	-	20,000	24,000	29,000	33,520	33,520	33,520	33,520	33,520	33,520	33,520	33,520	33,520
4 18 Hole Rounds		-	-	-	3,500	4,500	5,500	6,500	6,500	6,500	6,500	6,500	6,500	6,500	6,500	6,500
5 9 Hole Rounds		-	-	-	500	750	1,000	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500
6 Golf Outings		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7 Total Rounds		-	-	-	24,000	29,250	35,500	41,520	41,520	41,520	41,520	41,520	41,520	41,520	41,520	41,520
8																
9 Greens Fees																
10 18 Hole Round (Week)					\$ 24.00	\$ 24.70	\$ 25.40	\$ 26.20	\$ 27.00	\$ 27.80	\$ 28.60	\$ 29.50	\$ 30.40	\$ 31.30		
11 18 Hole Round (Weekend)					\$ 28.00	\$ 28.80	\$ 29.70	\$ 30.60	\$ 31.50	\$ 32.40	\$ 33.40	\$ 34.40	\$ 35.40	\$ 36.50		
12 9 Hole Round (Week)					\$ 13.00	\$ 13.40	\$ 13.70	\$ 14.10	\$ 14.50	\$ 14.90	\$ 15.30	\$ 15.80	\$ 16.20	\$ 16.70		
13 9 Hole Round (Weekend)					\$ 15.00	\$ 15.40	\$ 15.90	\$ 16.30	\$ 16.80	\$ 17.20	\$ 17.70	\$ 18.20	\$ 18.70	\$ 19.30		
14 Outing Greens Fees with Cart					\$ 45.00	\$ 46.40	\$ 47.80	\$ 49.20	\$ 50.70	\$ 52.20	\$ 53.80	\$ 55.40	\$ 57.10	\$ 58.80		
15																
16 Cart Fees																
17 18 Hole Rounds					\$ 20.00	\$ 20.60	\$ 21.20	\$ 21.80	\$ 22.50	\$ 23.20	\$ 23.90	\$ 24.60	\$ 25.30	\$ 26.10		
18 9 Hole Rounds					\$ 10.00	\$ 10.30	\$ 10.60	\$ 10.90	\$ 11.30	\$ 11.60	\$ 12.00	\$ 12.30	\$ 12.70	\$ 13.10		
19																
20 Pro Shop																
21 (Dollars Spent Per Round)					\$ 2.50	\$ 2.60	\$ 2.70	\$ 2.80	\$ 2.90	\$ 3.00	\$ 3.10	\$ 3.20	\$ 3.30	\$ 3.40		
22																
23 Food & Beverage																
24 (Dollars Spent Per Round)					\$ 2.25	\$ 2.30	\$ 2.40	\$ 2.50	\$ 2.60	\$ 2.70	\$ 2.80	\$ 2.90	\$ 3.00	\$ 3.10		
25																
26 Alcoholic Beverages																
27 (Dollars Spent Per Round)					\$ 1.50	\$ 1.50	\$ 1.50	\$ 1.50	\$ 1.50	\$ 1.50	\$ 1.50	\$ 1.50	\$ 1.50	\$ 1.50		
28																
29 Practice Range																
30 (Dollars Spent Per Round)					\$ 1.75	\$ 1.80	\$ 1.90	\$ 2.00	\$ 2.10	\$ 2.20	\$ 2.30	\$ 2.40	\$ 2.50	\$ 2.60		
31																

10 Year Golf Course Business and Operations Plan

Vint Hill Farms Station

Scenario: VHFEDA Business and Operati

	Year 1 1997	Year 2 1998	Year 3 1999	Year 4 2000	Year 5 2001	Year 6 2002	Year 7 2003	Year 8 2004
1 PROJECTED REVENUE								
2								
3 Greens Fee Revenue								
4 18 Hole Rounds (Week)	\$ -	\$ -	\$ -	\$ 192,000	\$ 237,000	\$ 295,000	\$ 348,000	\$ 359,000
5 18 Hole Rounds (Weekend)	\$ -	\$ -	\$ -	\$ 336,000	\$ 415,000	\$ 517,000	\$ 610,000	\$ 628,000
6 9 Hole Rounds (Week)	\$ -	\$ -	\$ -	\$ 18,000	\$ 24,000	\$ 30,000	\$ 37,000	\$ 38,000
7 9 Hole Rounds (Weekend)	\$ -	\$ -	\$ -	\$ 32,000	\$ 42,000	\$ 52,000	\$ 64,000	\$ 66,000
8 Cuting Revenue	\$ -	\$ -	\$ -	\$ 23,000	\$ 35,000	\$ 48,000	\$ 74,000	\$ 76,000
9 Total Greens Fee Revenue	\$ -	\$ -	\$ -	\$ 601,000	\$ 753,000	\$ 942,000	\$ 1,133,000	\$ 1,167,000
10								
11 Golf Cart Revenue	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
12 18 Hole Rounds	\$ -	\$ -	\$ -	\$ 130,000	\$ 181,000	\$ 200,000	\$ 236,000	\$ 243,000
13 9 Hole Rounds	\$ -	\$ -	\$ -	\$ 11,000	\$ 15,000	\$ 19,000	\$ 23,000	\$ 24,000
14 Total Golf Cart Revenue	\$ -	\$ -	\$ -	\$ 141,000	\$ 176,000	\$ 219,000	\$ 259,000	\$ 267,000
15								
16 Other Revenue								
17 Pro Shop	\$ -	\$ -	\$ -	\$ 56,000	\$ 70,000	\$ 88,000	\$ 106,000	\$ 110,000
18 Food & Beverage Sales	\$ -	\$ -	\$ -	\$ 50,000	\$ 62,000	\$ 79,000	\$ 95,000	\$ 99,000
19 Alcoholic Beverages	\$ -	\$ -	\$ -	\$ 33,000	\$ 41,000	\$ 49,000	\$ 57,000	\$ 57,000
20 Practice Range Revenue	\$ -	\$ -	\$ -	\$ 39,000	\$ 49,000	\$ 62,000	\$ 78,000	\$ 80,000
21 Total Other Revenue	\$ -	\$ -	\$ -	\$ 178,000	\$ 222,000	\$ 278,000	\$ 334,000	\$ 346,000
22								
23 TOTAL REVENUE	\$ -	\$ -	\$ -	\$ 920,000	\$ 1,151,000	\$ 1,439,000	\$ 1,726,000	\$ 1,780,000
24								
25								
26 PROJECTED EXPENSES								
27 Clubhouse Expenses:								
28 Operations & Maintenance	\$ -	\$ -	\$ -	\$ 35,000	\$ 36,100	\$ 37,200	\$ 38,300	\$ 39,400
29 Admin (Salary & Supply)	\$ -	\$ -	\$ -	\$ 30,000	\$ 30,900	\$ 31,800	\$ 32,800	\$ 33,800
30 Energy	\$ -	\$ -	\$ -	\$ 9,000	\$ 11,500	\$ 14,400	\$ 17,300	\$ 17,800
31 Marketing	\$ -	\$ -	\$ -	\$ 15,000	\$ 10,000	\$ 10,300	\$ 10,600	\$ 10,900
32 FF&E Reserve Replacement	\$ -	\$ -	\$ -	\$ 18,000	\$ 23,000	\$ 43,000	\$ 52,000	\$ 53,000
33 Misc.	\$ -	\$ -	\$ -	\$ 9,200	\$ 11,500	\$ 14,400	\$ 17,300	\$ 17,800
34								
35 Course Expenses								
36 Maintenance Expenses	\$ -	\$ -	\$ -	\$ 315,000	\$ 324,000	\$ 334,000	\$ 344,000	\$ 354,000
37 Maintenance Equip. Lease	\$ -	\$ -	\$ -	\$ 50,000	\$ 50,000	\$ 50,000	\$ 50,000	\$ 50,000
38 Salaries (Pro/Manager/Golf)	\$ -	\$ -	\$ -	\$ 90,000	\$ 93,000	\$ 96,000	\$ 99,000	\$ 102,000
39 Payroll Tax & Benefits (30%)	\$ -	\$ -	\$ -	\$ 27,000	\$ 28,000	\$ 29,000	\$ 30,000	\$ 31,000
40 Golf Cart	\$ -	\$ -	\$ -	\$ 60,000	\$ 60,000	\$ 60,000	\$ 60,000	\$ 60,000
41 Golf Management	\$ -	\$ -	\$ -	\$ 65,000	\$ 65,000	\$ 65,000	\$ 65,000	\$ 65,000
42								
43 Departmental								
44 Pro Shop	\$ -	\$ -	\$ -	\$ 53,000	\$ 67,000	\$ 84,000	\$ 101,000	\$ 105,000
45 Food & Beverage	\$ -	\$ -	\$ -	\$ 45,000	\$ 56,000	\$ 71,000	\$ 86,000	\$ 89,000
46 Alcoholic Beverage	\$ -	\$ -	\$ -	\$ 15,000	\$ 18,000	\$ 22,000	\$ 26,000	\$ 26,000
47 Driving Range	\$ -	\$ -	\$ -	\$ 23,000	\$ 29,000	\$ 37,000	\$ 46,000	\$ 48,000
48								
49 TOTAL FACILITY EXPENSES	\$ -	\$ -	\$ -	\$ 859,200	\$ 913,000	\$ 999,100	\$ 1,075,300	\$ 1,102,700
50								
51 Gross Profit from Operations	\$ -	\$ -	\$ -	\$ 60,800	\$ 238,000	\$ 439,900	\$ 650,700	\$ 677,300
52								
53 Taxes								
54 Property Tax	\$ -	\$ -	\$ -	\$ 6,000	\$ 6,200	\$ 6,400	\$ 6,600	\$ 6,800
55 Amusement Tax	\$ -	\$ -	\$ -	\$ 2,226	\$ 2,787	\$ 3,483	\$ 4,176	\$ 4,302
56								
57 NET OPERATING INCOME	\$ -	\$ -	\$ -	\$ 52,574	\$ 229,013	\$ 430,017	\$ 639,924	\$ 666,198
58								
59 Debt Service @ 6.5%					\$ 570,125	\$ 568,100	\$ 565,425	\$ -
60								
61 Development Cost	\$ 3,724,041	\$ 1,241,347	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
62 Capitalized Interest	\$ -	\$ -	\$ 385,125	\$ 385,125	\$ -	\$ -	\$ -	\$ -
63 Financing Costs	\$ 303,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
64 Loan Proceeds	\$ 5,925,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
65								
66 CASH FLOW	\$ 2,503,959	\$ (1,241,347)	\$ (332,551)	\$ (156,112)	\$ (140,108)	\$ 71,824	\$ 100,773	\$ -
67 Cumulative Cash Flow	\$ 2,503,959	\$ 1,262,612	\$ 930,061	\$ 773,949	\$ 633,841	\$ 705,665	\$ 806,438	\$ -
68								

Scenario: VHFEDA Business and Operations Plan

Year 3 1999	Year 4 2000	Year 5 2001	Year 6 2002	Year 7 2003	Year 8 2004	Year 9 2005	Year 10 2006	Year 11 2007	Year 12 2008	Year 13 2009	Year 14 2010
- \$ 192,000	\$ 237,000	\$ 295,000	\$ 348,000	\$ 359,000	\$ 370,000	\$ 380,000	\$ 392,000	\$ 404,000	\$ 416,000		
- \$ 336,000	\$ 415,000	\$ 517,000	\$ 610,000	\$ 628,000	\$ 646,000	\$ 666,000	\$ 686,000	\$ 706,000	\$ 728,000		
- \$ 18,000	\$ 24,000	\$ 30,000	\$ 37,000	\$ 38,000	\$ 39,000	\$ 40,000	\$ 41,000	\$ 42,000	\$ 43,000		
- \$ 32,000	\$ 42,000	\$ 52,000	\$ 64,000	\$ 66,000	\$ 67,000	\$ 69,000	\$ 71,000	\$ 73,000	\$ 75,000		
- \$ 23,000	\$ 35,000	\$ 48,000	\$ 74,000	\$ 76,000	\$ 78,000	\$ 81,000	\$ 83,000	\$ 86,000	\$ 88,000		
- \$ 801,000	\$ 753,000	\$ 942,000	\$ 1,133,000	\$ 1,167,000	\$ 1,200,000	\$ 1,236,000	\$ 1,273,000	\$ 1,311,000	\$ 1,350,000	\$ -	\$ -
- \$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
- \$ 130,000	\$ 161,000	\$ 200,000	\$ 236,000	\$ 243,000	\$ 251,000	\$ 258,000	\$ 266,000	\$ 273,000	\$ 282,000		
- \$ 11,000	\$ 15,000	\$ 19,000	\$ 23,000	\$ 24,000	\$ 25,000	\$ 25,000	\$ 26,000	\$ 27,000	\$ 28,000		
- \$ 141,000	\$ 176,000	\$ 219,000	\$ 259,000	\$ 267,000	\$ 276,000	\$ 283,000	\$ 292,000	\$ 300,000	\$ 310,000	\$ -	\$ -
- \$ 58,000	\$ 70,000	\$ 88,000	\$ 106,000	\$ 110,000	\$ 114,000	\$ 118,000	\$ 122,000	\$ 125,000	\$ 129,000		
- \$ 50,000	\$ 62,000	\$ 79,000	\$ 95,000	\$ 99,000	\$ 103,000	\$ 106,000	\$ 110,000	\$ 114,000	\$ 118,000		
- \$ 33,000	\$ 41,000	\$ 49,000	\$ 57,000	\$ 57,000	\$ 57,000	\$ 57,000	\$ 57,000	\$ 57,000	\$ 57,000		
- \$ 39,000	\$ 49,000	\$ 62,000	\$ 76,000	\$ 80,000	\$ 84,000	\$ 87,000	\$ 91,000	\$ 95,000	\$ 99,000		
- \$ 176,000	\$ 222,000	\$ 278,000	\$ 334,000	\$ 346,000	\$ 358,000	\$ 368,000	\$ 380,000	\$ 391,000	\$ 403,000	\$ -	\$ -
- \$ 920,000	\$ 1,151,000	\$ 1,439,000	\$ 1,726,000	\$ 1,780,000	\$ 1,834,000	\$ 1,887,000	\$ 1,945,000	\$ 2,002,000	\$ 2,063,000	\$ -	\$ -
- \$ 35,000	\$ 36,100	\$ 37,200	\$ 38,300	\$ 39,400	\$ 40,600	\$ 41,800	\$ 43,100	\$ 44,400	\$ 45,700		
- \$ 30,000	\$ 30,900	\$ 31,800	\$ 32,800	\$ 33,800	\$ 34,800	\$ 35,800	\$ 36,900	\$ 38,000	\$ 39,100		
- \$ 9,000	\$ 11,500	\$ 14,400	\$ 17,300	\$ 17,800	\$ 18,300	\$ 18,900	\$ 19,500	\$ 20,000	\$ 20,600		
- \$ 15,000	\$ 10,000	\$ 10,300	\$ 10,600	\$ 10,900	\$ 11,200	\$ 11,500	\$ 11,800	\$ 12,200	\$ 12,600		
- \$ 18,000	\$ 23,000	\$ 43,000	\$ 52,000	\$ 53,000	\$ 73,000	\$ 75,000	\$ 78,000	\$ 80,000	\$ 83,000		
- \$ 9,200	\$ 11,500	\$ 14,400	\$ 17,300	\$ 17,800	\$ 18,300	\$ 18,900	\$ 19,500	\$ 20,000	\$ 20,600		
- \$ 315,000	\$ 324,000	\$ 334,000	\$ 344,000	\$ 354,000	\$ 365,000	\$ 376,000	\$ 387,000	\$ 399,000	\$ 411,000		
- \$ 50,000	\$ 50,000	\$ 50,000	\$ 50,000	\$ 50,000	\$ 50,000	\$ 50,000	\$ 50,000	\$ 50,000	\$ 50,000		
- \$ 90,000	\$ 93,000	\$ 96,000	\$ 99,000	\$ 102,000	\$ 105,000	\$ 108,000	\$ 111,000	\$ 114,000	\$ 117,000		
- \$ 27,000	\$ 28,000	\$ 29,000	\$ 30,000	\$ 31,000	\$ 32,000	\$ 32,000	\$ 33,000	\$ 34,000	\$ 35,000		
- \$ 60,000	\$ 60,000	\$ 60,000	\$ 60,000	\$ 60,000	\$ 60,000	\$ 60,000	\$ 60,000	\$ 60,000	\$ 60,000		
- \$ 65,000	\$ 65,000	\$ 65,000	\$ 65,000	\$ 65,000	\$ 65,000	\$ 65,000	\$ 65,000	\$ 65,000	\$ 65,000		
- \$ 53,000	\$ 67,000	\$ 84,000	\$ 101,000	\$ 105,000	\$ 108,000	\$ 112,000	\$ 116,000	\$ 119,000	\$ 123,000		
- \$ 45,000	\$ 56,000	\$ 71,000	\$ 86,000	\$ 89,000	\$ 93,000	\$ 95,000	\$ 99,000	\$ 103,000	\$ 106,000		
- \$ 15,000	\$ 18,000	\$ 22,000	\$ 26,000	\$ 26,000	\$ 26,000	\$ 26,000	\$ 26,000	\$ 26,000	\$ 26,000		
- \$ 23,000	\$ 29,000	\$ 37,000	\$ 46,000	\$ 48,000	\$ 50,000	\$ 52,000	\$ 55,000	\$ 57,000	\$ 59,000		
- \$ 859,200	\$ 913,000	\$ 969,100	\$ 1,075,300	\$ 1,102,700	\$ 1,150,200	\$ 1,177,900	\$ 1,210,900	\$ 1,241,900	\$ 1,273,800	\$ -	\$ -
- \$ 60,800	\$ 238,000	\$ 439,900	\$ 650,700	\$ 677,300	\$ 683,800	\$ 709,100	\$ 734,200	\$ 760,400	\$ 789,400	\$ -	\$ -
- \$ 6,000	\$ 6,200	\$ 6,400	\$ 6,600	\$ 6,800	\$ 7,000	\$ 7,200	\$ 7,400	\$ 7,600	\$ 7,800		
- \$ 2,226	\$ 2,787	\$ 3,483	\$ 4,176	\$ 4,302	\$ 4,428	\$ 4,557	\$ 4,695	\$ 4,833	\$ 4,980		
- \$ 52,574	\$ 229,013	\$ 430,017	\$ 639,924	\$ 666,198	\$ 672,372	\$ 697,343	\$ 722,105	\$ 747,967	\$ 776,620	\$ -	\$ -
	\$ 570,125	\$ 568,100	\$ 565,425	\$ 567,100	\$ 576,800	\$ 567,525	\$ 566,275	\$ 569,050			
1,241,347	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
- \$ 385,125	\$ 385,125	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
- \$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
- \$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
(1,241,347)	\$ (332,551)	\$ (156,112)	\$ (140,109)	\$ 71,824	\$ 100,773	\$ 105,272	\$ 120,543	\$ 154,590	\$ 181,992	\$ 207,570	\$ 1,576,095
1,262,612	\$ 930,061	\$ 773,949	\$ 633,841	\$ 705,665	\$ 806,438	\$ 911,710	\$ 1,032,253	\$ 1,186,833	\$ 1,368,525	\$ 1,576,095	

ns Plan

Year 9 2005	Year 10 2006	Year 11 2007	Year 12 2008	Year 13 2009	Year 14 2010	Year 15 2011
370,000 \$	380,000 \$	392,000 \$	404,000 \$	416,000		
648,000 \$	666,000 \$	686,000 \$	706,000 \$	728,000		
39,000 \$	40,000 \$	41,000 \$	42,000 \$	43,000		
67,000 \$	69,000 \$	71,000 \$	73,000 \$	75,000		
78,000 \$	81,000 \$	83,000 \$	86,000 \$	88,000		
1,200,000 \$	1,236,000 \$	1,273,000 \$	1,311,000 \$	1,350,000 \$	- \$	-
- \$	- \$	- \$	- \$	- \$	- \$	-
251,000 \$	258,000 \$	266,000 \$	273,000 \$	282,000		
25,000 \$	25,000 \$	26,000 \$	27,000 \$	28,000		
276,000 \$	283,000 \$	292,000 \$	300,000 \$	310,000 \$	- \$	-
114,000 \$	118,000 \$	122,000 \$	125,000 \$	129,000		
103,000 \$	106,000 \$	110,000 \$	114,000 \$	118,000		
57,000 \$	57,000 \$	57,000 \$	57,000 \$	57,000		
84,000 \$	87,000 \$	91,000 \$	95,000 \$	99,000		
358,000 \$	368,000 \$	380,000 \$	391,000 \$	403,000 \$	- \$	-
1,834,000 \$	1,887,000 \$	1,945,000 \$	2,002,000 \$	2,063,000 \$	- \$	-
40,800 \$	41,800 \$	43,100 \$	44,400 \$	45,700		
34,800 \$	35,800 \$	36,900 \$	38,000 \$	39,100		
18,300 \$	18,900 \$	19,500 \$	20,000 \$	20,600		
11,200 \$	11,500 \$	11,800 \$	12,200 \$	12,600		
73,000 \$	75,000 \$	78,000 \$	80,000 \$	83,000		
18,300 \$	18,900 \$	19,500 \$	20,000 \$	20,600		
365,000 \$	378,000 \$	387,000 \$	399,000 \$	411,000		
50,000 \$	50,000 \$	50,000 \$	50,000 \$	50,000		
105,000 \$	108,000 \$	111,000 \$	114,000 \$	117,000		
32,000 \$	32,000 \$	33,000 \$	34,000 \$	35,000		
60,000 \$	60,000 \$	60,000 \$	60,000 \$	60,000		
65,000 \$	65,000 \$	65,000 \$	65,000 \$	65,000		
108,000 \$	112,000 \$	116,000 \$	119,000 \$	123,000		
93,000 \$	95,000 \$	99,000 \$	103,000 \$	106,000		
26,000 \$	26,000 \$	26,000 \$	26,000 \$	26,000		
50,000 \$	52,000 \$	55,000 \$	57,000 \$	59,000		
1,150,200 \$	1,177,900 \$	1,210,800 \$	1,241,800 \$	1,273,600 \$	- \$	- 0
683,800 \$	709,100 \$	734,200 \$	760,400 \$	789,400 \$	- \$	- 0
7,000 \$	7,200 \$	7,400 \$	7,600 \$	7,800		
4,428 \$	4,557 \$	4,695 \$	4,833 \$	4,980		
672,372 \$	697,343 \$	722,105 \$	747,967 \$	776,620 \$	- \$	- 0
567,100 \$	576,800 \$	587,525 \$	598,275 \$	609,050		
- \$	- \$	- \$	- \$	- \$	- \$	-
- \$	- \$	- \$	- \$	- \$	- \$	-
- \$	- \$	- \$	- \$	- \$	- \$	-
- \$	- \$	- \$	- \$	- \$	- \$	-
105,272 \$	120,543 \$	154,580 \$	181,892 \$	207,570 \$	1,576,095	
911,710 \$	1,032,253 \$	1,186,833 \$	1,368,525 \$	1,576,095		

Water and Sewer System Operating Projections Vint Hill Farms Station

Scenario: VHFEDA Business as

	Year 1 1997	Year 2 1998	Year 3 1999	Year 4 2000	Year 5 2001	Year 6 2002	Year 7 2003
Occupied SF							
New Construction	-	-	44,213	133,076	214,097	278,784	380,061
School & Community Facilities	23,191	23,191	23,191	23,191	48,191	48,191	48,191
Interim Lease	28,528	206,777	282,170	282,477	215,756	207,885	-
Building Sales	160	38,737	56,867	96,460	287,882	297,855	362,332
Housing Units	24	37	82	166	234	294	324
Total Occupied SF	49,877	268,705	386,442	545,203	765,926	832,715	790,584
Total Taps Consumed	1500	0	48	143	230	299	408
Daily Water Usage (in Gallons)							
New Construction	0.25	-	11,053	33,269	53,524	69,696	95,015
School & Community Facilities	0.2	4,638	4,638	4,638	9,638	9,638	9,638
Interim Lease	0.15	3,979	31,017	39,326	32,363	31,183	-
Building Sales	0.15	-	8,530	14,469	43,182	44,678	54,350
Housing Units	285	6,840	10,545	47,310	66,690	83,790	92,340
Total Gallons Used	15,457	52,010	86,917	143,558	205,398	238,985	251,343
Annual Revenues							
Water Usage Fees/1,000 gals	\$ 4.90	\$ -	\$ 93,020	\$ 155,451	\$ 256,753	\$ 367,355	\$ 427,425
Sewer Usage Fees/1,000 gals	\$ 5.40	\$ -	\$ 102,512	\$ 171,314	\$ 282,952	\$ 404,840	\$ 471,040
Total User Fees	\$ -	\$ 195,533	\$ 326,765	\$ 539,705	\$ 772,194	\$ 898,465	\$ 944,925
Non-Residential Connection Fees	7000	\$ 302,825	\$ 1,327,669	\$ 714,327	\$ 963,235	\$ 1,339,162	\$ 405,223
Residential Connection Fees	7000	\$ -	\$ 88,375	\$ 324,042	\$ 589,167	\$ 483,117	\$ 424,200
Total Connection Fees	\$ 302,825	\$ 1,416,044	\$ 1,038,369	\$ 1,562,402	\$ 1,822,279	\$ 829,423	\$ (43,520)
TOTAL INCOME	\$ 302,825	\$ 1,611,577	\$ 1,365,134	\$ 2,092,107	\$ 2,594,474	\$ 1,727,888	\$ 901,405
Operating Costs (Exc. Debt Svc)							
Water							
Fixed Costs	\$ 110,000	\$ -	\$ 113,300	\$ 116,699	\$ 120,200	\$ 123,806	\$ 127,520
Treatment Costs (/1000 gals)	\$ 1.53	\$ -	\$ 20,045	\$ 51,495	\$ 87,604	\$ 129,101	\$ 154,718
Subtotal	\$ -	\$ 142,345	\$ 168,194	\$ 207,804	\$ 252,907	\$ 282,238	\$ 296,946
Sewer							
Fixed Costs	\$ 550,000	\$ -	\$ 388,250	\$ 397,838	\$ 409,773	\$ 422,066	\$ 637,601
Treatment Costs (/1000 gals)	\$ 1.68	\$ -	\$ 31,893	\$ 56,543	\$ 96,192	\$ 141,758	\$ 169,887
Subtotal	\$ -	\$ 418,143	\$ 454,381	\$ 506,965	\$ 583,824	\$ 807,487	\$ 840,760
TOTAL OPERATING COSTS	\$ -	\$ 560,488	\$ 622,575	\$ 713,769	\$ 816,731	\$ 1,089,726	\$ 1,139,707
NET OPERATING INCOME	\$ 302,825	\$ 1,051,089	\$ 742,559	\$ 1,378,338	\$ 1,777,743	\$ 638,162	\$ (238,302)
CUMULATIVE NOI	\$ 302,825	\$ 1,353,714	\$ 2,096,274	\$ 3,474,612	\$ 5,252,354	\$ 5,890,516	\$ 5,652,215

Scenario: VHFEDA Business and Operations Plan

Year 2 1998	Year 3 1999	Year 4 2000	Year 5 2001	Year 6 2002	Year 7 2003	Year 8 2004	Year 9 2005	Year 10 2006	Year 11 2007	Year 12 2008	Year 13 2009	
-	44,213	133,076	214,097	278,784	380,061	415,345	590,020	680,189	878,823	979,447	1,014,730	1,054
23,191	23,191	23,191	48,191	48,191	48,191	48,191	48,191	48,191	48,191	48,191	48,191	4
36,777	262,170	292,477	215,756	207,885	-	-	-	-	-	-	-	52
38,737	56,867	96,460	287,882	297,855	362,332	417,058	471,785	481,768	491,731	501,704	511,678	52
37	82	166	234	294	324	324	324	324	324	324	324	1,61
38,705	388,442	545,203	765,926	832,715	790,584	880,594	1,109,996	1,210,138	1,418,745	1,529,342	1,574,699	1,61
0	48	143	230	299	408	446	634	731	945	1053	1091	
-	11,053	33,269	53,524	69,696	95,015	103,836	147,505	170,047	219,708	244,862	253,683	26
4,638	4,638	4,638	9,638	9,638	9,638	9,638	9,638	9,638	9,638	9,638	9,638	
31,017	39,326	43,871	32,363	31,183	-	-	-	-	-	-	-	7
5,811	8,530	14,469	43,182	44,678	54,350	62,559	70,768	72,264	73,780	75,256	76,752	7
10,545	23,370	47,310	66,690	83,790	92,340	92,340	92,340	92,340	92,340	92,340	92,340	9
32,010	86,917	143,558	205,398	238,985	251,343	268,373	320,251	344,289	388,444	422,096	432,412	44
93,020 \$	155,451 \$	256,753 \$	367,355 \$	427,425 \$	449,527 \$	479,985 \$	572,769 \$	615,761 \$	707,251 \$	754,918 \$	773,370 \$	75
32,512 \$	171,314 \$	282,952 \$	404,840 \$	471,040 \$	495,397 \$	528,963 \$	631,215 \$	678,594 \$	779,419 \$	831,950 \$	852,285 \$	87
95,533 \$	328,765 \$	539,705 \$	772,194 \$	898,465 \$	944,925 \$	1,008,949 \$	1,203,984 \$	1,294,355 \$	1,486,870 \$	1,586,868 \$	1,625,654 \$	1,66
27,669 \$	714,327 \$	963,235 \$	1,339,162 \$	405,223 \$	(255,620) \$	546,107 \$	1,391,822 \$	607,581 \$	1,265,653 \$	671,010 \$	274,581 \$	27
88,375 \$	324,042 \$	589,167 \$	483,117 \$	424,200 \$	212,100 \$	- \$	- \$	- \$	- \$	- \$	- \$	27
16,044 \$	1,038,399 \$	1,582,402 \$	1,822,279 \$	829,423 \$	(43,520) \$	546,107 \$	1,391,822 \$	607,581 \$	1,265,653 \$	671,010 \$	274,581 \$	27
11,577 \$	1,365,134 \$	2,082,107 \$	2,594,474 \$	1,727,988 \$	901,405 \$	1,555,056 \$	2,585,806 \$	1,901,937 \$	2,762,324 \$	2,257,878 \$	1,900,238 \$	1,90
13,300 \$	116,699 \$	120,200 \$	123,806 \$	127,520 \$	131,346 \$	135,286 \$	139,345 \$	143,525 \$	147,831 \$	152,266 \$	156,834 \$	16
29,045 \$	51,495 \$	87,604 \$	129,101 \$	154,718 \$	167,600 \$	184,325 \$	226,554 \$	250,867 \$	298,784 \$	326,291 \$	344,294 \$	36
42,345 \$	168,194 \$	207,804 \$	282,907 \$	282,238 \$	298,946 \$	319,611 \$	368,999 \$	394,392 \$	444,615 \$	478,558 \$	501,127 \$	50
86,250 \$	397,838 \$	409,773 \$	422,068 \$	637,601 \$	656,729 \$	676,431 \$	696,724 \$	717,625 \$	739,154 \$	761,329 \$	784,168 \$	80
31,893 \$	56,543 \$	96,192 \$	141,758 \$	169,887 \$	184,032 \$	202,396 \$	248,766 \$	275,461 \$	325,881 \$	358,280 \$	378,048 \$	39
18,143 \$	454,381 \$	806,865 \$	553,824 \$	807,487 \$	840,780 \$	878,827 \$	945,489 \$	993,067 \$	1,065,036 \$	1,119,608 \$	1,162,217 \$	1,20
60,488 \$	622,575 \$	713,799 \$	816,731 \$	1,089,726 \$	1,139,707 \$	1,198,437 \$	1,311,388 \$	1,367,478 \$	1,509,650 \$	1,599,165 \$	1,663,344 \$	1,70
51,089 \$	742,559 \$	1,378,338 \$	1,777,743 \$	638,162 \$	(238,302) \$	356,618 \$	1,284,417 \$	514,458 \$	1,242,674 \$	689,713 \$	236,891 \$	20
53,714 \$	2,096,274 \$	3,474,612 \$	5,252,354 \$	5,890,516 \$	5,652,215 \$	6,008,833 \$	7,293,250 \$	7,807,709 \$	9,050,382 \$	9,710,095 \$	9,946,987 \$	10,1

Operations Plan

Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Cumulative Forecast		
2004	2005	2006	2007	2008	2009	2010	2011	5 Year Total	10 Year Total	15 Year Total
.345	590,020	680,189	878,823	979,447	1,014,730	1,050,014	1,248,647	391,387	2,735,786	7,907,447
.191	48,191	48,191	48,191	48,191	48,191	48,191	48,191	140,955	381,910	622,865
.058	471,785	481,758	491,731	501,704	511,678	521,651	531,624	1,003,706	1,211,991	1,211,991
324	324	324	324	324	324	324	324	480,106	2,510,894	5,089,282
.594	1,109,996	1,210,138	1,418,745	1,529,342	1,574,599	1,619,856	1,828,462	543	2,133	3,763
								2,018,996	6,842,314	14,814,938
446	634	731	945	1053	1091	1129	1343	421	2,639	8,500
.836	147,505	170,047	219,706	244,862	253,683	262,503	312,162	97,847	683,946	1,976,862
.638	9,638	9,638	9,638	9,638	9,638	9,638	9,638	28,191	76,382	124,573
.559	70,768	72,264	73,780	75,256	76,752	78,248	79,744	180,556	181,739	181,739
.340	92,340	92,340	92,340	92,340	92,340	92,340	92,340	71,992	376,610	780,368
.373	320,251	344,289	395,444	422,096	432,412	442,729	493,684	184,755	607,905	1,089,605
								603,340	1,929,582	4,113,147
.985 \$	572,769 \$	615,761 \$	707,251 \$	754,918 \$	773,370 \$	791,821 \$	883,311 \$	872,579	3,418,047	7,328,718
.963 \$	631,215 \$	678,594 \$	779,419 \$	831,950 \$	852,285 \$	872,619 \$	973,445 \$	981,618	3,768,828	8,076,546
.949 \$	1,203,984 \$	1,294,355 \$	1,486,670 \$	1,586,868 \$	1,625,654 \$	1,684,441 \$	1,856,756 \$	1,834,197	7,184,675	15,408,264
.107 \$	1,391,822 \$	607,581 \$	1,265,653 \$	671,010 \$	274,581 \$	274,581 \$	1,265,653	4,647,018	7,342,131	11,093,609
\$	\$	\$	\$	\$	\$	\$	\$	1,484,701	2,121,001	2,121,001
.107 \$	1,391,822 \$	607,581 \$	1,265,653 \$	671,010 \$	274,581 \$	274,581 \$	1,265,653 \$	6,131,719	9,463,132	13,214,610
.056 \$	2,595,806 \$	1,901,937 \$	2,752,324 \$	2,257,878 \$	1,900,235 \$	1,339,021 \$	3,122,409	7,965,916	16,848,007	28,619,874
.286 \$	139,345 \$	143,525 \$	147,831 \$	152,266 \$	156,834 \$	161,539 \$	166,385	474,005	1,161,027	1,936,861
.325 \$	226,554 \$	250,867 \$	296,784 \$	326,291 \$	344,294 \$	363,083 \$	417,186	297,245	1,281,309	3,028,648
.611 \$	365,999 \$	384,392 \$	444,615 \$	478,556 \$	501,127 \$	524,622 \$	583,571	771,250	2,432,336	4,964,828
.431 \$	696,724 \$	717,625 \$	739,154 \$	761,329 \$	784,168 \$	807,694 \$	831,924	1,615,928	5,001,035	8,825,304
.396 \$	248,766 \$	275,461 \$	325,881 \$	358,280 \$	378,048 \$	398,680 \$	458,087	326,396	1,408,929	3,325,903
.827 \$	945,489 \$	983,087 \$	1,065,036 \$	1,119,608 \$	1,162,217 \$	1,206,373 \$	1,290,011	1,842,312	6,407,963	12,251,207
.437 \$	1,311,398 \$	1,387,478 \$	1,509,650 \$	1,598,165 \$	1,663,244 \$	1,730,998 \$	1,873,583	2,713,562	8,840,296	17,216,035
.618 \$	1,284,417 \$	514,458 \$	1,242,674 \$	659,713 \$	236,891 \$	208,026 \$	1,248,826	5,282,354	7,807,709	11,403,839
.833 \$	7,293,250 \$	7,807,709 \$	9,050,382 \$	9,710,095 \$	9,946,987 \$	10,155,012 \$	11,403,839			

Table B8. Administrative and Marketing Expenditures. VHFEDA Business and Operations Plan.

15 Year Administrative and Marketing Budget Vint Hill Farms Station

Scenario: VHFEDA I

		Year 1 1997	Year 2 1998	Year 3 1999	Year 4 2000	Year 5 2001	Year 6 2002	
1 DESCRIPTION								
2 SALARIES								
3 Director	3% \$	61,832	63,687	65,598	67,565	69,592	71,680	73,818
4 Admin Assistant	3% \$	27,500	28,325	29,175	30,050	30,951	31,880	32,835
5 Director of Economic Development	3% \$	55,100	56,753	58,456	60,209	62,016	63,876	65,787
6 Director of Finance	3% \$	64,950	66,899	68,905	70,973	73,102	75,295	77,525
7 Grounds Superintendent	3% \$	-	-	10,000	50,000	15,000	15,450	15,900
8 Grounds Staff								
9 Finance Assistant	3% \$	-	25,000	25,750	26,523	27,318	28,138	28,983
10 Office Assistant	3% \$	-	18,000	18,540	19,096	19,669	20,259	20,865
11 Site Engineer	3% \$	-	45,000	46,350	47,741	49,173	50,648	52,165
12 Market Assistant	3% \$	-	30,000	30,900	31,827	32,782	33,765	34,777
13 Board Compensation	3% \$	-	10,000	10,300	10,609	10,927	11,255	11,593
14 SUBTOTAL-SALARIES		\$ 209,382	\$ 343,663	\$ 363,973	\$ 414,593	\$ 390,530	\$ 402,246	\$ 414,301
15 FRINGE BENEFITS	25% \$	\$ 52,346	\$ 85,916	\$ 90,993	\$ 103,648	\$ 97,633	\$ 100,562	\$ 103,576
16								
17 CONTRACTING SERVICES								
18 Audit	3% \$	2,000	4,000	5,000	5,000	5,150	5,305	5,465
19 Legal Services	3% \$	30,000	60,000	50,000	50,000	45,000	30,000	30,000
20 Architectural Services	3% \$	37,500	75,000	85,000	55,000	50,000	45,000	30,000
21 SUBTOTAL-CONTRACTING SERVICES		\$ 69,500	\$ 139,000	\$ 120,000	\$ 110,000	\$ 100,150	\$ 80,305	\$ 66,300
22 OVERHEAD								
23 MAINTENANCE								
24 Office Equipment	3% \$	500	1,000	1,030	1,061	1,093	1,126	1,159
25 Janitorial	3% \$	500	1,000	1,030	1,061	1,093	1,126	1,159
26 UTILITIES								
27 Electric	3% \$	4,000	8,000	8,240	8,487	8,742	9,004	9,271
28 Water	3% \$	250	500	515	530	546	563	580
29 Telephone	3% \$	4,000	8,000	9,000	10,000	10,300	10,500	7,500
30 TRAVEL	3% \$	6,000	12,000	15,000	15,000	12,000	12,000	12,000
31 SUPPLIES	3% \$	6,000	12,000	12,360	12,731	13,113	13,506	13,911
32 EQUIPMENT	3% \$	2,000	4,000	4,120	4,244	4,371	4,502	4,639
33 SUBTOTAL-OVERHEAD		\$ 23,250	\$ 46,500	\$ 51,295	\$ 53,114	\$ 51,258	\$ 52,327	\$ 50,221
34								
35 MARKETING								
36 Marketing Collateral	\$	17,000	34,500	18,000	41,000	23,000	42,250	21,750
37 Advertising, Outreach & Public Relations	\$	2,000	100,000	100,000	100,000	100,000	100,000	100,000
38 Rezoning	\$	55,000						
39 Foreign Trade Zone	\$	-	36,000	1,000	1,000	1,000	1,000	1,000
40 SUBTOTAL MARKETING		\$ 74,000	\$ 170,500	\$ 120,000	\$ 142,000	\$ 124,000	\$ 143,250	\$ 122,750
41								
42 TOTAL ADMIN AND MARKETING		\$ 426,478	\$ 785,579	\$ 746,262	\$ 823,355	\$ 763,571	\$ 778,680	\$ 757,221

Scenario: VHFEDA Business and Operations Plan

Year 1 1997	Year 2 1998	Year 3 1999	Year 4 2000	Year 5 2001	Year 6 2002	Year 7 2003	Year 8 2004	Year 9 2005	Year 10 2006	Year 11 2007	Year 12 2008	Year 13 2009
.832 \$	63,687 \$	65,598 \$	67,565 \$	69,592 \$	71,680 \$	73,831 \$	76,046 \$	78,327 \$	80,677 \$	83,097 \$	85,590 \$	88,158 \$
.500 \$	28,325 \$	29,175 \$	30,050 \$	30,951 \$	31,880 \$	32,836 \$	33,822 \$	34,836 \$	35,881 \$	36,958 \$	38,066 \$	39,208 \$
.100 \$	56,753 \$	58,456 \$	60,209 \$	62,016 \$	63,876 \$	65,792 \$	67,766 \$	69,799 \$	71,893 \$	74,050 \$	76,271 \$	78,559 \$
.950 \$	66,899 \$	68,905 \$	70,973 \$	73,102 \$	75,295 \$	77,554 \$	79,880 \$	82,277 \$	84,745 \$	87,287 \$	89,906 \$	92,603 \$
- \$	- \$	10,000 \$	50,000 \$	15,000 \$	15,450 \$	15,914 \$	16,391 \$	16,883 \$	17,389 \$	17,911 \$	18,448 \$	19,002 \$
totals included under building and grounds maintenance budgets												
- \$	25,000 \$	25,750 \$	26,523 \$	27,318 \$	28,138 \$	28,982 \$	29,851 \$					
- \$	18,000 \$	18,540 \$	19,096 \$	19,669 \$	20,259 \$	20,867 \$	21,493 \$					
- \$	45,000 \$	46,350 \$	47,741 \$	49,173 \$	50,648 \$	52,167 \$	53,732 \$	55,344 \$	57,005 \$			
- \$	30,000 \$	30,900 \$	31,827 \$	32,782 \$	33,765 \$	34,778 \$						
- \$	10,000 \$	10,300 \$	10,609 \$	10,927 \$	11,255 \$	11,593 \$	11,941 \$	12,299 \$	12,668 \$	13,048 \$	13,439 \$	13,842 \$
282 \$	343,663 \$	363,973 \$	414,583 \$	390,530 \$	402,246 \$	414,314 \$	390,921 \$	349,765 \$	360,257 \$	312,350 \$	321,721 \$	331,373 \$
346 \$	85,916 \$	90,993 \$	103,648 \$	97,633 \$	100,562 \$	103,578 \$	97,730 \$	87,441 \$	90,064 \$	78,088 \$	80,430 \$	82,943 \$
.000 \$	4,000 \$	5,000 \$	5,000 \$	5,150 \$	5,305 \$	5,464 \$	5,628 \$	5,796 \$	5,970 \$	6,149 \$	6,334 \$	6,524 \$
.000 \$	60,000 \$	50,000 \$	50,000 \$	45,000 \$	30,000 \$	30,900 \$	25,000 \$	20,000 \$	20,000 \$	15,000 \$	10,000 \$	10,000 \$
.500 \$	75,000 \$	65,000 \$	55,000 \$	50,000 \$	45,000 \$	30,000 \$	30,000 \$	30,000 \$	10,000 \$	10,000 \$	10,000 \$	10,000 \$
.500 \$	139,000 \$	120,000 \$	110,000 \$	100,150 \$	80,305 \$	66,364 \$	60,628 \$	55,796 \$	35,970 \$	31,149 \$	26,334 \$	26,524 \$
500 \$	1,000 \$	1,030 \$	1,061 \$	1,093 \$	1,126 \$	1,159 \$	1,194 \$	1,230 \$	1,267 \$	1,305 \$	1,344 \$	1,384 \$
500 \$	1,000 \$	1,030 \$	1,061 \$	1,093 \$	1,126 \$	1,159 \$	1,194 \$	1,230 \$	1,267 \$	1,305 \$	1,344 \$	1,384 \$
.000 \$	8,000 \$	8,240 \$	8,487 \$	8,742 \$	9,004 \$	9,274 \$	9,552 \$	9,839 \$	10,134 \$	10,438 \$	10,751 \$	11,074 \$
250 \$	500 \$	515 \$	530 \$	546 \$	563 \$	580 \$	597 \$	615 \$	633 \$	652 \$	672 \$	692 \$
.000 \$	8,000 \$	9,000 \$	10,000 \$	10,300 \$	10,500 \$	7,500 \$	7,725 \$	7,957 \$	8,195 \$	8,441 \$	8,695 \$	8,955 \$
.000 \$	12,000 \$	15,000 \$	15,000 \$	12,000 \$	12,000 \$	12,000 \$	12,000 \$	12,000 \$	10,000 \$	8,000 \$	8,000 \$	8,000 \$
.000 \$	12,000 \$	12,360 \$	12,731 \$	13,113 \$	13,506 \$	13,911 \$	14,329 \$	14,758 \$	15,201 \$	15,657 \$	16,127 \$	16,611 \$
.000 \$	4,000 \$	4,120 \$	4,244 \$	4,371 \$	4,502 \$	4,637 \$	4,776 \$	4,919 \$	5,067 \$	5,219 \$	5,376 \$	5,537 \$
.250 \$	46,800 \$	51,295 \$	53,114 \$	51,258 \$	52,327 \$	50,220 \$	51,367 \$	52,548 \$	51,764 \$	51,017 \$	52,309 \$	53,637 \$
.000 \$	34,500 \$	19,000 \$	41,000 \$	23,000 \$	42,250 \$	21,750 \$	43,250 \$	17,250 \$	43,750 \$	9,500 \$	40,000 \$	10,000 \$
.000 \$	100,000 \$	100,000 \$	100,000 \$	100,000 \$	100,000 \$	100,000 \$	66,000 \$	59,000 \$	65,000 \$	48,000 \$	52,000 \$	35,000 \$
.000 \$	36,000 \$	1,000 \$	1,000 \$	1,000 \$	1,000 \$	1,000 \$	1,000 \$	1,000 \$	1,000 \$	1,000 \$	1,000 \$	1,000 \$
.000 \$	170,500 \$	120,000 \$	142,000 \$	124,000 \$	143,250 \$	122,750 \$	110,250 \$	77,250 \$	109,750 \$	58,500 \$	93,000 \$	46,000 \$
478 \$	785,579 \$	746,262 \$	823,355 \$	763,571 \$	778,690 \$	757,226 \$	710,897 \$	622,900 \$	647,806 \$	531,104 \$	573,794 \$	540,377 \$

see and Operations Plan

Year 8 2004	Year 9 2005	Year 10 2006	Year 11 2007	Year 12 2008	Year 13 2009	Year 14 2010	Year 15 2011	Cumulative Forecast		
								5 Year Total	10 Year Total	15 Year Total
76,046 \$	78,327 \$	80,677 \$	83,097 \$	85,590 \$	88,158 \$	90,802 \$	93,526 \$	328,274 \$	708,835 \$	1,150,008 \$
33,822 \$	34,836 \$	35,881 \$	36,958 \$	38,066 \$	39,208 \$	40,385 \$	41,596 \$	146,001 \$	315,257 \$	511,470 \$
67,766 \$	68,799 \$	71,893 \$	74,050 \$	76,271 \$	78,559 \$	80,916 \$	83,344 \$	292,533 \$	631,660 \$	1,024,800 \$
79,880 \$	82,277 \$	84,745 \$	87,287 \$	89,906 \$	92,603 \$	95,381 \$	98,243 \$	344,828 \$	744,579 \$	1,207,999 \$
16,391 \$	16,883 \$	17,389 \$	17,911 \$	18,448 \$	19,002 \$	19,572 \$	20,159 \$	75,000 \$	157,026 \$	252,117 \$
29,851										
21,493								104,591 \$	191,562 \$	191,562 \$
53,732 \$	55,344 \$	57,005						75,305 \$	137,924 \$	137,924 \$
								188,263 \$	457,160 \$	457,160 \$
								125,509 \$	194,052 \$	194,052 \$
11,941 \$	12,299 \$	12,668 \$	13,048 \$	13,439 \$	13,842 \$	14,258 \$	14,685 \$	41,836 \$	101,591 \$	170,863 \$
390,921 \$	349,785 \$	360,257 \$	312,350 \$	321,721 \$	331,373 \$	341,314 \$	351,553 \$	1,722,142 \$	3,639,645 \$	5,297,956 \$
97,730 \$	87,441 \$	90,064 \$	78,088 \$	80,430 \$	82,843 \$	85,328 \$	87,888 \$	430,535 \$	909,911 \$	1,324,489 \$
5,628 \$	5,796 \$	5,970 \$	6,149 \$	6,334 \$	6,524 \$	3,720 \$	6,921 \$	21,150 \$	49,313 \$	78,961 \$
25,000 \$	20,000 \$	20,000 \$	15,000 \$	10,000 \$	10,000 \$	10,000 \$	10,000 \$	235,000 \$	360,900 \$	415,900 \$
30,000 \$	30,000 \$	10,000 \$	10,000 \$	10,000 \$	10,000 \$	10,000 \$	5,000 \$	282,500 \$	427,500 \$	472,500 \$
60,628 \$	55,796 \$	35,970 \$	31,149 \$	26,334 \$	26,524 \$	23,720 \$	21,921 \$	538,650 \$	837,713 \$	967,361 \$
1,194 \$	1,230 \$	1,267 \$	1,305 \$	1,344 \$	1,384 \$	1,426 \$	1,469 \$	4,684 \$	10,660 \$	17,588 \$
1,194 \$	1,230 \$	1,267 \$	1,305 \$	1,344 \$	1,384 \$	1,426 \$	1,469 \$	4,684 \$	10,660 \$	17,588 \$
9,552 \$	9,839 \$	10,134 \$	10,438 \$	10,751 \$	11,074 \$	11,406 \$	11,748 \$	37,469 \$	86,272 \$	140,689 \$
597 \$	615 \$	633 \$	652 \$	672 \$	692 \$	713 \$	734 \$	2,341 \$	5,329 \$	8,792 \$
7,725 \$	7,957 \$	8,195 \$	8,441 \$	8,685 \$	8,955 \$	9,224 \$	9,501 \$	41,300 \$	83,177 \$	127,993 \$
12,000 \$	12,000 \$	10,000 \$	8,000 \$	8,000 \$	8,000 \$	6,000 \$	6,000 \$	60,000 \$	118,000 \$	154,000 \$
14,329 \$	14,758 \$	15,201 \$	15,657 \$	16,127 \$	16,611 \$	17,109 \$	17,622 \$	56,204 \$	127,909 \$	211,035 \$
4,776 \$	4,919 \$	5,067 \$	5,219 \$	5,376 \$	5,537 \$	5,703 \$	5,874 \$	18,735 \$	42,636 \$	70,345 \$
51,367 \$	52,548 \$	51,764 \$	51,017 \$	52,309 \$	53,637 \$	53,007 \$	54,417 \$	225,417 \$	483,643 \$	748,030 \$
43,250 \$	17,250 \$	43,750 \$	9,500 \$	40,000 \$	10,000 \$	8,000 \$	3,000 \$	134,500 \$	302,750 \$	373,250 \$
66,000 \$	59,000 \$	65,000 \$	48,000 \$	52,000 \$	35,000 \$	38,000 \$	25,000 \$	402,000 \$	792,000 \$	990,000 \$
								55,000 \$	55,000 \$	55,000 \$
1,000 \$	1,000 \$	1,000 \$	1,000 \$	1,000 \$	1,000 \$	1,000 \$	1,000 \$	38,000 \$	44,000 \$	49,000 \$
110,250 \$	77,250 \$	109,750 \$	58,500 \$	93,000 \$	46,000 \$	47,000 \$	29,000 \$	630,500 \$	1,193,750 \$	1,467,250 \$
710,897 \$	622,800 \$	647,806 \$	531,104 \$	573,794 \$	540,377 \$	550,369 \$	544,779 \$	3,547,244 \$	7,064,662 \$	9,805,086 \$

Table B6. VHFEDA Capital Expenditures. VHFEDA Business and Operations Plan.

**Projected Capital Expenditures
Vint Hill Farms Station**

Scenario: VHFEDA Bu

		Year 1 1997	Year 2 1998	Year 3 1999	Year 4 2000	Year 5 2001	Year 6 2002	Year 7 2003
CAPITAL EXPENDITURES	Basis							
SOFT COSTS								
Engineering								
Roads & Site Engineering	\$ 159,000	\$	81,885	\$	84,342			
Sewer Engineering	\$ 650,000	\$	435,175	\$	241,355			
Golf Course & Precast & Design	\$ 515,000	\$ 128,750	\$ 285,225	\$	138,591			
Architectural Services/Tenant Fit-Up	30%	\$ 16,368	\$ 35,786	\$ 24,914	\$ 9,435			
Construction Management	\$ 200,000	\$	41,200	\$ 42,436	\$ 43,709	\$ 45,020	\$ 46,371	
Bond Counsel	2%	\$ 859	\$ 157,416	\$ 116,423	\$ 35,140	\$ 56,028	\$ 128,137	\$ 13.5
Traffic Studies	\$ 35,000	\$	36,050					
SUBTOTAL-SOFT COSTS	\$ 1,569,000	\$ 145,977	\$ 1,052,737	\$ 646,080	\$ 88,285	\$ 101,048	\$ 174,508	\$ 13.5
HARD COSTS								
Maintenance to Existing WWTP	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Treatment Plant Expansion	\$ 6,300,000	\$ -	\$ -	\$ -	\$ 332,615	\$ 3,442,566	\$ 3,563,055	
Elevated Tank (450,000 Gal)	\$ 800,000	\$ -	\$ -	\$ -	\$ 886,974			
Maintenance of Existing Tank	\$ 75,000	\$ -	\$ -	\$ 80,342	\$ -			
Roads & Utilities - Phase 1	\$ 7,940,000	\$ -	\$ 4,108,950	\$ 4,252,763	\$ -			
Roads & Utilities - Phase 2	\$ 3,091,000	\$ -	\$ -	\$ -	\$ -		\$ 3,671,138	
Electrical Distribution System	\$ 439,000	\$ -	\$ 327,143				\$ 145,990	
Gas Distribution System	\$ 250,000	\$ -	\$ 250,160					
Golf Course Construction & Grow-In	\$ 2,925,000	\$	1,816,425	\$ 940,000	\$ 324,300			
Golf Course Infrastructure and Equipment	\$ 1,000,000	\$	414,000	\$ 642,735				
Tenant Fit-Up Allowances	\$ 5.00	\$ 54,559	\$ 119,286	\$ 83,048	\$ 31,450			
Entrance Signage	\$ 300,000	\$	103,500	\$ 107,122		\$ 114,752		
Traffic Signalization	\$ 1,050,000							\$ 430.2
Building Demolition and Disposal	\$ 9.81	\$ 2,855,216	\$ 1,285,915	\$ 655,800		\$ 755,478	\$ 432.5	
Contingency	5%	\$ 2,728	\$ 499,734	\$ 369,596	\$ 111,557	\$ 177,866	\$ 406,783	\$ 43.7
SUBTOTAL-HARD COSTS	\$	\$ 7,287	\$ 10,494,414	\$ 7,761,522	\$ 2,342,696	\$ 3,735,184	\$ 8,542,446	\$ 906.2
TOTAL CAPITAL EXPENDITURES	\$	\$ 203,264	\$ 11,547,151	\$ 8,407,582	\$ 2,430,981	\$ 3,838,232	\$ 8,716,953	\$ 919.7

USACERL Note: With the inclusion of Parcel 10
53560 SF of additional building space will be demolished in 1998 and 1999
An additional 15,888 SF of Interim space will be demolished in 2002

Scenario: VHFEDA Business and Operations Plan

Year 2 1998	Year 3 1999	Year 4 2000	Year 5 2001	Year 6 2002	Year 7 2003	Year 8 2004	Year 9 2005	Year 10 2006	Year 11 2007	Year 12 2008	Year 13 2009	Year 14 2010
81,885 \$	84,342											
35,175 \$	241,355											
65,225 \$	138,591											
35,786 \$	24,914 \$	9,435										
41,200 \$	42,436 \$	43,709 \$	45,020 \$	46,371								
57,416 \$	116,423 \$	35,140 \$	56,028 \$	128,137 \$	13,595 \$	- \$	- \$	7,513 \$	- \$	8,048		
36,050												
52,737 \$	646,060 \$	88,285 \$	101,048 \$	174,808 \$	13,595 \$	- \$	- \$	7,513 \$	- \$	8,048		
- \$	- \$	- \$	- \$	- \$	- \$	- \$	- \$	- \$	- \$	- \$	- \$	- \$
- \$	- \$	332,615 \$	3,442,566 \$	3,563,055								
- \$	- \$	886,974										
- \$	80,342 \$	- \$	-									
08,950 \$	4,252,763 \$	- \$	-									
- \$	- \$	- \$	-	3,671,138								
27,143				145,990								
50,160												
16,425 \$	940,000 \$	324,300										
14,000 \$	642,735											
19,286 \$	83,048 \$	31,450										
03,500 \$	107,122	\$	114,752									
				\$	430,239		\$	477,014		\$	510,989	
55,216 \$	1,285,915 \$	655,800		\$	755,478 \$	\$	432,966					
99,734 \$	369,596 \$	111,557 \$	177,866 \$	408,783 \$	43,160 \$	- \$	- \$	23,851 \$	- \$	25,549		
64,414 \$	7,761,522 \$	2,342,696 \$	3,736,194 \$	8,542,446 \$	906,365 \$	- \$	- \$	500,864 \$	- \$	536,538		
47,151 \$	8,407,582 \$	2,430,961 \$	3,836,232 \$	8,716,963 \$	919,961 \$	- \$	- \$	506,377 \$	- \$	544,596		

of Parcel 10
 demolished in 1998 and 1999
 space will be demolished in 2002

ess and Operations Plan

Year 8 2004	Year 9 2005	Year 10 2006	Year 11 2007	Year 12 2008	Year 13 2009	Year 14 2010	Year 15 2011	Cumulative Forecast		
								5 Year Total	10 Year Total	15 year Total
								\$ 166,227	\$ 166,227	\$ 166,227
								\$ 676,530	\$ 676,530	\$ 676,530
								\$ 530,566	\$ 530,566	\$ 530,566
								\$ 86,503	\$ 86,503	\$ 86,503
								\$ 172,365	\$ 218,736	\$ 218,736
								\$ 365,867	\$ 515,112	\$ 523,160
								\$ 36,050	\$ 36,050	\$ 36,050
\$ -	\$ -	\$ 7,513	\$ -	\$ 8,048				\$ 2,094,107	\$ 2,229,723	\$ 2,237,771
\$ -	\$ -	\$ 7,513	\$ -	\$ 8,048						
\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 3,775,181	\$ 7,338,236	\$ 7,338,236
								\$ 886,974	\$ 886,974	\$ 886,974
								\$ 80,342	\$ 80,342	\$ 80,342
								\$ 8,361,713	\$ 8,361,713	\$ 8,361,713
								\$ -	\$ 3,671,138	\$ 3,671,138
								\$ 327,143	\$ 473,133	\$ 473,133
								\$ 250,160	\$ 250,160	\$ 250,160
								\$ 3,080,725	\$ 3,080,725	\$ 3,080,725
								\$ 1,056,735	\$ 1,056,735	\$ 1,056,735
								\$ 288,343	\$ 288,343	\$ 288,343
								\$ 325,374	\$ 325,374	\$ 325,374
								\$ -	\$ 907,253	\$ 1,418,241
								\$ 4,796,932	\$ 5,985,376	\$ 5,985,376
								\$ 1,161,481	\$ 1,635,275	\$ 1,660,825
\$ -	\$ -	\$ 23,851	\$ -	\$ 25,549				\$ 24,391,103	\$ 34,340,778	\$ 34,877,316
\$ -	\$ -	\$ 800,964	\$ -	\$ 536,538						
\$ -	\$ -	\$ 508,377	\$ -	\$ 544,586				\$ 29,428,210	\$ 39,570,501	\$ 37,115,098

Annual Debt Service Calculations
Vint Hill Farms Station

Scenario: VHFEDA Business

	Year 1 1997	Year 2 1998	Year 3 1999	Year 4 2000	Year 5 2001	Year 6 2002	Year 7 2003
Capital Budget	\$ 203,264	\$ 11,547,151	\$ 8,407,582	\$ 2,430,981	\$ 3,836,232	\$ 8,716,953	\$ 918,961
Less Cash Flow Applied to PRN Reduction	\$ -	\$ 3,000,000	\$ 1,900,000	\$ 2,430,981	\$ 3,836,232	\$ -	\$ -
Plus Debt Service Reserve	9% \$ 18,294	\$ 789,244	\$ 585,682	\$ (0)	\$ (0)	\$ 784,526	\$ 82,796
Amount Borrowed	\$ 221,558	\$ 9,316,395	\$ 7,093,265	\$ -	\$ -	\$ 9,501,479	\$ 1,002,757
Interest Rate	0.07						
Term	20						
PRN Payment							
1	\$ 11,078						
2	\$ 11,078	\$ 465,820					
3	\$ 11,078	\$ 465,820	\$ 354,663				
4	\$ 11,078	\$ 465,820	\$ 354,663	\$ -			
5	\$ 11,078	\$ 465,820	\$ 354,663	\$ -	\$ -		
6	\$ 11,078	\$ 465,820	\$ 354,663	\$ -	\$ -	\$ 475,074	
7	\$ 11,078	\$ 465,820	\$ 354,663	\$ -	\$ -	\$ 475,074	\$ 50,138
8	\$ 11,078	\$ 465,820	\$ 354,663	\$ -	\$ -	\$ 475,074	\$ 50,138
9	\$ 11,078	\$ 465,820	\$ 354,663	\$ -	\$ -	\$ 475,074	\$ 50,138
10	\$ 11,078	\$ 465,820	\$ 354,663	\$ -	\$ -	\$ 475,074	\$ 50,138
11	\$ 11,078	\$ 465,820	\$ 354,663	\$ -	\$ -	\$ 475,074	\$ 50,138
12	\$ 11,078	\$ 465,820	\$ 354,663	\$ -	\$ -	\$ 475,074	\$ 50,138
13	\$ 11,078	\$ 465,820	\$ 354,663	\$ -	\$ -	\$ 475,074	\$ 50,138
14	\$ 11,078	\$ 465,820	\$ 354,663	\$ -	\$ -	\$ 475,074	\$ 50,138
15	\$ 11,078	\$ 465,820	\$ 354,663	\$ -	\$ -	\$ 475,074	\$ 50,138
16	\$ 11,078	\$ 465,820	\$ 354,663	\$ -	\$ -	\$ 475,074	\$ 50,138
17	\$ 11,078	\$ 465,820	\$ 354,663	\$ -	\$ -	\$ 475,074	\$ 50,138
18	\$ 11,078	\$ 465,820	\$ 354,663	\$ -	\$ -	\$ 475,074	\$ 50,138
19	\$ 11,078	\$ 465,820	\$ 354,663	\$ -	\$ -	\$ 475,074	\$ 50,138
20	\$ 11,078	\$ 465,820	\$ 354,663	\$ -	\$ -	\$ 475,074	\$ 50,138
21		\$ 465,820	\$ 354,663	\$ -	\$ -	\$ 475,074	\$ 50,138
22			\$ 354,663	\$ -	\$ -	\$ 475,074	\$ 50,138
23			\$	\$ -	\$ -	\$ 475,074	\$ 50,138
24				\$	\$ -	\$ 475,074	\$ 50,138
25					\$ 475,074	\$	\$ 50,138
26						\$	\$ 50,138
27							
28							
29							
30							
31							
32							
33							
34							
TOTALS	\$ 221,558	\$ 9,316,395	\$ 7,093,265	\$ -	\$ -	\$ 9,501,479	\$ 1,002,757
Interest	0.094393 \$ 196,712	\$ 8,271,640	\$ 6,297,815	\$ -	\$ -	\$ 8,435,969	\$ 890,306
	\$ 418,270	\$ 17,588,035	\$ 13,391,080	\$ -	\$ -	\$ 17,937,448	\$ 1,893,064

Scenario: VHFEDA Business and Operations Plan[illegible]

1d Operations Plan

Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	PRN Repayment	Cumulative Borrowing	Cumulative PRN	Beginning Balance	Interest	Debt Service
2004	2005	2006	2007	2008	2009	2010	2011						
\$ -	\$ -	\$ 508,377	\$ -	\$ 544,586	\$ -	\$ -	\$ -						
\$ -	\$ -	\$ 508,377	\$ -	\$ 544,587	\$ -	\$ -	\$ -						
\$ -	\$ -	\$ 0	\$ -	\$ (0)	\$ -	\$ -	\$ -						
\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -						
								\$ 11,078	\$ -	\$ -	\$ -	\$ -	\$ 11,078
								\$ 476,898	\$ 9,537,953	\$ 9,537,953	\$ 9,537,953	\$ 9,537,953	\$ 1,144,554
								\$ 831,561	\$ 16,631,217	\$ 487,976	\$ 16,143,242	\$ 1,130,027	\$ 1,961,588
								\$ 831,561	\$ 16,631,217	\$ 1,318,536	\$ 15,311,681	\$ 1,071,818	\$ 1,903,370
								\$ 831,561	\$ 16,631,217	\$ 2,151,097	\$ 14,480,120	\$ 1,013,608	\$ 1,845,169
								\$ 1,306,635	\$ 26,132,696	\$ 2,982,658	\$ 23,150,038	\$ 1,620,503	\$ 2,927,137
								\$ 1,356,773	\$ 27,135,453	\$ 4,289,293	\$ 22,846,160	\$ 1,599,231	\$ 2,956,004
								\$ 1,356,773	\$ 27,135,453	\$ 5,646,066	\$ 21,489,388	\$ 1,504,257	\$ 2,861,030
								\$ 1,356,773	\$ 27,135,453	\$ 7,002,838	\$ 20,132,615	\$ 1,409,283	\$ 2,766,056
								\$ 1,356,773	\$ 27,135,453	\$ 8,359,611	\$ 18,775,842	\$ 1,314,309	\$ 2,671,082
								\$ 1,356,773	\$ 27,135,453	\$ 9,716,384	\$ 17,419,070	\$ 1,219,335	\$ 2,576,108
								\$ 1,356,773	\$ 27,135,453	\$ 11,073,156	\$ 16,062,297	\$ 1,124,361	\$ 2,481,133
								\$ 1,356,773	\$ 27,135,453	\$ 12,429,929	\$ 14,705,524	\$ 1,029,387	\$ 2,386,159
								\$ 1,356,773	\$ 27,135,453	\$ 13,786,702	\$ 13,348,752	\$ 934,413	\$ 2,291,186
								\$ 1,356,773	\$ 27,135,453	\$ 15,143,474	\$ 11,991,979	\$ 839,439	\$ 2,196,211
								\$ 1,356,773	\$ 27,135,453	\$ 16,500,247	\$ 10,635,206	\$ 744,464	\$ 2,101,237
								\$ 1,356,773	\$ 27,135,453	\$ 17,857,020	\$ 9,278,434	\$ 649,490	\$ 2,006,263
								\$ 1,356,773	\$ 27,135,453	\$ 19,213,792	\$ 7,921,661	\$ 554,516	\$ 1,911,289
								\$ 1,356,773	\$ 27,135,453	\$ 20,570,565	\$ 6,564,888	\$ 459,542	\$ 1,816,315
								\$ 1,356,773	\$ 27,135,453	\$ 21,927,338	\$ 5,208,116	\$ 364,568	\$ 1,721,341
								\$ 1,348,698	\$ 27,135,453	\$ 23,284,110	\$ 3,851,343	\$ 269,594	\$ 1,615,289
								\$ 879,875	\$ 27,135,453	\$ 24,629,805	\$ 2,505,648	\$ 175,395	\$ 1,055,270
								\$ 525,212	\$ 27,135,453	\$ 25,509,680	\$ 1,625,773	\$ 113,804	\$ 639,016
								\$ 525,212	\$ 27,135,453	\$ 26,034,892	\$ 1,100,561	\$ 77,039	\$ 602,251
								\$ 525,212	\$ 27,135,453	\$ 26,560,104	\$ 575,350	\$ 40,274	\$ 565,486
								\$ 50,138	\$ 27,135,453	\$ 27,085,316	\$ 50,138	\$ 3,510	\$ 53,648
								\$ -	\$ 27,135,453	\$ 27,135,453			
								\$ -	\$ 27,135,453				
								\$ -	\$ 27,135,453				
\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 27,135,453			\$ 16,226,525		\$ 47,068,278
\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 24,092,443					
\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 51,227,897					

3

Table B11. Discounted Cash Flow Analysis. VHFEDA Business and Operations Plan.

Projected Revenues, Expenditures and Cash Flow
Vint Hill Farms Station

Scenario: VHF

	0	Year 1 1997	Year 2 1998	Year 3 1999	Year 4 2000	Year 5 2001	Year 6 2002
DEVELOPMENT YEAR							
1 REVENUES							
2							
3 INCOME FROM REAL ESTATE ACTIVITY	BASIS						
4 Land Sales	\$	-	\$ 1,780,483	\$ 3,164,630	\$ 5,291,928	\$ 1,761,737	\$ 731,506
5 Sales of Existing Facilities	\$	16,000	\$ 1,572,735	\$ 384,050	\$ 746,340	\$ 3,828,440	\$ 109,705
6 Golf Course Operations (Before Debt Service)	\$	-	\$ -	\$ -	\$ 52,574	\$ 229,013	\$ 430,017
7 Leases on Interm Use Buildings	\$	17,342	\$ 255,582	\$ 400,030	\$ 505,564	\$ 308,445	\$ 286,827
8 SUBTOTAL SALES/LEASE INCOME:	\$	33,342	\$ 3,617,779	\$ 3,948,720	\$ 6,696,406	\$ 6,127,635	\$ 1,658,055
9							
10 OTHER INCOME							
11 County Contributions	\$ 250,000	\$ 250,000	\$ 250,000	\$ 250,000	\$ 250,000	\$ 250,000	\$ 250,000
12 State Contributions	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
13 Grants - OEA	\$ -	\$ 367,000	\$ 183,500	\$ 91,750	\$ -	\$ -	\$ -
14 Grants - EDA	\$ 5,000,000	\$ -	\$ 2,000,000	\$ 1,000,000	\$ 1,000,000	\$ 1,000,000	\$ -
15 Grants - RDA and Other	\$ 500,000	\$ -	\$ 500,000	\$ -	\$ -	\$ -	\$ -
16 Water/Sewer User Fees	\$ -	\$ -	\$ 195,533	\$ 326,785	\$ 539,705	\$ 772,194	\$ 898,465
17 Water/Sewer Service Connections	0	\$ 302,625	\$ 1,416,044	\$ 1,038,360	\$ 1,552,402	\$ 1,822,279	\$ 829,423
18 SUBTOTAL-OTHER INCOME	\$	919,625	\$ 4,545,077	\$ 2,706,864	\$ 3,342,107	\$ 3,844,474	\$ 1,977,888
19 TOTAL REVENUES	\$	962,967	\$ 8,162,856	\$ 6,655,604	\$ 9,938,512	\$ 9,972,109	\$ 3,635,943
22 EXPENDITURES							
23 BUILDING AND GROUNDS							
24 Water System O&M	\$	-	\$ 142,345	\$ 168,194	\$ 207,804	\$ 252,907	\$ 282,238
25 Sewer System O&M	\$	-	\$ 418,143	\$ 454,381	\$ 505,965	\$ 563,824	\$ 607,487
26 Electrical	0.25	\$ -	\$ 203,584	\$ 184,131	\$ 168,656	\$ 93,596	\$ 93,070
27 Heating	0.25	\$ -	\$ 203,584	\$ 184,131	\$ 168,656	\$ 93,596	\$ 93,070
28 Security	100000	\$ -	\$ 100,000	\$ 103,000	\$ 106,000	\$ 109,273	\$ -
29 Building Maintenance	0.85	\$ 127,098	\$ 529,320	\$ 478,741	\$ 433,307	\$ 243,349	\$ 241,982
30 Roads & Grounds Maintenance	500	\$ -	\$ 84,932	\$ 152,158	\$ 117,329	\$ 88,920	\$ 83,857
31 Other Maintenance/Contingency	5%	\$ 6,355	\$ 84,005	\$ 86,237	\$ 85,190	\$ 72,273	\$ 80,085
32 SUBTOTAL-BLDGS & GROUNDS		133,453	1,768,004	1,810,973	1,788,967	1,517,736	1,681,790
34 ADMINISTRATION & MARKETING							
35 Salaries and Board Compensation	\$	209,382	\$ 343,683	\$ 363,973	\$ 414,593	\$ 390,530	\$ 402,246
36 Fringe Benefits	\$	52,346	\$ 85,916	\$ 90,993	\$ 103,648	\$ 97,833	\$ 100,582
37 Contracted Services	\$	60,500	\$ 139,000	\$ 120,000	\$ 110,000	\$ 100,150	\$ 80,305
38 Overhead (Eq., Supl., Travel, etc)	\$	23,250	\$ 46,500	\$ 51,295	\$ 53,114	\$ 51,258	\$ 52,327
39 Marketing Collateral	\$	17,000	\$ 34,500	\$ 19,000	\$ 41,000	\$ 23,000	\$ 42,250
40 Advertising and PR	\$	2,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000
41 Rezoning & Permitting	\$	55,000	\$ -	\$ -	\$ -	\$ -	\$ -
42 FTZ Designation and Maintenance	\$	-	\$ 36,000	\$ 1,000	\$ 1,000	\$ 1,000	\$ 1,000
43 Broker Commission & Fees	5%	\$ -	\$ 180,889	\$ 197,436	\$ 327,192	\$ 294,931	\$ 56,402
44 Insurance	\$	2,150	\$ 31,650	\$ 32,800	\$ 61,827	\$ 58,219	\$ 53,691
45 Operating Reserve and Contingency	5%	\$ 21,531	\$ 49,908	\$ 48,815	\$ 80,619	\$ 55,836	\$ 44,439
46 SUBTOTAL-ADMIN & MARKETING	\$	462,159	\$ 1,048,024	\$ 1,026,113	\$ 1,272,992	\$ 1,172,567	\$ 933,222
47 TOTAL OPERATING AND MAINTENANCE COSTS	\$	695,612	\$ 2,816,028	\$ 2,837,086	\$ 3,061,959	\$ 2,690,294	\$ 2,615,011
48 CASH FLOW AVAILABLE FOR DEBT SERVICE	\$	367,355	\$ 5,346,828	\$ 3,819,518	\$ 6,876,523	\$ 7,281,815	\$ 920,932
52 CAPITAL IMPROVEMENTS	\$	203,284	\$ 11,547,181	\$ 8,407,582	\$ 2,430,991	\$ 3,836,232	\$ 8,716,963
53 DEBT SERVICE							
54 Principal Repayments	\$	11,078	\$ 478,998	\$ 831,561	\$ 831,561	\$ 831,561	\$ 1,308,635
55 Interest Expense	\$	-	\$ 687,657	\$ 1,130,027	\$ 1,071,818	\$ 1,013,608	\$ 1,620,503
56 SUBTOTAL-DEBT SERVICE	\$	11,078	\$ 1,144,554	\$ 1,961,588	\$ 1,903,379	\$ 1,845,169	\$ 2,929,137
57 TOTAL OPERATING EXPENSES AND DEBT SVC	\$	806,690	\$ 3,960,582	\$ 4,797,673	\$ 4,965,338	\$ 4,535,463	\$ 5,544,149
58 NET OPERATING INCOME (NOI)	\$	366,277	\$ 4,204,274	\$ 1,867,931	\$ 4,973,144	\$ 5,436,646	\$ (2,008,206)
59 Capital Improvements	\$	-	\$ (3,000,000)	\$ (1,900,000)	\$ (2,414,101)	\$ (3,861,525)	\$ -
60 NET CASH FLOW (NOI - Capital Improvements)	\$	366,277	\$ 1,204,274	\$ (42,069)	\$ 2,559,043	\$ 1,775,121	\$ (2,008,206)
61 CUMULATIVE CASH FLOW	\$	366,277	\$ 1,580,551	\$ 1,518,482	\$ 4,077,525	\$ 5,852,646	\$ 3,846,440
62 Discounted Cash Flows @	9%	\$ 326,880	\$ 1,013,613	\$ (32,485)	\$ 1,812,891	\$ 1,153,707	\$ (1,198,235)
63 NET PRESENT VALUE			\$ 1,263,403				
64 Discounted Cash Flows @	18%	\$ 309,806	\$ 910,804	\$ (27,661)	\$ 1,463,141	\$ 882,549	\$ (867,338)
65 NET PRESENT VALUE			\$ 1,231,062				
66							
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Flow

Scenario: VHFEDA Business and Operations Plan

	Year	Year	Year	Year	Year	Year	Year	Year	Year	Year	Year	Year
0	1	2	3	4	5	6	7	8	9	10	11	12
	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
BASIS												
\$	-	1,789,463	3,164,630	5,291,928	1,761,737	731,506	981,803	310,728	3,583,342	1,635,149	2,320,975	1,961,184
\$	18,000	1,572,735	384,050	746,340	3,828,440	109,705	577,222	333,472	333,472	109,705	109,705	109,705
\$	17,342	255,582	400,030	505,564	308,445	430,017	639,924	986,198	672,372	697,343	722,105	747,967
\$	33,342	3,617,779	3,948,720	6,598,406	6,127,636	1,688,066	2,198,749	1,310,398	4,586,186	2,442,197	3,162,786	2,818,866
\$ 250,000	250,000	250,000	250,000	250,000	250,000	250,000	250,000	250,000	250,000	250,000	250,000	250,000
\$	-	-	-	-	-	-	-	-	-	-	-	-
\$	367,000	183,500	91,750	-	-	-	-	-	-	-	-	-
\$ 5,000,000	-	2,000,000	1,000,000	1,000,000	1,000,000	-	-	-	-	-	-	-
\$ 500,000	-	500,000	-	-	-	-	-	-	-	-	-	-
\$	-	195,533	326,765	539,705	772,194	898,465	944,925	1,008,949	1,203,984	1,294,355	1,486,670	1,588,868
0	302,825	1,416,044	1,038,389	1,552,402	1,822,279	829,423	(43,520)	546,107	1,391,822	807,581	1,265,653	671,010
\$	918,628	4,648,077	2,706,884	3,342,107	3,844,474	1,977,899	1,161,406	1,806,086	2,846,806	2,161,937	3,002,324	2,607,878
\$	952,967	5,162,866	3,665,804	5,938,612	5,972,109	3,636,943	3,360,164	3,116,464	7,434,991	4,894,134	6,166,109	6,328,734
\$	-	142,345	168,194	207,804	252,907	282,238	298,948	319,611	365,899	394,392	444,615	478,556
\$	-	418,143	454,381	505,985	563,824	807,487	840,760	878,827	945,489	993,087	1,085,035	1,119,608
0.25	-	203,584	184,131	166,656	93,506	93,070	-	28,641	-	-	-	-
0.25	-	203,584	184,131	166,656	93,506	93,070	-	-	-	-	-	-
100000	-	100,000	103,000	106,090	109,273	-	-	-	-	-	-	-
0.65	127,098	529,320	478,741	433,307	243,349	241,982	-	-	-	-	-	-
500	-	84,932	152,158	117,329	88,920	83,857	74,623	71,868	80,873	54,873	39,243	32,625
5%	6,355	84,095	86,237	85,190	72,273	80,085	60,716	64,947	66,613	72,118	77,445	81,539
\$	133,453	1,766,004	1,810,973	1,768,997	1,617,736	1,681,790	1,276,046	1,263,994	1,440,674	1,614,469	1,626,338	1,712,329
\$	209,382	343,663	383,973	414,593	390,530	402,248	414,314	390,921	349,785	380,257	312,350	321,721
\$	52,346	85,916	90,993	103,648	97,633	100,562	103,578	97,730	87,441	90,084	78,088	80,430
\$	69,500	139,000	120,000	110,000	100,150	80,305	66,364	60,628	55,796	35,970	31,149	26,334
\$	23,250	48,500	51,295	53,114	51,258	52,327	50,220	51,367	52,548	51,784	51,017	52,309
\$	17,000	34,500	19,000	41,000	23,000	42,250	21,750	43,250	17,250	43,750	9,500	40,000
\$	2,000	100,000	100,000	100,000	100,000	100,000	100,000	68,000	89,000	65,000	48,000	52,000
\$	55,000	-	-	-	-	-	-	-	-	-	-	-
\$	-	36,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
5%	-	180,889	197,436	327,192	294,931	56,402	77,941	32,210	195,841	87,243	121,534	103,544
\$	2,150	31,650	32,600	61,827	58,219	53,691	49,680	46,707	49,191	51,037	52,568	54,146
5%	21,531	49,906	48,815	60,619	55,836	44,439	44,242	39,491	43,392	39,304	35,260	36,574
\$	462,169	1,048,024	1,026,113	1,272,982	1,172,557	833,222	828,080	829,306	911,223	826,390	740,486	768,089
\$	686,612	2,814,028	2,838,086	3,081,989	2,690,294	2,616,011	2,204,136	2,183,199	2,362,097	2,339,869	2,398,804	2,480,386
\$	367,265	5,348,828	3,819,618	6,876,623	7,281,816	920,932	1,146,018	922,265	6,082,894	2,264,276	3,788,304	2,846,346
\$	203,284	11,647,161	8,407,682	2,430,981	3,836,232	8,716,963	919,961	-	-	806,377	-	644,686
\$	11,078	478,898	831,561	831,561	831,561	1,306,635	1,356,773	1,356,773	1,356,773	1,356,773	1,356,773	1,356,773
\$	-	667,857	1,130,027	1,071,818	1,013,808	1,620,503	1,599,231	1,504,257	1,409,283	1,314,309	1,219,335	1,124,361
\$	11,078	1,144,654	1,961,688	1,903,379	1,845,169	2,927,137	2,968,004	2,861,030	2,788,066	2,671,062	2,576,108	2,481,133
\$	896,890	3,868,682	4,797,673	4,966,368	4,636,463	6,642,149	5,180,140	6,064,229	5,118,163	6,019,940	4,842,912	4,961,622
\$	368,277	4,204,274	1,867,931	4,973,144	5,438,646	(2,006,206)	(1,808,986)	(1,836,778)	2,316,838	(416,808)	1,212,197	366,212
\$	-	(3,000,000)	(1,900,000)	(2,414,101)	(3,661,525)	-	-	-	-	(508,378)	-	(544,587)
\$	368,277	1,204,274	(42,089)	2,689,043	1,776,121	(2,006,206)	(1,808,986)	(1,836,778)	2,316,838	(826,184)	1,212,197	(179,376)
\$	368,277	1,880,551	1,818,482	4,077,626	5,862,646	3,848,440	2,036,454	97,679	2,414,617	1,486,333	2,701,830	2,822,165
9%	328,860	1,013,613	(32,485)	1,812,891	1,153,707	(1,196,235)	(990,124)	(973,008)	1,068,737	(300,808)	489,766	(63,774)
\$	1,843,403											
18%	300,806	910,604	(27,661)	1,483,141	882,549	(867,338)	(680,441)	(633,789)	658,500	(228,691)	260,553	(33,526)
\$	1,831,082											

A Business and Operations Plan

Year 7 2003	Year 8 2004	Year 9 2005	Year 10 2006	Year 11 2007	Year 12 2008	Year 13 2009	Year 14 2010	Year 15 2011	Cumulative Forecast		
									5 Year Total	10 Year Total	15 Year Total
1,803	\$ 310,728	\$ 3,583,342	\$ 1,635,149	\$ 2,320,975	\$ 1,961,184	\$ 343,089	\$ 349,930	\$ 2,512,298	12,007,768	19,280,086	26,737,541
7,222	\$ 333,472	\$ 333,472	\$ 109,705	\$ 109,705	\$ 109,705	\$ 109,705	\$ 109,705	\$ 109,705	6,547,885	8,011,141	8,589,867
3,924	\$ 666,198	\$ 672,372	\$ 697,343	\$ 722,105	\$ 747,967	\$ 776,820	\$ 800,785	\$ 825,723	281,587	3,387,441	7,280,641
-	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	1,486,972	1,773,789	1,773,789
3,749	\$ 1,310,398	\$ 4,898,186	\$ 2,442,197	\$ 3,152,786	\$ 2,918,866	\$ 1,228,384	\$ 1,280,421	\$ 3,447,728	\$ 20,323,881	\$ 32,422,486	\$ 44,331,648
0,000	\$ 250,000	\$ 250,000	\$ 250,000	\$ 250,000	\$ 250,000	\$ 250,000	\$ 250,000	\$ 250,000	1,380,000	2,800,000	3,760,000
-	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	-	-	-
-	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	642,280	642,280	642,280
-	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	6,000,000	6,000,000	6,000,000
-	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	800,000	800,000	800,000
4,925	\$ 1,008,949	\$ 1,203,984	\$ 1,204,355	\$ 1,486,670	\$ 1,586,868	\$ 1,625,654	\$ 1,664,441	\$ 1,856,756	1,834,197	7,164,675	16,406,284
3,520	\$ 546,107	\$ 1,391,822	\$ 607,581	\$ 1,265,653	\$ 671,010	\$ 274,581	\$ 274,581	\$ 1,265,653	6,131,719	9,463,132	13,214,610
1,405	\$ 1,805,088	\$ 2,846,808	\$ 2,161,937	\$ 3,002,334	\$ 2,807,878	\$ 2,180,236	\$ 2,189,021	\$ 3,372,409	16,368,166	26,250,267	36,612,124
3,154	\$ 3,116,464	\$ 7,434,991	\$ 4,894,134	\$ 6,166,109	\$ 6,326,734	\$ 3,379,629	\$ 3,446,442	\$ 6,820,136	\$ 36,682,048	\$ 57,712,723	\$ 82,843,772
1,946	\$ 319,611	\$ 365,899	\$ 394,302	\$ 444,615	\$ 478,556	\$ 501,127	\$ 524,822	\$ 583,571	\$ 771,280	\$ 2,432,336	\$ 4,984,828
1,760	\$ 878,827	\$ 945,489	\$ 993,087	\$ 1,065,035	\$ 1,119,808	\$ 1,182,217	\$ 1,206,373	\$ 1,290,011	\$ 1,942,312	\$ 6,407,983	\$ 12,261,207
-	\$ 28,641	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 647,988	\$ 769,679	\$ 769,679
-	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 647,988	\$ 741,037	\$ 741,037
-	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 418,383	\$ 418,383	\$ 418,383
-	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1,811,814	\$ 2,083,796	\$ 2,083,796
1,623	\$ 71,888	\$ 60,673	\$ 54,873	\$ 39,243	\$ 32,625	\$ 29,870	\$ 27,115	\$ 11,484	\$ 443,338	\$ 789,433	\$ 929,770
1,716	\$ 64,947	\$ 66,613	\$ 72,118	\$ 77,445	\$ 81,539	\$ 84,661	\$ 87,906	\$ 94,253	\$ 334,181	\$ 680,830	\$ 1,106,434
1,046	\$ 1,263,894	\$ 1,440,874	\$ 1,614,489	\$ 1,838,338	\$ 1,712,329	\$ 1,777,875	\$ 1,846,016	\$ 1,979,320	\$ 7,017,164	\$ 14,263,237	\$ 23,236,114
1,314	\$ 390,921	\$ 340,785	\$ 360,257	\$ 312,350	\$ 321,721	\$ 331,373	\$ 341,314	\$ 351,553	\$ 1,722,142	\$ 3,336,645	\$ 5,297,986
1,578	\$ 97,730	\$ 87,441	\$ 90,064	\$ 78,088	\$ 80,430	\$ 82,843	\$ 85,328	\$ 87,888	\$ 430,635	\$ 909,911	\$ 1,334,489
1,364	\$ 60,628	\$ 55,796	\$ 35,970	\$ 31,149	\$ 26,334	\$ 26,524	\$ 23,720	\$ 21,921	\$ 838,680	\$ 837,713	\$ 987,261
1,220	\$ 51,367	\$ 52,548	\$ 51,784	\$ 51,017	\$ 52,309	\$ 53,637	\$ 53,007	\$ 54,417	\$ 225,417	\$ 483,643	\$ 748,030
1,750	\$ 43,250	\$ 17,250	\$ 43,750	\$ 9,500	\$ 40,000	\$ 10,000	\$ 8,000	\$ 3,000	\$ 134,800	\$ 302,780	\$ 373,280
1,000	\$ 66,000	\$ 66,000	\$ 66,000	\$ 48,000	\$ 52,000	\$ 36,000	\$ 36,000	\$ 25,000	\$ 402,000	\$ 792,000	\$ 980,000
-	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 66,000	\$ 66,000	\$ 66,000
1,000	\$ 1,000	\$ 1,000	\$ 1,000	\$ 1,000	\$ 1,000	\$ 1,000	\$ 1,000	\$ 1,000	\$ 39,000	\$ 44,000	\$ 49,000
1,941	\$ 32,210	\$ 196,841	\$ 87,243	\$ 121,534	\$ 103,544	\$ 22,639	\$ 22,982	\$ 131,100	\$ 1,000,446	\$ 1,480,084	\$ 1,961,883
1,680	\$ 46,707	\$ 46,191	\$ 51,037	\$ 52,588	\$ 54,146	\$ 56,770	\$ 18,338	\$ 18,888	\$ 186,446	\$ 436,782	\$ 636,482
1,242	\$ 39,491	\$ 43,392	\$ 39,304	\$ 35,260	\$ 36,574	\$ 30,939	\$ 29,584	\$ 34,738	\$ 236,707	\$ 447,875	\$ 614,672
1,080	\$ 829,306	\$ 911,223	\$ 826,390	\$ 740,486	\$ 769,089	\$ 648,726	\$ 621,273	\$ 729,606	\$ 4,970,845	\$ 9,399,074	\$ 12,908,103
1,136	\$ 2,193,199	\$ 2,363,097	\$ 2,339,899	\$ 2,368,904	\$ 2,480,388	\$ 2,427,899	\$ 2,467,289	\$ 2,708,826	\$ 11,988,008	\$ 23,892,310	\$ 36,143,217
1,016	\$ 922,265	\$ 6,082,894	\$ 2,264,275	\$ 3,786,304	\$ 2,846,346	\$ 962,030	\$ 982,163	\$ 4,111,309	\$ 23,894,039	\$ 34,020,413	\$ 46,700,555
1,961	\$ -	\$ -	\$ 808,377	\$ -	\$ 644,896	\$ -	\$ -	\$ -	\$ 26,426,210	\$ 36,670,801	\$ 37,116,088
1,773	\$ 1,356,773	\$ 1,356,773	\$ 1,356,773	\$ 1,356,773	\$ 1,356,773	\$ 1,356,773	\$ 1,356,773	\$ 1,356,773	\$ 2,982,688	\$ 9,716,384	\$ 16,800,247
1,231	\$ 1,504,257	\$ 1,409,283	\$ 1,314,309	\$ 1,219,335	\$ 1,124,361	\$ 1,029,387	\$ 934,413	\$ 839,439	\$ 3,953,110	\$ 11,330,893	\$ 16,477,626
1,004	\$ 2,861,030	\$ 2,769,096	\$ 2,671,082	\$ 2,576,108	\$ 2,481,133	\$ 2,386,189	\$ 2,291,185	\$ 2,196,211	\$ 6,866,788	\$ 21,047,076	\$ 32,977,873
1,140	\$ 6,064,229	\$ 6,116,183	\$ 6,010,940	\$ 4,942,912	\$ 4,961,622	\$ 4,813,789	\$ 4,768,476	\$ 4,906,037	\$ 18,963,778	\$ 44,739,286	\$ 69,121,080
1,986	\$ (1,936,776)	\$ 2,316,838	\$ (416,808)	\$ 1,212,197	\$ 365,212	\$ (1,434,129)	\$ (1,309,033)	\$ 1,915,088	\$ 16,828,272	\$ 12,973,337	\$ 13,722,862
-	\$ -	\$ -	\$ (508,378)	\$ -	\$ (544,587)	\$ -	\$ -	\$ -	\$ (10,975,628)	\$ (11,484,004)	\$ (12,028,591)
1,986	\$ (1,936,776)	\$ 2,316,838	\$ (826,184)	\$ 1,212,197	\$ (179,376)	\$ (1,434,129)	\$ (1,309,033)	\$ 1,915,088	\$ 6,862,646	\$ 1,489,333	\$ 1,894,091
1,464	\$ 97,679	\$ 2,414,617	\$ 1,486,333	\$ 2,701,830	\$ 2,622,165	\$ 1,088,026	\$ (221,007)	\$ 1,894,091			
1,124	\$ (673,006)	\$ 1,066,737	\$ (390,808)	\$ 489,766	\$ (63,774)	\$ (467,782)	\$ (391,723)	\$ 525,767			100%
441	\$ (633,799)	\$ 658,590	\$ (228,691)	\$ 260,553	\$ (33,526)	\$ (233,066)	\$ (185,004)	\$ 235,355			

Table B12. Discounted Cash Flow Analysis, CERL1 Scenario with 25% Project View.

Projected Revenues, Expenditures and Cash Flow
Vint Hill Farms Station

Scenario: CEI

	0	Year 1 1997	Year 2 1998	Year 3 1999	Year 4 2000	Year 5 2001	Year 6 2002
DEVELOPMENT YEAR							
1 REVENUES							
2							
3 INCOME FROM REAL ESTATE ACTIVITY	BASIS						
4 Land Sales	\$ -	\$ 1,789,463	\$ 3,024,139	\$ 5,030,634	\$ 1,523,508	\$ 548,630	\$
5 Sales of Existing Facilities	\$ 16,000	\$ 1,275,551	\$ 288,038	\$ 622,255	\$ 2,871,330	\$ 82,279	\$
6 Golf Course Operations (Before Debt Service)	\$ -	\$ -	\$ -	\$ 52,574	\$ 229,013	\$ 430,017	\$
7 Leases on Interim Use Buildings	\$ 13,006	\$ 190,043	\$ 300,029	\$ 379,173	\$ 231,334	\$ 215,120	\$
8 SUBTOTAL SALES/LEASE INCOME:	\$ 29,006	\$ 3,265,066	\$ 3,612,206	\$ 6,084,636	\$ 4,865,186	\$ 1,276,046	\$
9							
10 OTHER INCOME							
11 County Contributions	\$ 250,000	\$ 250,000	\$ 250,000	\$ 250,000	\$ 250,000	\$ 250,000	\$
12 State Contributions	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$
13 Grants - OEA	\$ -	\$ 367,000	\$ 183,500	\$ 91,750	\$ -	\$ -	\$
14 Grants - EDA	\$ 5,000,000	\$ -	\$ 2,000,000	\$ 1,000,000	\$ 1,000,000	\$ 1,000,000	\$
15 Grants - RDA and Other	\$ 500,000	\$ -	\$ 500,000	\$ -	\$ -	\$ -	\$
16 Water/Sewer User Fees	\$ -	\$ -	\$ 174,539	\$ 285,481	\$ 467,886	\$ 664,968	\$ 774,337
17 Water/Sewer Service Connections	0	\$ 262,389	\$ 1,230,413	\$ 864,774	\$ 1,311,393	\$ 1,525,408	\$ 712,990
18 SUBTOTAL-OTHER INCOME	\$ 579,389	\$ 4,338,483	\$ 2,482,004	\$ 3,029,279	\$ 3,440,376	\$ 1,737,326	\$
19							
20 TOTAL REVENUES	\$ 908,395	\$ 7,603,549	\$ 6,104,210	\$ 9,113,915	\$ 8,295,561	\$ 3,013,372	\$
21							
22 EXPENDITURES							
23 BUILDING AND GROUNDS							
24 Water System O&M	\$ -	\$ 139,227	\$ 161,888	\$ 196,114	\$ 234,980	\$ 260,863	\$
25 Sewer System O&M	\$ -	\$ 414,719	\$ 447,237	\$ 493,129	\$ 544,139	\$ 624,616	\$
26 Electrical	0.25	\$ -	\$ 179,675	\$ 164,611	\$ 151,505	\$ 85,613	\$ 85,842
27 Heating	0.25	\$ -	\$ 179,675	\$ 164,611	\$ 151,505	\$ 85,613	\$ 85,842
28 Security	100000	\$ -	\$ 100,000	\$ 103,000	\$ 106,090	\$ 109,273	\$ -
29 Building Maintenance	0.65	\$ 131,408	\$ 467,154	\$ 427,989	\$ 393,913	\$ 222,594	\$ 223,190
30 Roads & Grounds Maintenance	500	\$ -	\$ 84,932	\$ 152,158	\$ 117,329	\$ 88,920	\$ 83,857
31 Other Maintenance/Contingency	5%	\$ 6,570	\$ 78,260	\$ 81,065	\$ 80,479	\$ 68,557	\$ 68,211
32 SUBTOTAL-BLDGS & GROUNDS		\$ 137,979	\$ 1,443,660	\$ 1,702,380	\$ 1,880,085	\$ 1,439,689	\$ 1,432,421
33							
34 ADMINISTRATION & MARKETING							
35 Salaries and Board Compensation	\$ 209,382	\$ 343,863	\$ 363,973	\$ 414,593	\$ 390,530	\$ 402,246	\$
36 Fringe Benefits	\$ 52,346	\$ 85,916	\$ 90,993	\$ 103,648	\$ 97,633	\$ 100,562	\$
37 Contracted Services	\$ 69,500	\$ 139,000	\$ 120,000	\$ 110,000	\$ 100,150	\$ 80,305	\$
38 Overhead (Equip., Supl., Travel, etc)	\$ 23,250	\$ 46,500	\$ 51,295	\$ 53,114	\$ 51,258	\$ 52,327	\$
39 Marketing Collateral	\$ 17,000	\$ 34,500	\$ 19,000	\$ 41,000	\$ 23,000	\$ 42,250	\$
40 Advertising and PR	\$ 2,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000	\$
41 Rezoning & Permitting	\$ 55,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$
42 FTZ Designation and Maintenance	\$ -	\$ 36,000	\$ 1,000	\$ 1,000	\$ 1,000	\$ 1,000	\$
43 Broker Commission & Fees	5%	\$ -	\$ 162,753	\$ 180,610	\$ 301,603	\$ 231,309	\$ 42,301
44 Insurance	\$ 2,150	\$ 31,650	\$ 32,600	\$ 61,827	\$ 58,219	\$ 53,691	\$
45 Operating Reserve and Contingency	5%	\$ 21,531	\$ 48,999	\$ 47,974	\$ 59,339	\$ 52,655	\$ 43,734
46 SUBTOTAL-ADMIN & MARKETING	\$ 462,169	\$ 1,028,961	\$ 1,007,448	\$ 1,246,124	\$ 1,105,763	\$ 918,416	\$
47							
48 TOTAL OPERATING AND MAINTENANCE COSTS	\$ 600,138	\$ 2,672,632	\$ 2,709,806	\$ 2,936,189	\$ 2,645,443	\$ 2,360,838	\$
49							
50 CASH FLOW AVAILABLE FOR DEBT SERVICE	\$ 318,258	\$ 4,920,878	\$ 3,394,406	\$ 6,177,726	\$ 5,750,118	\$ 662,534	\$
51							
52 CAPITAL IMPROVEMENTS	\$ 163,614	\$ 9,810,700	\$ 7,195,132	\$ 1,486,164	\$ 790,975	\$ 6,844,255	\$
53 DEBT SERVICE							
54 Principal Repayments	\$ 8,912	\$ 380,095	\$ 668,679	\$ 668,679	\$ 668,679	\$ 1,041,691	\$
55 Interest Expense	\$ -	\$ 532,133	\$ 606,921	\$ 862,113	\$ 815,306	\$ 1,290,715	\$
56 SUBTOTAL-DEBT SERVICE	\$ 8,912	\$ 912,227	\$ 1,577,900	\$ 1,530,792	\$ 1,483,985	\$ 2,332,406	\$
57							
58 TOTAL OPERATING EXPENSES AND DEBT SVC	\$ 609,049	\$ 3,584,859	\$ 4,287,406	\$ 4,466,981	\$ 4,029,428	\$ 4,693,244	\$
59							
60 NET OPERATING INCOME (NOI)	\$ 309,347	\$ 4,008,660	\$ 1,816,805	\$ 4,646,934	\$ 4,265,133	\$ (1,689,872)	\$
61 Capital Improvements	\$ -	\$ (3,000,000)	\$ (1,900,000)	\$ (2,414,101)	\$ (3,661,525)	\$ -	\$
62 NET CASH FLOW (NOI - Capital Improvements)	\$ 309,347	\$ 1,008,660	\$ (83,195)	\$ 2,232,833	\$ 604,608	\$ (1,689,872)	\$
63							
64 CUMULATIVE CASH FLOW	\$ 309,347	\$ 1,317,997	\$ 1,234,802	\$ 3,467,635	\$ 4,072,243	\$ 2,402,371	\$
65							
66 Discounted Cash Flows @	9%	\$ 283,804	\$ 848,961	\$ (64,242)	\$ 1,581,795	\$ 392,954	\$ (905,690)
67							
68 NET PRESENT VALUE		\$ 810,410					
69							
70 Discounted Cash Flows @	18%	\$ 268,997	\$ 762,685	\$ (54,702)	\$ 1,276,629	\$ 300,597	\$ (721,932)
71							
72 NET PRESENT VALUE		\$ 998,568					
73							
74							
75							

Scenario: CERL1 with 25% Absorption Reduction (plus USACERL Infrastructure Costs)

	Year 1 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14
	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
	\$ 1,789,463	\$ 3,024,139	\$ 5,030,634	\$ 1,523,508	\$ 548,630	\$ 736,202	\$ 233,046	\$ 2,687,506	\$ 1,226,362	\$ 1,740,731	\$ 1,470,888	\$ 257,302	\$ 262,448
	\$ 1,275,551	\$ 288,038	\$ 622,255	\$ 2,871,330	\$ 82,279	\$ 432,916	\$ 250,104	\$ 250,104	\$ 82,279	\$ 82,279	\$ 82,279	\$ 82,279	\$ 82,279
	\$ -	\$ -	\$ 52,574	\$ 229,013	\$ 430,017	\$ 639,924	\$ 666,198	\$ 672,372	\$ 697,343	\$ 722,105	\$ 747,967	\$ 776,620	\$ 800,785
	\$ 190,043	\$ 300,029	\$ 379,173	\$ 231,334	\$ 215,120	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	\$ 3,265,086	\$ 3,612,206	\$ 6,034,636	\$ 4,865,186	\$ 1,276,046	\$ 1,808,043	\$ 1,148,348	\$ 3,808,982	\$ 2,005,984	\$ 2,546,116	\$ 2,301,134	\$ 1,116,201	\$ 1,145,512
	\$ 250,000	\$ 250,000	\$ 250,000	\$ 250,000	\$ 250,000	\$ 250,000	\$ 250,000	\$ 250,000	\$ 250,000	\$ 250,000	\$ 250,000	\$ 250,000	\$ 250,000
	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	\$ 183,500	\$ 91,750	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	\$ 2,000,000	\$ 1,000,000	\$ 1,000,000	\$ 1,000,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	\$ 500,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	\$ 174,539	\$ 285,481	\$ 467,686	\$ 664,968	\$ 774,337	\$ 804,563	\$ 852,581	\$ 998,857	\$ 1,066,636	\$ 1,210,872	\$ 1,286,020	\$ 1,315,110	\$ 1,344,200
	\$ 1,230,413	\$ 864,774	\$ 1,311,593	\$ 1,525,408	\$ 712,990	\$ (115,761)	\$ 409,580	\$ 1,043,867	\$ 455,686	\$ 949,240	\$ 503,257	\$ 205,936	\$ 205,936
	\$ 4,338,463	\$ 2,482,004	\$ 3,029,279	\$ 3,440,376	\$ 1,737,326	\$ 938,802	\$ 1,612,161	\$ 2,292,724	\$ 1,772,322	\$ 2,410,112	\$ 2,039,278	\$ 1,771,046	\$ 1,800,136
	\$ 7,883,809	\$ 6,104,210	\$ 8,113,916	\$ 8,295,661	\$ 3,013,372	\$ 2,747,846	\$ 2,661,809	\$ 6,902,706	\$ 3,778,306	\$ 4,965,227	\$ 4,340,411	\$ 2,987,246	\$ 2,945,647
	\$ 139,227	\$ 161,688	\$ 196,114	\$ 234,960	\$ 260,863	\$ 274,050	\$ 291,044	\$ 327,300	\$ 350,256	\$ 389,558	\$ 416,696	\$ 435,358	\$ 454,764
	\$ 414,719	\$ 447,237	\$ 493,129	\$ 544,139	\$ 624,616	\$ 649,242	\$ 678,351	\$ 728,925	\$ 765,218	\$ 819,791	\$ 861,352	\$ 893,957	\$ 927,743
	\$ 179,675	\$ 164,611	\$ 151,505	\$ 85,613	\$ 85,842	\$ -	\$ 21,481	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	\$ 179,675	\$ 164,611	\$ 151,505	\$ 85,613	\$ 85,842	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	\$ 100,000	\$ 103,000	\$ 106,090	\$ 109,273	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	\$ 467,154	\$ 427,989	\$ 393,913	\$ 222,504	\$ 223,190	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	\$ 84,932	\$ 152,158	\$ 117,329	\$ 88,920	\$ 83,857	\$ 74,623	\$ 71,868	\$ 60,873	\$ 54,873	\$ 39,243	\$ 32,625	\$ 29,870	\$ 27,115
	\$ 78,269	\$ 81,085	\$ 80,479	\$ 68,557	\$ 68,211	\$ 49,896	\$ 53,137	\$ 55,855	\$ 58,517	\$ 62,430	\$ 65,534	\$ 67,959	\$ 70,481
	\$ 1,643,660	\$ 1,702,380	\$ 1,880,065	\$ 1,439,689	\$ 1,432,421	\$ 1,047,811	\$ 1,116,882	\$ 1,172,964	\$ 1,228,984	\$ 1,311,021	\$ 1,376,208	\$ 1,427,144	\$ 1,480,104
	\$ 343,663	\$ 363,973	\$ 414,593	\$ 390,530	\$ 402,246	\$ 414,314	\$ 390,921	\$ 349,785	\$ 360,257	\$ 312,350	\$ 321,721	\$ 331,373	\$ 341,314
	\$ 85,916	\$ 90,993	\$ 103,648	\$ 97,633	\$ 100,562	\$ 103,578	\$ 97,730	\$ 87,441	\$ 90,064	\$ 78,088	\$ 80,430	\$ 82,843	\$ 85,328
	\$ 139,000	\$ 120,000	\$ 110,000	\$ 100,150	\$ 80,305	\$ 66,364	\$ 60,628	\$ 55,796	\$ 35,970	\$ 31,149	\$ 26,334	\$ 26,524	\$ 23,720
	\$ 46,500	\$ 51,295	\$ 53,114	\$ 51,258	\$ 52,327	\$ 50,220	\$ 51,367	\$ 52,548	\$ 51,764	\$ 51,017	\$ 52,309	\$ 53,637	\$ 53,007
	\$ 34,500	\$ 19,000	\$ 41,000	\$ 23,000	\$ 42,250	\$ 21,750	\$ 43,250	\$ 17,250	\$ 43,750	\$ 9,500	\$ 40,000	\$ 10,000	\$ 8,000
	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 66,000	\$ 59,000	\$ 65,000	\$ 48,000	\$ 52,000	\$ 35,000	\$ 36,000
	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	\$ 36,000	\$ 1,000	\$ 1,000	\$ 1,000	\$ 1,000	\$ 1,000	\$ 1,000	\$ 1,000	\$ 1,000	\$ 1,000	\$ 1,000	\$ 1,000	\$ 1,000
	\$ 162,753	\$ 180,610	\$ 301,603	\$ 231,309	\$ 42,301	\$ 58,456	\$ 24,158	\$ 146,881	\$ 65,432	\$ 91,150	\$ 77,658	\$ 16,979	\$ 17,236
	\$ 31,650	\$ 32,600	\$ 61,827	\$ 58,219	\$ 53,691	\$ 49,680	\$ 46,707	\$ 49,191	\$ 51,037	\$ 52,586	\$ 54,146	\$ 55,770	\$ 18,338
	\$ 49,990	\$ 47,974	\$ 59,339	\$ 52,655	\$ 43,734	\$ 43,268	\$ 39,088	\$ 40,944	\$ 38,214	\$ 33,741	\$ 35,280	\$ 30,656	\$ 29,297
	\$ 1,028,961	\$ 1,007,446	\$ 1,246,124	\$ 1,105,763	\$ 918,416	\$ 908,630	\$ 820,849	\$ 869,815	\$ 802,489	\$ 708,684	\$ 740,878	\$ 643,782	\$ 615,241
	\$ 2,672,632	\$ 2,709,806	\$ 2,836,189	\$ 2,645,443	\$ 2,360,838	\$ 1,968,441	\$ 1,936,731	\$ 2,032,788	\$ 2,031,363	\$ 2,019,586	\$ 2,117,085	\$ 2,070,928	\$ 2,065,345
	\$ 4,920,878	\$ 3,384,405	\$ 6,177,726	\$ 5,760,118	\$ 682,634	\$ 791,404	\$ 724,778	\$ 3,889,937	\$ 1,746,963	\$ 2,936,842	\$ 2,223,327	\$ 816,320	\$ 860,303
	\$ 9,810,700	\$ 7,195,132	\$ 1,486,164	\$ 790,975	\$ 6,844,265	\$ 692,881	\$ -	\$ -	\$ 266,800	\$ -	\$ 274,886	\$ -	\$ -
	\$ 380,095	\$ 668,679	\$ 668,679	\$ 668,679	\$ 1,041,691	\$ 1,079,453	\$ 1,079,453	\$ 1,079,453	\$ 1,079,453	\$ 1,079,453	\$ 1,079,453	\$ 1,079,453	\$ 1,079,453
	\$ 532,133	\$ 906,921	\$ 862,113	\$ 815,306	\$ 1,290,715	\$ 1,270,683	\$ 1,195,101	\$ 1,119,540	\$ 1,043,978	\$ 968,416	\$ 892,854	\$ 817,293	\$ 741,731
	\$ 912,227	\$ 1,677,800	\$ 1,630,792	\$ 1,463,986	\$ 2,332,406	\$ 2,360,116	\$ 2,274,666	\$ 2,198,993	\$ 2,123,431	\$ 2,047,969	\$ 1,972,308	\$ 1,896,746	\$ 1,821,184
	\$ 3,694,660	\$ 4,267,406	\$ 4,486,961	\$ 4,029,428	\$ 4,683,244	\$ 4,306,557	\$ 4,211,286	\$ 4,231,761	\$ 4,164,784	\$ 4,067,464	\$ 4,080,392	\$ 3,967,672	\$ 3,916,629
	\$ 4,008,660	\$ 1,816,806	\$ 4,646,934	\$ 4,296,133	\$ (1,889,872)	\$ (1,558,712)	\$ (1,549,777)	\$ 1,670,945	\$ (376,478)	\$ 867,773	\$ 261,019	\$ (1,080,426)	\$ (970,882)
	\$ (3,000,000)	\$ (1,900,000)	\$ (2,414,101)	\$ (3,661,525)	\$ -	\$ -	\$ -	\$ -	\$ (508,378)	\$ -	\$ (544,587)	\$ -	\$ -
	\$ 1,008,660	\$ (83,188)	\$ 2,232,833	\$ 604,808	\$ (1,889,872)	\$ (1,558,712)	\$ (1,549,777)	\$ 1,670,945	\$ (984,968)	\$ 867,773	\$ (293,898)	\$ (1,080,426)	\$ (970,882)
	\$ 1,317,967	\$ 1,234,902	\$ 3,467,636	\$ 4,072,243	\$ 2,402,371	\$ 843,669	\$ (706,117)	\$ 964,827	\$ 79,971	\$ 967,744	\$ 674,176	\$ (406,280)	\$ (1,377,132)
	\$ 848,961	\$ (64,242)	\$ 1,581,795	\$ 392,954	\$ (995,690)	\$ (852,689)	\$ (777,781)	\$ 760,349	\$ (373,773)	\$ 344,041	\$ (104,374)	\$ (352,412)	\$ (290,533)
	\$ 762,685	\$ (54,702)	\$ 1,276,629	\$ 300,597	\$ (721,932)	\$ (585,978)	\$ (506,625)	\$ 474,987	\$ (218,723)	\$ 190,821	\$ (54,870)	\$ (175,599)	\$ (137,213)

1 with 25% Absorption Reduction (plus USACERL Infrastructure Costs)

Year 7 2003	Year 8 2004	Year 9 2005	Year 10 2006	Year 11 2007	Year 12 2008	Year 13 2009	Year 14 2010	Year 15 2011	Cumulative Forecast		
									5 Year Total	10 Year Total	15 Year Total
36,202	\$ 233,046	\$ 2,687,506	\$ 1,226,362	\$ 1,740,731	\$ 1,470,888	\$ 257,302	\$ 262,448	\$ 1,884,223	11,387,743	16,796,489	22,416,081
32,916	\$ 250,104	\$ 250,104	\$ 82,279	\$ 82,279	\$ 82,279	\$ 82,279	\$ 82,279	\$ 82,279	5,073,174	6,170,886	6,682,280
39,924	\$ 686,198	\$ 672,372	\$ 697,343	\$ 722,105	\$ 747,967	\$ 776,620	\$ 800,785	\$ 825,723	3,811,687	3,387,441	7,280,641
	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	1,113,686	1,328,705	1,328,705
98,043	\$ 1,149,348	\$ 3,609,982	\$ 2,005,984	\$ 2,546,116	\$ 2,301,134	\$ 1,116,201	\$ 1,146,512	\$ 2,792,226	17,636,089	27,686,491	37,696,678
50,000	\$ 250,000	\$ 250,000	\$ 250,000	\$ 250,000	\$ 250,000	\$ 250,000	\$ 250,000	\$ 250,000	1,280,000	2,800,000	3,780,000
	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	-	-	-
	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	642,280	642,280	642,280
	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	5,000,000	5,000,000	5,000,000
	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	800,000	800,000	800,000
04,563	\$ 852,581	\$ 998,857	\$ 1,066,636	\$ 1,210,872	\$ 1,286,020	\$ 1,315,110	\$ 1,344,200	\$ 1,488,436	1,882,674	6,088,648	12,734,286
15,761	\$ 409,580	\$ 1,043,867	\$ 455,686	\$ 949,240	\$ 503,257	\$ 205,936	\$ 205,936	\$ 949,240	5,184,577	7,700,939	10,814,548
18,900	\$ 1,512,161	\$ 2,292,734	\$ 1,772,322	\$ 2,410,112	\$ 2,039,278	\$ 1,771,048	\$ 1,800,136	\$ 2,887,676	14,179,802	22,432,837	33,141,082
47,845	\$ 2,861,609	\$ 6,902,706	\$ 3,778,306	\$ 4,968,227	\$ 4,340,411	\$ 2,867,248	\$ 2,846,647	\$ 6,478,901	32,016,691	60,119,328	70,727,782
74,050	\$ 291,044	\$ 327,300	\$ 350,256	\$ 389,558	\$ 416,696	\$ 435,358	\$ 454,764	\$ 500,815	732,008	2,236,622	4,432,713
49,242	\$ 678,351	\$ 728,925	\$ 785,218	\$ 819,791	\$ 861,352	\$ 893,957	\$ 927,743	\$ 991,161	1,888,224	5,345,676	9,639,680
	\$ 21,481	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	881,404	881,404	881,404
	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	881,404	887,247	887,247
	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	418,383	418,383	418,383
	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	1,843,080	1,888,249	1,888,249
74,623	\$ 71,888	\$ 80,873	\$ 54,873	\$ 39,243	\$ 32,625	\$ 29,870	\$ 27,115	\$ 11,484	443,339	786,433	929,770
49,896	\$ 53,137	\$ 55,855	\$ 58,517	\$ 62,430	\$ 65,534	\$ 67,950	\$ 70,481	\$ 75,173	314,940	600,686	842,132
47,811	\$ 1,116,882	\$ 1,172,964	\$ 1,228,964	\$ 1,311,021	\$ 1,376,206	\$ 1,427,144	\$ 1,480,104	\$ 1,578,633	6,613,743	12,611,674	19,784,782
14,314	\$ 390,921	\$ 349,785	\$ 360,257	\$ 312,350	\$ 321,721	\$ 331,373	\$ 341,314	\$ 351,553	1,722,142	3,639,646	5,297,968
33,578	\$ 97,730	\$ 87,441	\$ 90,084	\$ 78,088	\$ 80,430	\$ 82,843	\$ 85,328	\$ 87,888	430,636	899,911	1,334,489
66,364	\$ 60,628	\$ 55,796	\$ 35,970	\$ 31,149	\$ 26,334	\$ 26,524	\$ 23,720	\$ 21,921	838,680	837,713	967,361
50,220	\$ 51,367	\$ 52,548	\$ 51,764	\$ 51,017	\$ 52,309	\$ 53,637	\$ 53,007	\$ 54,417	226,417	483,643	748,030
21,750	\$ 43,250	\$ 17,250	\$ 43,750	\$ 9,500	\$ 40,000	\$ 10,000	\$ 8,000	\$ 3,000	134,800	302,780	373,280
00,000	\$ 66,000	\$ 69,000	\$ 65,000	\$ 48,000	\$ 52,000	\$ 36,000	\$ 38,000	\$ 25,000	402,000	792,000	990,000
	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	88,000	88,000	88,000
1,000	\$ 1,000	\$ 1,000	\$ 1,000	\$ 1,000	\$ 1,000	\$ 1,000	\$ 1,000	\$ 1,000	38,000	44,000	48,000
58,456	\$ 24,158	\$ 146,881	\$ 65,432	\$ 91,150	\$ 77,658	\$ 16,979	\$ 17,236	\$ 98,325	676,275	1,213,802	1,814,862
49,680	\$ 46,707	\$ 49,191	\$ 51,037	\$ 52,586	\$ 54,146	\$ 55,770	\$ 18,338	\$ 18,888	184,446	436,762	636,462
13,288	\$ 39,088	\$ 40,944	\$ 38,214	\$ 33,741	\$ 35,280	\$ 30,656	\$ 29,297	\$ 33,100	230,488	425,746	587,820
38,630	\$ 820,840	\$ 888,816	\$ 802,489	\$ 708,664	\$ 740,678	\$ 643,782	\$ 616,241	\$ 686,082	4,840,463	9,180,662	12,664,219
58,441	\$ 1,838,731	\$ 2,032,789	\$ 2,031,363	\$ 2,019,686	\$ 2,117,086	\$ 2,070,926	\$ 2,086,346	\$ 2,273,726	11,464,206	21,762,236	32,339,001
71,404	\$ 724,778	\$ 3,889,937	\$ 1,748,983	\$ 2,936,642	\$ 2,223,327	\$ 816,320	\$ 880,303	\$ 3,206,176	20,881,286	28,286,992	38,386,780
32,881	\$ -	\$ -	\$ 268,800	\$ -	\$ 274,886	\$ -	\$ -	\$ -	19,448,486	27,242,230	27,617,116
70,453	\$ 1,079,453	\$ 1,079,453	\$ 1,079,453	\$ 1,079,453	\$ 1,079,453	\$ 1,079,453	\$ 1,079,453	\$ 1,079,453	2,396,044	7,764,640	12,161,816
70,683	\$ 1,195,101	\$ 1,119,540	\$ 1,043,978	\$ 968,416	\$ 892,854	\$ 817,293	\$ 741,731	\$ 666,169	3,118,472	9,028,489	13,124,632
50,116	\$ 2,274,665	\$ 2,188,993	\$ 2,123,431	\$ 2,047,889	\$ 1,972,308	\$ 1,896,746	\$ 1,821,184	\$ 1,746,623	6,613,616	16,793,017	26,276,747
38,657	\$ 4,211,286	\$ 4,231,761	\$ 4,164,784	\$ 4,087,464	\$ 4,009,292	\$ 3,967,672	\$ 3,916,629	\$ 4,019,248	16,967,722	38,585,263	68,616,748
58,712	\$ (1,649,777)	\$ 1,670,946	\$ (378,478)	\$ 867,773	\$ 261,019	\$ (1,080,428)	\$ (970,882)	\$ 1,480,654	15,047,889	11,883,976	12,112,013
	\$ -	\$ -	\$ (508,378)	\$ -	\$ (544,587)	\$ -	\$ -	\$ -	(10,976,626)	(11,484,004)	(12,028,691)
58,712	\$ (1,649,777)	\$ 1,670,946	\$ (884,868)	\$ 867,773	\$ (293,688)	\$ (1,080,428)	\$ (970,882)	\$ 1,480,654	4,072,243	79,971	83,422
43,889	\$ (708,117)	\$ 864,627	\$ 79,971	\$ 967,744	\$ 674,176	\$ (408,280)	\$ (1,377,132)	\$ 83,422			
52,680	\$ (777,781)	\$ 780,340	\$ (373,773)	\$ 344,041	\$ (104,374)	\$ (352,412)	\$ (290,533)	\$ 400,978			75%
86,978	\$ (506,625)	\$ 474,987	\$ (218,723)	\$ 190,821	\$ (54,870)	\$ (175,590)	\$ (137,213)	\$ 179,494			

Projected Revenues, Expenditures and Cash Flow Vint Hill Farms Station

Scenario: CERL1 with

	0	Year 1 1997	Year 2 1998	Year 3 1999	Year 4 2000	Year 5 2001	Year 6 2002	Year 2003
DEVELOPMENT YEAR								
1 REVENUES								
2								
3 INCOME FROM REAL ESTATE ACTIVITY								
4 Land Sales								
5 Sales of Existing Facilities								
6 Golf Course Operations (Before Debt Service)								
7 Leases on Interim Use Buildings								
8 SUBTOTAL SALES/LEASE INCOME:								
9								
10 OTHER INCOME								
11 County Contributions								
12 State Contributions								
13 Grants - OEA								
14 Grants - EDA								
15 Grants - RDA and Other								
16 Water/Sewer User Fees								
17 Water/Sewer Service Connections								
18 SUBTOTAL-OTHER INCOME								
19								
20 TOTAL REVENUES								
21								
22 EXPENDITURES								
23 BUILDING AND GROUNDS								
24 Water System O&M								
25 Sewer System O&M								
26 Electrical								
27 Heating								
28 Security								
29 Building Maintenance								
30 Roads & Grounds Maintenance								
31 Other Maintenance/Contingency								
32 SUBTOTAL-BLDGS & GROUNDS								
33								
34 ADMINISTRATION & MARKETING								
35 Salaries and Board Compensation								
36 Fringe Benefits								
37 Contracted Services								
38 Overhead (Equip., Suppl., Travel, etc)								
39 Marketing Collateral								
40 Advertising and PR								
41 Reasoning & Permitting								
42 FTZ Designation and Maintenance								
43 Broker Commission & Fees								
44 Insurance								
45 Operating Reserve and Contingency								
46 SUBTOTAL-ADMIN & MARKETING								
47								
48 TOTAL OPERATING AND MAINTENANCE COSTS								
49								
50 CASH FLOW AVAILABLE FOR DEBT SERVICE								
51								
52 CAPITAL IMPROVEMENTS								
53 DEBT SERVICE								
54 Principal Repayments								
55 Interest Expense								
56 SUBTOTAL-DEBT SERVICE								
57								
58 TOTAL OPERATING EXPENSES AND DEBT SVC								
59								
60 NET OPERATING INCOME (NOI)								
61 Capital Improvements								
62 NET CASH FLOW (NOI - Capital Improvements)								
63								
64 CUMULATIVE CASH FLOW								
65								
66 Discounted Cash Flows @								
67								
68 NET PRESENT VALUE								
69								
70 Discounted Cash Flows @								
71								
72 NET PRESENT VALUE								
73								
74								
75								

Scenario: CERL1 with 40% Absorption Reduction (plus USACERL Infrastructure Costs)

Year 2 1998	Year 3 1999	Year 4 2000	Year 5 2001	Year 6 2002	Year 7 2003	Year 8 2004	Year 9 2005	Year 10 2006	Year 11 2007	Year 12 2008	Year 13 2009	Year 14 2010	
9,463 \$	2,939,844 \$	4,873,858 \$	1,380,570 \$	438,904 \$	588,962 \$	186,437 \$	2,150,005 \$	981,089 \$	1,392,585 \$	1,176,710 \$	205,841 \$	209,958 \$	1,507
7,241 \$	230,430 \$	547,804 \$	2,297,064 \$	65,823 \$	346,333 \$	200,083 \$	200,083 \$	65,823 \$	65,823 \$	65,823 \$	65,823 \$	65,823 \$	65
\$ -	\$ -	52,574 \$	229,013 \$	430,017 \$	639,924 \$	688,198 \$	672,372 \$	697,343 \$	722,105 \$	747,967 \$	776,620 \$	800,785 \$	825
1,245 \$	240,024 \$	303,336 \$	185,067 \$	172,096 \$	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
7,949 \$	3,410,298 \$	5,777,574 \$	4,091,714 \$	1,106,840 \$	1,675,219 \$	1,062,718 \$	3,022,460 \$	1,744,288 \$	2,180,613 \$	1,980,800 \$	1,048,286 \$	1,078,696 \$	2,398
3,000 \$	250,000 \$	250,000 \$	250,000 \$	250,000 \$	250,000 \$	250,000 \$	250,000 \$	250,000 \$	250,000 \$	250,000 \$	250,000 \$	250,000 \$	250
\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
3,500 \$	91,750 \$	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
3,000 \$	1,000,000 \$	1,000,000 \$	1,000,000 \$	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
3,000 \$	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2,092 \$	260,710 \$	424,475 \$	600,632 \$	699,859 \$	720,346 \$	758,780 \$	875,781 \$	930,004 \$	1,045,393 \$	1,105,512 \$	1,128,784 \$	1,152,055 \$	1,267
3,631 \$	759,021 \$	1,167,108 \$	1,347,286 \$	643,130 \$	(159,105) \$	327,664 \$	835,093 \$	364,549 \$	759,392 \$	402,606 \$	164,748 \$	164,748 \$	759
1,222 \$	2,361,481 \$	3,841,683 \$	3,197,918 \$	1,592,989 \$	811,241 \$	1,336,424 \$	1,960,873 \$	1,644,563 \$	2,654,785 \$	1,758,115 \$	1,000,000 \$	1,695,651 \$	2,276
1,171 \$	5,771,779 \$	8,618,157 \$	7,289,632 \$	2,699,629 \$	2,386,460 \$	2,389,142 \$	4,983,334 \$	3,268,306 \$	4,236,298 \$	3,748,518 \$	2,591,817 \$	2,643,370 \$	4,675
378 \$	157,784 \$	189,100 \$	224,224 \$	248,038 \$	259,113 \$	273,904 \$	304,141 \$	323,775 \$	356,523 \$	379,580 \$	395,896 \$	412,850 \$	451
688 \$	442,951 \$	485,427 \$	532,329 \$	610,534 \$	632,840 \$	659,531 \$	703,495 \$	738,140 \$	783,518 \$	820,597 \$	850,626 \$	881,719 \$	936
263 \$	152,899 \$	142,414 \$	80,824 \$	81,506 \$	\$ -	17,185 \$	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
263 \$	152,899 \$	142,414 \$	80,824 \$	81,506 \$	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
3,000 \$	103,000 \$	106,090 \$	109,273 \$	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
684 \$	397,538 \$	370,277 \$	210,142 \$	211,915 \$	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
932 \$	152,198 \$	117,329 \$	88,920 \$	83,857 \$	74,623 \$	71,968 \$	80,873 \$	54,873 \$	39,243 \$	32,625 \$	29,670 \$	27,115 \$	11,4
760 \$	77,961 \$	77,653 \$	66,327 \$	65,868 \$	48,329 \$	51,124 \$	53,425 \$	55,739 \$	58,984 \$	61,640 \$	63,820 \$	66,084 \$	69,6
989	1,637,191	1,639,706	1,392,861	1,383,222	1,014,904	1,073,612	1,121,696	1,170,627	1,228,248	1,284,442	1,340,212	1,397,788	1,469,2
663 \$	363,973 \$	414,593 \$	390,530 \$	402,246 \$	414,314 \$	390,921 \$	349,785 \$	380,257 \$	312,350 \$	321,721 \$	331,373 \$	341,314 \$	351,5
916 \$	90,993 \$	103,648 \$	97,633 \$	100,582 \$	103,578 \$	97,730 \$	87,441 \$	90,064 \$	78,088 \$	80,430 \$	82,843 \$	85,328 \$	87,8
000 \$	120,000 \$	110,000 \$	100,150 \$	80,305 \$	68,384 \$	60,628 \$	55,796 \$	35,970 \$	31,149 \$	26,334 \$	26,524 \$	23,720 \$	21,9
500 \$	51,296 \$	53,114 \$	51,258 \$	52,327 \$	50,220 \$	51,367 \$	52,548 \$	51,784 \$	51,017 \$	52,309 \$	53,637 \$	53,007 \$	54,4
500 \$	19,000 \$	41,000 \$	23,000 \$	42,250 \$	21,750 \$	43,250 \$	17,250 \$	43,750 \$	9,500 \$	40,000 \$	10,000 \$	8,000 \$	3,0
000 \$	100,000 \$	100,000 \$	100,000 \$	100,000 \$	100,000 \$	66,000 \$	99,000 \$	66,000 \$	48,000 \$	82,000 \$	35,000 \$	38,000 \$	25,0
\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
300 \$	1,000 \$	1,000 \$	1,000 \$	1,000 \$	1,000 \$	1,000 \$	1,000 \$	1,000 \$	1,000 \$	1,000 \$	1,000 \$	1,000 \$	1,0
397 \$	170,515 \$	288,250 \$	193,135 \$	33,841 \$	46,765 \$	19,328 \$	117,504 \$	52,346 \$	72,820 \$	62,127 \$	13,583 \$	13,789 \$	78,6
350 \$	32,600 \$	61,827 \$	58,219 \$	53,691 \$	49,680 \$	46,707 \$	49,191 \$	51,037 \$	52,568 \$	54,146 \$	55,770 \$	58,338 \$	18,8
156 \$	47,489 \$	58,572 \$	50,746 \$	43,311 \$	42,684 \$	38,846 \$	39,475 \$	37,599 \$	32,830 \$	34,503 \$	30,486 \$	29,125 \$	32,1
383 \$	896,845 \$	1,339,003 \$	1,086,671 \$	898,633 \$	896,364 \$	816,776 \$	828,970 \$	788,748 \$	689,422 \$	724,670 \$	640,216 \$	611,621 \$	674,4
352 \$	2,634,037 \$	2,880,708 \$	2,488,633 \$	2,292,766 \$	1,911,269 \$	1,889,388 \$	1,980,905 \$	1,889,276 \$	1,927,670 \$	2,019,012 \$	1,980,429 \$	1,999,389 \$	2,143,6
19 \$	3,137,742 \$	5,769,449 \$	4,831,100 \$	407,074 \$	476,201 \$	499,764 \$	3,032,430 \$	1,329,834 \$	2,307,828 \$	1,729,806 \$	611,388 \$	643,961 \$	2,632,0
61 \$	6,334,448 \$	1,389,074 \$	676,307 \$	5,822,889 \$	667,072 \$	\$ -	\$ -	216,908 \$	\$ -	232,367 \$	\$ -	\$ -	\$ -
14 \$	567,747 \$	567,747 \$	567,747 \$	890,543 \$	926,354 \$	926,354 \$	926,354 \$	926,354 \$	926,354 \$	926,354 \$	926,354 \$	926,354 \$	926,35
90 \$	771,411 \$	731,689 \$	691,927 \$	1,104,099 \$	1,091,896 \$	1,027,051 \$	962,206 \$	897,362 \$	832,517 \$	787,672 \$	702,827 \$	637,983 \$	573,13
76 \$	1,339,168 \$	1,389,416 \$	1,269,674 \$	1,894,643 \$	2,018,249 \$	1,963,406 \$	1,988,680 \$	1,823,715 \$	1,769,670 \$	1,694,038 \$	1,629,161 \$	1,564,336 \$	1,499,46
27 \$	3,973,196 \$	4,160,124 \$	3,718,306 \$	4,267,368 \$	3,929,608 \$	3,842,792 \$	3,839,466 \$	3,762,960 \$	3,696,640 \$	3,713,038 \$	3,609,610 \$	3,683,726 \$	3,643,16
44 \$	1,798,684 \$	4,498,033 \$	3,671,426 \$	(1,867,689) \$	(1,643,048) \$	(1,463,661) \$	1,143,870 \$	(494,182) \$	648,769 \$	36,680 \$	(1,017,793) \$	(920,265) \$	1,032,57
00) \$	(1,900,000) \$	(2,414,101) \$	(3,661,525) \$	\$ -	\$ -	\$ -	\$ -	(508,378) \$	\$ -	(544,587) \$	\$ -	\$ -	\$ -
44 \$	(101,416) \$	2,044,632 \$	(90,099) \$	(1,867,689) \$	(1,643,048) \$	(1,463,661) \$	1,143,870 \$	(1,002,880) \$	648,769 \$	(809,007) \$	(1,017,793) \$	(920,265) \$	1,032,57
81 \$	1,061,986 \$	3,108,897 \$	3,016,798 \$	1,429,229 \$	(113,819) \$	(1,867,470) \$	(423,600) \$	(1,426,169) \$	(677,402) \$	(1,396,409) \$	(2,404,202) \$	(3,324,658) \$	(2,291,96
38 \$	(78,312) \$	1,448,681 \$	(58,559) \$	(946,615) \$	(844,100) \$	(729,536) \$	526,689 \$	(423,492) \$	212,682 \$	(180,970) \$	(331,982) \$	(275,413) \$	283,48
11 \$	(66,683) \$	1,169,196 \$	(44,795) \$	(686,350) \$	(580,089) \$	(475,201) \$	325,159 \$	(247,817) \$	117,952 \$	(95,137) \$	(165,420) \$	(130,073) \$	126,894

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Absorption Reduction (plus USACERL Infrastructure Costs)

Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Cumulative Forecast		
2004	2005	2006	2007	2008	2009	2010	2011	5 Year Total	10 Year Total	15 Year Total
5,437 \$	2,150,005 \$	981,089 \$	1,392,585 \$	1,176,710 \$	205,841 \$	209,958 \$	1,507,379	10,983,735	15,329,132	19,821,806
1,083 \$	200,083 \$	65,823 \$	65,823 \$	65,823 \$	65,823 \$	65,823 \$	65,823	4,188,839	6,088,886	6,386,800
3,198 \$	672,372 \$	697,343 \$	722,105 \$	747,967 \$	776,820 \$	800,785 \$	825,723	281,587	3,387,441	7,280,841
- \$	- \$	- \$	- \$	- \$	- \$	- \$	-	890,079	1,082,175	1,082,175
1,718 \$	3,022,480 \$	1,744,288 \$	2,180,613 \$	1,990,500 \$	1,048,286 \$	1,078,888 \$	2,388,926	16,343,940	24,845,432	33,540,221
1,000 \$	250,000 \$	250,000 \$	250,000 \$	250,000 \$	250,000 \$	250,000 \$	250,000	1,250,000	2,500,000	3,750,000
- \$	- \$	- \$	- \$	- \$	- \$	- \$	-	-	-	-
- \$	- \$	- \$	- \$	- \$	- \$	- \$	-	642,280	642,280	642,280
- \$	- \$	- \$	- \$	- \$	- \$	- \$	-	5,000,000	5,000,000	5,000,000
- \$	- \$	- \$	- \$	- \$	- \$	- \$	-	800,000	800,000	800,000
1,780 \$	875,781 \$	930,004 \$	1,045,393 \$	1,105,512 \$	1,128,784 \$	1,152,055 \$	1,257,444	1,447,909	5,432,889	11,131,847
964 \$	835,093 \$	384,540 \$	759,392 \$	402,808 \$	184,748 \$	184,748 \$	759,392	4,832,292	5,643,824	5,894,511
424 \$	1,980,874 \$	1,544,883 \$	2,054,786 \$	1,788,118 \$	1,543,832 \$	1,888,804 \$	2,278,836	12,472,451	20,718,833	29,918,808
142 \$	4,983,334 \$	3,288,808 \$	4,236,298 \$	3,748,818 \$	2,891,817 \$	2,843,370 \$	4,678,761	29,816,391	46,883,998	63,468,829
904 \$	304,141 \$	323,775 \$	356,523 \$	379,580 \$	395,896 \$	412,850 \$	451,181	708,488	2,117,488	4,113,467
531 \$	703,495 \$	738,140 \$	783,518 \$	820,597 \$	850,826 \$	881,719 \$	936,839	1,673,396	5,216,936	9,488,034
185 \$	- \$	- \$	- \$	- \$	- \$	- \$	-	541,401	540,091	540,091
- \$	- \$	- \$	- \$	- \$	- \$	- \$	-	541,401	540,091	540,091
- \$	- \$	- \$	- \$	- \$	- \$	- \$	-	418,283	418,283	418,283
- \$	- \$	- \$	- \$	- \$	- \$	- \$	-	1,841,838	1,783,581	1,783,581
968 \$	80,873 \$	54,873 \$	39,243 \$	32,825 \$	29,870 \$	27,115 \$	11,484	443,339	788,433	929,770
124 \$	53,425 \$	55,730 \$	58,984 \$	61,840 \$	63,820 \$	66,084 \$	69,984	303,401	577,887	898,389
512	1,121,836	1,170,827	1,238,248	1,294,442	1,340,212	1,387,788	1,488,349	6,371,421	12,136,822	18,885,541
321 \$	348,785 \$	380,257 \$	312,350 \$	321,721 \$	331,373 \$	341,314 \$	351,553	1,722,142	3,838,845	5,297,986
730 \$	87,441 \$	90,084 \$	78,088 \$	80,430 \$	82,843 \$	85,328 \$	87,888	430,836	908,911	1,334,489
328 \$	55,798 \$	35,970 \$	31,149 \$	28,334 \$	26,524 \$	23,720 \$	21,921	838,880	837,713	967,381
187 \$	52,548 \$	51,784 \$	51,017 \$	52,309 \$	53,637 \$	53,007 \$	54,417	228,417	483,843	748,030
150 \$	17,250 \$	43,750 \$	9,500 \$	40,000 \$	10,000 \$	8,000 \$	3,000	134,800	302,780	373,280
100 \$	59,000 \$	85,000 \$	48,000 \$	52,000 \$	35,000 \$	38,000 \$	25,000	402,000	782,000	990,000
- \$	- \$	- \$	- \$	- \$	- \$	- \$	-	85,000	85,000	85,000
100 \$	1,000 \$	1,000 \$	1,000 \$	1,000 \$	1,000 \$	1,000 \$	1,000	38,000	44,000	48,000
126 \$	117,504 \$	82,348 \$	72,820 \$	62,127 \$	13,583 \$	13,789 \$	78,880	801,787	1,071,578	1,312,889
107 \$	49,191 \$	51,037 \$	52,568 \$	54,146 \$	55,770 \$	18,338 \$	18,888	186,446	436,782	638,482
46 \$	39,475 \$	37,599 \$	32,830 \$	34,503 \$	30,486 \$	29,125 \$	32,116	228,774	428,880	587,710
78 \$	828,970 \$	788,748 \$	888,422 \$	724,570 \$	640,216 \$	611,821 \$	674,444	4,782,282	8,001,843	12,341,917
98 \$	1,980,805 \$	1,888,275 \$	1,927,870 \$	2,018,012 \$	1,980,429 \$	1,998,389 \$	2,143,893	11,133,883	21,137,288	31,207,468
54 \$	3,032,430 \$	1,328,834 \$	2,307,828 \$	1,728,808 \$	811,388 \$	643,981 \$	2,832,088	18,882,708	24,438,700	32,281,371
- \$	- \$	216,808 \$	- \$	232,267 \$	- \$	- \$	-	17,373,784	24,170,803	24,402,980
54 \$	926,354 \$	926,354 \$	926,354 \$	926,354 \$	926,354 \$	926,354 \$	926,354	2,038,017	6,833,975	11,285,743
51 \$	982,206 \$	897,382 \$	832,517 \$	787,672 \$	702,827 \$	637,983 \$	573,138	2,882,287	7,734,881	11,249,018
35 \$	1,888,680 \$	1,823,716 \$	1,788,870 \$	1,884,026 \$	1,828,181 \$	1,864,338 \$	1,698,491	4,690,284	14,388,886	22,614,781
13 \$	3,838,466 \$	3,782,880 \$	3,686,640 \$	3,713,038 \$	3,808,810 \$	3,863,728 \$	3,843,184	18,822,988	35,806,122	53,722,219
71 \$	1,143,870 \$	(484,182) \$	648,788 \$	36,880 \$	(1,017,793) \$	(920,265) \$	1,032,577	13,982,424	10,087,844	9,736,810
- \$	- \$	(508,378) \$	- \$	(544,587) \$	- \$	- \$	-	(10,975,626) \$	(11,484,004) \$	(12,029,891) \$
71 \$	1,143,870 \$	(1,002,880) \$	648,788 \$	(809,007) \$	(1,017,793) \$	(920,265) \$	1,032,577	3,016,798	(1,426,180) \$	(2,291,981) \$
79 \$	(423,800) \$	(1,426,180) \$	(877,402) \$	(1,286,409) \$	(2,404,202) \$	(3,234,889) \$	(2,291,981)			
8) \$	526,880 \$	(423,492) \$	212,682 \$	(180,570) \$	(331,982) \$	(275,413) \$	283,482			80%
1) \$	325,150 \$	(247,817) \$	117,952 \$	(95,137) \$	(185,420) \$	(130,073) \$	126,898			

3

Vint Hill Farms Station
Scenario and Sensitivity Analysis Table - Range of Scenario NPVs

Scenario - VHPEDA EDC Application Business and Operations Plan	Revenues			Operating Costs			Cash F
	Years 1-5	Years 1-10	15-Year Total	Years 1-5	Years 1-10	15-Year Total	Years 1-5
1 Total Project Analysis View							
2 Cash flow with total capital costs and debt service	\$ 35,682,048	\$ 57,712,723	\$ 82,843,772	\$ 11,988,008	\$ 23,692,310	\$ 36,143,217	\$ 23,694,036
3 Project Analysis with 25% Reduction in Absorption							
4 Cash flow with total capital costs and debt service	\$ 32,015,591	\$ 50,119,328	\$ 70,727,782	\$ 11,454,206	\$ 22,650,927	\$ 34,257,713	\$ 20,561,385
5 Project Analysis with 40% Reduction in Absorption							
6 Cash flow with total capital costs and debt service	\$ 29,816,391	\$ 45,563,966	\$ 63,468,829	\$ 11,133,683	\$ 22,025,857	\$ 33,126,170	\$ 18,682,706
7							
8							
9							
10							
11							
12							
13 USACERL Developed Scenarios - CERL1							
14							
15 1. Impact of Reduced Wastewater Treatment Plant Requirements							
16 Total Project Analysis View							
17 Cash flow with all other capital costs held constant	\$ 35,682,048	\$ 57,712,723	\$ 82,843,772	\$ 11,988,008	\$ 23,692,310	\$ 36,143,217	\$ 23,694,036
18 Project Analysis with 25% Reduction in Absorption							
19 Cash flow with all other capital costs held constant (maximum)	\$ 32,015,591	\$ 50,119,328	\$ 70,727,782	\$ 11,454,206	\$ 22,650,927	\$ 34,257,713	\$ 20,561,385
20 Project Analysis with 40% Reduction in Absorption							
21 Cash flow with all other capital costs held constant (minimum)	\$ 29,816,391	\$ 45,563,966	\$ 63,468,829	\$ 11,133,683	\$ 22,025,857	\$ 33,126,170	\$ 18,682,706
22							
23 2. Impact of USACERL-Developed Infrastructure							
24 Total Project Analysis View							
25 Cash flow with reduced infrastructure requirements	\$ 35,682,048	\$ 57,712,723	\$ 82,843,772	\$ 11,988,008	\$ 23,692,310	\$ 36,143,217	\$ 23,694,036
26 Project Analysis with 25% Reduction in Absorption							
27 Cash flow with reduced infrastructure requirements (maximum)	\$ 32,015,591	\$ 50,119,328	\$ 70,727,782	\$ 11,454,206	\$ 22,650,927	\$ 34,257,713	\$ 20,561,385
28 Project Analysis with 40% Reduction in Absorption							
29 Cash flow with reduced infrastructure requirements (minimum)	\$ 29,816,391	\$ 45,563,966	\$ 63,468,829	\$ 11,133,683	\$ 22,025,857	\$ 33,126,170	\$ 18,682,706
30							
31							
32 3. Impact of Withdrawn Financial Support from Fauquier Co.							
33 Total Project Analysis View							
34 Cash flow with reduced infrastructure requirements	\$ 34,432,048	\$ 55,212,723	\$ 79,083,772	\$ 11,988,008	\$ 23,692,310	\$ 36,143,217	\$ 22,444,036
35 Project Analysis with 25% Reduction in Absorption							
36 Cash flow with reduced infrastructure requirements (maximum)	\$ 30,765,591	\$ 47,619,328	\$ 66,977,782	\$ 11,454,206	\$ 22,650,927	\$ 34,257,713	\$ 19,311,385
37 Project Analysis with 40% Reduction in Absorption							
38 Cash flow with reduced infrastructure requirements (minimum)	\$ 28,566,391	\$ 43,063,966	\$ 60,708,829	\$ 11,133,683	\$ 22,025,857	\$ 33,126,170	\$ 17,432,706
39							
40							
41 4. Impact of Increased Financial Support from Fauquier Co.							
42 Total Project Analysis View							
43 Cash flow with reduced infrastructure requirements	\$ 36,932,048	\$ 60,212,723	\$ 86,883,772	\$ 11,988,008	\$ 23,692,310	\$ 36,143,217	\$ 24,944,036
44 Project Analysis with 25% Reduction in Absorption							
45 Cash flow with reduced infrastructure requirements (maximum)	\$ 33,265,591	\$ 52,619,328	\$ 74,477,782	\$ 11,454,206	\$ 22,650,927	\$ 34,257,713	\$ 21,811,385
46 Project Analysis with 40% Reduction in Absorption							
47 Cash flow with reduced infrastructure requirements (minimum)	\$ 31,066,391	\$ 48,063,966	\$ 67,208,829	\$ 11,133,683	\$ 22,025,857	\$ 33,126,170	\$ 19,932,706
48							
49							
50 5. Impact of Reduced Water and Wastewater Costs							
51 Total Project Analysis View							
52 Cash flow with reduced infrastructure requirements	\$ 35,682,048	\$ 57,712,723	\$ 82,843,772	\$ 11,988,008	\$ 22,803,719	\$ 34,224,806	\$ 23,694,036
53 Project Analysis with 25% Reduction in Absorption							
54 Cash flow with reduced infrastructure requirements (maximum)	\$ 32,015,591	\$ 50,119,328	\$ 70,727,782	\$ 11,454,206	\$ 21,762,336	\$ 32,339,001	\$ 20,561,385
55 Project Analysis with 40% Reduction in Absorption							
56 Cash flow with reduced infrastructure requirements (minimum)	\$ 29,816,391	\$ 45,563,966	\$ 63,468,829	\$ 11,133,683	\$ 21,137,266	\$ 31,207,458	\$ 18,682,706
57							
58							
59							
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65							
66							
67							
68							

of Scenario NPVs

Scenario Plan	Revenue			Operating Costs			Cash Flow Available for Debt Service			Capital Costs			Debt Service	
	Years 1-5	Years 1-10	15-Year Total	Years 1-5	Years 1-10	15-Year Total	Years 1-5	Years 1-10	15-Year Total	Years 1-5	Years 1-10	15-Year Total	Years 1-5	Years 1-10
Scenario 1	\$ 35,682,048	\$ 57,712,723	\$ 82,843,772	\$ 11,988,008	\$ 23,692,310	\$ 36,143,217	\$ 23,694,039	\$ 34,020,413	\$ 46,700,585	\$ 26,425,210	\$ 36,570,501	\$ 37,118,088	\$ 6,865,768	\$ 21,047,076
Scenario 2	\$ 32,015,501	\$ 50,119,328	\$ 70,727,782	\$ 11,454,206	\$ 22,650,927	\$ 34,257,713	\$ 20,561,385	\$ 27,468,401	\$ 36,470,048	\$ 26,425,210	\$ 36,570,501	\$ 37,118,088	\$ 6,865,768	\$ 21,047,076
Scenario 3	\$ 29,816,301	\$ 45,563,986	\$ 63,468,829	\$ 11,133,683	\$ 22,025,857	\$ 33,126,170	\$ 18,682,708	\$ 23,538,109	\$ 30,332,680	\$ 26,425,210	\$ 36,570,501	\$ 37,118,088	\$ 6,865,768	\$ 21,047,076
Scenario Plan	Revenue			Operating Costs			Cash Flow Available for Debt Service			Capital Costs			Debt Service	
	Years 1-5	Years 1-10	15-Year Total	Years 1-5	Years 1-10	15-Year Total	Years 1-5	Years 1-10	15-Year Total	Years 1-5	Years 1-10	15-Year Total	Years 1-5	Years 1-10
Scenario 4	\$ 35,682,048	\$ 57,712,723	\$ 82,843,772	\$ 11,988,008	\$ 23,692,310	\$ 36,143,217	\$ 23,694,039	\$ 34,020,413	\$ 46,700,585	\$ 23,140,712	\$ 30,186,059	\$ 30,730,646	\$ 6,865,768	\$ 19,137,976
Scenario 5	\$ 32,015,501	\$ 50,119,328	\$ 70,727,782	\$ 11,454,206	\$ 22,650,927	\$ 34,257,713	\$ 20,561,385	\$ 27,468,401	\$ 36,470,048	\$ 23,140,712	\$ 30,186,059	\$ 30,730,646	\$ 6,865,768	\$ 19,137,976
Scenario 6	\$ 29,816,301	\$ 45,563,986	\$ 63,468,829	\$ 11,133,683	\$ 22,025,857	\$ 33,126,170	\$ 18,682,708	\$ 23,538,109	\$ 30,332,680	\$ 23,027,035	\$ 29,965,092	\$ 30,808,678	\$ 6,865,768	\$ 19,071,901
Scenario 7	\$ 35,682,048	\$ 57,712,723	\$ 82,843,772	\$ 11,988,008	\$ 23,692,310	\$ 36,143,217	\$ 23,694,039	\$ 34,020,413	\$ 46,700,585	\$ 19,448,485	\$ 27,242,230	\$ 27,817,116	\$ 5,513,516	\$ 16,793,017
Scenario 8	\$ 32,015,501	\$ 50,119,328	\$ 70,727,782	\$ 11,454,206	\$ 22,650,927	\$ 34,257,713	\$ 20,561,385	\$ 27,468,401	\$ 36,470,048	\$ 19,448,485	\$ 27,242,230	\$ 27,817,116	\$ 5,513,516	\$ 16,793,017
Scenario 9	\$ 29,816,301	\$ 45,563,986	\$ 63,468,829	\$ 11,133,683	\$ 22,025,857	\$ 33,126,170	\$ 18,682,708	\$ 23,538,109	\$ 30,332,680	\$ 17,373,754	\$ 24,170,603	\$ 24,402,980	\$ 4,690,284	\$ 14,368,856
Scenario 10	\$ 34,432,048	\$ 56,212,723	\$ 79,093,772	\$ 11,988,008	\$ 23,692,310	\$ 36,143,217	\$ 22,444,039	\$ 31,520,413	\$ 42,990,585	\$ 19,448,485	\$ 27,242,230	\$ 27,817,116	\$ 5,513,516	\$ 16,793,017
Scenario 11	\$ 30,765,501	\$ 47,819,328	\$ 66,977,782	\$ 11,454,206	\$ 22,650,927	\$ 34,257,713	\$ 19,311,385	\$ 24,968,401	\$ 32,720,048	\$ 19,448,485	\$ 27,242,230	\$ 27,817,116	\$ 5,513,516	\$ 16,793,017
Scenario 12	\$ 28,566,301	\$ 43,063,986	\$ 60,708,829	\$ 11,133,683	\$ 22,025,857	\$ 33,126,170	\$ 17,432,708	\$ 21,038,109	\$ 28,682,680	\$ 17,373,754	\$ 24,170,603	\$ 24,402,980	\$ 4,690,284	\$ 14,368,856
Scenario 13	\$ 36,932,048	\$ 60,212,723	\$ 86,893,772	\$ 11,988,008	\$ 23,692,310	\$ 36,143,217	\$ 24,944,039	\$ 36,520,413	\$ 50,480,585	\$ 19,448,485	\$ 27,242,230	\$ 27,817,116	\$ 5,513,516	\$ 16,793,017
Scenario 14	\$ 33,285,501	\$ 52,619,328	\$ 74,477,782	\$ 11,454,206	\$ 22,650,927	\$ 34,257,713	\$ 21,811,385	\$ 29,968,401	\$ 40,220,048	\$ 19,448,485	\$ 27,242,230	\$ 27,817,116	\$ 5,513,516	\$ 16,793,017
Scenario 15	\$ 31,086,301	\$ 48,083,986	\$ 67,208,829	\$ 11,133,683	\$ 22,025,857	\$ 33,126,170	\$ 19,932,708	\$ 26,038,109	\$ 34,082,680	\$ 17,373,754	\$ 24,170,603	\$ 24,402,980	\$ 4,690,284	\$ 14,368,856
Scenario 16	\$ 35,682,048	\$ 57,712,723	\$ 82,843,772	\$ 11,988,008	\$ 22,803,719	\$ 34,224,805	\$ 23,694,039	\$ 34,909,004	\$ 48,619,287	\$ 19,448,485	\$ 27,242,230	\$ 27,817,116	\$ 5,513,516	\$ 16,793,017
Scenario 17	\$ 32,015,501	\$ 50,119,328	\$ 70,727,782	\$ 11,454,206	\$ 21,782,336	\$ 32,338,001	\$ 20,561,385	\$ 28,366,992	\$ 38,388,780	\$ 19,448,485	\$ 27,242,230	\$ 27,817,116	\$ 5,513,516	\$ 16,793,017
Scenario 18	\$ 29,816,301	\$ 45,563,986	\$ 63,468,829	\$ 11,133,683	\$ 21,137,266	\$ 31,207,468	\$ 18,682,708	\$ 24,426,700	\$ 32,251,371	\$ 17,373,754	\$ 24,170,603	\$ 24,402,980	\$ 4,690,284	\$ 14,368,856

CONCLUSION: Estimated VHFEDA Business Plan Valuation
 40% Reduction in Absorption with Reduced Infrastructure and Water/Sewer Operating Costs
 25% Reduction in Absorption with Reduced Infrastructure and Water/Sewer Operating Costs
 Total of USACERL's Estimation of Present Value for the VHFEDA Business Plan

										Net Present Value 15 Years Discount Rate		
ble for Debt Service		Capital Costs			Debt Service			Total Cash Flows				
-10	15-Year Total	Years 1-5	Years 1-10	15-Year Total	Years 1-5	Years 1-10	15-Year Total	Years 1-5	Years 1-10	15-Year Total	15%	9%
0.413	\$ 46,700,668	\$ 26,425,210	\$ 36,570,501	\$ 37,116,088	\$ 6,865,768	\$ 21,047,076	\$ 32,977,873	\$ 5,852,646	\$ 1,480,333	\$ 1,684,091	\$ 1,831,062	\$ 1,963,403
8.401	\$ 36,470,048	\$ 26,425,210	\$ 36,570,501	\$ 37,116,088	\$ 6,865,768	\$ 21,047,076	\$ 32,977,873	\$ 2,719,991	\$ (5,062,679)	\$ (8,836,416)	\$ (1,670,314)	\$ (3,348,626)
8.100	\$ 30,332,660	\$ 26,425,210	\$ 36,570,501	\$ 37,116,088	\$ 6,865,768	\$ 21,047,076	\$ 32,977,873	\$ 841,314	\$ (8,992,971)	\$ (14,673,806)	\$ (3,770,291)	\$ (6,314,802)

											Net Present Value 15 Years	
Year for Debt Service		Capital Costs			Debt Service			Total Cash Flows			Discount Rate	
-10	15-Year Total	Years 1-5	Years 1-10	15-Year Total	Years 1-5	Years 1-10	15-Year Total	Years 1-5	Years 1-10	15-Year Total	15%	9%
0.413	\$ 46,700,666	\$ 23,140,712	\$ 30,186,059	\$ 30,730,646	\$ 6,865,768	\$ 19,137,976	\$ 29,466,329	\$ 6,852,646	\$ 3,398,434	\$ 8,216,636	\$ 2,742,968	\$ 3,367,308
8.401	\$ 36,470,048	\$ 23,140,712	\$ 30,186,059	\$ 30,730,646	\$ 6,865,768	\$ 19,137,976	\$ 29,466,329	\$ 2,719,991	\$ (3,153,579)	\$ (8,013,872)	\$ (788,406)	\$ (1,744,620)
8.100	\$ 30,332,660	\$ 23,027,036	\$ 29,965,092	\$ 30,806,678	\$ 6,865,768	\$ 19,071,901	\$ 29,333,413	\$ 841,314	\$ (7,083,871)	\$ (11,181,261)	\$ (2,836,822)	\$ (4,768,845)

0.413	\$ 46,700,668	\$ 19,448,485	\$ 27,242,230	\$ 27,617,116	\$ 5,513,516	\$ 16,793,017	\$ 26,276,747	\$ 7,204,897	\$ 5,743,392	\$ 8,386,217	\$ 4,036,863	\$ 6,136,567
8.401	\$ 36,470,048	\$ 19,448,485	\$ 27,242,230	\$ 27,617,116	\$ 5,513,516	\$ 16,793,017	\$ 26,276,747	\$ 4,072,243	\$ (806,620)	\$ (1,836,290)	\$ 636,467	\$ 26,626
8.100	\$ 30,332,660	\$ 17,373,754	\$ 24,170,603	\$ 24,402,960	\$ 4,690,284	\$ 14,368,856	\$ 22,614,761	\$ 3,016,796	\$ (2,314,751)	\$ (4,210,662)	\$ (303,927)	\$ (1,180,616)

0.413	\$ 42,980,686	\$ 19,448,485	\$ 27,242,230	\$ 27,617,116	\$ 5,513,516	\$ 16,793,017	\$ 26,276,747	\$ 5,964,897	\$ 3,243,392	\$ 4,646,217	\$ 2,676,021	\$ 3,123,386
8.401	\$ 32,720,048	\$ 19,448,485	\$ 27,242,230	\$ 27,617,116	\$ 5,513,516	\$ 16,793,017	\$ 26,276,747	\$ 2,822,243	\$ (3,306,620)	\$ (6,886,290)	\$ (926,366)	\$ (1,868,644)
8.100	\$ 26,582,660	\$ 17,373,754	\$ 24,170,603	\$ 24,402,960	\$ 4,690,284	\$ 14,368,856	\$ 22,614,761	\$ 1,766,796	\$ (4,814,751)	\$ (7,980,662)	\$ (1,766,796)	\$ (3,196,967)

0.413	\$ 60,480,686	\$ 19,448,485	\$ 27,242,230	\$ 27,617,116	\$ 5,513,516	\$ 16,793,017	\$ 26,276,747	\$ 8,454,897	\$ 8,243,392	\$ 12,146,217	\$ 6,466,706	\$ 7,163,726
8.401	\$ 40,220,048	\$ 19,448,485	\$ 27,242,230	\$ 27,617,116	\$ 5,513,516	\$ 16,793,017	\$ 26,276,747	\$ 5,322,243	\$ 1,691,380	\$ 1,914,710	\$ 1,967,330	\$ 2,041,800
8.100	\$ 34,082,660	\$ 17,373,754	\$ 24,170,603	\$ 24,402,960	\$ 4,690,284	\$ 14,368,856	\$ 22,614,761	\$ 4,266,796	\$ 186,240	\$ (460,662)	\$ 1,167,916	\$ 634,367

3.004	\$ 46,616,267	\$ 19,448,485	\$ 27,242,230	\$ 27,617,116	\$ 5,513,516	\$ 16,793,017	\$ 26,276,747	\$ 7,204,897	\$ 6,631,963	\$ 10,213,929	\$ 4,466,944	\$ 6,922,336
6.992	\$ 38,368,790	\$ 19,448,485	\$ 27,242,230	\$ 27,617,116	\$ 5,513,516	\$ 16,793,017	\$ 26,276,747	\$ 4,072,243	\$ 79,971	\$ 83,422	\$ 966,566	\$ 610,410
3.700	\$ 32,261,371	\$ 17,373,754	\$ 24,170,603	\$ 24,402,960	\$ 4,690,284	\$ 14,368,856	\$ 22,614,761	\$ 3,016,796	\$ (1,426,160)	\$ (2,291,961)	\$ 166,164	\$ (367,034)

CONCLUSION: Estimated VHFEDA Business Plan Valuation
 40% Reduction in Absorption with Reduced Infrastructure and Water/Sewer Operating Costs
 25% Reduction in Absorption with Reduced Infrastructure and Water/Sewer Operating Costs
 Total of USACERL's Estimation of Present Value for the VHFEDA Business Plan

15% Project Discount Rate
 \$ 156,154
 \$ 966,566
\$ 159,154 \$ 968,566

Appendix C: Engineering Analysis

Section 1: Tables

Table C1. Infrastructure divisions and systems which were evaluated for this application.

<i>Division</i>	<i>System</i>
Transportation	
	Roads*
	Parking lots
	Airfields
	Heliports
	Sidewalks
	Traffic signalization
Utilities - Water	
	Storm Sewer
	Sanitary Sewer and Wastewater Treatment Plant
	Domestic water
Utilities - Energy	
	Electricity
	Natural Gas
	Heating
	Cooling
Buildings	
	Demolition
	Rehabilitation
	New Construction
Miscellaneous	
	Communications
	Landscaping
	Landfills
	Industrial Waste
	Compressed Air
Public Services	
	Fire Protection
	Police

The EDA did not consider some very important items such as parking that are required to support the retail/office/manufacturing type environment that the reuse plan calls for. Construction of parking lots and the additional impact of drainage into the storm water system will add additional dollars to the construction costs.

Table C2. EMS condition rating scale.

Condition Rating Category	Condition Descriptions		
	Amount of Deterioration Present	How the distress affects the functionality	Type of maintenance and repair required to repair the distress
Excellent	Minimal Deterioration	Functionality is not impaired	Preventative/minor maintenance or very minor repair
Very Good	Minor Deterioration	Functionality is only slightly impaired	Preventative/minor maintenance or minor repair
Good	Moderate Deterioration	Functionality is somewhat impaired	Moderate maintenance or minor repair
Fair	Significant Deterioration	Functionality is seriously impaired	Significant maintenance or moderate repair
Poor	Severe Deterioration over a small amount (10% to 25% of area)	Functionality is critically impaired	Major repair
Very Poor	Severe Deterioration over a moderate amount	Functionality barely exists	Major repair but less than total restoration
Failed	Severe Deterioration over a large portion (>66% of area)	Functionality is lost	Total restoration

Table C3. Functionality scale.

Rating category	Functionality/Capacity/Capability Descriptions	
	How current design and construction affects the capacity	Type of M&R/Alteration required to meet future requirements
Excellent	Current capacity far exceeds future requirements	Preventative/minor maintenance, very minor repair, or very minor amount of alteration
Very Good	Current functionality fully meets or barely exceeds future requirements	Minor maintenance and repair or minor amount of alterations
Good	Current capability just meets future requirements	Moderate repairs or moderate amount of alterations
Fair	Current functionality meets future requirements without any safety requirements	Significant repairs or significant amount of alterations
Poor	Future requirements just barely exceed current capacity	Major amount of repair and alterations
Very Poor	Future requirements exceed current capabilities	Major rebuild and alteration but less than total restoration
Failed	Future requirements far exceed current capacity	Remove and restore

Table C.4. Sanitary treatment flows - Maximum scenario.

USACERL Maximum Scenario											
Parcel	Usage	EDA Projected Build-out	UOM	Persons (per sf)	Persons (total)	LOW			HIGH		
						Quantity required (gpd)	UOM	Total (gpd)	Quantity required (gpd)	UOM	Total
1	Community/Public/WWTP	26,910	SF	0	3	100	person	300	100	person	400
2	Retail Services	65,340	SF	350	187	200	1000 sf	13,068	300	1000 sf	19,602
3	Residential	100	*DU	2.5	250	100	** person/DU	25,000	100	***person/DU	35,000
4	Retail Services	54,886	SF	350	157	200	1000 sf	10,977	300	1000 sf	16,466
5	R&D	146,362	SF	350	418	200	1000 sf	29,272	300	1000 sf	43,909
5B	R&D	24,176	SF	350	69	200	1000 sf	4,835	300	1000 sf	7,253
5C	R&D	16,335	SF	350	47	200	1000 sf	3,267	300	1000 sf	4,901
6	R&D (parking)	16,523	SF	350	47	200	1000 sf	3,305	300	1000 sf	4,957
7	R&D (parking)	10,380	SF	350	30	200	1000 sf	2,076	300	1000 sf	3,114
8	R&D			350	0	200	1000 sf	0	300	1000 sf	0
9	R&D	15,682	SF	350	45	200	1000 sf	3,136	300	1000 sf	4,705
10	School	650	students	0	650	10	person	6,500	16	person	10,400
10	School Office	43,000	SF	350	123	200	1000 sf	8,600	300	1000 sf	12,900
10	School /Public library	50	persons	350	50	10	person	500	16	person	800
11	Residential	150	*DU	3	375	100	** person/DU	15,000	100	***person/DU	15,000
12	Office/Services	7,313	SF	350	21	200	1000 sf	1,463	300	1000 sf	2,194
13	Swimming Pool	200	Persons	0	200	10	gpd/swimmer	2,000	50	gpd/swimmer	10,000
13	Theater	250	Persons	0	250	5	gpd/seat	1,250	6	gpd/seat	1,500
13	Gym/Ballfield	100	Persons	0	100	10	person	1,000	50	person	5,000
14	Retail Services	20,909	SF	350	60	200	1000 sf	4,182	300	1000 sf	6,273
15	Tower	160	SF	350	0	0	person	0	0	person	0
16	Community	7,167	SF	350	20	200	1000 sf	1,433	300	1000 sf	2,150
18	Retail Services	139,392	SF	350	398	200	1000 sf	27,878	300	1000 sf	41,818
20	Retail Services	11,082	SF	350	32	200	1000 sf	2,216	300	1000 sf	3,325
20	Child Care	75	Persons	0	75	10	person	750	16	gpd per	1,200
21	Office/Services	5,243	SF	350	15	200	1000 sf	1,049	300	1000 sf	1,573
22	Office/Services	14,810	SF	350	42	200	1000 sf	2,962	300	1000 sf	4,443
23	Office/Services	3,218	SF	350	9	200	1000 sf	644	300	1000 sf	965
24	Golf Course	100	Persons	0	100	10	person	1,000	50	person	5,000
25	Innovative Technology	419,483	SF	350	1,199	200	1000 sf	83,897	300	1000 sf	125,845
25B	Innovative Technology	74,799	SF	350	214	200	1000 sf	14,960	300	1000 sf	22,440
25C	Innovative Technology	143,567	SF	350	410	200	1000 sf	28,713	300	1000 sf	43,070
27	Innovative Technology	472,408	SF	350	1,350	200	1000 sf	94,482	300	1000 sf	141,722
28	Residential	50	*DU	3	125	100	** person/DU	5,000	100	***person/DU	5,000
29	Office/Services	18,613	SF	350	53	200	1000 sf	3,723	300	1000 sf	5,584
SUBTOTAL								404,438			608,506
							95%			95%	
TOTAL								425,724			640,533

* Dwelling Units

Table C-5. Sanitary treatment flows - 25% reduction scenario.

USACERL Alternative Scenario											
Parcel	Usage	25% reduction build-out	UOM	Persons (per sf)	Persons (total)	LOW			HIGH		
						Quantity required (gpd)	UOM	Total	Quantity required (gpd)	UOM	Total
1	Community/Pl	20,183	SF	0	3	80	person	240	80	person	320
2	Retail Service	49,005	SF	350	140	200	1000 sf	9,801	300	1000 sf	14,702
3	Residential	100	*DU	2.5	200	80	***person/DU	16,000	80	***person/DU	22,400
4	Retail Service	41,165	SF	350	118	200	1000 sf	8,233	300	1000 sf	12,349
5	R&D	109,772	SF	350	314	15	1000 sf	4,704	35	1000 sf	10,977
5B	R&D	18,132	SF	350	52	15	1000 sf	777	35	1000 sf	1,813
5C	R&D	12,251	SF	350	35	15	1000 sf	525	35	1000 sf	1,225
6	R&D (parking)	12,392	SF	350	35	15	1000 sf	531	35	1000 sf	1,239
7	R&D (parking)	7,785	SF	350	22	15	1000 sf	334	35	1000 sf	779
8	R&D	0	SF	350	0	15	1000 sf	0	35	1000 sf	0
9	R&D	11,762	SF	350	34	15	1000 sf	504	35	1000 sf	1,176
10	School	650	students	0	650	10	person	6,500	16	person	10,400
10	School Office	32,250	SF	350	92	7	1000 sf	645	16	1000 sf	1,474
10	School /Public	50	persons	350	50	10	person	500	16	person	800
11	Residential	150	*DU	3	375	80	***person/DU	30,000	80	***person/DU	42,000
12	Office/Service	5,485	SF	350	16	7	1000 sf	110	16	1000 sf	251
13	Swimming Pool	150	Persons	0	150	10	gpd/swimmer	1,500	50	gpd/swimmer	7,500
13	Theater	188	Persons	0	188	5	gpd/seat	938	6	gpd/seat	1,125
13	Gym/Ballfield	75	Persons	0	75	10	person	750	50	person	3,750
14	Retail Service	15,682	SF	350	45	200	1000 sf	3,136	300	1000 sf	4,705
15	Tower	160	SF	350	0	0	person	0	0	person	0
16	Community	5,375	SF	350	15	7	1000 sf	108	16	1000 sf	246
18	Retail Service	104,544	SF	350	299	200	1000 sf	20,909	300	1000 sf	31,363
20	Retail Service	8,312	SF	350	24	200	1000 sf	1,662	300	1000 sf	2,493
20	Child Care	56	Persons	0	56	10	gpd per	563	16	gpd per	900
21	Office/Service	3,932	SF	350	11	7	1000 sf	79	16	1000 sf	180
22	Office/Service	11,108	SF	350	32	7	1000 sf	222	16	1000 sf	508
23	Office/Service	2,414	SF	350	7	7	1000 sf	48	16	1000 sf	110
24	Golf Course	75	Persons	0	75	10	person	750	50	person	3,750
25	Innovative Tel	314,612	SF	350	899	16	1000 sf	14,382	80	1000 sf	71,911
25B	Innovative Tel	56,099	SF	350	160	16	1000 sf	2,565	80	1000 sf	12,823
25C	Innovative Tel	107,675	SF	350	308	16	1000 sf	4,922	80	1000 sf	24,611
27	Innovative Tel	354,306	SF	350	1,012	16	1000 sf	16,197	80	1000 sf	80,984
28	Residential	50	*DU	3	125	80	***person/DU	10,000	80	***person/DU	14,000
29	Office/Service	13,960	SF	350	40	7	1000 sf	279	16	1000 sf	638
SUBTOTAL								158,413			383,503
							95%			95%	
TOTAL								166,751			403,687
											*** family size is 3.5

* Dwelling Units

Table C.6. Sanitary treatment flows - 40% reduction scenario.

USACERL Minimum Scenario											
Parcel	Usage	40% reduction build-out	UOM	Persons (per sf)	Persons (total)	LOW			HIGH		
						Quantity required (gpd)	UOM	Total	Quantity required (gpd)	UOM	Total
1	Community/P	16,146	SF	0	3	80	person	240	80	person	320
2	Retail Service	39,204	SF	350	112	200	1000 sf	7,841	300	1000 sf	11,761
3	Residential	100	*DU	2.5	200	80	***person/DU	16,000	80	***person/DU	22,400
4	Retail Service	32,932	SF	350	94	200	1000 sf	6,586	300	1000 sf	9,879
5	R&D	87,817	SF	350	251	15	1000 sf	3,764	35	1000 sf	8,782
5B	R&D	14,506	SF	350	41	15	1000 sf	622	35	1000 sf	1,451
5C	R&D	9,801	SF	350	28	15	1000 sf	420	35	1000 sf	980
6	R&D (parking)	9,914	SF	350	28	15	1000 sf	425	35	1000 sf	991
7	R&D (parking)	6,228	SF	350	18	15	1000 sf	267	35	1000 sf	623
8	R&D	0	SF	350	0	15	1000 sf	0	35	1000 sf	0
9	R&D	9,409	SF	350	27	15	1000 sf	403	35	1000 sf	941
10	School	650	students	0	650	10	person	6,500	16	person	10,400
10	School Office	25,800	SF	350	74	7	1000 sf	516	16	1000 sf	1,179
10	School /Public	50	persons	350	50	10	person	500	16	person	800
11	Residential	150	*DU	3	375	80	***person/DU	30,000	80	***person/DU	42,000
12	Office/Service	4,388	SF	350	13	7	1000 sf	88	16	1000 sf	201
13	Swimming Po	120	Persons	0	120	10	gpd/swimmer	1,200	50	gpd/swimmer	6,000
13	Theater	150	Persons	0	150	5	gpd/seat	750	6	gpd/seat	900
13	Gym/Ballfield	60	Persons	0	60	10	person	600	50	person	3,000
14	Retail Service	12,545	SF	350	36	200	1000 sf	2,509	300	1000 sf	3,764
15	Tower	160	SF	350	0	0	person	0	0	person	0
16	Community	4,300	SF	350	12	7	1000 sf	86	16	1000 sf	197
18	Retail Service	83,635	SF	350	239	200	1000 sf	16,727	300	1000 sf	25,091
20	Retail Service	6,649	SF	350	19	200	1000 sf	1,330	300	1000 sf	1,995
20	Child Care	45	Persons	0	45	10	gpd per	450	16	gpd per	720
21	Office/Service	3,146	SF	350	9	7	1000 sf	63	16	1000 sf	144
22	Office/Service	8,886	SF	350	25	7	1000 sf	178	16	1000 sf	406
23	Office/Service	1,931	SF	350	6	7	1000 sf	39	16	1000 sf	88
24	Golf Course	60	Persons	0	60	10	person	600	50	person	3,000
25	Innovative Te	251,690	SF	350	719	16	1000 sf	11,506	40	1000 sf	28,765
25B	Innovative Te	44,879	SF	350	128	16	1000 sf	2,052	40	1000 sf	5,129
25C	Innovative Te	86,140	SF	350	246	16	1000 sf	3,938	40	1000 sf	9,845
27	Innovative Te	283,445	SF	350	810	16	1000 sf	12,957	40	1000 sf	32,394
28	Residential	50	*DU	3	125	80	***person/DU	4,000	80	***person/DU	14,000
29	Office/Service	11,168	SF	350	32	7	1000 sf	223	16	1000 sf	511
SUBTOTAL						133,379			248,654		
TOTAL						140,398			261,741		
						95%			95%		
						** family size is 2.5			*** family size is 3.5		
						* Dwelling Units					

Table C7. Contribution sewage flow estimates to be used as a design basis for new sewage works.

Discharge Facility	Contributing Design Units	Flow (gpd)	BOD's #/day	S.S #/day	Flow Duration (Hr)
Dwellings	per person	100	0.2	0.2	24
Schools with Showers and cafeteria	per person	16	0.04	0.04	8
Schools without showers and with cafeteria	per person	10	0.025	0.025	8
Boarding Schools	per person	75	0.2	0.2	16
Motels at 65 gals/person (rooms only)	per room	130	0.26	0.26	24
Trailer Courts at 3 person/trailer	per trailer	300	0.6	0.6	24
Restaurants	per seat	50	0.2	0.2	16
Interstate or through highway restaurants	per seat	180	0.7	0.7	16
Interstate rest areas	per person	5	0.01	0.01	24
Service Stations	per vehicle serviced	10	0.01	0.01	16
Factories	per person per 8-hr shift	15-35	0.03-0.07	0.03-0.07	Oper. Per.
Shopping centers	per 1000 SF of ultimate floor space	200-300	0.1	0.1	12
Hospitals	per bed	300	0.6	0.6	24
Nursing Homes	per bed	200	0.3	0.3	24
Homes for the aged	per bed	100	0.2	0.2	24
Doctors Office in Medical Center	per 1000 SF of ultimate floor space	500	0.1	0.1	12
Laundromats, 9 to 12 machines	per machine	500	0.3	0.3	16
Community Colleges	per student and faculty	15	0.03	0.03	12
Swimming Pools	per swimmer	10	0.001	0.001	12
Theaters, drive-in type	per car	5	0.01	0.01	4
Theaters, Auditorium type	per seat	5	0.01	0.01	12
Picnic areas	per person	5	0.01	0.01	12
Camps, Resort day and night with limited plumbing	per camp site	50	0.05	0.05	24
Luxury camps with flush toilets	per camp site	100	0.1	0.1	24

Table C8. EIS flow rate estimates.

Source	Unit	Flow, gal/unit per day		
		Low range	High range	Typical
Residential				
Apartment:				
High-rise	Person	35	75	50
Low rise	Person	50	80	65
Hotel	Guest	30	55	45
Individual Residence:				
Typical Home	Person	45	90	70
Better Home	Person	60	100	80
Luxury Home	Person	75	150	95
Older Home	Person	30	60	45
Summer Cottage	Person	25	50	40
Motel:				
With Kitchen	Unit	90	180	100
Without Kitchen	Unit	75	150	95
Trailer Park	Person	30	50	40
Commercial				
Airport	Passenger	2	4	3
Automobile Service Station	Vehicle served	7	13	10
	Employee	9	15	12
Bar	Customer	1	5	3
	Employee	10	16	13
Department Store	Toilet Room	400	600	500
	Employee	8	12	10
Hotel	Guest	40	56	48
	Employee	7	13	10
Industrial building (sanitary only)	Employee	7	16	13
Laundry (self service)	Machine	450	650	550
	Wash	45	55	50
Office	Employee	7	16	13
Restaurant	Meal	2	4	3
Shopping Center	Employee	7	13	10
	Parking Space	1	2	2
Institutional Sources				
Hospital, medical	Bed	125	250	165
	Employee	5	15	10
Hospital, mental	Bed	75	140	100
	Employee	5	15	10
Prison	Inmate	75	150	115
	Employee	5	15	10
Rest Home	Resident	50	120	85
School, day				
With cafeteria, gym, and showers	Student	15	30	25
With cafeteria only	student	10	20	15
Without cafeteria and gym	student	5	17	11
School, boarding	Student	50	100	75

Source	Unit	Flow, gal/unit per day		
		Low range	High range	Typical
Recreational Facilities				
Apartment, resort	Person	50	70	60
Cabin, resort	Person	8	50	40
Cafeteria	Customer	1	3	2
	Employee	8	12	10
Campground (developed)	Person	20	40	30
Cocktail Lounge	Seat	12	25	20
Coffee shop	Customer	4	8	6
	Employee	8	12	10
Country Club	Member present	60	130	200
	Employee	10	15	13
Day camp (no meals)	Person	10	15	13
Dining Hall	Meal Served	4	10	7
Dormitory Bunkhouse	Person	20	50	40
Hotel, resort	Person	40	60	50
Store, resort	Customer	1	4	3
	Employee	8	12	10
Swimming Pool	Customer	5	12	10
	Employee	8	12	10
Theater	Seat	2	4	3
Visitor Center	Visitor	4	8	5

Table C9. Trip generation based on full build out - maximum scenario.

Parcel	Land usage	EDA Projected Build-out	UOM	Trips required	Low UOM (SF)	Total	Trips require d	High UOM (SF)	Total	Trips required	Typical UOM (SF)	Total
1	Public/WWTP	26,910	SF	2	1000	54	10	1000	269	8	1000	215
2	Retail/Service	65,300	SF	60	1000	3,918	140	1000	9,142	80	1000	5,224
3	Residential	100	DU	5	N/A	500	8	N/A	800	7	N/A	700
4	Retail/Service	54,900	SF	60	1000	3,294	140	1000	7,686	80	1000	4,392
5A	R&D	148,400	SF	3	1000	445	8	1000	1,187	4	1000	594
5B	R&D	24,200	SF	3	1000	73	8	1000	194	4	1000	97
5C	R&D	16,300	SF	3	1000	49	8	1000	130	4	1000	65
6&8	R&D	22,030	SF	3	1000	66	8	1000	176	4	1000	88
7	R&D	13,840	SF	3	1000	42	8	1000	111	4	1000	55
9	R&D	15,700	SF	3	1000	47	8	1000	126	4	1000	63
10	School	650	Students	0	N/A	260	1	N/A	780	1	N/A	520
11	Residential	150	DU	5	N/A	750	8	1000	1,200	7	1000	1,050
12	Office/Service	9,750	SF	6	1000	59	60	1000	585	14	1000	137
13	Village Green	23,191	SF	2	1000	46	10	1000	232	8	1000	186
14	Retail/Service	20,900	SF	60	1000	1,254	140	1000	2,926	80	1000	1,672
15	Tower	160	SF	0	1000	0	0	1000	0	0	1000	0
16	Community	9,556	SF	2	1000	19	10	1000	96	8	1000	76
18	Retail/Service	139,400	SF	60	1000	8,364	140	1000	19,516	80	1000	11,152
20	Retail/Service	14,776	SF	60	1000	887	140	1000	2,069	80	1000	1,182
21	Office/Service	6,900	SF	6	1000	41	60	1000	414	14	1000	97
22	Office/Service	14,800	SF	6	1000	89	60	1000	888	14	1000	207
23	Office/Service	4,290	SF	6	1000	26	60	1000	257	14	1000	60
24	Community	7,500	SF	2	1000	15	10	1000	75	8	1000	60
25A	Innovative Tech	419,500	SF	1	1000	420	4	1000	1,678	4	1000	1,678
25B	Innovative Tech	90,732	SF	1	1000	91	4	1000	363	4	1000	363
25C	Innovative Tech	191,422	SF	1	1000	191	4	1000	766	4	1000	766
27	Innovative Tech	472,400	SF	1	1000	472	4	1000	1,890	4	1000	1,890
28	Residential	50	DU	5	N/A	250	8	N/A	400	7	N/A	350
29	Office/Service	24,817	SF	6	1000	149	60	1000	1,489	14	1000	347
Total		1,838,624		373		21,816	1,119		55,175	556		33,070

Table C.10. Trip generation based on 25% reduction - Alternative scenario.

Parcel	Usage	25% reduction build-out	UOM	LOW			HIGH			TYPICAL		
				Trips required	UOM	Total	Trips required	UOM	Total	Trips required	UOM	Total
1	Public/WWTP	20,183	SF	2	1000sf	40	10	1000sf	202	8	1000sf	161
2	Retail/Service	49,005	SF	60	1000sf	2,940	140	1000sf	6,861	80	1000sf	3,920
3	Residential	100	DU	5	N/A	500	8	N/A	800	7	N/A	700
4	Retail/Service	41,165	SF	60	1000sf	2,470	140	1000sf	5,763	80	1000sf	3,293
5A	R&D	109,772	SF	3	1000sf	329	8	1000sf	878	4	1000sf	439
5B	R&D	18,132	SF	3	1000sf	54	8	1000sf	145	4	1000sf	73
5C	R&D	12,251	SF	3	1000sf	37	8	1000sf	98	4	1000sf	49
6&8	R&D	12,392	SF	3	1000sf	37	8	1000sf	99	4	1000sf	50
7	R&D	7,785	SF	3	1000sf	23	8	1000sf	62	4	1000sf	31
9	R&D	11,762	SF	3	1000sf	35	8	1000sf	94	4	1000sf	47
10	School	488	Students	0	N/A	195	1	N/A	585	1	N/A	390
11	Residential	150	DU	5	N/A	750	8	N/A	1,200	7	N/A	1,050
12	Office/Service	5,485	SF	6	1000sf	33	60	1000sf	329	14	1000sf	77
13	Village Green	17,393	SF	2	1000sf	35	10	1000sf	174	8	1000sf	139
14	Retail/Service	15,682	SF	60	1000sf	941	140	1000sf	2,195	80	1000sf	1,255
15	Tower	160	SF	0	1000sf	0	0	1000sf	0	0	1000sf	0
16	Community	5,375	SF	2	1000sf	11	10	1000sf	54	8	1000sf	43
18	Retail/Service	104,544	SF	60	1000sf	6,273	140	1000sf	14,636	80	1000sf	8,364
20	Retail/Service	8,312	SF	60	1000sf	499	140	1000sf	1,164	80	1000sf	665
21	Office/Service	3,932	SF	6	1000sf	24	60	1000sf	236	14	1000sf	55
22	Office/Service	11,108	SF	6	1000sf	67	60	1000sf	666	14	1000sf	156
23	Office/Service	2,414	SF	6	1000sf	14	60	1000sf	145	14	1000sf	34
24	Community/Golf C	5,625	SF	2	1000sf	11	10	1000sf	56	8	1000sf	45
25A	Innovative Tech	314,612	SF	0	1000sf	126	1	1000sf	378	1	1000sf	252
25B	Innovative Tech	56,099	SF	0	1000sf	22	1	1000sf	67	1	1000sf	45
25C	Innovative Tech	107,675	SF	0	1000sf	43	1	1000sf	129	1	1000sf	86
27	Innovative Tech	354,306	SF	0	1000sf	142	1	1000sf	425	1	1000sf	283
28	Residential	50	DU	5	N/A	250	8	N/A	400	7	N/A	350
29	Office/Service	13,960	SF	6	1000sf	84	60	1000sf	838	14	1000sf	195
TOTAL				371		15,945	1,108		38,478	543		22,085

Table C.11. Trip generation based on 25% reduction - Alternative scenario.

Parcel	Usage	40% reduction build-out	UOM	LOW			HIGH			TYPICAL		
				Trips required	UOM	Total	Trips required	UOM	Total	Trips required	UOM	Total
1	Public/WWTP	16,146	SF	2	1000sf	32	10	1000sf	161	8	1000sf	129
2	Retail/Service	39,204	SF	60	1000sf	2,352	140	1000sf	5,489	80	1000sf	3,136
3	Residential	100	DU	5	N/A	500	8	N/A	800	7	N/A	700
4	Retail/Service	32,932	SF	60	1000sf	1,976	140	1000sf	4,610	80	1000sf	2,635
5A	R&D	87,817	SF	3	1000sf	263	8	1000sf	703	4	1000sf	351
5B	R&D	14,506	SF	3	1000sf	44	8	1000sf	116	4	1000sf	58
5C	R&D	9,801	SF	3	1000sf	29	8	1000sf	78	4	1000sf	39
6&8	R&D	9,914	SF	3	1000sf	30	8	1000sf	79	4	1000sf	40
7	R&D	6,228	SF	3	1000sf	19	8	1000sf	50	4	1000sf	25
9	R&D	9,409	SF	3	1000sf	28	8	1000sf	75	4	1000sf	38
10	School	390	Students	0	N/A	156	1	N/A	468	1	N/A	312
11	Residential	150	DU	5	N/A	750	8	N/A	1,200	7	N/A	1,050
12	Office/Service	4,388	SF	6	1000sf	26	60	1000sf	263	14	1000sf	61
13	Village Green	13,915	SF	2	1000sf	28	10	1000sf	139	8	1000sf	111
14	Retail/Service	12,545	SF	60	1000sf	753	140	1000sf	1,756	80	1000sf	1,004
15	Tower	160	SF	0	1000sf	0	0	1000sf	0	0	1000sf	0
16	Community	4,300	SF	2	1000sf	9	10	1000sf	43	8	1000sf	34
18	Retail/Service	83,635	SF	60	1000sf	5,018	140	1000sf	11,709	80	1000sf	6,691
20	Retail/Service	6,649	SF	60	1000sf	399	140	1000sf	931	80	1000sf	532
21	Office/Service	3,146	SF	6	1000sf	19	60	1000sf	189	14	1000sf	44
22	Office/Service	8,886	SF	6	1000sf	53	60	1000sf	533	14	1000sf	124
23	Office/Service	1,931	SF	6	1000sf	12	60	1000sf	116	14	1000sf	27
24	Community/Golf Course	4,500	SF	2	1000sf	9	10	1000sf	45	8	1000sf	36
25A	Innovative Tech	251,690	SF	0	1000sf	101	1	1000sf	302	1	1000sf	201
25B	Innovative Tech	44,879	SF	0	1000sf	18	1	1000sf	54	1	1000sf	36
25C	Innovative Tech	86,140	SF	0	1000sf	34	1	1000sf	103	1	1000sf	69
27	Innovative Tech	283,445	SF	0	1000sf	113	1	1000sf	340	1	1000sf	227
28	Residential	50	DU	5	N/A	250	8	N/A	400	7	N/A	350
29	Office/Service	11,168	SF	6	1000sf	67	60	1000sf	670	14	1000sf	156
TOTAL				371		13,056	1,108		31,262	543		18,088

Section 2. Condition Assessment of Vint Hill Farms Station

The following paragraphs outline the current condition of the installations infrastructure divisions and systems.

Transportation

Roads. The roads at VHFS have one lane of traffic in each direction and are constructed with asphalt and aggregate surfaces. The Directorate of Public Works (DPW) at VHFS had put much work into the roads on the installation until the announcement of closure. Very little work has been done since then. Overall, the roads are in "very good" condition, with the exception of some roads and streets in the housing areas that are in "fair" condition with a fair amount of medium severity transverse and longitudinal cracking.

Parking lots. The reuse plan does not address any parking, and therefore, USACERL did not consider it in the analysis.

Traffic signalization. There are approximately 50 traffic control and directional signs on VHFS. The existing traffic control and directional signs are in "excellent" condition.

Street lights. The street lights on the installation are in "excellent" condition and will only require preventative maintenance to keep them that way.

Utilities - Water

Domestic water. A domestic water system is available to supply a sufficient volume of water at adequate pressure from a supply source to consumers for domestic, irrigation, industrial, and fire fighting purposes. The domestic water system at VHFS consists of: 325,000 gal of total storage in elevated water storage tanks, five wells with a total capacity of 560 gal per minute (only three are currently operational), a total of 59,600 linear feet of assorted pipe sizes, and 84 fire hydrants. The domestic water system at VFHS is in "good" condition. One of the greatest downfalls to the system is that Well No. 5 is not on line due to a manganese problem and Well No. 3 has a broken casing.

Storm water system. A storm drainage system is designed to collect, direct, and dispose of runoff through a combination of aboveground and below ground components. The storm water system at VFHS is in "fair" condition. The most notable problem with the storm sewer system is the amount of Inflow and

Infiltration (I/I) of runoff into sanitary sewer system (estimated at almost 50%). Water may infiltrate sewers through poor joints, cracked pipes, walls of manholes, perforated manhole covers, and drains. Sewers in wet ground with a high water table or close to streambeds will also have more infiltration. The DPW at VHFS did a study a few years ago to try to determine the cause of the I/I. Many of the items suggested in the report were resolved/fixed. However, the amount of I/I did not significantly decrease.

Wastewater treatment/sanitary sewer. The sanitary sewer at VHFS consists of: a 246,000 gpd treatment plant, 41,735 total linear feet of assorted pipe sizes, and one 150 gal per minute pump station.

Utilities - Energy

Electricity. The electrical system at VHFS is in "good" condition. The biggest detrimental item is that the underground conduit and handhole stations have an excess of water in them that cannot drain. It is not known whether this is because of the high water table exerting pressure on the water to enter the lines or not.

Natural Gas. The natural gas system of VHFS consists of 37,056 total linear feet of different sizes of lines, a 'sniffer'/odorizer station, 58 valves, and 17 meters. The system is capable of delivering up to 2,900 million cubic feet per day. The natural gas distribution system is at the high end of a "very good" condition because of 12 gas valves that are leaking. To improve the condition, the leaks will have to be plugged (at worst case the valves will need to be replaced) with preventative maintenance to keep it that way.

Buildings

Demolition. A very large percentage of the buildings at VHFS are Capehart/Wherry type housing constructed under a "tropical" type design, which signifies that they are built on post and pier foundations with open crawl spaces. The buildings were built with no insulation and, for the climate of this area, require huge amounts of heat. The installation has spent googols of dollars on trying to make the buildings energy efficient, with little success. Because the buildings cannot meet their current function they have a condition rating of "fair."

The other buildings are in "very good" condition.

Public Services

Fire. Fire services are going to be maintained on the installation for approximately 2 years or until the caretaker force leaves. The U.S. Army has the only full time fire fighting force in the county, and they have a reciprocating agreement with all of the local fire fighting crews within an 8-mile radius. After they leave, the county is left with nothing. Another problem is that the fire station is physically located on the new curb and gutter for the expansion of Harrison Road, thus hindering the implementation of the reuse plan.

Police. The VHFS police force is much like the fire fighting scenario. Because it is 8 miles from the nearest town, police and security forces may be a problem for the redevelopment of the installation.

Section 3. Functionality Assessment of Vint Hill Farms Station

The following paragraphs outline the functional assessment of the installation's infrastructure divisions and systems.

Transportation

Roads. The factors that determine road functionality are the current width and depth of the asphalt pavements. With total build-out, the number of trips almost triples to 35,000 vehicle trips per day. This increase will greatly change the width and depth requirements for the existing road pavements. Therefore, the roads receive a "fair" condition rating.

Parking lots. The reuse plan does not address parking; therefore, USACERL did not consider it in the analysis.

Traffic signalization. Approximately 50 traffic control and directional signs are on VHFS. The existing traffic control and directional signs are in "excellent" condition.

Street lights. Because the number of trips affect the width and depth of the existing road pattern, the number of street lights will also change. Therefore, they are in "good" condition and will require the installation of an additional number of lights to reach a functional rating of excellent. (Note the cost to install these lights is included in the road improvement costs.)

Utilities - Water

Domestic water. The domestic water system at VFHS is in "good" condition.

Storm water system. A storm drainage system is designed to collect, direct, and dispose of runoff through a combination of aboveground and below ground components.

Wastewater treatment/sanitary sewer. The most notable problem with the sanitary sewer system is the amount of Inflow and Infiltration (I/I) of runoff into the system (estimated at almost 50%). Water may infiltrate sewers through poor joints, cracked pipes, walls of manholes, perforated manhole covers, and drains. Sewers in wet ground with a high water table or close to streambeds will also have more infiltration. The DPW at VFHS did a study a few years ago to try to determine the cause of the I/I. Many of the items suggested in the report were resolved/fixed. However, the amount of I/I did not significantly decrease.

Utilities - Energy

Natural gas. The natural gas system at VFHS is capable of delivering up to 2,900 million cubic feet per day (MCFD), which is 98% more than what is required to support full build-out. Therefore, the natural gas distribution system has a functional rating of "excellent." According to the existing reports, to bring the system into compliance, better maintenance records need to be kept and additional redundant lines need to be installed.

From reports furnished by VFHS the largest population ever at Vint Hill was 3,820. Utility reports state that they used only 900 MCFD of natural gas. The Reuse Plan calls for a total population of 5,636 people. By using a state line ratio, they will require 1,460 MCFD. By using a 25% reduction in total absorption, the installation will have a population of 4,461 which, in turn, will require 1,156 MCFD. Both numbers are lower than the total current capacity of 2,900 MCFD.

Section 4. EDA Assessment Based on a 100% Build-out

Soft costs. These costs include all of the necessary architectural and engineering design to develop the proposed plan. Among the designs would be the engineering for the roads and utilities, the wastewater sewage treatment plant, the golf course, traffic studies, construction management and financing costs.

The EDA projected cost is \$2,135,000, while USACERL's range is \$1,863,000 to \$2,102,000. The EDA's figure is slightly out of USACERL's range, but is still felt to be reasonable. Looking at the individual items, it can be seen that USACERL's projections are lower in the engineering costs for the roads and utilities and the golf course and higher in the construction management costs (USACERL used a standard construction management cost of 1.5%). The difference between these two offset each other and thus make the EDA's number reasonable.

Transportation

Roads. These costs include the demolition of several of the existing main traffic lanes and construction of new four-lane divided and undivided roads and construction of several new two lane roads, all to Virginia Department of Transportation standards. Also all of the distribution lines for the domestic water, sanitary sewer, and the storm sewer lines will be redone to match the new existing roads.

Dewberry and Davis supplied extensive cut and fill profiles of the existing and proposed road network. USACERL felt that a good portion of the cut and fill could be handled with a road grader and scraper as opposed to a front end loader and dump truck. Therefore all cost estimates were done as "grading" and not actual cut and fill.

Utilities - Water

Sanitary sewer and WWTP. These costs include minimal maintenance to the existing plant until a new one can be built in Year 6 of the redevelopment plan. Calculations from the A/E firm that developed the Reuse Plan show that 657,000 gpd will be required to support the population. The EDA has rounded that number off to 700,000 gpd. The EDA's projected costs for the construction of the plant is estimated at \$6,300,000 and maintenance of the existing plant would be at \$300,000. USACERL's estimate for the construction of a new plant is between \$6,286,000 and \$7,428,000 and maintenance of the existing plant is between \$968,000 and \$1,144,000.

Domestic water. These costs include the construction of a new elevated water tank and maintenance to the existing tanks to increase the required storage and flow for fire protection.

Appendix D: Amendment to the EDC Application for Vint Hill Farms Station and USACERL's Technical Review of the Amendment

BACKGROUND

The Vint Hill Farms Economic Development Authority (VHFEDA) met with the Army at the Pentagon on September 4, 1997 to hear the Construction Engineering Research Laboratory's (USACERL's) evaluation of the VHFEDA's Economic Development Conveyance (EDC) application dated April 30, 1997. USACERL's evaluation recommended that the VHFEDA formulate a supplemental redevelopment strategy to address a sales and leasing schedule that is 25 percent lower than that proposed in the EDC application. Slower sales and leasing would require a corresponding reduction in or a delaying of proposed infrastructure costs to retain a financially feasible redevelopment. A conservative strategy would also reduce the long-term bond financing and interest payments proposed in the EDC. USACERL recommended this more conservative strategy be pursued while the real estate market on Vint Hill is being tested.

The VHFEDA compliments USACERL on the analysis they conducted of the large and detailed EDC application. While the VHFEDA does not concur with all of USACERL's findings and recommendations, the VHFEDA agrees that formulation of an alternative conservative business strategy is a prudent recommendation.

The VHFEDA includes four areas in this Amendment to its EDC application:

- we include the water and wastewater systems in the EDC request instead of asking for them under a Public Health Benefit transfer;
- we include Parcel 10 in the EDC request because of concern that recent Fauquier County School Board revisions regarding timing for construction of a new middle school at Vint Hill may exceed the time allowed for a Public Benefit Conveyance by the US Department of Education;
- we include the modular buildings into the VHFEDA's EDC request which were originally specified in the EDC for Public Benefit Conveyance to the Fauquier County School Board for removal and off-site educational use, and
- we submit the components of a more conservative business strategy for redevelopment as an alternative to the VHFEDA's EDC application to support redevelopment should

lower lease and sales absorption of up to 25 percent occur over those projected in the EDC for the 15 year Business Plan horizon.

A. WATER AND WASTEWATER SYSTEM TRANSFER AS PART OF THE EDC

The EDC application stated that the water and wastewater systems on Vint Hill would be sought under a no-cost Public Health Benefit Conveyance. The purpose of separating the water and wastewater systems from the EDC application was to comply with BRAC regulations that other transfer mechanisms, when available, be used prior to the EDC.

The Army has indicated to the VHFEDA that including the water and wastewater systems in the EDC application will not meaningfully affect the final value of Vint Hill and will simplify the Army's transfer process. **Therefore, the VHFEDA amends its EDC application to have the water and wastewater systems transferred to the VHFEDA within the negotiated price for the base.**

B. INCLUDE PARCEL 10 IN THE EDC APPLICATION IN LIEU OF A PUBLIC BENEFIT CONVEYANCE FOR EDUCATIONAL PURPOSES

The Fauquier County School Board recently approved a plan for making additions to three of the County's four middle schools and for replacing an existing elementary school. The County Board of Supervisors has approved the funding or funding process which will enable these actions to be undertaken as soon as possible. The decisions were sound both financially and educationally. They will result in permanent classrooms replacing the many modular classrooms now in use as "temporary classrooms" at the middle schools. The plan will also produce the acreage necessary for a future expansion at the fourth middle school.

The middle schools' expansion plan will delay projected need for a new middle school for the New Baltimore portion of the County. That new school had been planned to open in 2001. Now, it will be at least 2005 or later before a new middle school is needed. The approved replacement of an existing elementary school in Warrenton will make the former school building available for school activity offices. Building 162 at Vint Hill had originally been targeted for that purpose by the School Board. Thus, it appears Building 162 will no longer be needed for School Board activity purposes.

The guidelines for Public Benefit Conveyance sponsorship by the US Department of Education calls for use within one (1) year of existing base facilities or within three (3) years if renovation or new construction is proposed. The delay in projected need for a new middle school on Vint Hill exceeds the time period that qualifies for educational conveyance.

The VHFEDA does not want Parcel 10 to be excluded from the EDC conveyance if a Public Benefit Conveyance for educational purposes is no longer within the guidelines. **The VHFEDA does hereby amend its EDC application to include Parcel 10 within the acreage sought,**

rather than allow Parcel 10 to be sold separately from conveyance of the remainder of the 701 acres.

C. INCLUDE MODULAR BUILDINGS AS PART OF THE EDC

The VHFEDA had concurred with the School Board's initial request to allow the modular office buildings and a metal warehouse on Vint Hill to be transferred to the School Board under a Public Benefit Conveyance. The School Board wanted the buildings for removal and off-site use as overflow classrooms at various schools in Fauquier County. The need for the modular buildings has changed recently with the School Board's decision to build enough classrooms at three existing middle schools to eliminate the need for overflow classrooms at those schools. That construction will free up the currently used overflow classrooms for future use by the School Board. There is now no projected need for the modular buildings by the School Board. The VHFEDA is requesting that the modular office buildings and the metal warehouse designated for transfer to the School Board in the EDC be transferred instead with the Vint Hill real estate to allow their use for interim leasing purposes. The modular office buildings can readily provide office space for small users needing 3,000-7,000 SF of office space. **The VHFEDA requests that the modular office buildings and the warehouse building be included in the final negotiated price for the EDC transfer of the base.**

D. VARIETY OF STRATEGIC ACTIONS AVAILABLE TO THE VHFEDA TO ADDRESS SLOWER THAN PROJECTED ABSORPTION, TO INCREASE PROJECT INCOME, TO AVOID OR DELAY INVESTMENT IN INFRASTRUCTURE IMPROVEMENTS, AND TO REDUCE DEBT AND DEBT PAYMENTS

D.1 Implications of a Reduction in Sales and Leasing Income

USACERL has asked the VHFEDA to develop a strategy to address the potential for at least a 25 percent decrease in income from sales and leasing over a 15-year planning period. The EDC projects approximately \$36,000,000 in sales and leasing income from Vint Hill over 15 years. A 25 percent reduction in absorption would reduce projected real estate sales and leasing income by about \$9,000,000. Corresponding reductions or delays in planned capital improvements would be necessary for development to be supported by the reduced income. Avoidance of or delays in making planned site improvements would reduce some of the early year borrowing shown in the EDC application. This would result in lower long-term debt repayments than shown in the Business Plan.

D.2 Variety of Action Options Available to the VHFEDA

The private sector's response to a slowdown in real estate sales is typically to increase the advertising budget and the attractiveness of the product to rebuilt interest and extend its outreach to more potential customers. That is a proactive strategy. The private sector also examines ways to reduce costs during a slowdown in sales. That is a reactive strategy. USACERL has proposed

a that the VHFEDA consider a reactive strategy of reducing expenditures and debt. Thus, USACERL's proposal is only one possible option for addressing the possibility of a \$9,000,000 decrease in real estate income and the avoidance or delay of $\pm$ \$13,000,000 in debt and debt service over 15 years from that shown in the EDC.

The variety of options available to the VHFEDA to adjust to reductions in absorption includes both proactive and reactive actions. **A combination of proactive and reactive actions would be used by the VHFEDA to address a slowdown in sales and lease absorption.** The particular combination of actions initially adopted would be evaluated to determine its success or lack of success in meeting the desired objectives. If one or more action elements of a combined strategy were not proving successful, they could be dropped and new actions undertaken. Redevelopment strategy must be fluid. It must be able to be changed, adapted, and modified to respond to market conditions and to market opportunities as they appear.

D.3 PROACTIVE ACTIONS

Proactive actions would be focused on making the site more attractive to customers and/or expanding knowledge of the site to more potential customers. Some of the proactive options available to the VHFEDA include:

- Adjust Lease Rates and Terms – Make it more attractive for businesses to occupy buildings in exchange for assuming more of the maintenance costs, a currently planned strategy for Building 260 to reduce building and grounds maintenance costs.
- Adjust Land Sales Terms – Make it more attractive for businesses to acquire sites for new construction, as with owner financing, which is currently planned to help sell Building 260. This action will reduce up-front income but will result in extended income and interest income over a long period.
- Increase the Marketing Budget – Expand the marketing outreach to more customers.
- Private-Sector Partners or Investors – Bring in private-sector partners and/or investors to share in redevelopment capital costs. Investors would share in the potential returns from redevelopment of individual parcels or the whole base. The VHFEDA is currently seeking private-sector joint-venture partners and/or investors for the golf course, housing areas, retail center and a technology park. If successful, this action could provide millions for infrastructure or golf course construction that the VHFEDA would not have to borrow. Obtaining a golf course investor/partner appears highly probable, thus reducing the need for the VHFEDA to contribute all the proposed expenditure of \$5,000,000 during years 1-4 for designing and constructing the golf course.
- Incentives – Provide incentives for businesses by having Vint Hill classified as a Local Technology Zone, an Enterprise Zone and/or an annex of the Dulles International Airport's Foreign Trade Zone. None of these zones now exist in Fauquier County. Each offers tax and employment incentives to locating businesses. The incentives are funded from local and State funds. The VHFEDA is actively pursuing each of these zone designations for VHFS to provide greater incentives for business attraction.
- Private Facilities – Operate for longer periods as private facilities current infrastructure systems that require capital improvements before they can be turned over to another

agency, i.e., the street system to VDOT and the water and wastewater systems to WSA. Bob Moore, VDOT Resident Engineer in Warrenton, stated to Owen Bludau on October 2, 1997 that based on VDOT measurements and field examination, the Vint Hill streets are insufficient "as is" for acceptance into the VDOT system. They will require rebuilding to VDOT standards. VDOT will allow the VHFEDA to initially build only two lanes of future four-lane streets until the additional lanes are required by traffic volume. The major factor determining the timing of improvements to Harrison, Jackson and Bicher Roads will be when buyers for sites accessed by these roads become available. Zoning requires access to public roads for sales of most land uses. \$8.3 million in Year 1-2 expenditures can be delayed if parcel purchasers are not yet available. Necessary street improvements can also be phased by street, rather than completing the three streets at one time if improvements are not immediately necessary to achieve parcel sales. Any delay in these expenditures would reduce up-front debt and reduce debt payments over the 15 years.

- Obtain Increased Grant Funds – Increase the amount of grant money obtained for capital improvements over the \$5.5 million projected in the EDC. The VHFEDA will seek an additional \$450,000 in VDOT Highway Access Program grant funds for the initial extension of the antenna field road to Parcel 25A. A business ready to locate in Parcel 25A will be necessary to "trigger" the grant funds. The VHFEDA will then seek to locate a prospective tenant in Building 260 to trigger an additional \$450,000 in grant funds to build the new street from the other end. We should be able to gain a total of \$900,000 from this source at a local match cost of \$300,000. We should be able to achieve this strategy by Year 4. The VHFEDA will also seek more than the \$500,000 projected in Rural Development Agency grant funds for building demolition. The Rural Development Agency has said that Vint Hill presents a strong case for grant support for rural economic development purposes. The VHFEDA will pursue US Department of Housing and Urban Development grant funds for infrastructure improvements benefiting the transitional housing in Parcel 3A. A grant to extend a new gas line, a new wastewater collection line and to improve Beauregard Road to VDOT standards will be sought in conjunction with Fauquier Family Shelter Services. With persistence and careful crafting of grant applications, the VHFEDA feels that these actions could obtain up to \$1,500,000 more for infrastructure improvements than the \$5.5 million projected in the EDC. That amount would result in elimination of up to \$3,000,000 in debt payments should the \$1,500,000 amount have to be borrowed.
- Increase Fees and Prices – Increase fees and prices where possible without becoming non-competitive, such as water and wastewater connection fees, utility service fees and franchise fees. Raising connection fees to match those of Prince William County would generate \$2,200 or 31 percent more per combined water and wastewater connection over figures shown in the EDC. That action would generate \$4,600,000 versus \$3,500,000 in connection fee income for each 500 combined connections sold.
- Property Owners' Association (POA) – Create a POA to help fund and eventually take over the cost of operations and maintenance of common facilities and services. This

would contribute little in the short-term by would reduce maintenance costs over the long term.

- Increase Annual Golf Rounds - Achieve an increase in annual golf rounds from 38,000 to 42,000—the annual average for the nine competitive courses in the Vint Hill market. The pro forma for 42,000 rounds increases projected Net Operating Income Before Debt Service by 17 percent, or \$946,000, during the first 10 years of operations and by 22 percent annually after reaching annual round stabilization by Year 6.

D.4 REACTIVE ACTIONS

USACERL's recommendation to plan for lower absorption by avoiding or delaying capital improvements is a valid reaction. The specific actions proposed by USACERL are some of many actions which could be used to reduce capital costs, long-term debt and debt payments. There are other actions which the VHFEDA could also use as part of a combination strategy to address a slower absorption schedule and the desire to reduce expenditures and debt by up to $\pm$ \$20,000,000 over 15 years. Some of these actions include:

- Wastewater Treatment Plant Sizing and Operations – Three factors will dictate the needed size and operational costs of the Vint Hill wastewater treatment plant (WWTP): 1) State regulations, 2) user demand, and 3) the cost effectiveness of operating the existing facility. The VHFEDA intends to maintain the existing WWTP plant as long as doing so does not violate State regulations, as long as user and marketing demands do not require more treatment capacity, and as long as the costs to maintain or renovate the facility can be financially justified when compared to constructing a replacement facility.

There are differences of technical opinion between USACERL and the VHFEDA's engineers on whether the existing plant can be operated by a non-Federal agency and not have to meet the same standards required of WWTPs operated by other authority agencies, such as the Fauquier County Water and Sanitation Authority (WSA).

The VHFEDA will seek, within the limits of State regulations, to delay the cost of adding ammonia nitrate treatment until discharge quality requires that it be added. This strategy is intended to delay the early need for from \$525,000-\$1,000,000 in process additions to the existing WWTP necessary to meet discharge limits as flow volume again rebuilds toward plant capacity.

The VHFEDA will use fees from the sale of sewer connections to accumulate the funds to expand the WWTP when that becomes necessary to meet treatment capacity demand. For example, the sale of 700 connections from the existing WWTP at \$6,000 each would generate \$3,850,000. Sale of connections should enable the VHFEDA to fund from cash all of an expansion to 350,000 gallons per day (gpd) as proposed by USACERL or multi-phased replacements of the WWTP as proposed by the VHFEDA. This strategic action is a different approach than that contained in the EDC application that proposed early construction of a replacement plant with borrowed funds to provide 700,000 gpd in treatment capacity. This action would eliminate or sharply reduce the need to borrow

\$6,800,000 in the early years of redevelopment. This action would save an even greater amount of debt repayment thereafter.

The VHFEDA used Vint Hill's actual operational budget in projecting its costs for operating the proposed 700,000 gpd replacement WWTP. A strategy of maintaining the existing WWTP and of phased replacement when necessary can reduce the cost of operating the WWTP to about \$268,000, which is approximately the current cost to the Army for operating the WWTP. In addition, the VHFEDA would expect to achieve lower operating costs by bidding out WWTP operations separately from buildings and grounds maintenance. Reductions in WWTP operating costs over 15 years will result in savings of up to \$5,000,000.

The VHFEDA is exploring the potential for long-term leasing of or a public-private partnership for operation of the water and wastewater systems. Should that be achieved, a private-sector partner/operator would be financially responsible for maintaining the systems and for renovations or expansions, should they become necessary, in exchange for the opportunity to make a profit through the sale of water and wastewater connections. The potential to generate profits from system capacity will be the key to whether a public-private partnership of the systems can be formed. This strategy may save the VHFEDA the cost of annual systems operations and the need to use its funding for renovations or any expansion costs. A lease or public-private partnership of the water and wastewater systems could potentially save the VHFEDA up to \$23,100,000 million in systems operations, renovations and expansion costs over 15 years from those shown in the EDC application.

- Water System Improvements – The major expenditures projected in the EDC application for water system improvements included new wells and a new 450,000-gallon storage tank to provide for fire flow storage. The VHFEDA will enter into an agreement with the WSA to cross-connect with its adjacent water system. This agreement will allow the water supply and reserves of the WSA system to be available to supplement the Vint Hill system and vice versa. We will mutually explore using the combined storage capacity of the two systems to meet industrial fire flow requirements on Vint Hill. The cost of a new storage tank may be avoided by linking the systems. This action should avoid or delay the need for the projected \$800,000 storage tank and additional wells called for in the EDC application.
- Questions have arisen regarding the VHFEDA's plans to irrigate the golf course. It is not the VHFEDA's plans to irrigate the golf course from the Vint Hill drinking water system.
- Tax District – Fauquier County can declare Vint Hill a special tax district under current state statutes. A tax district is created for the purpose of placing an added tax on an area in which public infrastructure improvements are to be made and to provide a means to help retire the debt for those improvements. Revenues from the added tax can only be applied to debt retirement in the applicable tax district. Two major liabilities to the concept are: 1) the VHFEDA is tax-exempt; taxes would only be generated on leasehold or sold properties; 2) Fauquier County already has high taxes. Adding more tax burden

for prospective leaseholds or site purchasers may hinder absorption and be counter-productive to Vint Hill's redevelopment. This concept will be carefully weighed. The total tax burden it would impose will have to be carefully evaluated against the tax levels of competitor counties before the County is asked to create a tax district at Vint Hill. A tax district could be used to pay for off-site road improvements if the district includes the site of the improvements.

E. PARCEL 10 REUSE

No costs or revenues associated with Parcel 10 were included in the EDC application. The application called for Parcel 10 to be transferred to the Fauquier County School Board. Recent decisions of the School Board have resulted in a delayed need of Parcel 10 for educational purposes to well beyond the time frame authorized for a Public Benefit Transfer. The VHFEDA is, therefore, seeking title to Parcel 10 under this Amendment to the EDC to prevent it from being disposed of separately from the remainder of Vint Hill. The size and strategic location of Parcel 10 requires that it be an integral part of Vint Hill's redevelopment plan to achieve the desired village organization. By holding title to Parcel 10, the VHFEDA can also make the site available to the School Board if no permanent job generating user has been found to acquire the site prior to its possible need for future educational use.

Parcel 10 contains 28.3 acres, approximately 10.6 acres of which is currently parade field and ball fields. The remaining 17.7 acres contain Buildings 141, 142, 146, 158, 160, 161, 162, 170 and 171. Some small storage and equipment buildings are also located on the site. The following are the VHFEDA's reuse strategies proposed for Parcel 10.

- The Reuse Plan proposed that County Parks and Recreation receive a Public Benefit Conveyance of 23 acres (Reuse Plan Parcels 13.A and 13.B). Subsequent agreement between County Parks and Recreation and the School Board resulted in the recreation field being split between the two to provide the School Board with the acreage required by the State for a middle school site. County Parks and Recreation will want to reclaim the recreational acreage split with the School Board and which is shown as part of Parcel 10 in the EDC.

The VHFEDA will allow Parks and Recreation to lease and/or use the existing recreation fields that are included in Parcel 10 and will probably deed them that acreage in the future. If a future Parcel 10 purchaser—such as an educational or retraining facility—needs access to the recreational fields, the VHFEDA will structure a joint-use agreement between the Parcel 10 purchaser and County Parks and Recreation similar to the one existing between County Parks and Recreation and the School Board.

- Buildings 170 and 171 are each 960 SF modular houses (minus kitchen equipment) which were used as office buildings. The VHFEDA will interim lease the two buildings until the site is needed. One building is currently leased for \$250 per month and the second is pending interim lease for the same amount. Together, the two buildings should generate

\$6,000 per year. The houses will eventually be given to a homeless provider for off-site housing use.

- Building 161 is the former base steam plant. It has no identifiable reuse. It will be removed. The 1950 SF building is of brick. It contains asbestos. A tall brick steam stack will probably have to be collapsed by explosives. The back of the building serves as the proposed NOVEC substation for electrical supply to the base, a complicating factor. A cost of \$25 per SF for demolition has been projected. Total building removal cost is thus projected at \$50,000.
- Building 146, containing 3,200 SF, and the small storage and equipment buildings on Parcel 10 will be removed. Building 146 is a metal building which formerly housed a dry cleaners and laundry. The building will be offered free of charge to anyone willing to remove it for off-site use.
- Buildings 141 and 142 are both 1940s era buildings. They have most recently been used for office and credit union purposes. Plans are to interim lease the two buildings, if possible. When the new exit onto Rt. 602 is constructed, the site of the two buildings will be a visible entry site for office purposes. The two buildings total 8,800 SF. When leased for office use, the buildings could generate annual income of up to \$35,200 annually. Eventual removal of the buildings will cost an estimated \$86,000 at current projected prices. If the ± 1.5 acre site is sold separately from the remainder of Parcel 10, it could produce up to \$130,000.
- Building 160 is the former battalion-sized barracks building. It contains a total of 134,263 SF on two and three levels. Part of the building (46,345 SF) was renovated and used for offices. The remainder (87,918 SF) has not been renovated and contains former day rooms, one- and two-person rooms, common bath/restroom facilities and offices. With the exception of the kitchen and dining hall, this portion of the building has not been renovated.

The configuration and utility systems of Building 160 make it difficult to break up for use by multiple tenants. Most of the interior walls in the non-renovated section are not load-bearing walls. They can be removed and larger spaces created, as was done in the renovated wing. With renovations, the spaces could serve well for office, classroom or meeting room activities. However, making these renovations will be expensive.

The VHFEDA sees Building 160 and its site as potentially usable for two purposes: 1) an educational or training/retraining center, or 2) as a government/business conference facility.

- a) Educational or Training/Retraining Center – Many classroom-sized spaces can be created. Under this scenario, the VHFEDA would seek a tenant or purchaser, preferably a private-sector effort combined with college or community college support, to use the building for educational, training or retraining purposes. The dining hall/kitchen will support such uses. The restrooms will support such uses.

Modifications to comply with ADA requirements will be necessary for access into and throughout the multi-leveled building.

The VHFEDA does not know what the costs to renovate Building 160 would be. However, all of the 46,345 SF of renovated space could be interim leased immediately. The remainder of the building could be renovated in sections as user demand dictated. The VHFEDA would not finance such renovations unless a "solid," long-term lease will guarantee repayment of the renovation costs. The VHFEDA prefers that any prospective user of the building also pay for the renovations.

The VHFEDA has been approached by several people about using Building 160 for training/retraining purposes. None of them had the financing or necessary institutional connections in place to move beyond the conceptual stage. In many instances, educational foundations' interests in Building 160 were based on free or minimum cost acquisition. Such institutional use does not appear to meet either of the VHFEDA's goals of job generation and tax base creation. That is why a private-sector initiative is sought.

The VHFEDA will move beyond the conceptual stage. It will seek a private-sector lessor or purchaser. A private-sector funded and operated training/retraining center would help meet the goals for Vint Hill. A high technology training/retraining program on Parcel 10 could be a great attraction for Vint Hill. Numerous newspaper articles have identified a shortage of 19,000 employees for high technology jobs in the Northern Virginia area. The regional labor force has a lack of sufficiently trained high technology employees to fill all of the region's needs. A private-sector funded and operated training program could utilize Parcel 10's buildings, and high technology companies would be attracted to Vint Hill because it would offer a stream of future program graduates.

b) Government-Business Conference Center – Building 160 could be renovated into a conference center serving government agencies and regional businesses. The existing dining hall, kitchen and restroom facilities would support such renovated reuse. Activity could start with minimum renovations to the three-story 46,345 SF portion of the building that was used for open office purposes. Other renovations could proceed as demand dictated.

The existing pool, gym, theater and outdoor recreational facilities, the proposed golf course, future restaurant use of the Inn and eventually the neighborhood commercial node would all serve as on-site support features for conference center activities.

- Building 162 is a three-story barracks building. Reuse will require renovations. There is no-identified reuse for the 48,500 SF building. If Building 160 can be developed into a high technology training/retraining center, then Building 162 could be used for academic

offices or as an adjunct classroom building. A covered walkway could be installed to connect the two buildings. Similarly, if Building 160 is used as a government-business conference center, Building 162 could be renovated to provide overnight accommodations for conference attendees.

Finding a user for Buildings 160 and 162 will save an estimated \$1.8-\$2 million dollars to remove the buildings. If the 136,418 SF of combined non-renovated space (in Buildings 160 and 162) can be leased for \$2/SF, with the tenant funding all renovations, the VHFEDA could potentially earn \$272,836 annually from the spaces. The 46,345 SF of renovated space now in Building 160 should be able to bring more and could potentially produce annual income of \$185,380-\$278,070. Thus, the lease potential from both Buildings 160 and 162 would equal about \$458,216-\$550,906 annually. All these income possibilities are predicated on being able to attract tenants willing to renovate the buildings within a reasonable period of time. This may be optimistic, but with the Northern Virginia rental market currently tightening significantly, now is the time to pursue such users.

- Building 158 was the former Provost Marshall's office. Its design and contents (including weapons storage room, two detention cells, etc.) limit its reuse potential. The Fauquier County Sheriff's Department previously requested the use of this building as a department substation. Interim use of this building is proposed. The VHFEDA's plans are to sell the building with Parcel 10. The VHFEDA will interim lease the building to the Sheriff's Department at a low rate if it is still sought. That lease would delay the cost of demolishing the building and provide added law enforcement presence on site. The increased presence of Sheriff's Department personnel will benefit the VHFEDA during the early years when Vint Hill is only lightly populated and the potential for theft and vandalism is at its greatest. If the building can be leased to the Sheriff's Department, it could generate \$10,000 annually until building removal.

The full use/rental potential of Parcel 10's buildings will probably not be achieved in a short period of time. If no users appear, the buildings will increasingly deteriorate. The cost to keep them in a condition available to lease, with minimum winter heat and electricity, will have to be weighed over time against the cost to remove them.

Parcel 10's reusable acreage may not sell within the 15 years under a reduced absorption scenario. Removing the buildings will only contribute to long-term debt financing. Having vacant land there will not produce any meaningful income. It is incumbent on the VHFEDA to aggressively market the buildings and make the lease/purchase prices competitive enough to attract users willing to invest the funds to renovate the buildings.

IMPACT OF CONSERVATIVE STRATEGY ON THE VHFEDA'S PURCHASE OFFER

The conservative strategy actions outlined above to use in responding to possibly lower real estate absorption have both pro and con aspects. Reducing long-term financial risk and indebtedness is a positive aspect. Delays in completely preparing the site for new development and redevelopment may make the site less attractive in the regional market. So the implementation of individual financial actions and investments have to be carefully weighed to insure that the outcome will justify the investment within a desired time frame.

The VHFEDA's original application offered to purchase approximately 658 acres of Vint Hill Farms Station for a Net Present Value of \$800,000. The \$800,000 represented the projected profit which redevelopment would produce. Payments were to be made in Years 10-15.

This Amendment to the EDC application identifies actions that can be used to increase income and to reduce capital expenditures and long-term debt, especially in the early years of redevelopment. However, this Supplement also places the added burden on the VHFEDA of trying to come up with income-producing reuses for an additional 200,000 SF of buildings in Parcel 10 which had been planned to go to the School Board. The alternative to finding users for the Parcel 10 buildings is to spend an additional \$1-2 million to remove the buildings and prepare the site for reuse. This is an added and unexpected burden to incorporate into a lower absorption prospective.

The conservative scenario addressed in this Amendment carries with it the tension between fiscal conservatism and market preparation. Only testing of a conservative strategy will show if it also provides the inventory of sites and buildings for sale and lease within the time frames needed by prospective customers and by the VHFEDA. The VHFEDA has not yet placed this conservative fiscal strategy into a Business Plan spreadsheet. For these reasons, the VHFEDA cannot project at this time if a "profit" will result and what size any such "profit" might be. The VHFEDA will insure that over the long-term the VHFEDA does not lose money on the redevelopment and that all its debts are covered by adequate income to insure repayment. However, the VHFEDA on its own does not have to "make a profit;" it must just not lose money before it completes its mission and dissolves.

For these reasons, the VHFEDA feels it must now reduce its purchase offer to \$300,000 from that originally made in the EDC application. The \$300,000 would be financed by the Army and be paid to the Army in Years 10-15 or sooner. This offer is more appropriate to the CERL's desired fiscally conservative approach and will reduce the VHFEDA's long-term obligations over the offer contained in the EDC application.

The VHFEDA does, therefore, revise its EDC acquisition offer to \$300,000 for approximately 686.3 acres of Vint Hill Farms Station. The \$300,000, in today's dollars, would initially be financed by the Army with payments to be made in Years 10-15.

FINANCIAL FEASIBILITY CONCLUSIONS

Outlined above are a variety of strategic actions—both proactive and reactive—which are available to the VHFEDA in redeveloping Vint Hill Farms Station. Any combination of the actions can be used to begin the redevelopment on a more conservative financial basis. Or a combination of the identified actions can be applied if initial testing of the real estate market indicates that sales and lease absorption will be slower than projected in the EDC application. The actions recommended by CERL are but one combination of actions available to the VHFEDA to achieve a more conservative financial approach to the redevelopment of Vint Hill.

The Business Plan presented in the EDC application is not perceived as “set in stone” by the VHFEDA. It was based on a particular and identified set of projected circumstances. If these circumstances change over the 15-year planning horizon, as will surely be the case, the Business Plan itself will be changed to better respond to market circumstances. The Business Plan is seen as a fluid “working document” to be constantly analyzed and adjusted to achieve the goals of job and tax base creation in a financially feasible way.

CERL’s EDC review comments have helped the VHFEDA to identify alternative actions and approaches to those contained in the EDC. That is a positive outcome. As a result of viewing the redevelopment from a different and more conservative perspective, the VHFEDA will re-evaluate its Business Plan to incorporate some of these more conservative approaches and actions. This approach should result in a financial strategy which avoids the early commitment of large amounts of borrowed funds in making infrastructure improvements until the improvements are clearly needed to achieve sales and leases. Thus, the VHFEDA can “test” the real estate market more before committing to large expenditures which might otherwise be avoided or delayed. While borrowing can probably never be completely avoided in a project of this scope, the Business Plan can become more of a “pay as you go” plan with less reliance upon early borrowing and large long-term debt service requirements.

Several combinations of the actions identified above should achieve the desired outcome identified by CERL. That outcome is the reduction in initial infrastructure investment by \$9,000,000 or more of borrowed funds, with a corresponding reduction in debt repayment of \$9-\$14 million over the 15 year period of the Business Plan, depending upon when debts are incurred.

USACERL's Technical Review of the Amendment to the EDC Application for Vint Hill Farms Station

Background

The U.S. Army Corps of Engineers Construction Engineering Research Laboratories (USACERL), Headquarters U.S. Army Corps of Engineers (HQUSACE), U.S. Army Material Command, and the Army Base Realignment and Closure Office (DAIM-BO) met with the Vint Hill Farms Economic Development Authority (EDA) on 4 September 1997 to share and discuss USACERL's preliminary findings for the *Technical Review of the Economic Development Conveyance for Vint Hill Farms Station, VA* (Bogg et al. 1997).

The 4 September meeting was intended to demonstrate to the EDA that USACERL and the Army could not accept the subject EDC application in the form submitted for review and approval. Recall that one of the key EDC approval criteria specified in the DoD Base Reuse Implementation Manual (BRIM) clearly states that a Local Redevelopment Authority (LRA) must demonstrate redevelopment financial feasibility in order for the Secretary of the military department to approve an EDC request. In the case of Vint Hill Farms Station, apparent financial feasibility was supported in the EDA's 30 April 1997 EDC application as indicated by a 15-yr project net present value (NPV) of *positive* \$800,000. However, upon closer inspection, USACERL determined that financial feasibility, defined for the sake of this analysis as *positive* project NPV, was most likely not achievable over the span of the 15-yr business plan pro forma.

The fundamental reason leading to this conclusion rests solely with what USACERL can only conclude to be overly optimistic business plan revenue assumptions set against the backdrop of an untested real estate market. USACERL commends the EDA on its diligent efforts to submit an intellectually honest EDC application and, more importantly, to reuse nearly 700 acres of abandoned military facilities in an economically productive manner that increases the welfare of the community at large. However, USACERL's findings strongly suggest that the EDA's projections of revenue over 15 years may be overstated. This represents a financial problem when one understands the

tenuous balance between revenues and costs as set forth in the EDA's business plan. For instance, a 25% reduction in commercial property absorption and corresponding real estate revenues yields a range of project NPV of *negative* \$3 million at the EDA's project discount rate of 9%. In fact, an 11% decrease in commercial property absorption *ceteris paribus* results in an indicated project NPV of *negative* \$92,000.

With such sensitivity to commercial property absorption and revenues (as one might expect), contingency planning measures must be developed in order for the EDA to maintain project financial feasibility over the long-term. Moreover, the Secretary of the Army must be assured that the EDA can maintain financial solvency under more conservative, and in USACERL's opinion, appropriate real estate projections. The EDA recognizing that the potential to fall short of projected revenues is a reality, developed and submitted the Amendment to the Economic Development Conveyance Application for Vint Hill Farms to USACERL on 10 October, 1997 (Appendix D). Although USACERL shared various scenarios with the EDA which yield financially feasible outcomes, the EDA was instructed to develop strategies which make economic and political sense based on the community's long-term goals and objectives. Although USACERL expended considerable effort in developing its preliminary findings and postulating reductions in capital and operating costs, it is ultimately the EDA which must make these difficult decisions should property absorption be less than projected.

Findings

In Section D of the Amendment to the Vint Hill Farms EDC Application, the EDA presents a variety of "proactive" and "reactive" development strategies to address the potential of slower than projected property absorption. According to the EDA, a 25% reduction in real estate sales and leasing income (excluding golf course and residential revenue streams) would likely result in a decrease of nearly \$9 million (present value) of revenue over the 15-yr pro forma. This finding is generally consistent with USACERL's calculations of 15-yr project revenue under a 25% reduction scenario.

To address potential operational shortfalls, the EDA outlines a number of proactive strategies that are focused on making the site more marketable and competitive. The intent of such measures is to create site demand, which will hopefully accelerate property absorption. The EDA's proposed proactive strategies are outlined below, followed by USACERL's opinion.

Proactive Strategies

Adjust lease rates and terms – The purpose of this strategy is to make occupation of reusable buildings more attractive for businesses at Vint Hill Farms in exchange for assuming more maintenance costs (e.g., the EDA has already proposed such a strategy for Building 260 in the April 1997 EDC application).

USACERL opinion – The EDA projects nearly \$1.24 million in leasing revenues (including Parcel 10) under its original application. Alternatively, \$1.2 million is projected over 15 years for ongoing building maintenance and repair (Table B11). Depending upon final terms and conditions, this option could likely be a “zero sum game” for the EDA. In other words, rent concessions given in return for reduced building operations and maintenance costs will likely create no new net revenue over 15 years, because leasing revenues virtually equal building costs. However, the real benefit may rest in the fact that more rapidly occupied buildings, despite the lack of new net revenues, may create more demand for the site in the outyears by creating the perception of economic activity and viability at the site. Therefore, the attractiveness of this option is most likely related to enhanced marketing of the site through the rapid population of reusable buildings in the early years otherwise known as project momentum, which will hopefully improve the marketability of the site in later years.

Adjust land sales terms – This strategy’s intent is to make it more attractive for businesses to acquire sites for new construction. This action will likely reduce up-front income, but will result in extended income and interest over a long period. Building 260 is already a target for this strategy.

USACERL opinion – USACERL concurs with the EDA’s observations and generally supports the strategy

Increase the marketing budget – Expand the marketing outreach to broader markets and potential customers.

USACERL opinion - As USACERL notes on p 70 of this Technical Review, Vint Hill Farms lies within one of the most competitive economic development markets in the region. This is demonstrated by the large marketing budgets and outreach programs other organizations use to attract investment and create wealth (pp 69-70). USACERL supports increased marketing efforts for this reason, and deems it to be prudent and necessary in order to effectively compete

for market share. Of course, increased marketing efforts must be paid for with "reactive" strategies that serve to reduce project costs.

Private sector partners and investors – Hopefully, capitalizing on the marked increase of public-private partnerships observed throughout the country at various levels of government, the EDA intends to attract private-sector partners to share in redevelopment costs, risks, and returns. According to the EDA, partners are already being sought for the golf course, housing areas, retail center, and industrial park. If successful, the EDA claims that millions of dollars would not have to be spent on golf course construction costs and attendant bond financing. At the time of this writing, a partner appears to be highly probable, thus reducing the need for EDA to contribute nearly \$5 million during years 1-4 for designing and constructing the golf course.

USACERL opinion – Public-private partnerships are a popular way for government agencies at all levels to leverage existing assets and limited capital with private sector development and operational expertise. Often, a public agency can offer a private partner access to equity and favorable financing terms that the partner would not otherwise find from traditional equity and debt institutions. In return, the public sector can leverage scarce tax revenues with private sector capital and development expertise to deliver facilities and services that would not otherwise be possible without raising taxes.

In the case of the EDA, which is limited in terms of financial resources and marketing depth, this is an attractive strategy. Assuming partners can be secured, the EDA can provide an array of enticing incentives such as discounted or free land/buildings, ground leases with favorable terms, and streamlined development permitting. In exchange, the EDA can reduce or altogether avoid capital expenditures, share in project cash flows, and reallocate marketing responsibilities to the partner who has a profit motive and established marketing channels. The weaknesses of this strategy, of course, are reduced control of development and the short-term profit focus of any private-sector investor, which can be at odds with economic development goals.

Incentives – The intent is to provide incentives for businesses by having Vint Hill classified as a Local Technology Zone, an Enterprise Zone and/or an annex of the Dulles International Airport's Foreign Trade Zone. Incentives are funded from local and state funds, and provide an array of tax and employment incentives to businesses that chose to locate within them. According to the EDA, no such zones currently exist in Fauquier County, but status is currently being sought.

USACERL opinion – Economic zones such as those being sought by the EDA often encounter mixed results. In USACERL's opinion, such zones will most likely not encumber development efforts, and will in all likelihood improve marketing efforts. However, manufacturing and distribution industries often find such zones attractive, as they are often engaged in activities which are highly dependent on strong transportation linkages for easy access to economic inputs and markets. As argued in this technical review, Vint Hill Farms currently suffers from transportation weaknesses.

Private facilities – The EDA argues that nearly \$8.3 million in road improvement expenditures could be delayed in Years 1 and 2 if parcel purchasers are not available for the Innovative Technology area (Figure 1). Street improvements also can be phased by street, rather than completing Harrison, Jackson, and Bircher roads all at once, if improvements are not immediately necessary to achieve parcel sales. It is further asserted that any delay in these expenditures would reduce up-front debt and reduce debt payments over 15-years.

USACERL opinion – Although USACERL found contradictory information concerning the acceptance of existing Vint Hill roads by the Virginia Department of Transportation (VDOT), it is assumed that the 10 October Amendment provides the most up-to-date and accurate information concerning this matter. As USACERL demonstrated in its analysis (Chapter 5, **Need and Extent of Proposed Infrastructure Improvements**), road construction and rehabilitation costs can be reduced while simultaneously complying with VDOT standards. The two factors that serve to mitigate costs are vehicle trip generation and road construction specifications.

On the first account, USACERL demonstrated that the EDA's property absorption schedules are most likely optimistic, assuming the EDA's full capital improvement program (Chapter 4, **Business Plan Review and Financial Feasibility**). Because of this observation, it was determined that certain road widenings and new construction projects could be reduced.* On the second account, although VDOT standards mandate a higher level of road design

* For example, the four-lane urban collector which is programmed to service the Innovative Technology park could be reduced to two lanes based on forecasted trip generation

standards, there is still a level of flexibility that would permit the EDA to use less stringent standards that will ultimately reduce costs.*

Finally, in terms of the EDA's estimated \$8.3 million in delayed expenditures, USACERL was unable to independently calculate delayed road costs of this magnitude. Although delaying road improvement costs is a prudent short-term strategy while the real estate market is being tested, long-term capital and debt-service costs will most likely remain unaltered if economic development goals remain fundamentally unaltered.

Obtain increased grant funding - The EDA is actively seeking external sources of fiscal packaging including \$900,000 from the VDOT Highway Access Program, \$500,000 from the Rural Development Agency for building demolition, and an undisclosed amount from the Department of Housing and Urban Development to improve utility services to transitional housing in Parcel 3A (Figure 1). All told, the EDA calculates nearly \$1.5 million in potential grant funding, which could be applied to infrastructure improvements.

USACERL opinion - The EDA's proactive strategy to seek additional sources of grant funding to supplement the currently programmed \$5.5 million, is reasonable and necessary. The EDA incurs little or new risk in terms of applying for the grants, and will only be required to fulfill the original purpose of the grant. Moreover, every dollar of grant funding received reduces long-term debt costs by nearly \$2, because the need to borrow is reduced.

Increase fees and prices - The intent of this strategy is to increase water and wastewater connection and service fees to a level commensurate with Prince William County. The EDA claims that this action could generate \$4.6 million versus the previously projected \$3.5 million connection fee income for each 500 combined connections sold.

USACERL opinion - This appears to be a sound strategy that should not affect the marketing or price competitiveness of the site. Given that much of Fauquier County does not have water or wastewater service, the fact that it can be easily obtained at competitive prices (i.e., with Prince William County) at Vint Hill

* For example, less trip generation reduces stress on road facilities which may permit a design change from 8 in. of asphalt base to 6 in. A design alternation of this nature would tend to reduce road construction costs while simultaneously conforming with VDOT standards and serving on-site users.

Farms Station should enhance marketing efforts and supplement income over 15 years. Moreover, the EDA's real estate pricing strategy and proposed site amenities should more than compensate for any perceived high costs associated with water and wastewater connection fees.

Property Owners Association (POA) – The intent is to create a POA to help fund and eventually take financial responsibility for the cost of operations and maintenance of common facilities and services. This strategy would tend to result in marginal net gains in the short term, but would likely be cost-effective over the long term.

USACERL opinion – USACERL concurs with this proactive strategy. A POA will encourage owners to play an integral role in the maintenance of Vint Hill Farms and in the enforcement of the standards set by the ownership group. Over time, it will likely become a mature organization with enthusiastic support from its tenant members and will be capable of taking over when the EDA relinquishes control of the site.

Increase annual golf rounds – The EDA plans to achieve an increase in annual golf rounds from 38,000 to 42,000.

USACERL opinion – Given the demonstrated demand for golf in the region and the market niche which the EDA is proposing to target, this strategy appears reasonable and stands a high probability for success. When coupled with a public-private partnership, the probability for success increases again. This increase is due to the overall marketing and management depth a private partner could bring to the venture.

Reactive Strategies

As the EDA correctly notes in Section D.4 of the 10 October Amendment, many actions could be taken to reduce capital costs, long-term debt, and payments. In fact, the EDA asserts that a combination of actions to address slower absorption schedules could result in a reduction of capital costs and debt by up to \$20 million over 15 years. Presented below are the EDA's reactive strategies to address slower absorption and USACERL's opinion for each.

Wastewater treatment plant sizing and operations – According to the EDA, three factors will dictate the needed size and operational costs of the Vint Hill Farms wastewater treatment plant (WWTP): (1) State of Virginia regulations, (2) user demand, and (3) the cost effectiveness of operating the existing Army facility.

Under this reactive strategy, the EDA will seek, within the limits of State regulations, to delay the cost of adding ammonia nitrate treatment until discharge quality requires it to be added. This strategy is intended to delay the early need for a \$525,000 to \$1,000,000 capital outlay.

A second tenet of this strategy programs fees accumulated from the sale of sewer connections to fund necessary WWTP expansions to serve demand. According to the EDA, sale of connections should enable total funding of an expansion to 350,000 gallons per day (gpd) as proposed by USACERL, or multi-phased replacements of the WWTP as proposed by the EDA. This approach contrasts with the original strategy in the EDC application that proposed early construction of a replacement plant with borrowed funds to provide 700,000 gpd in treatment capacity. The net effect of this new strategy would eliminate or sharply reduce the need to borrow \$6.8 million in the early years of development.

The third tenet of the WWTP strategy looks to reduce ongoing WWTP operations and maintenance costs. A strategy of phased replacement may reduce the cost of operating the WWTP to about \$268,000 a year versus the original EDA estimate of \$550,000 a year. The EDA also suggests that lower operating costs could be achieved by bidding out WWTP operations separately from buildings and grounds maintenance. The combined effect of these actions could lower WWTP operating costs by as much as \$5 million over 15 years while delivering wastewater service and complying with State regulations.

The final tenet of the EDA's strategy focuses on the privatization of the WWTP and ongoing operations. Under a privatization scheme, a private sector partner/operator would be financially responsible for maintaining the systems for operations and for renovations and expansions, should they become necessary, in exchange for the opportunity to make a profit through the sale of water and wastewater connections. According to the EDA, such a strategy could potentially save up to \$23.1 million in systems operations, renovations, and expansion costs over 15 years from those shown in the original EDC application.

USACERL opinion – In concept, USACERL agrees with much of the EDA's WWTP reactive strategies. Delaying costs until the market is tested and investing revenues directly into WWTP expansions is reasonable and prudent. The likely effect of these strategies will be reduced borrowing, which lowers long-term costs and obligations.

In terms of lowering operating costs, USACERL determined in its technical review that estimated operating costs of \$550,000 were likely overestimated under most scenarios, especially when plant improvements or a new WWTP are considered. The EDA's newly estimated annual operating cost appears reasonable based on industry standards, plant size, and proposed improvements. However, a lack of specific engineering information still makes this estimate speculative.

Finally, a privatization scheme holds much merit, especially if WWTP is not a net revenue generator in the long term based on the EDA's ownership and management plan, a private company may be able to extract value. However, depending on borrowing scenarios, the WWTP could be a net revenue generator, which would suggest that EDA ownership may be desirable. At any rate, the privatization of the WWTP would likely be at odds with the EDA's proactive strategy of increasing wastewater connection fees from \$7,000 to \$9,200. Under this scenario, with a 25% reduction in absorption, USACERL estimates that WWTP ownership and operations would generate net operating income that indicates that privatization may not be the best alternative. However, USACERL lacks the specific information needed to conduct a cost-benefit analysis that would suggest a proper course of action.

Water system improvements – The major expenditures projected in the EDC application for water system improvements included new wells and a new 450,000-gal storage tank. The EDA is planning to enter into an agreement with the Fauquier County Water and Sanitation Authority (WSA) to cross-connect with its adjacent water system. The cost of a new storage tank may be avoided entirely by linking Vint Hill Farms system with the WSA's system. According to the EDA, this strategy should avoid or delay the need for the estimated \$800,000 storage tank and additional wells called for in the EDC application.

USACERL opinion – USACERL finds this strategy reasonable.

Tax district – Fauquier County can institute a special tax overlay district on Vint Hill Farms Station that places an added tax on an area in which public infrastructure improvements are to be made and to provide a means to help retire the debt of those improvements.

USACERL opinion – As the EDA correctly notes in the EDC Application Amendment, a reactive strategy of this nature suffers from two key liabilities: (1) the EDA is tax-exempt; taxes would be generated only on leasehold or sold properties, and (2) Fauquier County is already marked by high taxes. An

increase in taxes would likely serve as a disincentive to investors and developers that might otherwise chose Vint Hill Farms. USACERL does not advise the implementation of this strategy, at least in the early lean years when business attraction is critical. However, after a base of property owners with vested interests in the site is established, the strategy could be reevaluated for overall feasibility.

Financial Feasibility Conclusions

USACERL offered several strategies within the *Technical Review of the Economic Development Conveyance for Vint Hill Farms Station* that could be applied to achieve a financially feasible 15-yr plan under a 25% reduction in absorption. At the request of USACERL and the Army, the EDA was tasked with developing independent strategies and actions that accomplish the same financial feasibility objectives, but with community goals and economic realities in mind.

It is the conclusion of USACERL that the proactive and reactive strategies outlined in the EDA's 10 October EDC Application Amendment go a long way toward achieving long-term financial feasibility under a constrained absorption scenario. The EDA clearly demonstrated creativity and balanced planning in its Amendment. Because the EDC application is not a static document, the array of strategies presented above will likely address many future market scenarios, which will hopefully ensure long-term financial feasibility.

Although no spreadsheets were available for financial analysis, the EDA claims that a combination of proactive and reactive strategies could result in a reduction of \$9 million in infrastructure costs and a corresponding reduction in debt repayment of \$9 million to \$14 million over the 15-yr pro forma. Evaluating the potential increase in revenues and reduction in costs outlined above, it appears that this calculation is within a range of reasonableness. If so, USACERL concludes that the EDA's 15-yr business plan is financially feasible under a 25% reduction in absorption.

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