



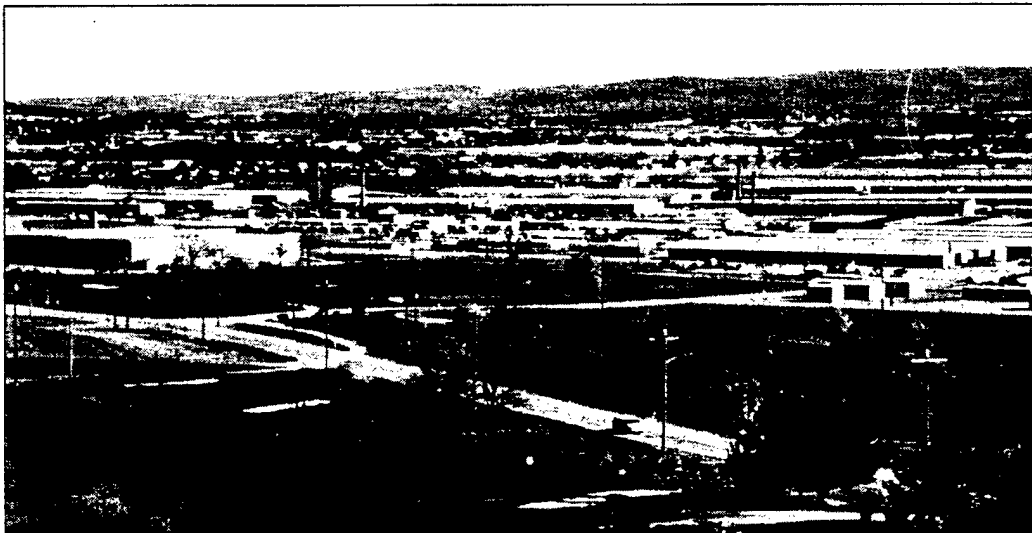
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Technical Review of the Economic Development Conveyance for Letterkenny Army Depot (LEAD), Chambersburg, PA

by

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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 17 September 1997, the Letterkenny Industrial Development Authority filed an EDC application for transfer of the Letterkenny Army Depot, a U.S. Army installation slated for closure under BRAC 95. 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)

USACERL's analysis generally failed to support findings about closure impacts and the potential for recovery suggested by the EDC application. In particular, USACERL determined that total likely detrimental impacts will probably amount to about 1,650 total jobs, rather than the 2,700 referred to in the EDC application.

Despite these differing quantitative findings, however, USACERL analysis generally supported the more qualitative findings enumerated in the EDC application. Furthermore, because these findings substantially meet the outline sketched by new supplemental Army and Office of Economic Adjustment (OEA) guidance for evaluating "substantial adverse economic impact," USACERL finds that the Army may have adequate support to approve a rural conveyance for the LEAD facility.

Extent of Long-Term Job Creation (Chapter 2)

USACERL's analysis of potential long-term job creation suggests that around 20,000 total jobs will eventually be created as a result of redevelopment. Note, however, that these projections are based on the assumptions that absorption of redeveloped space will proceed at a rate of about 25 acres per year, and that employment densities will approximate one employee for each 950 sq ft of space; other specific assumptions were also made. These projections suggest that total closure impacts (as calculated by USACERL) will likely be mitigated by the third year of the redevelopment.

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

The Letterkenny Industrial Development Authority (LIDA) Economic Development Conveyance (EDC) application was found to be generally consistent with the goals, objectives, and implementation strategies set forth in the Letterkenny Army Depot (LEAD) Reuse Strategy prepared by the Franklin County Reuse Committee (FCRC). Given that the proposed EDC qualifies for a no-cost rural transfer, the Base Reuse Implementation Manual (BRIM) allows for the submission of an application that lacks much of the detail usually associated with a standard EDC. Therefore, the EDC application relies extensively on previous work, ostensibly the Reuse Strategy.

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

Findings

USACERL segmented the review of the LIDA business plan into two separate analyses. This approach was in response to the LIDA's request for LEAD utility systems as part of the EDC request. Because the Army will retain a significant and essential mission at LEAD, the provision of reliable and cost-effective utility service from the LIDA is a prerequisite to the proposed EDC. Therefore, USACERL evaluated the market and financial feasibility of the proposed industrial park from a real estate perspective, and LEAD water, sewer, and electrical utility systems with LIDA financial feasibility and cost-effective utility rates to the Army in mind. USACERL's findings and recommendations for the LIDA EDC business plan are as follows:

1. Given the demolition and infrastructure investment required to move the project forward, redevelopment of the subject property does not appear to be financially feasible in the absence of substantial subsidization from the public sector. Therefore, the estimated residual value of the property is less than zero from a business plan perspective.
2. There is a reasonable likelihood that the project can obtain supplemental funding from a variety of Federal, state, and local entities in an amount sufficient for the business and operations plan to be financially feasible.
3. It is likely that the LIDA can manage the utility distribution systems and provide services to LEAD and park users at reasonable rates. Transferring

water, sewer, and electric utilities allows revenues gained from electric operations to offset losses from other utility services. Transfer of all systems to the LIDA enhances park marketability to clients, provides LIDA more leverage when negotiating bulk rates, and mitigates uncertainties caused by future Base Realignment and Closure (BRAC) actions.

4. Local and regional market conditions appear to be conducive to the proposed reuse at the present time.
5. Although the property is not in a prime location and access is limited, it is anticipated that these potential weaknesses could largely be overcome if competitive incentives are offered by the LIDA. The LIDA has already contemplated a land price discount strategy for job creation.

Recommendations

Given the above findings, USACERL recommends that the surplus EDC parcels be conveyed at no cost per the application's request. The conveyance should be made subject to a number of important considerations and conditions including, but not limited to, the following:

Utility rates. The Army should negotiate electric, water, and sewer rates with the appropriate redevelopment authorities. The rates should be low enough that the retained Army mission is cost effective, but high enough that it pays its own way and imposes no financial burden on the redevelopment; that is, rates must be competitive, yet sufficient to amortize debt. USACERL has independently developed supportable ranges of utility rates for water, sewer, and electrical systems with this short- and long-run optimization in mind.

Utility operators. Operating agreements need to be in place for all utilities prior to conveyance. The Army should reserve the right to approve both the initial operator(s) and subsequent operators, if any.

Utility financing plan. Before the conveyance, the Army should review and approve the financing plan for each utility system. The financing plan should identify the anticipated operating and capital costs over a reasonable period of time and set forth the manner in which start-up operating losses and capital improvements will be funded. The plan should also indicate the underlying credit of the utility authority. Finally, a contingency plan for each system should be presented that potentially includes agreements with other utility authorities in the event that the LIDA is no longer capable of operating LEAD utility systems, and a utility performance bond.

The Army must appreciate that, for the LIDA to make system upgrades and recover costs through rate revenues, the LIDA accepts considerable risks if the Army reduces demand and/or closes the balance of LEAD. Thus, the LIDA will need a protection clause in any transfer agreement wherein improvements and rates are guaranteed in return for a guaranteed demand for a certain term.

Mobilization plan. Before conveyance, the Army must consider the extent to which its utility and road access requirements might be affected in the event of mobilization (e.g., California Avenue).

Reversion clause. Although the property is likely to be encumbered by creditors of the redevelopment authority and/or owners and tenants, the Army may wish to take a position wherein it, at its option, may step in and take over the utility systems in the event that the authority fails. This would allow the Army to pursue other privatization options, if necessary.

Excess profits. The Army should negotiate an excess profits clause in the unlikely event that the LIDA has an unforeseeable windfall. Excess profits should be defined as sales or proceeds to the LIDA net of hard and soft costs incurred in moving the project forward. The calculation must recognize that the LIDA is undertaking a long-term project and may, at times, hold substantial cash or other assets that are not excess profits, but a reserve for future programmed costs.

Need and Extent of Proposed Infrastructure Improvements (Chapter 5)

In accordance with BRAC, the LIDA has requested 1,500 acres of LEAD to develop into an industrial park. The Army is to retain the remainder of the facility for continued mission use. The LIDA has contemplated capital improvements of \$20.5 million in the areas of roads, rail, buildings, and demolition in the Industrial Park business plan. USACERL found that these cost estimates were generally reasonable given the current condition of LEAD facilities, desired job creation goals, and cost estimating methodology.

In addition to real estate capital improvements, the LIDA also contemplated capital improvements for electrical, domestic water, sanitary sewer and storm sewer systems, which were requested under the EDC application. With minor exceptions (which tended to cancel each other out), USACERL found the LIDA's utility improvement program of \$24 million reasonable. Therefore, it is the conclusion of USACERL that the LIDA's \$43.5 million capital improvement plan

is necessary to accommodate the economic development and Army sustainment mandates of the 1997 Reuse Strategy.

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

It is the conclusion of USACERL that the redevelopment of LEAD will incur substantial project investment and risk which will require external subsidization to ensure financial feasibility and that Reuse Strategy objectives are effectively accommodated. USACERL's independent review and analysis suggests that a large amount of project investment and risk can be directly underwritten by the LIDA through real estate and utility revenues. However, substantial operational deficits will persist in the absence of additional local and non-local investment. Fortunately, project financial feasibility stands a reasonable probability of being attained through a mixture of Federal and state grant funding and TIF financing which are both being actively investigated and sought by the LIDA.

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 real estate markets. USACERL's independent market analysis suggests that the Franklin County area real estate market is fairly robust, and unlikely to present a major limitation to redevelopment. In particular, recent demographic and economic trends, when combined with availability trends in the local real estate market, indicate that reasonably steady demand for space is likely for the foreseeable future.

However, USACERL also cautions that the uniqueness and volume of much of the space at the Letterkenny facility, in comparison to other area commercial properties, necessarily imposes qualitative limits on future sales and lease value estimates. Therefore, it is USACERL's conclusion that the redevelopment and marketing of the LEAD facility faces a moderate degree of market risk.

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

As part of the EDC 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 USACERL's scope of technical review.

Economic Benefit to the Federal Government (Chapter 9)

Based on the eligibility factors/criteria reviewed for this report, it is the opinion of USACERL that the applicant is eligible for a zero-cost rural EDC. USACERL recommends that the Army consider \$3.1 million to \$6.2 million in facility layaway and annual maintenance and repair costs when negotiating the final terms and conditions of the conveyance. It is also the recommendation of USACERL that the Army consider the conveyance of LEAD electric, water, and sewer systems to the LIDA for the following reasons:

1. It is likely that the LIDA can manage the utility distribution systems and provide services to LEAD and park users at reasonable rates.
2. Transferring water, sewer, and electric systems allows revenues gained from electric operations to offset losses from other utility services.
3. Transfer of all systems to the LIDA enhances park marketability to clients, provides LIDA more leverage when negotiating bulk rates, and eliminates uncertainties caused by future BRAC actions.
4. The conveyance of these systems to the LIDA will provide an immediate and measurable reduction in ongoing utility operations and capital costs to the Army, consistent with DoD utility privatization mandates and anticipated cost savings from BRAC actions.
5. USACERL's analysis indicates that a reasonable probability exists for the Army to negotiate a lower utility rate structure than is currently being borne, thus amplifying anticipated economic benefits. The table below supports this finding:

LEAD Comparative Utility Rate Analysis

Utility System	LIDA Rate & CERL1 Model	Army Unburdened [*]	Burden [†]	Army Fully Burdened Rate	USACERL Recommended Rate Range
Electric 12.47 KWH	0.05	0.0425	0.0263	0.0688	0.055 - 0.065
Electric 7.2 KWH	0.11	0.0641	0.0263	0.0904	0.055 - 0.065
Water/Kgal	3.5	1.4305	1.7544	3.899	3.5 - 4.0
Sewer/Kgal	5.0	5.674	1.7334	7.4074	5.5 - 6.0

Finally, the Army should ensure that the LIDA has the ability to manage utility operations by requiring the following: (1) that the LIDA produce a well-defined financing plan including performance bond provisions; (2) that an installation mobilization plan be provided to the LIDA so surge utility requirements are defined and understood; (3) that contracts be awarded to utility operators *prior* to conveyance and that the Army retain a right of first refusal on contract awardees; (4) that an excess profits clause provision be included in any utilities contract; and (5) that a reversion clause be included in any utilities contract so the Army can seek alternative utility service arrangements in the event that the LIDA is no longer capable or willing to provide utility service to the Army.

Review of the EDC Application for Completeness (Chapter 10)

Given that the LIDA qualifies for a rural no-cost conveyance, a complete EDC application is not required under governing EDC guidance. Nevertheless, USACERL evaluated the LIDA EDC application for completeness in conjunction with the 1997 Reuse Strategy and Technical Appendices. USACERL generally found that documentation was complete with two notable exceptions: (1) explicit infrastructure project phasing within the context of annual capital budgeting and business plan expense projections was absent; and (2) proposed financing strategies generally lacked detailed information concerning reserve contingencies, debt service, and gap financing.

^{*} LEAD data from Fiscal Year (FY) 1996.

[†] LEAD data from FY 1997.

Foreword

This study was conducted for and funded through the Base Realignment and Closure (BRAC) Office, Office of the Assistant Chief of Staff for Installation Management (ACSIM-DAIM-BO) under Military Interdepartmental Purchase Request (MIPR) No. MIPR8ACERB3003 dated 10 October 1997. The technical monitor was Gary B. Paterson, CERE-C.

The work was performed by the U.S. Army Construction Engineering Research Laboratories (USACERL), Planning and Management Laboratory, Environmental Processes Division (CECER-PL-N). Michael Golish is Operations Chief, CECER-PL, and L. Jerome Benson is Division Chief, CECER-PL-N. The USACERL technical editor was Linda L. Wheatley, Technical Information Team.

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Introduction

Background

The Letterkenny Army Depot (LEAD) Economic Development Conveyance (EDC) parcel consists of approximately 1,500 acres and 4.3 million square feet (SF) of building space in Franklin County, PA, about 50 miles west of Hagerstown, PA and 100 miles north of Washington, DC (see Figure 1, p 20). Primary access to the site is achieved by the Gate 6 site entrance, which lies at the intersection of Routes 997 and 433. Secondary site access is through Gate 1, which intersects with Letterkenny Road. Interstate access is achieved by the Route 997 and I-81 interchange, which is 4 miles east of Gate 6 (see Figure 2, p 21).

When LEAD was slated for realignment by the 1995 Base Realignment and Closure (BRAC) Commission, Franklin County established the Franklin County Reuse Committee (FCRC) and subsequent Letterkenny Industrial Development Authority (LIDA) to facilitate the reuse and economic redevelopment of the surplus parcels. Since the 1995 announcement, the Army has begun to demobilize the surplus parcels in anticipation of the EDC and mandatory operational closure. The LIDA and Army have begun work on conveyance/leaseback arrangements on buildings that will not be vacated by the Army per the LIDA's reuse schedule. Figure 3 (p 23) shows LIDA's proposed District and land-use plan for the redevelopment of LEAD.

Concurrent with the demobilization process, the LIDA prepared for the conveyance of the surplus parcels via the EDC property disposal authority. Because the realignment of LEAD caused a substantial adverse economic impact, and the fact that Franklin County lies outside of an Office of Management and Budget (OMB) designated metropolitan statistical area (MSA), the LIDA requested a rural no-cost EDC in advance of a formal EDC application. USACERL worked closely with the LIDA under the new rural guidance contained within the Base Reuse Implementation Manual (BRIM) to technically support a rural finding. As a result of the rural finding, local redevelopment authorities (LRAs) which qualify for a no-cost rural EDC are not required to submit the extensive documentation usually associated with an EDC application. Accordingly, USACERL generally adopted a reduced level of review and analysis per the

Army BRAC Office's request, with the exception of the Business Plan review, which supports forthcoming utility transfer negotiations. Supporting documentation for the rural determination is contained in Chapter 1, **Adverse Economic Impact of the Closure on the Region and the Potential for Recovery After the EDC** and Appendix A.

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 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 LRA.

These new regulations created a new property transfer authority called an Economic Development Conveyance (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 17 September 1997, the LIDA, acting as the approved LRA, filed an EDC application with the Chief of the Base Realignment and Closure Office at Headquarters U.S. Army Corps of Engineers, for the conveyance of certain parcels at LEAD. Included as part of the EDC application was a copy of the Letterkenny Army Depot Reuse Strategy and supporting technical appendices.

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

1. Transfer of all surplus land and improvements including road, rail, and building improvements.
2. Transfer of all components of the water and sewer systems at the Depot, regardless of location within retained or surplus property, and all property that is an integral part of those systems, such as the water supply source.
3. Transfer of all components of the electrical system at the Depot regardless of location within retained or surplus property.

4. A right of first refusal for the telecommunications switch.
5. Transfer of non-mission essential personal property at the Depot.
6. All rights of access, easements, etc., reasonably needed to facilitate the use and development of the above-cited properties (and not otherwise disruptive of retained DoD activities), subject to further clarification under a Memorandum of Agreement.
7. Incremental drawdown of surplus parcels as environmental conditions are remedied and as the LIDA is able to assume additional ownership and management responsibilities.
8. As part of the proposed EDC, the LIDA and Army have identified properties that will be transferred in title and which will be leased-back to the Army or other current DoD occupants for continued use in a manner generally consistent with current activities. The current list of agreed-upon properties for transfer/leaseback is as follows:
 - Building 350
 - Building 521
 - Building 433
 - Building 431
 - Building 102
 - Parking areas located:
 - Behind Building 1
 - West of Building 3
 - West of Building 10

The LIDA's EDC application contains many of the required elements under the regulation, but elements of the business plan as presented are not adequately supported or suffer from methodological shortcomings. Because of this, USACERL was impelled to develop independent assumptions and technical analyses to support LIDA reuse objectives. Despite these limitations, however, USACERL was able to successfully recast the LIDA business plan and demonstrate project financial feasibility through alternative scenario development.

Subsequent to the receipt of the application by Headquarters, U.S. Army Corps of Engineers, the U.S. Army Construction Engineering Research Laboratories (USACERL) was tasked by headquarters to provide a technical review of the EDC 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 LIDA EDC application in terms of:

1. validity of the information provided by the LIDA
2. completeness of the application according to the criteria and factors specified in the DoD regulations governing rural 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 a site visit to LEAD during the week of 9 June 1997. The purpose of the site visit was to collect source data and information with respect to the LIDA's request for a rural EDC. Subsequent site visits were made on January 1998 to perform the necessary engineering and real estate site work required to independently validate the LIDA EDC business plan. Most of the group's analytical work and documentation occurred between 13 January and 2 February 1998.

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 long-term job generation

3. consistency with the overall Redevelopment Plan (i.e., the LEAD Reuse Strategy)
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 decision-makers on 4 February 1998.

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 cu ft	=	0.028 m ³	1 ft	=	0.305 m
1 sq ft	=	0.093 m ²	1 mi	=	1.61 km			

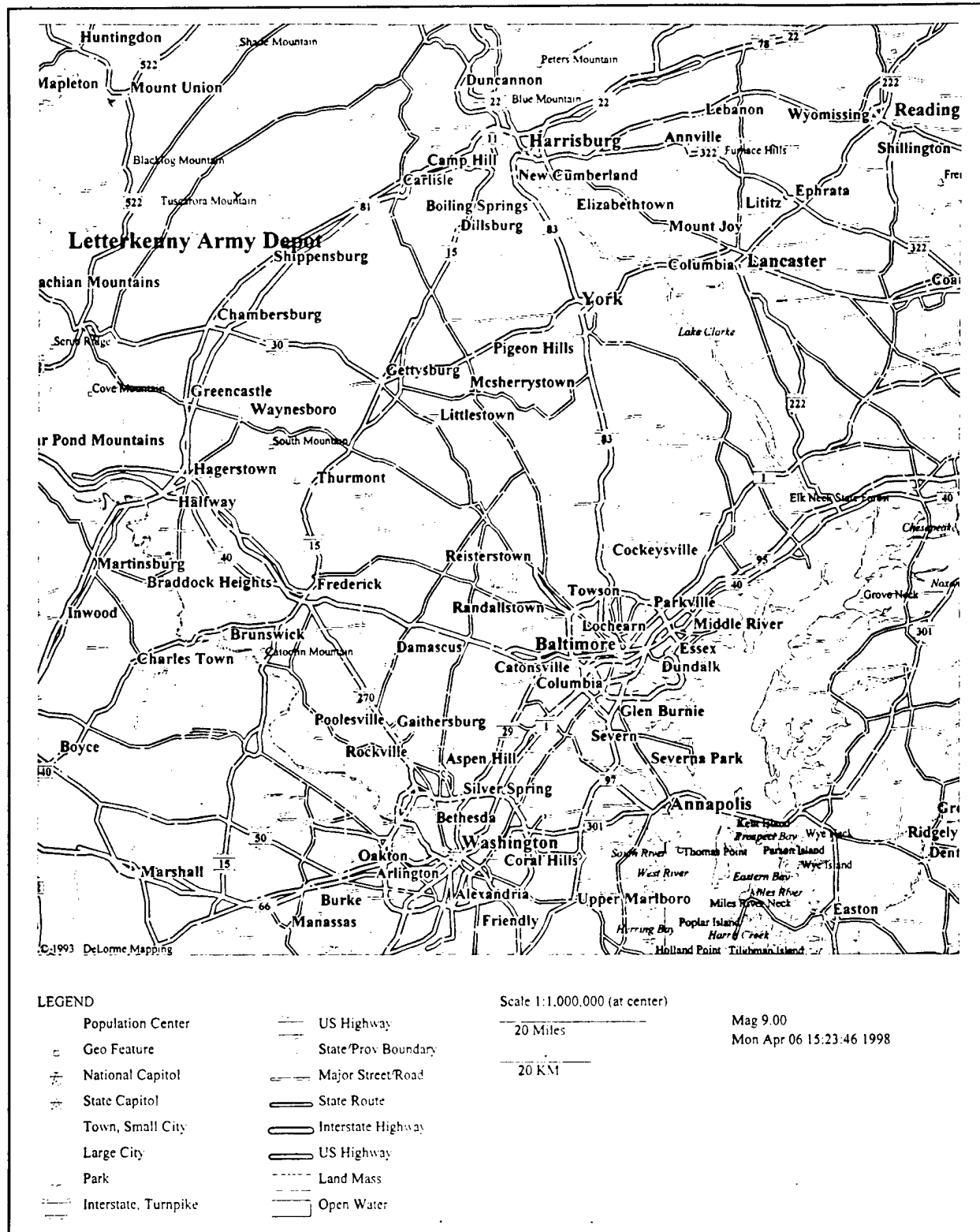


Figure 1. Geographic relationship of LEAD with the greater Baltimore region.

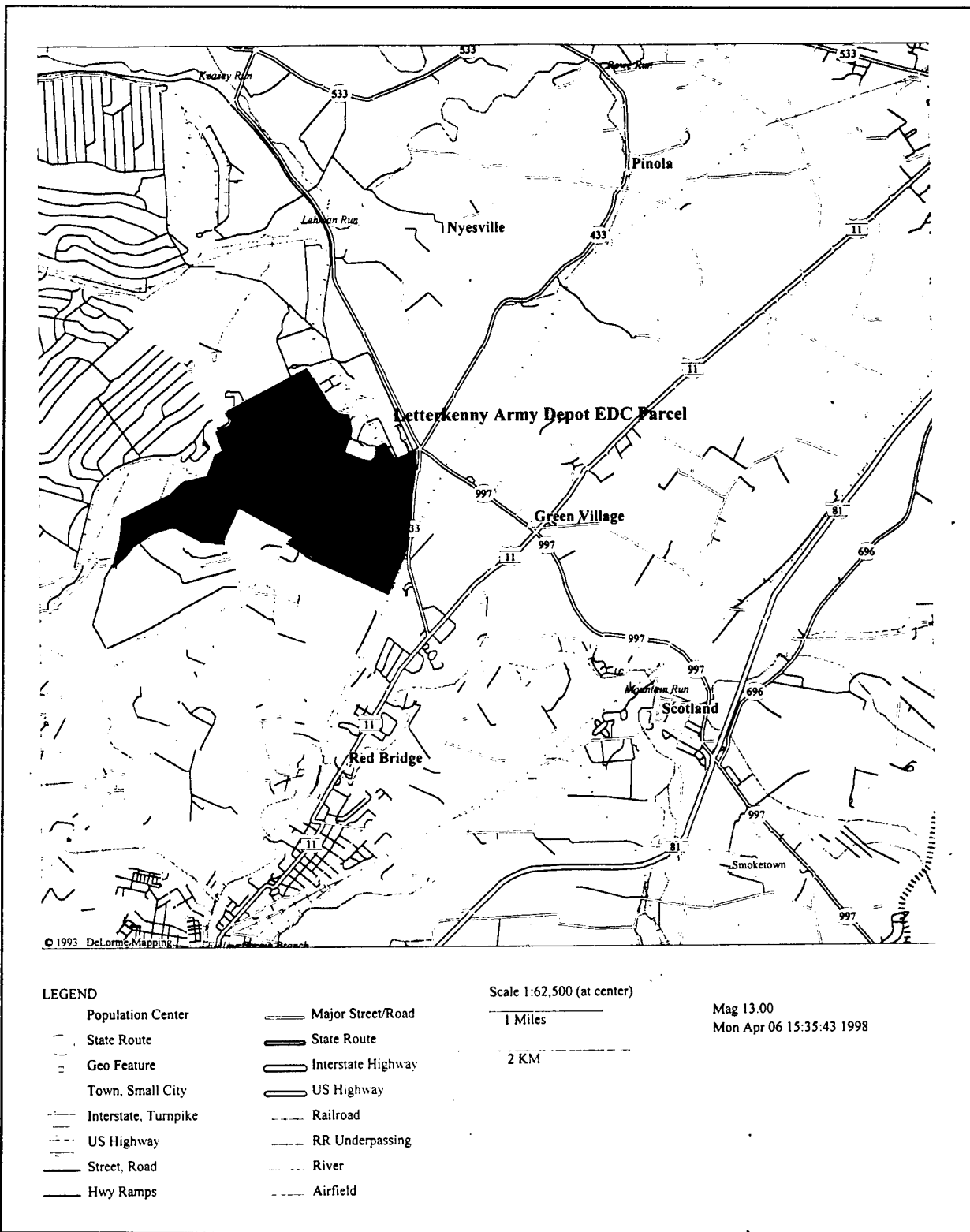


Figure 2. Secondary transportation corridors and geographic relationship of LEAD to nearby communities.

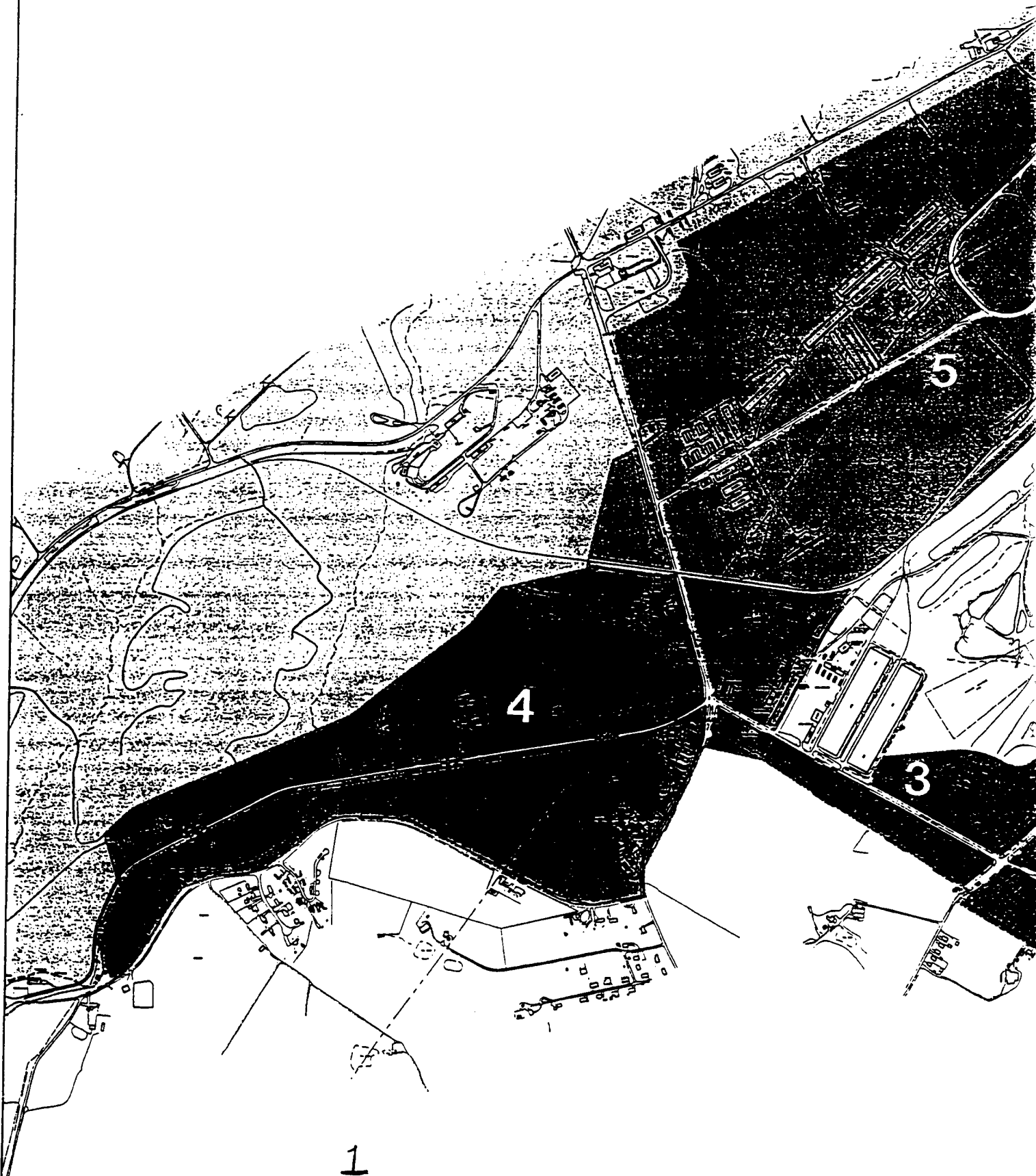
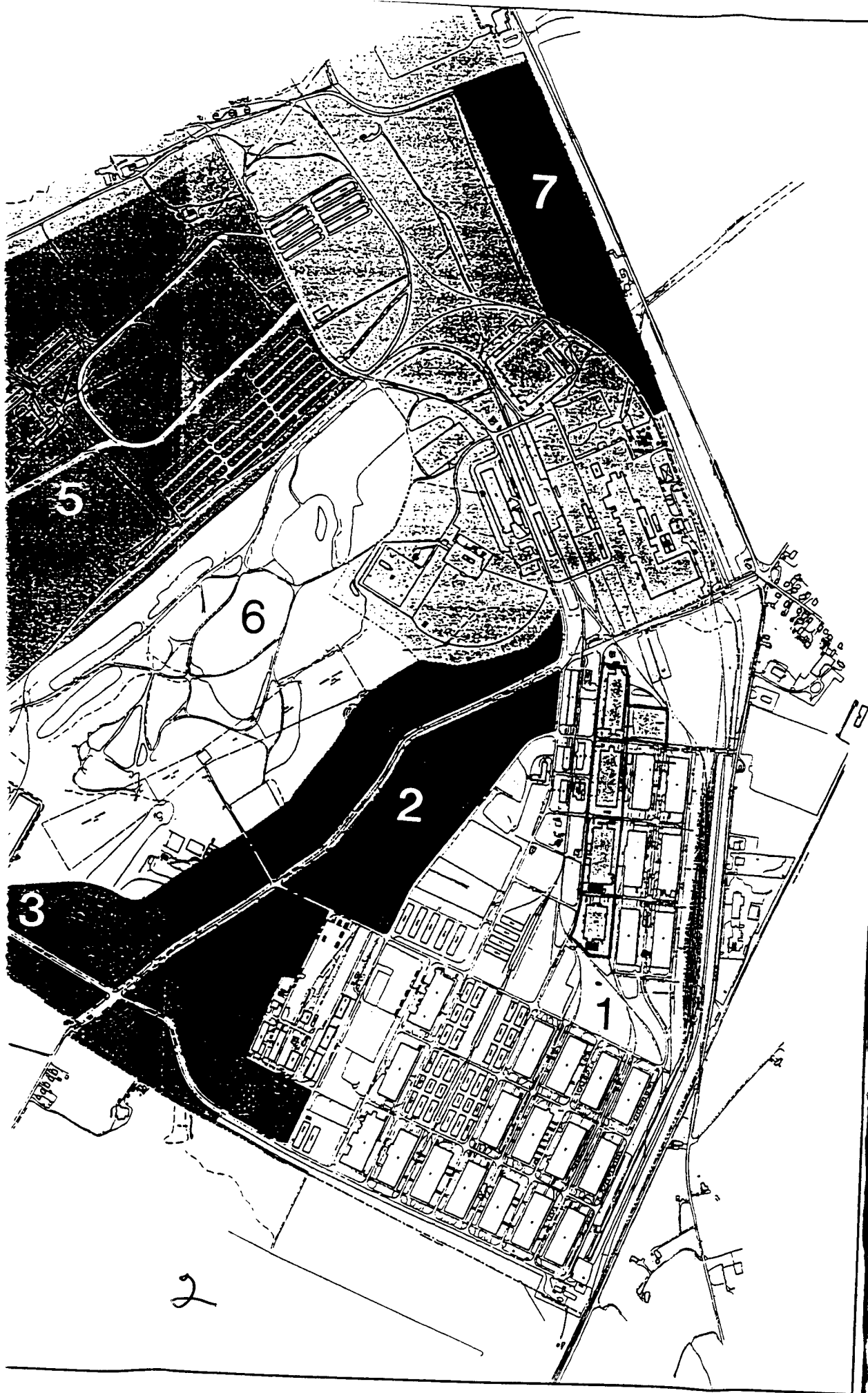


Figure 3. Detailed site plan for LEAD.



2

Letterkenny Army Depot Comprehensive Reuse Strategy

Franklin County, PA

Franklin County Reuse Committee








Hamilton, Rabinovitz & Alschuler, Inc.

Sasaki Associates, Inc.

Benatec Associates

Deloitte & Touche LLP – Fantus

Pepper, Hamilton & Scheetz

-  District 1 – Industrial
-  District 2 – Office / Flex
-  District 3 – Local Office /
Administration
-  District 4 – Community Uses /
Open Space
-  District 5 – Warehouse / Distribution
(Large Footprint)
-  District 6 – Light Industrial
-  District 7 – Highway Oriented
Industrial / Distribution

District Plan

January, 1997



0 600 1200 1800

3

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 CFR §175, an EDC application must include both a description of the economic impact of a closure on the local community, and projections of the potential for economic recovery offered by the EDC. In addition, EDC applications that request a zero-cost rural conveyance must also document the fulfillment of several specific rural criteria. USACERL relied on technical guidance created by the Army BRAC Office (DAIM-BO) in determining the merit of the LIDA rural request (Appendix A).

This chapter addresses these concerns by examining the extent of closure impacts, examining the probability that the proposed LEAD EDC application will facilitate a recovery of lost jobs and revenues, and evaluating the degree to which necessary rural determination criteria have been met.

Analytical Approach

USACERL used a general three-part approach for evaluating the closure impacts presented in the LEAD EDC application.

For part one, USACERL reviewed the impact estimates presented in the EDC application and then compared them to independently calculated impact estimates. As part of this process, USACERL also examined the assumptions and methodologies used to develop the impact estimates in the EDC application for their internal consistency and appropriateness. USACERL then supplemented this analysis by comparing these estimates with estimates presented in the Reuse Plan, the U.S. Army Draft Environmental Assessment (EA), and other referenced documents. Finally, 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.^{*} Appendix B lists the employment multipliers used in developing USACERL estimates. Appendix C describes assumptions and caveats for the input-output modeling used in USACERL's analysis.

For the second part, USACERL assessed the potential for regional economic recovery afforded by the proposed EDC application. Although this part presents some qualitative assessments of the recovery potential, specific job creation estimates are presented in Chapter 2, **Extent of Long-Term Job Creation**.

Finally, USACERL considered available legal and administrative guidance relating to the necessary fulfillment of the rural criteria (Appendix A). Although USACERL was unable to reach a specific determination on this point, due to the lack of specificity in guidance documents, a compelling argument for a substantial adverse economic impact can be made.

Review of Assumptions and Methodology

Overview

USACERL's review of the economic impact estimates presented in the EDC application suggests that the estimates used generally conformed with accepted methods of economic impact calculation. However, the assumptions that underlie these calculated impacts appear to directly conflict with the assump-

^{*} Implan Pro has been used extensively by private and public entities (including the LIDA) to quantify positive and negative economic effects that may result from a wide array of investment scenarios, such as the closure of military bases.

tions inherent in the more qualitative analysis of closure impacts that is also presented. While either assumption set can be defended from the perspective of appropriate methodological choice, retaining both in the same analysis would likely lead to a "double-dipping" effect that would tend to overstate actual impacts.

Mitigation Effects of Local Reemployment

The primary shortcoming of the closure impact estimates presented in the EDC application relates to apparently conflicting assumptions about whether former employees will leave the area to seek new employment, or will remain in the local area. This assumption is pertinent because, 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 within the same region.^{*}

Although the short summary of job-loss calculations presented on page 7 of the application does not offer any explanation of how the numerical findings were generated, it appears likely that all calculations were based on the assumption that all former employees will be leaving the area after the realignment. The EDC application explicitly states that "[t]he current BRAC actions will result in the loss of over 1,600 jobs at the Depot, with an anticipated indirect impact of another 1,100 jobs in the region, for a total negative impact on [sic] at least 2,700 jobs."[†] USACERL was generally able to replicate this finding, but only by relying on the assumption that every former LEAD employee will either leave the area or be unable to find a new job. Reliance on this assumption was not stated in the EDC application, but both LIDA and USACERL have access to the same LEAD employment and expenditure data, both entities use the same economic modeling software, and employment models in general are highly sensitive to this particular assumption. Also, conversations with Gary Gontz (the LEAD Base Transition Coordinator [BTC]) further confirmed the loss of a total of 1,600 jobs onsite. All of these factors tend to suggest that this assumption must have been used in the EDC calculations.[‡]

^{*} Note that this assumes that the new position is substantially similar in type and compensation to the old position; to the extent that a new position offers less compensation than the old position, there will be a detrimental impact.

[†] EDC application, p 7.

[‡] It is not unusual for calculated impacts to vary by 40 percent or more because of this assumption alone.

On the other hand, the discussion of “unemployment and underemployment” presented on the following page of the EDC application implicitly relies on the assumption that at least some of the former LEAD employees will remain in the local area after realignment. The EDC application specifically states: “...to the extent that Letterkenny’s workforce is able to find new employment, much of it will be at substantially lower wages making the prospect for the choice between unemployment and underemployment inevitable.” While USACERL’s findings generally support the truth of this statement, it is important to realize that *any* offsetting employment obtained by former employees will partially mitigate the total LEAD closure impacts, even if this new employment offers less compensation. Without an appropriate offsetting adjustment, impact calculations will tend to overstate the degree of impact by the amount of new employment that is actually obtained.

Thus, the EDC impact estimates present 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). In situations where a former employee is able to find new employment, but only at a reduced level, it is generally considered more appropriate to either subtract the value of the new employment (so as to capture only the net economic impact on the area), or to directly adjust the number of lost positions. Alternatively, in situations where all former employees do actually leave the area, it is more appropriate to rely on total job-loss figures for impact calculations, although there will then be no possibility of an inevitable “choice between unemployment and underemployment.”

Because the impact estimates presented in the EDC application do not appear to have been adjusted for one of these two mutually exclusive scenarios, it is USACERL’s opinion that EDC impact estimates may be overstated.

Findings in the Adverse Economic Impact of Closure

USACERL’s independent estimates of the closure impacts for LEAD generally failed to confirm the closure impact estimates presented in the EDC application. Although the EDC application correctly notes that LEAD was one of the larger employers in the area, USACERL finds that actual closure impacts may be somewhat lower than the EDC application estimates.

USACERL’s independent analysis did not confirm either the absolute volume of closure impacts claimed in the LEAD EDC application or the economic multipliers that were used. Instead, the analysis indicated that the total impacts

associated with the closure of LEAD will generally be only about 40 percent larger than the direct losses associated with the base closure itself. More specifically, USACERL found that, for each job lost at LEAD, the area will lose a total of about 1.43 jobs. Conversely, the EDC application suggests that each lost job will result in total loss of about 1.6 jobs. USACERL's findings are consistent with similar findings presented in studies of short-term base closure impacts.* Note that 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 of the civilian employees and contractors working at LEAD will probably not leave the area to seek new employment, further limiting likely impacts on the area. USACERL was unable to calculate an exact estimate of the number of contractors leaving the area, although anecdotal evidence gathered in conversations with the LEAD BTC and a LEAD Budget Coordinator suggested that at least 50 percent of former LEAD employees have remained (or will remain) in the area after the realignment. As noted above, the EDC application assumes that all jobs held by former employees will be permanently lost as these employees leave the area for purposes of its numerical analysis, and also assumes that an indeterminate number will remain in the area for purposes of its qualitative analysis. Table 1.1 shows USACERL's findings reduced to numerical terms.

Table 1.1. USACERL estimates of adverse employment impacts of LEAD closure.

	Non-salary Expenditures	Salary Expenditures	Total Impacts
LEAD Employment Impact			
Direct Impact	522	647	1169
Indirect Impact	65	95	160
Induced Impact	137	182	319
Total LEAD Employment Impacts	724	924	1648

As Table 1.1 denotes, USACERL's estimates indicate that a total of only about 1,650 jobs will be lost as a result of the realignment. This figure is much lower than the EDC application's estimated 2,700 lost jobs, primarily because it is based on the assumption that 50 percent of former LEAD employees will be able to obtain new employment within Franklin County after the realignment.

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

USACERL's calculations also suggest that the Franklin County area will lose about \$66.7 million in lost economic output because of the realignment.

Finally, USACERL's independent economic model indicates that the use of only a Franklin County Region of Impact (ROI) may be under-inclusive. USACERL's model indicated that total "leakage" effects amounted to almost half of all budget expenditures present in the year of closure. Such a large leakage effect would typically indicate to an analyst that the area chosen for study is under-inclusive. Although USACERL elected to retain this study area to maintain compatibility with the Draft EA, it is likely that the choice of a larger analysis area would further minimize the significance of closure impacts, relative to the ROI.

Potential for Recovery After the EDC

Although the results of USACERL's analysis generally fail to support the numerical closure impact claims presented in the EDC application, USACERL's independent review of area economic condition analysis conclusions generally supports the findings related to the prospects for economic recovery made in the EDC application.

In particular, USACERL's findings strongly support the conclusion that average area wages and employment levels (and the related standard of living) will decrease as a result of the LEAD realignment. As the EDC application correctly notes, LEAD was one of the largest employers in the region, and paid its employees an average of almost \$35,000 per year. Average wages for private manufacturing jobs in the area, conversely, are about \$21,000 per year. Furthermore, since the Franklin County economy does not have a significant degree of economic or employment diversity, it is significantly likely that many former LEAD employees will be unable to obtain local jobs outside the manufacturing sector. They will thus be unable to demand compensation levels similar to those formerly enjoyed at LEAD. Therefore, USACERL finds significant evidence to support the conclusion that the realignment will increase local underemployment and decrease average wages.

USACERL's analysis also suggests that the area has few short prospects for mitigating this impact. As the reuse plan explains, the programmed short-term and interim reuse applications are designed to leverage LEAD's (and Franklin County's) existing strengths in manufacturing and distribution, rather than develop more diversified economic activities. Furthermore, Franklin County has historically been at or near the bottom of state rankings for the number of local young people moving onto higher education. Consequently, the workforce of

Franklin County as a whole has little to offer high-tech manufacturers or other well-paying business endeavors that depend on a highly educated workforce. Although these structural factors can (and likely will) change over time, little evidence suggests that average wages or economic diversity in the area will increase in the short term.

For these reasons, USACERL generally supports the qualitative analysis of underemployment and wage effects presented in the EDC application, and additionally finds that these effects are unlikely to be mitigated, at least in the short term.

Fulfillment of Rural Criteria

According to the 1997 Base Reuse Implementation Manual (BRIM) (DoD 4165.66-M), three criteria must be satisfied in order for an LRA to qualify for a zero-cost rural conveyance. Pursuant to Office of Economic Adjustment and Army policy guidance, Department of the Army (DA) LIDA meets both the first and second criteria.^{*} However, it is currently unclear whether the LIDA has met the third criteria that a "substantial adverse economic impact on the prospect for recovery" must exist. Fortunately, both the DA and the OEA have offered additional interpretive guidance for the meaning of this criteria.

Department of the Army Guidance

Available DA guidance for this third rural criterion suggests that it is more subjective than the first two, and may be fulfilled in a variety of ways. For example, the Army BRAC Office suggested that a determination may be made on a case-by-case basis, "based on the unique and specific factors that affect the installation involved."[†] They further suggested that it would not be "necessary or appropriate to develop or utilize rigid criteria that must be met in all cases....," and that "...considerable deference should be afforded to the LRA's justification and analysis."

^{*} See "Memorandum for U.S. Army Construction Engineering Research Laboratory," paragraph 2: "Under BRIM guidelines, the application meets two of the three criteria for a rural no cost EDC."

[†] See "Memorandum for U.S. Army Construction Engineering Research Laboratory," paragraph 3.

USACERL interprets this guidance to mean that the concerned Military Department should be broadly deferential to the affected community applying for a rural conveyance. Furthermore, it will be important for the analyst to realize that every community will be impacted differently because of the composition of the local economic base, demographics, and the socio-economic relationship of the closing or realigning installation with the supporting community.

Office of Economic Adjustment Guidance

USACERL was also able to gain additional insight and guidance on the issue of the rural criteria from the OEA. Specifically, written correspondence from Tom Lowe (OEA PM) indicated that "one of the many criteria that you could use [for gauging the degree of] substantial economic impact on the prospect for economic recovery [would be that] historic absorption rates indicate that the local economy is not likely to absorb the amount of property to be made available for reuse over a five-year period." Additionally, OEA suggested that a substantial economic impact could be found where "[t]he average wage of the potential replacement jobs likely to tenant the base properties of the next [number] year period is substantially less than the jobs lost by the closure or realignment."

Findings and Recommendation

Although available supplemental guidance has been useful to both scale and focus the analysis, it is USACERL's position that available guidance is still somewhat too general to directly sustain a rural recommendation. Accordingly, the development of USACERL's findings have been focused more on the fulfillment of the more specific criteria offered by both the DA and the OEA, rather than on the rural determination as a whole. It is USACERL's opinion that this compromise best represents an appropriate application of both USACERL's technical strengths and limited policy role.

With respect to the guidance offered by the DA, USACERL finds that the facts offered by the EDC application are generally supportive of a rural finding. As discussed above, USACERL's independent analysis generally corroborated the factual claims made in the EDC application, making them applicable to the extent of their direct relevance. Furthermore, the content of the application shows that LIDA has expended considerable effort marshaling relevant evidence to support a rural finding. Therefore, it is USACERL's opinion that the non-numerical findings presented in the EDC application may be confidently relied upon in making a determination.

USACERL also finds that the application of the first supplemental OEA criteria supports a rural determination finding. As noted, OEA suggested that a rural determination could be found when the likely schedule of redevelopment would not permit the full absorption of the property within 5 years. According to the LIDA, over 1,500 acres of surplus LEAD property have been requested under an EDC, and are therefore available for reuse. The proposed reuse of the surplus parcels include a mixture of industrial, office, and distribution uses representing over 3 million sq ft of reusable space and 850 acres of developable land.* Based on an average floor area ratio (FAR) of 0.27, roughly 9.9 million sq ft of new buildings could be constructed on developable land, combining for a full buildout of 12.9 million sq ft. In addition, over 930 acres of the 1,364.77 acres dedicated to revenue-generating land uses have also been planned for industrial development, which includes manufacturing, warehousing, and distribution uses. According to the LIDA, over 2,600 acres of industrial park land is available from an inventory of 4,480 acres in the Quad County area.† The addition of LEAD's 930 acres of industrial land and buildings will increase the available inventory by nearly 36 percent. Although firm industrial land absorption estimates were not available in the LIDA EDC application and other governing documents, absorption figures were available for Franklin County, namely the Chambers-5 Business Park. The 400-acre business park is generally viewed as high-quality facility with an exit off of I-81 and dual rail service. Since its creation in 1988, 137 acres of land have been sold or leased to 23 different companies. Given this pattern, roughly 30 acres of land have been sold or leased per year; however, the Park has been subject to periods of highly episodic absorption. If current absorption trends continue, the balance of the 400 acres available will likely be sold out in 8 to 9 years. If an assumption were made that the former LEAD would likely absorb an average of 30 acres a year of industrial product as was assumed by the LIDA, nearly 31 years would pass before all of the industrial product at LEAD would be absorbed. Thus, application of this OEA criteria clearly supports a rural finding.

USACERL also finds that the application of the second supplemental OEA criterion supports a rural determination finding. Since, as OEA noted in communications with USACERL, "[t]he first and only interim lease tenant that [has been found] are some low paid clothing workers that were terminated by

* Page III-27 of the LEAD Reuse Strategy specifies reusable building space and developable acreage.

† The "Quad Counties" area is defined as including Franklin Co., PA (which contains LEAD), Frederick Co., VA, Washington Co., MD, and Berkeley Co., WV.

Shonemans, it will be long time, maybe never, that they can draw the highly paid workers that will be terminated or moved from the base." Assuming that OEA is factually correct on this point, this would clearly support a rural determination finding under the second OEA wage-level loss criterion. Thus, application of this second OEA criterion would also tend to support a rural finding.

Conclusion

One of the primary goals for redeveloping LEAD is to replace jobs being lost with its closing. Although USACERL's economic impact findings did not corroborate those presented in the EDC application, USACERL has determined that the economic impacts of the LEAD closure and the corresponding feasibility of rapid redevelopment would permit a finding that LIDA meets the rural determination criteria proposed in the revised BRIM. Finally, additional discussion on job creation and the redevelopment schedule is presented discussed in more detail elsewhere (see Chapter 2, **Extent of Long-Term Job Creation**, and Chapter 4, **Business Plan Review and Market and Financial Feasibility Analysis**).

2 Extent of Long-Term Job Creation

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Background and Approach

The LIDA EDC application is required by Federal law to discuss job creation prospects for the proposed reuse of the Letterkenney facility. A principal eligibility criterion that the military must consider when reviewing an EDC application is the extent of job generation. Job creation, after all, is the primary intent of this "jobs centered" property disposal authority.

Since the LIDA EDC application makes a persuasive case for its economic projections, USACERL's analysis in this particular case was limited primarily to an independent validation of the LIDA's calculation methodology and source data. Unlike other EDC applications, the LIDA application clearly delineates both the manner in which calculations were made and the underlying rationales for necessary assumptions. It also evinces a welcome degree of thoroughness and detail. Because of this level of detail, and because a well-prepared LRA is typically in a better position to evaluate important local factors, USACERL's scope of review in this case was considerably more deferential than has been the case for other less complete EDC applications.

Irrespective of this deference, however, it is important to note that, although the forecasting procedures used by both the LIDA and USACERL will generate sound estimates, the resulting projections are only as useful as the validity of the underlying assumptions. Major changes in 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 Analysis**, for more detail on these schedules), or in the aggregate economic

activities of the tenants, may lead to dramatic differences between these projections and the number of jobs actually created.

General Methodology

Following the standard procedure for applying an input-output analysis, USACERL first conceptually divided the economic impacts of the LEAD 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 LEAD tenants.

In this particular review, USACERL elected not to further consider short-term employment impacts. Although these impacts will undoubtedly be present over the 20-yr projected development schedule, they were not considered for several reasons. First, USACERL's narrowed scope of review, combined with the fact that short-term estimates were not presented in the EDC application, suggested against development of independent short-term estimates. Second, the complications engendered by the lengthiness of the 20-yr redevelopment schedule would have rendered these projections highly speculative.

Long-term impacts, however, were independently evaluated to determine both the types of economic activity that might be involved, and the relative magnitude of each activity. By comparing these activities, and their volumes, 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, and to compare these multipliers with the EDC estimates. Since the elements of a regional economy are inherently interrelated, this approach is effective in measuring the entire impact of a given event. For example, each particular programmed capital improvement (or permanent industrial end user) will create a particular set of onsite jobs at LEAD. Since these employees will purchase goods and services in the surrounding community, these onsite jobs will also create additional offsite jobs in the economic area surrounding LEAD. A local economic multiplier will capture both the impact of onsite job creation (a direct effect), and the number of additional jobs created as a result of onsite jobs and economic activity (an indirect effect). Once effects are calculated for each activity, they can be grouped to find total impacts.

Extent of Long-term Job Creation

Although, as the EDC application notes, "it is impossible to definitively predict 20 years of job generation," USACERL's analysis generally confirmed the job creation estimates presented in the LIDA EDC application.

Like LIDA, USACERL generated long-term job creation estimates by first considering the types of activities likely to take place during and after full redevelopment, by developing appropriate multipliers to capture the local impact of these activities, and by then projecting likely cumulative total impacts. In both cases, the calculation of these estimates was constrained by the absence of information about the types of end users likely to lease space at the redeveloped LEAD, and also about the volume of economic activity these end users are likely to generate. Thus, although both LIDA and USACERL were able to generate gross estimates based on various assumptions about the total number of people that might be employed by tenants at LEAD and about the type of tenants likely to locate at LEAD, the inaccuracies inherent in this approach will likely result in a model less accurate than one based on actual gross revenue data.

Gross Output Analysis

Since usable estimates of revenue volume were unavailable, both LIDA and USACERL used extrapolated potential revenue volumes by examining both the intensity and volume of potential LEAD reuses. Both of these factors are important for a gross output estimate because employment projections are a function of both how fast the local market absorbs new space, and how intensively the new space is used.

For absorption estimates, USACERL relied on the medium-growth absorption projections presented in the EDC application. As noted in other portions of this review (see Chapter 7, **Local and Regional Real Estate Market Conditions**), USACERL's independent analysis of the absorption estimate generally suggests that it is reasonable. Thus, this estimate was used for all economic volume calculations.

USACERL also relied on the EDC estimates for calculations of reuse intensity. In general, the LIDA estimates varied from about 250 to 1,500 usable sq ft of space per employee, depending on the type of use. USACERL evaluated these estimates by comparing them to industry norms for the region of analysis and found these estimates reasonable. Thus, where applicable, these figures were relied upon to recast the job generation estimates presented in the EDC application.

Multiplier Calculation

USACERL's analysis also generally supported the multiplier estimates presented in the EDC application, although the lack of firm employer and revenue data forced both USACERL and the LIDA to make general assumptions about the types of end users likely to lease space at the redeveloped LEAD.

USACERL's analysis assumes that the activities of future tenants will be functionally similar to those of similar firms in the local area. Making this assumption allowed the aggregation of similar industries in the area into a gross multiplier that generally describes the impact of a given form of redevelopment. Similar aggregation operations were performed for industrial, distribution, and office uses.

After constructing these aggregations, USACERL found that typical employment multipliers for local industrial activities are probably about 1.8 (depending on the specific use). Similarly, employment multipliers for office uses were found to be about 1.78, while multipliers for distribution uses were found to be about 1.88.

Long-term Employment Projections

After developing an idea of the economic volume that will take place after redevelopment, and the types of activities it will probably involve, USACERL developed a comparable forecast for likely long-term job creation. Table 2.1 summarizes the long-term employment projections calculated as part of USACERL's independent analysis and in the EDC application. Note that the figures presented in Table 2.1 vary somewhat from figures specifically cited in the EDC application, although the same calculation methodology was used. These minor discrepancies were a result of the way that LIDA aggregated the indirect and induced effects. This aggregation was not reproduced in Table 2.1 to retain compatibility between LIDA and USACERL estimates, although the LIDA calculation method should not be viewed as incorrect.

Caveats

Since it was necessary to make a variety of assumptions in order to construct these estimates, several caveats are in order. Although USACERL 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 based on such a large assumption set.

Table 2.1. Long-term job creation schedule.

Total (Direct & Indirect) Job Creation by Year	1,998	1,999	2,000	2,001	2,002	2,003	2,004	Cumulative
USACERL Projections								
<i>Direct Job Creation</i>								
Reuse Office (268 sq. ft. per person)	745							745.0
Reuse Industrial/Manufacturing (494 sq. ft per person)	1,836							1,836.0
New R&D/Industrial (550 sq. ft per person)		1,136	800	627				2,563.6
<i>Indirect & Induced Job Creation</i>								
Reuse Office (Multiplier of 1.75)	559							558.8
Reuse Industrial/Manufacturing (Multiplier of 2.07)	1,965							1,964.5
New R&D/Industrial (Multiplier of 1.76)		864	608	477				1,948.4
Total Jobs Created	5,104	2,000	1,408	1,104				9,616.3
LIDA Projections								
<i>Direct Job Creation</i>								
New R&D/Industrial (550 sq. ft per person)		355	444	554	421	444	444	2,861.1
New Commercial (400 sq. ft. per person)			327	218	109			653.4
<i>CERL Indirect & Induced Extrapolation</i>								
New R&D/Industrial (Multiplier of 1.76)		270	337	421	320	337	337	2,022.5
New Commercial (Multiplier of 1.91)			297	198	99			594.6
Total Jobs Created		624	1,405	1,392	950	781	781	5,931.6

Note: For purposes of the above calculations, "New Commercial" represents a blended aggregate of both office and industrial uses and represents the assumption that both types of uses will occupy about the same amount of space

Total (Direct & Indirect) Job Creation by Year	Year 5	Year 10	Year 15	Year 20	Cumulative
USACERL Projections					
<i>Direct Job Creation</i>					
Reuse Office (250 sq. ft. per person)	1250	2499	3749	4999	4999
Reuse Industrial (750 sq. ft per person)	860	1719	2579	3438	3438
Reuse Distribution (1,500 sq. ft per person)	436	873	1309	1746	1746
Total Direct Jobs					10183
<i>Indirect & Induced Job Creation</i>					
Reuse Office (Multiplier of 1.78)	975	1949	2924	3899	3899
Reuse Industrial (Multiplier of 1.80)	1547	3094	4642	6189	6189
Reuse Distribution (Multiplier of 1.88)	384	768	1152	1536	1536
Total Indirect and Induced Jobs					11624
Total Jobs Created	5452	10903	16355	21806	21806
LIDA Projections					
<i>Direct Job Creation</i>					
Reuse Office (250 sq. ft. per person)	1250	2499	3749	4999	4999
Reuse Industrial (750 sq. ft per person)	860	1719	2579	3438	3438
Reuse Distribution (1,500 sq. ft per person)	436	873	1309	1746	1746
Total Direct Jobs					10183
<i>Indirect & Induced Job Creation</i>					
Reuse Office (Multiplier of 1.61)	762	1525	2287	3049	3049
Reuse Industrial (Multiplier of 1.85)	1590	3180	4771	6361	6361
Reuse Distribution (Multiplier of 1.63)	275	550	825	1100	1100
Total Indirect and Induced Jobs					10510
Total Jobs Created	5173	10346	15519	20692	20692

First, as noted, assumptions were made about both the volume and the types of economic activities that will take place at LEAD; both assumptions were crucial to the projections. While USACERL has determined that these assumptions are reasonable, given the state of the local market and adopted reuse plan, reductions in either the absorption rate or in the intensity of reuse would further reduce job creation. For example, although the absorption schedule is a reasonably conservative estimate, a reduction would directly impact potential gross output, thus impacting future job creation. Similarly, the employment per square foot estimates were derived from broad industry-average standards; less intense reuse, such as that associated with warehousing facilities, would also likely result in the creation of fewer jobs. Note that changes in these assumptions would be particularly significant because they affect both the direct and indirect forecast figures.

Second, the standard input-output modeling procedure used to construct these estimates assumes that an underlying regional economy is static in nature and cannot capture essential long-term structural changes. Thus, fundamental shifts in a local economy may render the model's projections inaccurate, especially with regard to indirect and induced projections.

Third, this analysis does not consider other privately funded economic activity that will accompany the LEAD redevelopment. For example, short-term economic effects related to the refitting of existing buildings by eventual tenants were not considered, although this construction will undoubtedly affect 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 the necessary cost or revenue data from private developers. This omission will likely cause understatement of total job-creation effects, although the degree of error will be small.

Finally, no attempt was made to adjust for inflation because the lack of data about future gross output precluded USACERL from developing an acceptable method of adjusting long-term estimates. Errors caused by this omission will likely not be significant.

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 LEAD closure (see Chapter 1, **Adverse Economic Impact of the Closure on the Region and the Potential for Recovery After the EDC**). This final analytical step offers an

idea of when total closure impacts might reasonably be mitigated, and offers a general qualitative picture of how programmed capital expenditures affect job creation. USACERL's projections suggest that most of the employment impacts of the closure will be fully mitigated 2 to 3 years into the redevelopment process.

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 more than 20,000 jobs will probably be created as a result of the LEAD redevelopment.

3 EDC Application's Consistency With the Overall Redevelopment Plan

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The Letterkenny Industrial Development Authority (LIDA) EDC application was found to be generally consistent with the goals, objectives, and implementation strategies set forth in the LEAD Reuse Strategy prepared by the Franklin County Reuse Committee (FCRC). This finding was developed through the use of two evaluation criteria that qualitatively measure the technical relationship between the approved community reuse plan and EDC application submitted to the Army for review. USACERL's specific findings are as follows:

1. Does the application capture the spirit and intent of the Reuse Plan?

- The proposed reuse of LEAD contemplates the creation of high-quality jobs, which will serve as a countervailing force against the lower-paying, and often less stable service and retail jobs.
- The proposed reuse of LEAD considers the continuing Army mission at the installation within the context of providing cost-effective support services. However, the EDC application failed to consider Army utility infrastructure requirements that would be borne by the LIDA, or any other utility provider as result of a conveyance. Also, the LIDA failed to adequately address potential logistical conflicts arising from shared roads and other facilities.
- The proposed reuse of LEAD seeks to minimize fiscal risk to LIDA by relying, in part, on external sources of grant and debt financing to underwrite project investment and risk. However, the LIDA contemplates an "incremental drawdown of parcels" from the Army as a means to

reduce ownership and management costs and responsibilities. In effect, this strategy would reduce the LIDA's financial risk by making the Army a master developer for the site with no upside potential. The Army should carefully craft memorandum of agreement language to ensure that the LIDA will take the deed to the 1,500 acres requested in the EDC in a timely, predictable, and orderly fashion.

- The proposed reuse of LEAD seeks to improve overall site value in order to create an attractive and predictable environment that is supportive of private investment.
- The proposed reuse positions LEAD as a community asset that preserves agricultural land and the surrounding rural setting from real estate development pressures.

2. Is the application consistent with the Reuse Plan's marketing and implementation strategies?

- The application advances a business plan that should facilitate orderly development through flexibility to market demands, needed infrastructure improvements, demolition of obsolete buildings, and environmental clean up. However, USACERL questioned the reasonableness of some business assumptions and experienced difficulty in evaluating proposed capital improvements.
- The application identifies and programs both on- and offsite infrastructure improvements that will foster redevelopment through improved transportation, access, and services.
- The application outlines a business attraction strategy that includes marketing and business incentives.

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 Letterkenny Army Depot (LEAD) 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 1997):

- a property development timetable, phasing plan, and cash flow analysis
- 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 Letterkenny Industrial Development Authority (LIDA) is requesting an EDC to acquire approximately 1,500 acres of the realigned Letterkenny Army Depot, along with 4.3 million sq ft of building space, and water, wastewater, storm water, electric, and telecommunications utility systems for a proposed consideration of \$0 to the Department of the Army (LIDA EDC 1997, pp 1-2). Based on an earlier technical evaluation conducted by USACERL in conjunction with the LIDA, it was determined that the LIDA qualifies for a no-cost rural EDC transfer, thus supporting the LIDA's offer of \$0 to the Department of the Army (Chapter 1, **Adverse Economic Impact of the Closure on the Region and the Potential for Recovery After the EDC**). However, a final determination must be made by the Army in accordance with governing regulations and policies concerning rural transfers.

According to the May 1997 Reuse Strategy, the mission of LEAD's reuse is to create a multi-use industrial and commercial development intended to meet the region's growing need for improved industrial land with good, multimodal access (FCRC 1997, p I-1). To accommodate job creation and economic development goals, the Reuse Strategy has identified seven future land-use districts targeting a variety of industries and concerns of varying size including industrial, office/"flex," local office/administration, open space, community, warehouse/distribution, light industrial, and highway oriented industrial. Figure 3 shows the LIDA's proposed master plan development districts. Table 4.1 summarizes the LIDA's land-use mix and development potential by district.*

* Note, that LEAD gross acreage calculations presented in Table 4.1 do not account for land that is not developable because of existing roadway and rails, and land with topography that is prohibitively costly to develop.

Table 4.1. Proposed EDC land uses and development potential.

District	Gross Acres	Reusable Space (sq ft)	Marketable Land (acres)	Potential New Space (sq ft)	Total Development Potential
1. Industrial	285.38	1,741,920	143.19	3,118,515	4,860,435
2. Office/"Flex"	118.66	75,053	98.48	1,286,871	1,361,924
3. Local Office/Administration	70.96	103,835	38.37	501,354	605,189
4. Open Space/Community	244.46	129,742	187.78	0	129,742
5. Warehouse/Distribution	363.77	537,997	157.45	2,057,589	2,595,586
6. Light Industrial	236.97	443,552	180.06	2,353,024	2,796,576
7. Highway Oriented Industrial/Distribution	44.57	0	45.00	582,441	582,441
Total	1,364.77	3,032,099	850.33	9,899,794	12,931,893

It is worth noting that the LIDA forecasts a total development capacity of 6.5 million sq ft, or roughly half of the development potential presented in Table 4.1, over the first 20 years of redevelopment. Also, the LIDA further segmented development districts into 39 subdistricts that offer parcel sizes that could accommodate individual development pads, or subdivisions depending on the size of the subdistrict. Finally, floor area ratios (FARs) for new development range from 0.5 to 0.3, with the former representing District 1 industrial densities and the latter representing all other district densities.

Approach

Overview

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 LEAD Caretaker Force personnel, U.S. Army Corps of Engineers (USACE), Baltimore District appraisers, local economic development officials, and representatives of the LIDA (USACERL site visits to LEAD, 4-7 and 13-15 January 1998). With necessary site data collection complete, USACERL was able to perform market and financial feasibility analysis through the development of spreadsheet-based models, pro formas, and tables.

Recast of LIDA Business and Operations Plan

To aid in the analysis and documentation of the financial feasibility of the LIDA 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 served as a baseline model for developing and testing alternative business plan scenarios.

In this case, the LIDA's EDC business and operations plan and supporting narrative in the application tenuously support projected real estate revenues, operating costs, and capital improvements. In the course of the EDC review, USACERL encountered several technical limitations and information gaps, which hindered business plan recast efforts. Therefore, in an attempt to gain a thorough understanding and reconcile key business plan assumptions, USACERL worked closely with LEAD and LIDA staffs and relied upon professional experience to craft defensible assumptions to supplement deficient areas of the plan.

Business Plan Review and Findings

Introduction

According to the LIDA, the proposed EDC and supporting business plan represents an initial approach to site acquisition, management, financial matters, and marketing of surplus Army parcels. Consistent with the LIDA's long-term strategy, which includes industrial park and utility business centers, financial operations for each are treated separately. However, this conceptual bifurcation is limited in its usefulness from a comprehensive business operations viewpoint. Indeed, the financial feasibility of the LIDA, and its ability to fulfill reuse objectives, rest with the interdependency and aggregation of revenue and cost streams associated with industrial park and utility business centers. Accordingly, USACERL developed combined revenue and cost pro formas under a range of potential scenarios, in addition to separate industrial park and utilities analyses.

The following review and analysis is presented in three sections that compare the LIDA recast and CERL1 scenario findings. LIDA recast tables are not compared in this report, but relevant findings are discussed and compared to the CERL scenario. The first section relates to industrial park operations, and includes review and analysis of land sales, building rents, common area maintenance (CAM) charges, projected development costs, and operating costs. The second section relates to utilities, and contains demand and operations forecasts for LEAD electrical, water, and wastewater systems. Finally, the third

section presents forecasts for property tax revenue, projected sources and uses of cash, and a summary of project revenues and costs.

Industrial Park Business Plan Review and Analysis

Land Sales (Table 4.2)*

a. Number of acres sold (undeveloped land)

The 0-25-35 stepped rate in the USACERL Business Plan model, or CERL1, reflects a slightly more aggressive rate of sale than the LIDA Business Plan. This model displays a conservative rate of 25 acres per year (APY) during the 5 startup years. This rate of absorption for land sales coupled with available lease space for reuse of existing facilities will accommodate pent-up demand and provide a mix of developed and undeveloped property for purchase or lease during the startup period. Starting in Year 6, all reuse property is assumed to be leased and only undeveloped property is available for sale. The absorption rate of undeveloped land will then increase to 35 acres annually, which is appropriate for a fully functioning business park where success builds on success. The absorption rate used in the model is a blend of numerous rates displayed in the Reuse Strategy and the EDC application such as: (1) 25 APY, 500 total acres over 20 years; (2) 420 total acres over 20 years (derived from 5.5 million sq ft of improvements with a 0.30 FAR—EDC application, p 9); (3) 393 total acres over 20 years—EDC Application, Exhibit 7, p 3; and (4) an estimate that a medium rate of absorption would be 30 APY and a high rate of absorption would be 45 APY—Reuse Strategy, Appendix 9.

An important factor in determining the appropriate absorption rate to use in the USACERL model was the recommendations of local business and government officials, such as the President of the Chamber of Commerce, the Executive Director of the Chambersburg 5 Business Park, and others, who indicated that the higher 35-acre rate is reasonable if the functional uses are weighed 50 percent for warehouse/distribution, 35 percent for industrial, and 15 percent for office/administrative use. The stepped 0-25-35 rate permits the absorption of 625 of the 660 developable acres in the 20-yr planning period, which is not unreasonable. Because of the rather high annual operating costs,

* The remaining tables for this chapter are on foldout pages at the end of the chapter (beginning on p 65).

it is necessary to facilitate selling undeveloped properties, particularly in the early years, to reduce life-cycle costs, create jobs, and generate tax revenues.

b. Absorption period: 20 years

The 20-yr planning period used in the CERL1 scenario is consistent with the LIDA Reuse Strategy and the LIDA Business Plan and is a reasonable estimate of market demand. This model reflects a 20-yr program for the sale of the first 625 acres only. It is recognized that existing undeveloped land is available as well as raw land that will be created after leases expire and structures are demolished. Regardless of the acreage availability beyond 20 years, the development program must make economic sense by 20 years.

c. Average price per acre: \$25,000

The price points used in the USACERL model are consistent with the LIDA Business Plan and the estimate of the Staff Appraiser, U.S. Army Corps of Engineers, Baltimore District. Other area business parks are asking from \$40,000 to \$90,000 per acre, based on amenities provided and proximity to and frontage along major highways. LIDA has established a base asking price of \$40,000 per acre with premium charges for selected parcels and discounts for job creation. Considering location, services, other factors, and the opinions of local business and community leaders, \$25,000 per acre appears to be a reasonably conservative estimate of the selling price (vs the asking price). LIDA will offer a 15 percent discount for higher skilled jobs (i.e., pay rates at twice the minimum hourly rate) and another 15 percent discount for creating 10 or more jobs per acre.

The operating pro forma in Appendix 7 of the LIDA EDC application, 20-yr land sale revenues at \$25,000 per acre are projected at \$9.8 million, compared with USACERL's forecast of \$15.6 million.

d. Commissions and closing costs: 6.5 percent

The LIDA Business Plan does not include any allowance for closing costs. The USACERL Business Plan model reflects a 6 percent brokers commission rate to be shared by the selling and buying agents and also allots 0.5 percent for other closing costs. After total 20-yr commission and closing costs of \$1 million are deducted from \$15.6 million in gross land sale revenues, 20-yr net revenue from land sales totals \$14.6 million.

Building Rents (Table 4.2)

- a. The amount of existing leaseable building inventory that is considered to be marketable is 450,000 sq ft. Of this total, 45,000 sq ft is assumed for Office/Administration use, 90,000 is assumed for Industrial, and 315,000 is assumed for Distribution. This breakdown reflects land uses of 70 percent for Distribution, 20 percent for Industrial, and 10 percent for Office/Administrative, reflecting roughly the proportionate square footage in each category currently in inventory.

The Reuse Strategy and the LIDA Business Plan use several base figures for reused square feet leased. The figures vary from 1,000,000 to 825,000 (p 1, Exhibit 7, LIDA EDC application) to 373,000 sq ft (p 3, Exhibit 7, EDC application) depending on which source document or market study is used. Based on discussions with local government and business leaders and the fact that four businesses are already leasing 60,000 sq ft in the proposed Industrial Park before the property has been transferred to LIDA, a moderate total of 450,000 sq ft of reuse property is used in the model for leasing, compared with the LIDA's estimate in the Business Plan of 825,000 sq ft.

Leasing of the reuse property is extended over the first 5 years, reflecting 20 percent of each land use annually. Therefore, the annual amount absorbed is 9,000 sq ft for Office/Administrative, 18,000 sq ft for Industrial, and 63,000 sq ft for Distribution uses. This assumption is based on location interviews with community economic development officials and government and business leaders.

- b. The CERL1 rental rates and tenant improvements are as follows:

- \$5.00/sq ft - Office/Administrative
- \$2.50/sq ft - Industrial
- \$1.50/sq ft - Distribution.

The rates used in the USACERL Business Plan model are in the low range of the market rate and reflect "as is" value. To convert existing properties to meet user needs will require significant improvements to be paid for by the tenant. It is assumed that it will take at least 10 years to amortize the cost of improvements, thus 10-yr leases are used in the model. It is further assumed that only 40 percent of the leases will be renewed. New construction in the Industrial Park area will provide attractive alternatives to lessees. Thus, during Years 10 through 14, total leased properties are reduced to 40 percent (180,000 sq ft) of

the total leased space, which contrasts with the LIDA assumption that leased space will remain constant.

c. Commissions: 24 percent of First Year Rental Income

Commissions were not included in the LIDA Business Plan. The USACERL model uses standard real estate commission rates for leased property (i.e., 6 percent of the first year rental income, plus 2 percent of each remaining year of the lease). All commissions are paid upon signing in the first year. Ten-year leases are expected to be signed during Years 1 to 5. Forty percent of this leaseable space will be leased again (renewals and new leases) during Years 11 to 15.

d. Projected Building Rents

Over the span of the 20-yr Business Plan, USACERL projects that Office, Industrial, and Distribution space will generate \$3.0, \$3.0, and \$6.2 million respectively in gross rent totaling over \$12.2 million in total gross rent, which is substantially less than the LIDA's business plan projection of \$19.2 million. When leasing commissions are subtracted, USACERL estimates that the LIDA will likely receive over \$11.9 million in net annual rent.

Common Area Maintenance (Table 4.3) — The Common Area Maintenance (CAM) Rate is assumed to be \$0.15 per sq ft. The LIDA Business Plan recommended a \$0.10 per sq ft CAM rate. Using that rate, CAM operated at a loss throughout the 20-yr planning period. The USACERL Business Plan model uses a \$0.15 per sq ft rate, which permits the maintenance operations to obtain a slight positive cash flow by the Year 19, and should generate over \$11.3 million in revenue by Year 20. CAM should run on a cost-reimbursable basis.

Projected Development Costs (Table 4.4) — The LIDA Business Plan displayed infrastructure, or hard costs, of \$20 million for the first 5-yr period and the 20-yr costs, with few other details.* The CERL1 model displays the first 5-yr costs by year. The remaining total costs, except offsite roads, are prorated by year from Years 6 to 15. The data used in the model are from the LIDA Reuse Strategy,

* It is worth noting that the LIDA did not include project infrastructure costs as a line item component within the Business and Operations Plan. Furthermore, although infrastructure costs are supported within the Reuse Strategy Technical Appendices, USACERL encountered numerous limitations when attempting to reconcile 5-year Business Plan costs, with Reuse Strategy and Technical Appendices costs.

except for the following modifications (see Chapter 5, **Need and Extent of Proposed Infrastructure Improvements**):

- *Rail Costs* are assumed to be \$3.9 million in the CERL1 Business Plan; corresponding figures in the LIDA Business Plan are \$7.3 million.
- *Offsite Road Costs* are assumed to be \$2.5 million in the CERL1 Business Plan; corresponding figures in the LIDA Business Plan are \$6.4 million.
- *Onsite Road Costs* are assumed to be \$11.2 million in the CERL1 Business Plan; corresponding figures in the LIDA Business Plan are \$14.9 million.
- *Demolition/Site Preparation Costs* are assumed to be \$6.9 million in CERL1; corresponding figures in the LIDA Business Plan are \$5.9 million. The *Demolition/Site Preparation* (p III-39, Reuse Strategy) category in both USACERL and LIDA Business Plans include demolition, storm, and site preparation costs identified in the LIDA Reuse Plan. A cost of \$1.3 million is specifically identified for demolition (p III-39), compared with the USACERL demolition component of \$2 million, which was independently calculated from USACERL engineering sources.

The CERL1 model includes a 10 percent contingency, contained separately in each of the Hard Costs and Soft Costs totals, which is typical for development projects of this magnitude. Typical, too, is a Development Supervision fee. This fee is assumed in the USACERL Business Plan to be 7 percent; said percentage is applied to the total of all Development line items preceding the Development Supervision line.

Typically, 40 percent of development costs are “soft costs,” not including financing costs. The longer the absorption period the higher the percentage of soft costs. The soft costs in this model are a general estimate based on projects of similar scope and costs. Costs for land planning, engineering, fees/permits and insurance, and development supervision are high in the early development years as infrastructure is planned and constructed, and as adjustments are made to accommodate users’ needs. Legal/Accounting costs for Development are high throughout the development to deal with construction and labor contracts, ordinances, surveys, legal descriptions, and zoning. Accounting for construction expenses and sales and lease revenue, as well as utility management, is a significant responsibility for LIDA.

Therefore, 20-yr hard costs for infrastructure total \$27.3 million. When project soft costs of \$14.3 million are added, 20-yr projected development costs total \$41.6 million, of which over \$27 million are programmed within the first 5 years.

Operating Costs (Table 4.4)

LIDA will obtain the first parcel in mid-1998 and a second parcel in mid-1999. The USACERL Business Plan model reflects proration of annual operating costs.

General and Administrative Costs are assumed to be \$325,000 annually, which is consistent with the annual rate forecast as "staff/office" in the LIDA Business Plan.

Legal/Accounting Costs are assumed to be \$150,000 annually. The LIDA Business Plan allocated \$75,000 annually. The USACERL Business Plan model increased the planned annual amount. Experience with similar projects indicates that twice that amount is a conservative estimate of the legal costs. This legal expenditure is to address external actions involving land acquisition negotiations with the Army, utility easements and agreements, leases and sales contracts, environmental indemnification, boards and authority administration, grants and appropriation requests, and intergovernmental agreements.

The *Building Maintenance* rates used in CERL1 were: \$150,000 in Year 1; \$250,000 in Years 2 through 5, and \$50,000 in Years 6 through 20. The annual expenditure decreases when all leaseable buildings are rented by Year 6.

Grounds Maintenance is assumed to cost \$150,000 annually, except for Year 1, when costs are assumed to be \$100,000 to reflect the LIDA acquisition of property midyear.

For *Road Maintenance*, CERL1 recognizes the increased road use and repair costs required during the years when infrastructure construction is ongoing and when traffic increases as the industrial park builds out. Therefore, the LIDA Business Plan amounts were increased from \$25,000 to \$50,000 for Year 2 and again to \$100,000 for Years 3 through 20.

For *Railroad Maintenance*, the USACERL model allocates funds for maintenance of railroad systems at an increasing rate to respond to end-user requirements, prepare and maintain rail sidings prior to sale, and maintain railroad crossings. Beginning in Year 1, \$25,000 is assumed; for Year 2, \$50,000 is assumed; and for Years 3 through 20, \$75,000 is assumed annually. The LIDA Business Plan did not allocate any funds for this requirement.

For *Other Overhead*, the USACERL model assumes \$25,000 annually to fund equipment updates, travel, materials, utilities, repairs, etc. The LIDA Business Plan did not include this as a separate cost item.

For *Security*, the USACERL Business Plan allocates \$75,000 for 1 man/day for every day and provides for an increase to 2 man/days as development progresses and the potential for crime increases. Therefore, Years 2 through 20 assume \$150,000 per year for Security costs. The LIDA Business Plan allocates \$100,000 for 1 man/day for every day annually throughout the 20-yr development period.

Based on the foregoing operating cost assumptions, USACERL estimates 20-yr operating costs at \$23.2 million, which is moderately higher than the LIDA's estimate of \$19.9 million.

Industrial Park Business Plan Conclusions

When Net Land Sales of \$14.6 million are combined with Net Rental Income of \$11.9 million, and CAM charges of \$11.3 million, 20-yr revenues total \$37.8 million, which is slightly higher than the LIDA's projection of \$34.1 million. When \$23.1 million in operating costs are subtracted from total net revenues, net operating income totals *positive* \$14.6 million, which compares favorably with the LIDA's calculation of \$14.1 million, but is developed through alternative project assumptions.

However, infrastructure costs totaling \$41.6 million result in a 20-yr cumulative cash flow deficit of *negative* \$27.0 million. When a project discount rate of 7.5 percent is applied, 20-yr net present value (NPV) is calculated to be *negative* \$23.4 million, suggesting that the reuse and redevelopment of buildings and land at LEAD would not be financially feasible for a private developer on an all-cash basis in the absence of public subsidies. This negative NPV further suggests that tremendous amounts of local resources are required to redevelop LEAD to a marketable, functional, and code-compliant level which encourages private investment and job creation.

Accordingly, USACERL independently investigated other sources of revenues or fiscal packaging that would be available only to the public sector or, in this case, the LIDA to supplement annual deficits. This investigation revealed that nearly \$17.8 million in Federal, state, and local grant funding may be available to the LIDA to offset redevelopment costs. Based on the LIDA's early and continued success in receiving such funds, due in part to a high degree of political efficacy on the part of the LIDA, it is the opinion of USACERL that achieving defined grant funding goals is reasonably possible.

In addition, USACERL developed an independent tax increment finance (TIF) analysis, which suggests that \$19.2 million or more in ad valorem property tax revenues could be generated from the development of new properties and to a

much lesser extent, the leasing of reusable facilities.* When grant and TIF revenues are combined, over \$37 million in public funds could be available for Industrial Park redevelopment efforts, thus creating a business plan which is financially feasible.

EDC Utility Analysis and Review

As mentioned earlier, the LIDA separates Industrial Park and utility operations in the EDC business and operations plan. Because of ongoing Army missions at LEAD that must be supported by cost-effective and reliable utility service, USACERL evaluated the financial feasibility of three utility conveyances as separate business units in conjunction with the Industrial Park plan. The results of this analysis are intended to be used by the Army in guiding overall LEAD utilities disposal in light of LIDA redevelopment goals and the Army's retained mission requirements.

Industrial Park Electrical Demand (Table 4.5)

The CERL1 scenario projects demand and cash flow for a LIDA-owned and operated electrical system.

The Plan contains tables for the calculation of new Industrial Park Electric System Demand. Assumptions used in calculating these demand totals are based on projections of consumption in the LIDA Utility Transfer Analysis which, in turn, are based on a schedule of parcel development and the square footage development potential per parcel. Watts per square foot, load factor, and hours per month are expressed by land-use type: Office at 6.7 watts/sq ft, load factor 0.6, and 375 h/mo; Light Industrial at 3.5 watts/sq ft, load factor 0.5, and 300 h/mo; and Distribution at 1.5 watts/sq ft, load factor 0.7, and 375 h/mo. Per-month figures for electric system use were converted in order to produce annual Industrial Park demand. The 20-yr Industrial Park demand is projected to total 544.5 million kW. Current LEAD usage averages 54 million kW per year at 12.47 kV, and 1.9 million kW per year at 7.2 kV.

* Although TIF is a redevelopment-financing tool that is available to the LIDA, no firm commitment to the mechanism has been openly declared by the LIDA. USACERL's inclusion of a TIF analysis is only to be interpreted as a potential option that the LIDA can exercise once appropriate planning, legal, and financing measures have been undertaken.

Electric System Operations (Table 4.6)

- a. Sales of electricity service begins in Year 2 (1999).
- b. As required by the Army as a condition of transfer, the conversion of all 7.2 kV electrical systems to 12.47 kV is planned for Year 4. LEAD projects that, beginning in Year 4, it will consume 42.6 million kW, all at 12.47 kV, following the conversion. In Year 2, LEAD will consume 1.9 million kW at 7.2 kV and 54 million kW at 12.47 kV. Corresponding figures for Year 3 are 1.9 million kW and 40 million kW, respectively. LEAD engineering staff provided Army demand projections.
- c. The CERL1 scenario uses the above LEAD consumption rates for each system and applies the LIDA projected cost rates of \$0.05 and \$0.11 for the 12.47 kV and 7.2 kV systems, respectively.
- d. Electrical Revenues in Years 2 and 3 are based on utilization of both the 7.2 kV and 12.47 kV systems: \$0.05 retail rate for the 12.47 kV system and \$0.11 retail rate for the 7.2 kV system. All Industrial Park users are assumed to use the 12.47 kV system. The Army is expected to continue using both the 7.2 kV and 12.47 kV systems until the 7.2 kV system is phased out in Year 4. No third-party sales are anticipated.
- e. Electrical Costs include the wholesale rate of \$0.04 per kW. Operating costs of \$218,000 were derived from the Utility Transfer Analysis estimates.
- f. Capital Costs include the connection, substation, and primary network costs estimated in the Utility Transfer Analysis, as well as a 15 percent design contingency and satisfaction of the \$2 million conversion costs of the 7.2 kV system to 12.47 kV in Years 2 and 3.
- g. Start-up Costs include \$200,000 for metering in Year 2 (LEAD figures) and \$113,000 for other miscellaneous startup costs.

Based on the foregoing electrical utility assumptions, USACERL forecasts total revenues of \$68.5 million over 20 years disaggregated in the following manner: (1) \$27.2 million from Industrial Park service, (2) \$422,000 from Army service fees at 7.2 kV, and (3) \$40.9 million in Army service fees at 12.47 kV. This

revenue breakdown strongly suggests that the Army is going to be the dominant consumer of LIDA electrical service over the 20-yr Business Plan.*

The 20-yr electrical operating and capital costs total \$58.7 and \$5.3 million, respectively. When total electrical utility costs of \$64.1 million are applied to 20-yr revenues of \$68.5 million, a *positive* cumulative cash flow of \$4.4 million is calculated. The indicated NPV for the electrical utility system is positive \$913,000 at a 7.5 percent discount rate suggesting that the operation of the system by the LIDA is financially feasible in the absence of external fiscal subsidies.

Industrial Park Water Demand (Table 4.7)

The USACERL Business Plan projects demand and cash flow for a LIDA-owned and -operated water treatment and distribution system and a LIDA-owned and -operated sewerage collection and treatment system.

The Plan contains tables for the calculation of new Industrial Park Water Demand and new Industrial Park Sewer Demand. Assumptions used in calculating these demand totals are identical for Water and Sewer and are based on projections for consumption in the LIDA Utility Transfer Analysis. Gallons per capita per day (gpcd) for employees is expressed by land-use type: Office at 10 gpcd, Light Industrial at 35 gpcd, and Warehouse at 25 gpcd. Corresponding employee density figures are Office, 250 sq ft per employee; Industrial, 750 sq ft per employee; Warehouse, 1500 sq ft per employee. Per day figures for water and sewer consumption were converted in order to produce annual demand. This conversion assumes that Office operates on a 5-day basis and Industrial and Warehouse operate on a 6-day (one-shift) basis.

Water System Operations (Table 4.8)

The provision of water services is projected to commence mid-1998 (Year 1); therefore, all figures for Year 1 are half of calculated annual figures. Water Revenues are anticipated to be received through the sale of Treated Water and Raw Water.

* This assumes that the retained LEAD mission withstands anticipated future base closure rounds. If the remaining mission at LEAD were to be eliminated, electrical revenues would, of course, sharply decrease.

Treated Water revenues are based on a \$3.50 fee per 1,000 gal (from Utility Transfer Analysis) to be collected from LEAD, Industrial Park, and offsite users. While other local water rates are more competitive than \$3.50 per 1,000 gal, this figure is consistent with current fees charged by the LEAD for water. Industrial Park consumption levels were calculated based on the formula described above. LEAD consumption levels in Year 1 average 200 million gal (LIDA figures). BRAC actions are projected to reduce LEAD consumption by 2001 (Year 4) to 130 million gallons per year (LEAD figures). A straight-line reduction to this level results in a 176.7-million-gal consumption in Year 2 and 153.3-million-gal consumption in Year 3. Treated water sales to offsite users is assumed to apply to two privately owned water systems and a small neighboring municipality; total consumption is estimated at 3.6 million gal per year. Service to offsite users would begin in Year 4.

Raw Water fees were assumed to be \$0.65 based on an anticipated rate ranging from \$0.50 to \$0.75 (LIDA figure). Raw Water sales are based on a future agreement with Shippensburg Water Authority at a rate of 500,000 gal per day or 182,500,000 gal per year. To accommodate the need for "safe-yield" analyses of the LEAD reservoir, as has been initiated by LIDA, sales of raw water are assumed to begin in Year 2. LIDA officials have stated that the safe-yield study will be completed by Summer 1998.

Water Operating Expenses are assumed to be \$150,000 per year. This figure represents one-half of the updated LIDA estimate of \$300,000 per year for water and sewer utilities together. This figure includes emergency repair of breaks in the distribution/collection system; recent LIDA earth-penetrating surveillance concluded that the pipes are in good condition and free of breaks.

Water Capital Costs are based on figures from the LIDA Business Plan and include a 15 percent Design Contingency. One-half of the proposed physical interconnect to Shippensburg Water Authority is included in the Capital Costs. The Water Startup Costs in Years 1 and 2 are derived from the Reuse Plan estimates.

Industrial Park Sewer Demand

(see Industrial Park Water Demand)

Sewer System Operations (Table 4.9)

The provision of sewer services is projected to commence mid-1998 (Year 1); therefore, all figures for Year 1 are half of calculated annual figures.

Sewer Revenues are anticipated to be received from the treatment of wastewater from LEAD and Industrial Park users based on a \$5 fee per 1,000 gal (from Utility Transfer Analysis). This rate is consistent with the rate currently charged by LEAD, although this rate is inflated (according to LEAD) due to a 5-yr amortization of recent improvements to several sewage lift stations. LIDA contends the \$5 rate is competitive with rates in the region, although it is not the lowest rate. Industrial Park usage levels were calculated based on the formula described above. LEAD usage levels in Year 1 are an average of 23 million gal (11.5 million for one-half year) average (LIDA figures). A straight-line reduction to this level results in a 20.3-million-gal usage in Year 2 and a 17.7-million gallon usage in Year 3. BRAC actions are projected to reduce LEAD consumption by 2001 (Year 4) to 15 million gal per year (LEAD figures).

Sewer Operating Expenses are assumed to be \$150,000 per year. This figure represents one-half of the updated LIDA estimate of \$300,000 per year for water and sewer utilities together. This figure includes emergency repair of breaks in the distribution/collection system; recent LIDA earth-penetrating surveillance concluded that the pipes are in good condition and free of breaks.

Sewer Capital Costs are based on figures from the LIDA Business Plan and include a 15 percent Design Contingency. Sewer Startup Costs in Years 1 and 2 are derived from the Reuse Plan.

Utility Analysis Conclusions

Based on the foregoing, USACERL concludes that the inclusion or exclusion of utilities from the analysis does not dramatically impact project NPVs and LIDA financial feasibility (see Table 4.10).

When LEAD utilities are bundled, 20-yr project NPV is more than *negative* \$1.0 million, suggesting that additional public investment would be required to maintain financial feasibility.

Evaluating the transfer of LEAD utility systems to the LIDA was also evaluated from an Army economic perspective. USACERL developed independently supportable utility service rates that balance LIDA's need to maintain financial feasibility and the Army's need to pay lower utility rates. Table 4.11 summarizes USACERL's utility rate analysis.

As Table 4.11 shows, the CERL1 rates compare favorably with the rates the Army is paying for utilities on a fully burdened basis. Moreover, the marginally higher rates for sewer recommended by USACERL relative to the LIDA's rate,

reflects the breakeven rate for the system, in effect, mitigating the estimated *negative* \$1.0 million NPV presented in Table 4.10. In sum, this utility rate analysis provides a compelling argument to the Army that transferring LEAD utilities to the LIDA could potentially result in lower rates, thus reducing overall base operations costs, while simultaneously having required utility capital improvements performed (e.g., electric system upgrades).

The exact rate for each utility must be negotiated. However, the USACERL range provides the general parameters for consideration. As is shown in Table 4.12, if the negotiated rates were \$0.06 for electric, \$3.50 for water, and \$5.50 for sewer (all rates below current Army fully burdened rate), the Army could receive utilities at a lower rate and divest itself of liability and responsibilities. At the same time, the LIDA could generate sufficient revenue to amortize required capital improvements.

From the LIDA perspective, utility transfer means that electric and water revenues can be used to offset operational deficits caused by the sewer system, which allows rates to remain within market thresholds. Also, ownership of the system, and the supporting rate base, allows the LIDA to negotiate more favorable bulk rates than the Army or LIDA might otherwise be able to do independently. Transfer of all utilities to the LIDA also creates a better approach to land-use controls as they relate to utility easements and rights-of-way, which would require negotiations with third-party operators in the absence of a transfer. Finally, conveyance of the utility systems would get the Army out of the utility business, which is consistent with the privatization goals of the Department of Defense.

Projected Property Tax Revenue (Table 4.13)

The USACERL Business Plan model projects property tax revenues by applying the FAR of 0.30 to acreage to determine the square feet of construction by type: Office/Administration (15 percent), Industrial (35 percent), and Distribution (50 percent). Using construction costs by use type: Office/Administrative, \$140.00 per sq ft; Industrial, \$110.00 per sq ft; and Distribution, \$50.00 per sq ft (Construction Industry Research Board), the total value of improvements is calculated and added to land values to determine total taxable value. Property tax revenues are then computed by using 7.4 percent as the assessed value and a property tax rate of 14.5 percent (tax assessor of Franklin County). Based on these conservative assumptions, USACERL projects over \$19 million in tax increment revenues over 20 years to support capital improvement programming and maintain financial feasibility. Cumulative property tax revenues over 20 years are projected at \$64.5 million.

Projected Sources and Uses of Cash (Table 4.14)

The USACERL Business Plan model places \$17.8 million in revenue from Federal, state, and local grants into the cash flow during years 1998 through 2001, as is currently projected by LIDA (update of projection by telephone 26 January 1998). Additionally, to finance the project during the negative cash flow years, the model assumes the creation of a Tax Increment Financing (TIF) district and the allocation of funds to the Authority during Years 3 to 15, totaling a contribution of more than \$19.2 million to keep LIDA solvent until a positive cash flow occurs in Years 16 or 17.

In sum, public finance support is derived from three key areas. First, Federal and state grant funds may total over \$17.8 million based on communications with the LIDA and past success in securing funds. Second, USACERL projects \$19.2 million in TIF funds available for infrastructure improvements. Finally, USACERL calculates that nearly \$34.6 million in revenue bonds from utility operations may be available to cover deficits during the early years of the development program.

Findings and Recommendations

Findings

Per the assumptions previously set forth in this analysis, USACERL's findings and recommendations are as follows:

1. Given the demolition and infrastructure investment required to move the project forward, redevelopment of the subject property does not appear to be financially feasible in the absence of substantial subsidization from the public sector as is indicated in Projected Sources and Uses of Cash (Table 4.14). Therefore, the estimated residual value of the property is less than zero.

In the absence of public sector investment and subsidization, USACERL calculated the NPVs for three project scenarios (supported by Tables 4.15, 4.16, and 4.17 at the end of this chapter):

USACERL Scenarios	NPV @ 7.5%
Project view with electric and water/sewer (Table 4.15)	\$(24,528,354)
Project view with no utilities (Table 4.16)	\$(23,441,484)
Project view with water/sewer only (Table 4.17)	\$(25,441,793)

The above NPV calculations indicate a strong need for public investment, which is contemplated by the LIDA. Table 4.18 also suggests that the inclusion or exclusion of utilities from the EDC does not make a dramatic impact on project NPVs.

2. It is reasonably likely that the project can obtain supplemental funding from a variety of Federal, state, and local entities in an amount sufficient for the reuse plan to be financially feasible.
3. It is likely that the LIDA can manage the utility distribution systems and provide services to LEAD and park users at reasonable rates. Transferring water, sewer, and electric allows revenues gained from electric operations to offset losses from other utility services. Transfer of all systems to the LIDA enhances park marketability to clients, provides LIDA more leverage when negotiating bulk rates, and eliminates uncertainties caused by future BRAC actions.
4. Local and regional market conditions appear to be conducive to the proposed reuse at the present time.
5. Although the property is not in a prime location and access is limited, it is anticipated that these potential weaknesses could largely be overcome if competitive incentives are offered by the LIDA. The LIDA has already contemplated a land price discount strategy for job creation.

Recommendations

Given the above findings, USACERL recommends that the surplus EDC parcels be conveyed per the application's request. The conveyance should be made subject to a number of important considerations and conditions, including but not limited to the following:

Utility rates. The Army should negotiate electric, water, and sewer rates with the appropriate redevelopment authorities. The rates should be low enough that the retained Army mission is cost effective, but high enough that it pays its own way and imposes no financial burden on the redevelopment; that is, rates must be competitive, yet sufficient to amortize debt.

Utility operators. Operating agreements need to be in place for all utilities prior to conveyance. The Army should reserve the right to approve both the initial operator(s) and subsequent operators, if any.

Utility financing plan. Prior to the conveyance, the Army should review and approve the financing plan for each utility system. The financing plan should identify the anticipated operating and capital costs over a reasonable period of time and set forth the manner in which startup operating losses and capital improvements will be funded. The plan should also indicate the underlying credit of the utility authority. Finally, a contingency plan for each system should be presented that potentially includes agreements with other utility authorities in the event that the LIDA is no longer capable of operating LEAD utility systems.

The Army must appreciate that, for the LIDA to make system upgrades and recover costs through rate revenues, the LIDA accepts considerable risks if the Army reduces demand or closes the balance of LEAD. Thus, the LIDA will need a protection clause in any transfer agreement wherein improvements and rates are guaranteed in return for a guaranteed demand for a certain term.

Mobilization plan. Prior to conveyance, the Army must consider the extent to which its utility and road access requirements might be affected in the event of mobilization (e.g., California Avenue).

Reversion clause. Although the property is likely to be encumbered by creditors of the redevelopment authority and/or owners and tenants, the Army may wish to take a position wherein it, at its option, may step in and take over the utility systems in the event that the authority fails. This would allow the Army to pursue other privatization options, if necessary.

Excess profits. The Army should negotiate an excess profits clause in the unlikely event that the LIDA has an unforeseeable windfall. Excess profits should be defined as sales or proceeds to the LIDA net of Hard and Soft Costs incurred in moving the project forward. The calculation must recognize that the LIDA is undertaking a long-term project and may, at times, hold substantial cash or other assets that are not excess profits, but a reserve for future programmed costs.

Table 4.2. Development and Operating Revenue.

Version Name: CERL1

	Baseline Amount	Year 1 1998	Year 2 1999	Year 3 2000	Year 4 2001	Year 5 2002	Year 6 2003	Year 7 2004	Year 8 2005	Year 9 2006	Year 10 2007
Projected Land Sales											
1 Number of Acres Sold	-	-	25.00	25.00	25.00	25.00	35.00	35.00	35.00	35.00	35.00
2 Average Price per Acre	\$ 25,000	\$ -	\$ 25,000	\$ 25,000	\$ 25,000	\$ 25,000	\$ 25,000	\$ 25,000	\$ 25,000	\$ 25,000	\$ 25,000
3 Gross Revenue from Land Sales	\$ -	\$ -	\$ 625,000	\$ 625,000	\$ 625,000	\$ 625,000	\$ 875,000	\$ 875,000	\$ 875,000	\$ 875,000	\$ 875,000
4 less: Commissions and Closing Costs	6.50%	\$ -	\$ 40,625	\$ 40,625	\$ 40,625	\$ 40,625	\$ 56,875	\$ 56,875	\$ 56,875	\$ 56,875	\$ 56,875
5 Net Revenue from Land Sales	\$ -	\$ -	\$ 584,375	\$ 584,375	\$ 584,375	\$ 584,375	\$ 818,125	\$ 818,125	\$ 818,125	\$ 818,125	\$ 818,125
Projected Building Rent											
Office/Administration -											
8 Reusable Square Feet	45,000	-	-	-	-	-	-	-	-	-	-
10 % Reused	-	20%	20%	20%	20%	20%	-	-	-	-	-
11 Annual Square Feet Leased	-	9,000	9,000	9,000	9,000	9,000	-	-	-	-	-
12 Lease Reduction Due to Aging	-	-	-	-	-	-	-	-	-	-	-
13 Net Square Feet Leased	-	9,000	9,000	9,000	9,000	9,000	-	-	-	-	-
14 Cumulative Square Feet Leased	-	9,000	18,000	27,000	36,000	45,000	45,000	45,000	45,000	45,000	45,000
15 Rent Rate per Square Foot	\$ 5.00	\$ 5.00	\$ 5.00	\$ 5.00	\$ 5.00	\$ 5.00	\$ 5.00	\$ 5.00	\$ 5.00	\$ 5.00	\$ 5.00
16 Gross Annual Rent	\$ -	\$ 45,000	\$ 90,000	\$ 135,000	\$ 180,000	\$ 225,000	\$ 225,000	\$ 225,000	\$ 225,000	\$ 225,000	\$ 225,000
17 less: Commissions (6% + 2%, 10-Year Lease)	24.0%	\$ 10,800	\$ 10,800	\$ 10,800	\$ 10,800	\$ 10,800	\$ -	\$ -	\$ -	\$ -	\$ -
18 less: Tenant Improvements	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
19 Net Annual Office/Administrative Rent	\$ -	\$ 34,200	\$ 79,200	\$ 124,200	\$ 169,200	\$ 214,200	\$ 225,000	\$ 225,000	\$ 225,000	\$ 225,000	\$ 225,000
Industrial -											
22 Reusable Square Feet	90,000	-	-	-	-	-	-	-	-	-	-
23 % Reused	-	20%	20%	20%	20%	20%	-	-	-	-	-
24 Annual Square Feet Leased	-	18,000	18,000	18,000	18,000	18,000	-	-	-	-	-
25 Lease Reduction Due to Aging	-	-	-	-	-	-	-	-	-	-	-
26 Net Square Feet Leased	-	18,000	18,000	18,000	18,000	18,000	-	-	-	-	-
27 Cumulative Square Feet Leased	-	18,000	36,000	54,000	72,000	90,000	90,000	90,000	90,000	90,000	90,000
28 Rent Rate per Square Foot	\$ 2.50	\$ 2.50	\$ 2.50	\$ 2.50	\$ 2.50	\$ 2.50	\$ 2.50	\$ 2.50	\$ 2.50	\$ 2.50	\$ 2.50
29 Gross Annual Rent	\$ -	\$ 45,000	\$ 90,000	\$ 135,000	\$ 180,000	\$ 225,000	\$ 225,000	\$ 225,000	\$ 225,000	\$ 225,000	\$ 225,000
30 less: Commissions (6% + 2%, 10-Year Lease)	24.0%	\$ 10,800	\$ 10,800	\$ 10,800	\$ 10,800	\$ 10,800	\$ -	\$ -	\$ -	\$ -	\$ -
31 less: Tenant Improvements	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
32 Net Annual Industrial Rent	\$ -	\$ 34,200	\$ 79,200	\$ 124,200	\$ 169,200	\$ 214,200	\$ 225,000	\$ 225,000	\$ 225,000	\$ 225,000	\$ 225,000
Distribution -											
35 Reusable Square Feet	315,000	-	-	-	-	-	-	-	-	-	-
36 % Reused	-	20%	20%	20%	20%	20%	-	-	-	-	-
37 Annual Square Feet Leased	-	63,000	63,000	63,000	63,000	63,000	-	-	-	-	-
38 Lease Reduction Due to Aging	-	-	-	-	-	-	-	-	-	-	-
39 Net Square Feet Leased	-	63,000	63,000	63,000	63,000	63,000	-	-	-	-	-
40 Cumulative Square Feet Leased	-	63,000	126,000	189,000	252,000	315,000	315,000	315,000	315,000	315,000	315,000
41 Rent Rate per Square Foot	\$ 1.50	\$ 1.50	\$ 1.50	\$ 1.50	\$ 1.50	\$ 1.50	\$ 1.50	\$ 1.50	\$ 1.50	\$ 1.50	\$ 1.50
42 Gross Annual Rent	\$ -	\$ 94,500	\$ 189,000	\$ 283,500	\$ 378,000	\$ 472,500	\$ 472,500	\$ 472,500	\$ 472,500	\$ 472,500	\$ 472,500
43 less: Commissions (6% + 2%, 10-Year Lease)	24.0%	\$ 22,680	\$ 22,680	\$ 22,680	\$ 22,680	\$ 22,680	\$ -	\$ -	\$ -	\$ -	\$ -
44 less: Tenant Improvements	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
45 Net Annual Distribution Rent	\$ -	\$ 71,820	\$ 166,320	\$ 260,820	\$ 355,320	\$ 449,820	\$ 472,500	\$ 472,500	\$ 472,500	\$ 472,500	\$ 472,500
47 Total Combined Net Annual Rent	\$ -	\$ 140,220	\$ 324,720	\$ 509,220	\$ 693,720	\$ 878,220	\$ 922,500	\$ 922,500	\$ 922,500	\$ 922,500	\$ 922,500
49 Cumulative Square Feet Occupied	450,000	90,000	180,000	270,000	360,000	450,000	450,000	450,000	450,000	450,000	450,000

Year 9 2006	Year 10 2007	Year 11 2008	Year 12 2009	Year 13 2010	Year 14 2011	Year 15 2012	Year 16 2013	Year 17 2014	Year 18 2015	Year 19 2016	Year 20 2017	PROJECT TOTAL	NPV @ 7.50%
5.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00	625.00	-
000	\$ 25,000	\$ 25,000	\$ 25,000	\$ 25,000	\$ 25,000	\$ 25,000	\$ 25,000	\$ 25,000	\$ 25,000	\$ 25,000	\$ 25,000	\$ -	\$ -
000	\$ 875,000	\$ 875,000	\$ 875,000	\$ 875,000	\$ 875,000	\$ 875,000	\$ 875,000	\$ 875,000	\$ 875,000	\$ 875,000	\$ 875,000	\$ 15,625,000	\$ 7,327,313
875	\$ 56,875	\$ 56,875	\$ 56,875	\$ 56,875	\$ 56,875	\$ 56,875	\$ 56,875	\$ 56,875	\$ 56,875	\$ 56,875	\$ 56,875	\$ 1,015,625	\$ 476,275
125	\$ 818,125	\$ 818,125	\$ 818,125	\$ 818,125	\$ 818,125	\$ 818,125	\$ 818,125	\$ 818,125	\$ 818,125	\$ 818,125	\$ 818,125	\$ 14,609,375	\$ 6,851,038

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-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	5,400	5,400	5,400	5,400	5,400	-	-	-	-	-	45,000	-
-	-	(5,400)	(5,400)	(5,400)	(5,400)	(5,400)	-	-	-	-	-	27,000	-
-	-	(5,400)	(5,400)	(5,400)	(5,400)	(5,400)	-	-	-	-	-	18,000	-
000	45,000	39,600	34,200	28,800	23,400	18,000	18,000	18,000	18,000	18,000	18,000	-	-
5.00	\$ 5.00	\$ 5.00	\$ 5.00	\$ 5.00	\$ 5.00	\$ 5.00	\$ 5.00	\$ 5.00	\$ 5.00	\$ 5.00	\$ 5.00	\$ -	\$ -
000	\$ 225,000	\$ 198,000	\$ 171,000	\$ 144,000	\$ 117,000	\$ 90,000	\$ 90,000	\$ 90,000	\$ 90,000	\$ 90,000	\$ 90,000	\$ 2,970,000	\$ 1,567,404
-	\$ -	\$ 4,320	\$ 4,320	\$ 4,320	\$ 4,320	\$ 4,320	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 75,600	\$ 52,176
-	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
000	\$ 225,000	\$ 193,680	\$ 166,680	\$ 139,680	\$ 112,680	\$ 85,680	\$ 90,000	\$ 90,000	\$ 90,000	\$ 90,000	\$ 90,000	\$ 2,894,400	\$ 1,515,228

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-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	10,800	10,800	10,800	10,800	10,800	-	-	-	-	-	90,000	-
-	-	(10,800)	(10,800)	(10,800)	(10,800)	(10,800)	-	-	-	-	-	54,000	-
-	-	(10,800)	(10,800)	(10,800)	(10,800)	(10,800)	-	-	-	-	-	\$ 36,000	-
000	90,000	79,200	68,400	57,600	46,800	36,000	36,000	36,000	36,000	36,000	36,000	-	-
1.50	\$ 2.50	\$ 2.50	\$ 2.50	\$ 2.50	\$ 2.50	\$ 2.50	\$ 2.50	\$ 2.50	\$ 2.50	\$ 2.50	\$ 2.50	\$ -	\$ -
000	\$ 225,000	\$ 198,000	\$ 171,000	\$ 144,000	\$ 117,000	\$ 90,000	\$ 90,000	\$ 90,000	\$ 90,000	\$ 90,000	\$ 90,000	\$ 2,970,000	\$ 1,567,404
-	\$ -	\$ 4,320	\$ 4,320	\$ 4,320	\$ 4,320	\$ 4,320	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 75,600	\$ 52,176
-	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
000	\$ 225,000	\$ 193,680	\$ 166,680	\$ 139,680	\$ 112,680	\$ 85,680	\$ 90,000	\$ 90,000	\$ 90,000	\$ 90,000	\$ 90,000	\$ 2,894,400	\$ 1,515,228

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-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	37,800	37,800	37,800	37,800	37,800	-	-	-	-	-	315,000	-
-	-	(37,800)	(37,800)	(37,800)	(37,800)	(37,800)	-	-	-	-	-	189,000	-
-	-	(37,800)	(37,800)	(37,800)	(37,800)	(37,800)	-	-	-	-	-	126,000	-
300	315,000	277,200	239,400	201,600	163,800	126,000	126,000	126,000	126,000	126,000	126,000	-	-
1.50	\$ 1.50	\$ 1.50	\$ 1.50	\$ 1.50	\$ 1.50	\$ 1.50	\$ 1.50	\$ 1.50	\$ 1.50	\$ 1.50	\$ 1.50	\$ -	\$ -
500	\$ 472,500	\$ 415,800	\$ 359,100	\$ 302,400	\$ 245,700	\$ 189,000	\$ 189,000	\$ 189,000	\$ 189,000	\$ 189,000	\$ 189,000	\$ 6,237,000	\$ 3,291,548
-	\$ -	\$ 9,072	\$ 9,072	\$ 9,072	\$ 9,072	\$ 9,072	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 158,760	\$ 109,569
-	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
500	\$ 472,500	\$ 406,728	\$ 350,028	\$ 293,328	\$ 236,628	\$ 179,928	\$ 189,000	\$ 189,000	\$ 189,000	\$ 189,000	\$ 189,000	\$ 6,078,240	\$ 3,181,979

300	\$ 922,500	\$ 794,088	\$ 683,388	\$ 572,688	\$ 461,988	\$ 351,288	\$ 369,000	\$ 369,000	\$ 369,000	\$ 369,000	\$ 369,000	\$ 11,867,040	\$ 6,212,435
000	450,000	396,000	342,000	288,000	234,000	180,000	180,000	180,000	180,000	180,000	180,000	-	-

Table 4.3. Common Area Maintenance Revenues.

Version Name: CERL1

Common Area Maintenance Charges		Baseline Amount	Year 1 1998	Year 2 1999	Year 3 2000	Year 4 2001	Year 5 2002	Year 6 2003	Year 7 2004	Year 8 2005	Year 9 2006	Year 10 2007
1	Office/Administration --											
2	CAM Rate	\$ 0.15	\$ 0.15	\$ 0.15	\$ 0.15	\$ 0.15	\$ 0.15	\$ 0.15	\$ 0.15	\$ 0.15	\$ 0.15	\$ 0.15
3	Cumulative SQ FT New Construction	-	-	-	49,005	98,010	147,015	196,020	264,627	333,234	401,841	470,448
4	Cumulative SQ FT Leased	-	9,000	18,000	27,000	36,000	45,000	45,000	45,000	45,000	45,000	45,000
5	Total Annual Office/Admin Charges	\$ -	\$ 1,350	\$ 2,700	\$ 11,401	\$ 20,102	\$ 28,802	\$ 36,153	\$ 46,444	\$ 56,735	\$ 67,026	\$ 77,317
6												
7	Industrial --											
8	CAM Rate	\$ 0.15	\$ 0.15	\$ 0.15	\$ 0.15	\$ 0.15	\$ 0.15	\$ 0.15	\$ 0.15	\$ 0.15	\$ 0.15	\$ 0.15
9	Cumulative SQ FT New Construction	-	-	-	114,345	228,690	343,035	457,380	617,463	777,546	937,629	1,097,712
10	Cumulative SQ FT Leased	-	18,000	36,000	54,000	72,000	90,000	90,000	90,000	90,000	90,000	90,000
11	Total Annual Industrial Charges	\$ -	\$ 2,700	\$ 5,400	\$ 25,252	\$ 45,104	\$ 64,955	\$ 82,107	\$ 106,119	\$ 130,132	\$ 154,144	\$ 178,156
12												
13	Distribution --											
14	CAM Rate	\$ 0.15	\$ 0.15	\$ 0.15	\$ 0.15	\$ 0.15	\$ 0.15	\$ 0.15	\$ 0.15	\$ 0.15	\$ 0.15	\$ 0.15
15	Cumulative SQ FT New Construction	-	-	-	163,350	326,700	490,050	653,400	882,090	1,110,780	1,339,470	1,568,160
16	Cumulative SQ FT Leased	-	63,000	126,000	189,000	252,000	315,000	315,000	315,000	315,000	315,000	315,000
17	Total Annual Distribution Charges	\$ -	\$ 9,450	\$ 18,900	\$ 52,853	\$ 86,805	\$ 120,758	\$ 145,260	\$ 179,564	\$ 213,867	\$ 248,171	\$ 282,474
18												
19												
20	Total CAM Charges --											
21	CAM Rate	\$ 0.15	\$ 0.15	\$ 0.15	\$ 0.15	\$ 0.15	\$ 0.15	\$ 0.15	\$ 0.15	\$ 0.15	\$ 0.15	\$ 0.15
22	Cumulative SQ FT New Construction	-	-	-	326,700	653,400	980,100	1,306,800	1,764,180	2,221,560	2,678,940	3,136,320
23	Cumulative SQ FT Leased	-	90,000	180,000	270,000	360,000	450,000	450,000	450,000	450,000	450,000	450,000
24	Total Combined CAM Charges	\$ -	\$ 13,500	\$ 27,000	\$ 89,505	\$ 152,010	\$ 214,515	\$ 263,520	\$ 332,127	\$ 400,734	\$ 469,341	\$ 537,948

67

Year 9 2006	Year 10 2007	Year 11 2008	Year 12 2009	Year 13 2010	Year 14 2011	Year 15 2012	Year 16 2013	Year 17 2014	Year 18 2015	Year 19 2016	Year 20 2017	PROJECT TOTAL	NPV @ 7.50%
0.15	\$ 0.15	\$ 0.15	\$ 0.15	\$ 0.15	\$ 0.15	\$ 0.15	\$ 0.15	\$ 0.15	\$ 0.15	\$ 0.15	\$ 0.15	\$ -	\$ -
1,841	470,448	539,055	607,662	676,269	744,876	813,483	882,090	950,697	1,019,304	1,087,911	1,156,518	-	-
5,000	45,000	39,600	34,200	28,800	23,400	18,000	18,000	18,000	18,000	18,000	18,000	-	-
7,026	\$ 77,317	\$ 86,798	\$ 96,279	\$ 105,760	\$ 115,241	\$ 124,722	\$ 135,014	\$ 145,305	\$ 155,596	\$ 165,887	\$ 176,178	\$ 1,654,810	\$ 619,241
0.15	\$ 0.15	\$ 0.15	\$ 0.15	\$ 0.15	\$ 0.15	\$ 0.15	\$ 0.15	\$ 0.15	\$ 0.15	\$ 0.15	\$ 0.15	\$ -	\$ -
7,629	1,097,712	1,257,795	1,417,878	1,577,961	1,738,044	1,898,127	2,058,210	2,218,293	2,378,376	2,538,459	2,698,542	-	-
1,000	90,000	79,200	68,400	57,600	46,800	36,000	36,000	36,000	36,000	36,000	36,000	-	-
1,144	\$ 178,157	\$ 200,549	\$ 222,942	\$ 245,334	\$ 267,727	\$ 290,119	\$ 314,132	\$ 338,144	\$ 362,156	\$ 386,169	\$ 410,181	\$ 3,831,523	\$ 1,429,222
0.15	\$ 0.15	\$ 0.15	\$ 0.15	\$ 0.15	\$ 0.15	\$ 0.15	\$ 0.15	\$ 0.15	\$ 0.15	\$ 0.15	\$ 0.15	\$ -	\$ -
1,470	1,568,160	1,796,850	2,025,540	2,254,230	2,482,920	2,711,610	2,940,300	3,168,990	3,397,680	3,626,370	3,855,060	-	-
5,000	315,000	277,200	239,400	201,600	163,800	126,000	126,000	126,000	126,000	126,000	126,000	-	-
1,171	\$ 282,474	\$ 311,108	\$ 339,741	\$ 368,375	\$ 397,008	\$ 425,642	\$ 459,945	\$ 494,249	\$ 528,552	\$ 562,856	\$ 597,159	\$ 5,842,733	\$ 2,236,551
0.15	\$ 0.15	\$ 0.15	\$ 0.15	\$ 0.15	\$ 0.15	\$ 0.15	\$ 0.15	\$ 0.15	\$ 0.15	\$ 0.15	\$ 0.15	\$ -	\$ -
1,940	3,136,320	3,593,700	4,051,080	4,508,460	4,965,840	5,423,220	5,880,600	6,337,980	6,795,360	7,252,740	7,710,120	-	-
1,000	450,000	396,000	342,000	288,000	234,000	180,000	180,000	180,000	180,000	180,000	180,000	-	-
1,341	\$ 537,948	\$ 598,455	\$ 658,962	\$ 719,469	\$ 779,976	\$ 840,483	\$ 909,090	\$ 977,697	\$ 1,046,304	\$ 1,114,911	\$ 1,183,518	\$ 11,329,065	\$ 4,285,014

Table 4.4. Development and Operating Cost.

Version Name: CERL1

	Baseline Amount	Year 1 1998	Year 2 1999	Year 3 2000	Year 4 2001	Year 5 2002	Year 6 2003	Year 7 2004	Year 8 2005	Year 9 2006	Year 20
Projected Development Cost											
1 Hard Cost --	Cost per year										
2 On-Site Roads	\$ -	\$ 1,834,000	\$ 1,834,000	\$ 1,834,000	\$ 1,834,000	\$ 1,834,000	\$ 203,000	\$ 203,000	\$ 203,000	\$ 203,000	\$ 203,000
3 Off-Site Roads	\$ -	\$ 496,000	\$ 496,000	\$ 496,000	\$ 496,000	\$ 496,000	\$ -	\$ -	\$ -	\$ -	\$ -
4 Rail Improvements	\$ -	\$ 708,000	\$ 708,000	\$ 708,000	\$ 708,000	\$ 708,000	\$ 38,000	\$ 38,000	\$ 38,000	\$ 38,000	\$ 38,000
5 Demolition/Site Preparation	\$ -	\$ 826,000	\$ 826,000	\$ 826,000	\$ 826,000	\$ 826,000	\$ 274,000	\$ 274,000	\$ 274,000	\$ 274,000	\$ 274,000
6 Heating Plant/Boilers	\$ -	\$ 75,000	\$ 75,000	\$ 75,000	\$ 75,000	\$ 75,000	\$ -	\$ -	\$ -	\$ -	\$ -
7 General Contingency	10.00%	\$ 393,900	\$ 393,900	\$ 393,900	\$ 393,900	\$ 393,900	\$ 51,500	\$ 51,500	\$ 51,500	\$ 51,500	\$ 51,500
8 Total Projected Hard Cost	\$ -	\$ 4,332,900	\$ 4,332,900	\$ 4,332,900	\$ 4,332,900	\$ 4,332,900	\$ 566,500	\$ 566,500	\$ 566,500	\$ 566,500	\$ 566,500
9											
10 Soft Cost --	Cost per Year										
11 Land Planning	\$ -	\$ 40,000	\$ 30,000	\$ 25,000	\$ 20,000	\$ 15,000	\$ 15,000	\$ 15,000	\$ 15,000	\$ 15,000	\$ 15,000
12 Engineering	\$ -	\$ 150,000	\$ 150,000	\$ 125,000	\$ 125,000	\$ 100,000	\$ 50,000	\$ 50,000	\$ 50,000	\$ 50,000	\$ 50,000
13 Marketing Management/Materials	\$ 150,000	\$ 150,000	\$ 150,000	\$ 150,000	\$ 150,000	\$ 150,000	\$ 150,000	\$ 150,000	\$ 150,000	\$ 150,000	\$ 150,000
14 Misc. Fees/Permits/Insurance	\$ -	\$ 225,000	\$ 225,000	\$ 200,000	\$ 200,000	\$ 175,000	\$ 175,000	\$ 150,000	\$ 150,000	\$ 150,000	\$ 150,000
15 Legal/Accounting -- Development	\$ -	\$ 250,000	\$ 250,000	\$ 250,000	\$ 250,000	\$ 250,000	\$ 200,000	\$ 200,000	\$ 200,000	\$ 200,000	\$ 200,000
16 Development Supervision	7.00%	\$ 360,333	\$ 359,853	\$ 353,803	\$ 355,453	\$ 351,603	\$ 80,955	\$ 79,205	\$ 79,205	\$ 79,205	\$ 79,205
17 General Contingency	10.00%	\$ 117,535	\$ 116,465	\$ 110,580	\$ 110,045	\$ 104,180	\$ 67,096	\$ 64,421	\$ 64,421	\$ 64,421	\$ 64,421
18 Total Projected Soft Cost	\$ -	\$ 1,292,868	\$ 1,281,118	\$ 1,216,383	\$ 1,210,498	\$ 1,145,783	\$ 736,051	\$ 708,628	\$ 708,628	\$ 708,628	\$ 708,628
19											
20 Total Projected Development Cost	\$ -	\$ 5,625,768	\$ 5,614,018	\$ 5,549,283	\$ 5,543,398	\$ 5,478,683	\$ 1,304,551	\$ 1,275,128	\$ 1,275,128	\$ 1,275,128	\$ 1,275,128
21											
Projected Operating Cost											
22 General and Administrative	Cost per Year										
23 Legal/Accounting -- Operations	\$ 150,000	\$ 150,000	\$ 150,000	\$ 150,000	\$ 150,000	\$ 150,000	\$ 150,000	\$ 150,000	\$ 150,000	\$ 150,000	\$ 150,000
24 Building Maintenance	\$ -	\$ 150,000	\$ 250,000	\$ 250,000	\$ 250,000	\$ 250,000	\$ 50,000	\$ 50,000	\$ 50,000	\$ 50,000	\$ 50,000
25 Grounds Maintenance	\$ 150,000	\$ 100,000	\$ 150,000	\$ 150,000	\$ 150,000	\$ 150,000	\$ 150,000	\$ 150,000	\$ 150,000	\$ 150,000	\$ 150,000
26 Roads Maintenance	\$ 100,000	\$ 25,000	\$ 50,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000
27 Railroad Maintenance	\$ 75,000	\$ 25,000	\$ 50,000	\$ 75,000	\$ 75,000	\$ 75,000	\$ 75,000	\$ 75,000	\$ 75,000	\$ 75,000	\$ 75,000
28 Other Overhead	\$ 25,000	\$ 25,000	\$ 25,000	\$ 25,000	\$ 25,000	\$ 25,000	\$ 25,000	\$ 25,000	\$ 25,000	\$ 25,000	\$ 25,000
29 Security	\$ 150,000	\$ 75,000	\$ 150,000	\$ 150,000	\$ 150,000	\$ 150,000	\$ 150,000	\$ 150,000	\$ 150,000	\$ 150,000	\$ 150,000
30 General Contingency	10%	\$ 87,500	\$ 115,000	\$ 122,500	\$ 122,500	\$ 122,500	\$ 102,500	\$ 102,500	\$ 102,500	\$ 102,500	\$ 102,500
31 Total Projected Operating Cost	\$ -	\$ 962,500	\$ 1,265,000	\$ 1,347,500	\$ 1,347,500	\$ 1,347,500	\$ 1,127,500	\$ 1,127,500	\$ 1,127,500	\$ 1,127,500	\$ 1,127,500
32											
33 Total Projected Expense	\$ -	\$ 6,588,268	\$ 6,879,018	\$ 6,896,783	\$ 6,893,898	\$ 6,826,183	\$ 2,432,051	\$ 2,402,628	\$ 2,402,628	\$ 2,402,628	\$ 2,402,628
34 Cumulative Projected Expense	\$ -	\$ 6,588,268	\$ 13,467,307	\$ 20,364,090	\$ 27,257,988	\$ 34,084,172	\$ 36,513,222	\$ 38,915,828	\$ 41,318,453	\$ 43,721,079	\$ 46,123,707
35											
DEVELOPMENT & OPERATING SUMMARY											
36 Projected Development Revenue	\$ -	\$ -	\$ 584,375	\$ 584,375	\$ 584,375	\$ 584,375	\$ 818,125	\$ 818,125	\$ 818,125	\$ 818,125	\$ 818,125
37 Projected Development Cost	\$ -	\$ 5,625,768	\$ 5,614,018	\$ 5,549,283	\$ 5,543,398	\$ 5,478,683	\$ 1,304,551	\$ 1,275,128	\$ 1,275,128	\$ 1,275,128	\$ 1,275,128
38 Cash Increase (Decrease)	\$ -	\$ (5,625,768)	\$ (5,029,643)	\$ (4,964,908)	\$ (4,959,023)	\$ (4,894,298)	\$ (486,426)	\$ (457,001)	\$ (457,001)	\$ (457,001)	\$ (457,001)
39 Cumulative Cash Increase (Decrease)	\$ -	\$ (5,625,768)	\$ (10,655,432)	\$ (15,620,340)	\$ (20,579,363)	\$ (25,473,652)	\$ (26,960,077)	\$ (28,417,078)	\$ (29,874,078)	\$ (31,331,079)	\$ (32,788,080)
40											
41 Projected Operating Revenue	\$ -	\$ 153,720	\$ 351,720	\$ 598,725	\$ 845,730	\$ 1,092,735	\$ 1,186,020	\$ 1,254,627	\$ 1,323,234	\$ 1,391,841	\$ 1,460,448
42 Projected Operating Expense	\$ -	\$ 962,500	\$ 1,265,000	\$ 1,347,500	\$ 1,347,500	\$ 1,347,500	\$ 1,127,500	\$ 1,127,500	\$ 1,127,500	\$ 1,127,500	\$ 1,127,500
43 Cash Increase (Decrease)	\$ -	\$ (808,780)	\$ (913,280)	\$ (748,775)	\$ (501,770)	\$ (254,765)	\$ 58,520	\$ 127,127	\$ 195,734	\$ 264,341	\$ 332,948
44 Cumulative Cash Increase (Decrease)	\$ -	\$ (808,780)	\$ (1,722,060)	\$ (2,470,835)	\$ (2,972,605)	\$ (3,227,370)	\$ (3,168,850)	\$ (3,041,723)	\$ (2,845,989)	\$ (2,581,648)	\$ (2,248,700)
45											
46 Combined Revenue	\$ -	\$ 153,720	\$ 936,095	\$ 1,183,100	\$ 1,430,105	\$ 1,677,110	\$ 2,004,145	\$ 2,072,752	\$ 2,141,359	\$ 2,209,966	\$ 2,278,573
47 Combined Cost/Expense	\$ -	\$ 6,588,268	\$ 6,879,018	\$ 6,896,783	\$ 6,893,898	\$ 6,826,183	\$ 2,432,051	\$ 2,402,628	\$ 2,402,628	\$ 2,402,628	\$ 2,402,628
48 Cash Increase (Decrease)	\$ -	\$ (6,434,548)	\$ (5,942,923)	\$ (5,713,683)	\$ (5,463,793)	\$ (5,149,073)	\$ (427,906)	\$ (329,874)	\$ (261,267)	\$ (192,660)	\$ (124,025)
49 Cumulative Cash Increase (Decrease)	\$ -	\$ (6,434,548)	\$ (12,377,492)	\$ (18,091,175)	\$ (23,554,968)	\$ (28,704,042)	\$ (29,132,927)	\$ (29,462,801)	\$ (29,724,067)	\$ (29,916,727)	\$ (30,039,752)
50											
DEVELOPMENT & OPERATING COST											
51											
52 Potential Sources of Capital	Baseline Amount	Year 1 1998	Year 2 1999	Year 3 2000	Year 4 2001	Year 5 2002	Year 6 2003	Year 7 2004	Year 8 2005	Year 9 2006	Year 20
53 Grant Funding --											
54 Federal	\$ -	\$ 3,858,000	\$ 3,858,000	\$ 3,858,000	\$ 3,858,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
55 State	\$ -	\$ 542,500	\$ 542,500	\$ 542,500	\$ 542,500	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
56 Local	\$ -	\$ 30,000	\$ 30,000	\$ 30,000	\$ 30,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
57 Total Grant Funding	\$ -	\$ 4,430,500	\$ 4,430,500	\$ 4,430,500	\$ 4,430,500	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
58 Other Sources --											
59 TIF Funds	\$ -	\$ -	\$ -	\$ 302,820	\$ 605,640	\$ 908,460	\$ 1,211,881	\$ 1,635,769	\$ 2,059,858	\$ 2,483,946	\$ 2,908,033
60 Inter-Authority Transfers	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
61 Total Other Sources	\$ -	\$ -	\$ -	\$ 302,820	\$ 605,640	\$ 908,460	\$ 1,211,881	\$ 1,635,769	\$ 2,059,858	\$ 2,483,946	\$ 2,908,033
62 Total Potential Sources of Capital	\$ -	\$ 4,430,500	\$ 4,430,500	\$ 4,733,320	\$ 5,036,140	\$ 5,908,711	\$ 7,121,881	\$ 8,757,558	\$ 10,519,716	\$ 12,297,892	\$ 14,075,923
63											
64 Cash Increase (Decrease)	\$ -	\$ (6,434,548)	\$ (5,942,923)	\$ (5,713,683)	\$ (5,463,793)	\$ (5,149,073)	\$ (427,906)	\$ (329,874)	\$ (261,267)	\$ (192,660)	\$ (124,025)
65 Net Surplus (Shortfall)	\$ -	\$ (1,984,048)	\$ (1,482,423)	\$ (949,263)	\$ (404,453)	\$ (4,240,263)	\$ 783,775	\$ 1,305,884	\$ 1,798,591	\$ 2,291,286	\$ 2,783,981
66											
67 Amount to be Financed	\$ -	\$ 1,984,048	\$ 1,482,423	\$ 949,263	\$ 404,453	\$ 4,240,263	\$ -	\$ -	\$ -	\$ -	\$ -
68 Underwriting Fee	3.50%	\$ 69,442	\$ 52,235	\$ 33,609	\$ 14,156	\$ 149,410	\$ -	\$ -	\$ -	\$ -	\$ -
69 Total Requirement	\$ -	\$ 2,053,490	\$ 1,534,658	\$ 982,872	\$ 418,609	\$ 4,389,673	\$ -	\$ -	\$ -	\$ -	\$ -
70											
71 Debt Issue --											
72 Beginning Balance	\$ -	\$ -	\$ 2,207,324	\$ 4,033,596	\$ 5,404,328	\$ 6,259,872	\$ 11,447,218	\$ 11,521,984	\$ 11,080,237	\$ 10,112,644	\$ 8,579,827
73 Amount Borrowed	\$ -	\$ 2,053,490	\$ 1,544,658	\$ 982,872	\$ 418,609	\$ 4,389,673	\$ -	\$ -	\$ -	\$ -	\$ -
74 Amount Repaid	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 783,775	\$ 1,305,884	\$ 1,798,591	\$ 2,291,286	\$ 2,783,981
75 Net Amount	\$ -	\$ 2,053,490	\$ 1,544,658	\$ 982,872	\$ 418,609	\$ 4,389,673	\$ (783,775)	\$ (1,305,884)	\$ (1,798,591)	\$ (2,291,286)	\$ (2,783,981)
76 Interest Expense	7.50%	\$ 154,013	\$ 277,080	\$ 377,080	\$ 436,735	\$ 558,541	\$ 864,148	\$ 1,031,018	\$ 1,211,018	\$ 1,401,018	\$ 1,601,018
77 Ending Balance	\$ -	\$ 2,207,324	\$ 4,033,596	\$ 5,404,328	\$ 6,259,872	\$ 11,447,218	\$ 11,521,984	\$ 11,080,237	\$ 10,112,644	\$ 8,579,827	\$ 6,433,333
78											
79 Funds for Debt Paydown or Transfer --	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

Year 10 2007	Year 11 2008	Year 12 2009	Year 13 2010	Year 14 2011	Year 15 2012	Year 16 2013	Year 17 2014	Year 18 2015	Year 19 2016	Year 20 2017	PROJECT TOTAL	NPV @ 7.50%
203,000	203,000	203,000	203,000	203,000	203,000	203,000	-	-	-	-	11,200,000	8,390,744
-	-	-	-	-	-	-	-	-	-	-	2,480,000	2,006,759
38,000	38,000	38,000	38,000	38,000	38,000	38,000	-	-	-	-	3,920,000	3,046,173
274,000	274,000	274,000	274,000	274,000	274,000	274,000	-	-	-	-	6,870,000	4,651,959
-	-	-	-	-	-	-	-	-	-	-	375,000	303,441
51,500	51,500	51,500	51,500	51,500	51,500	51,500	-	-	-	-	2,484,500	1,839,909
566,500	566,500	566,500	566,500	566,500	566,500	566,500	-	-	-	-	27,329,500	20,236,984
15,000	10,000	10,000	10,000	10,000	10,000	5,000	5,000	5,800	5,000	5,000	280,000	177,458
50,000	25,000	25,000	25,000	25,000	25,000	15,000	15,000	15,800	15,000	15,000	1,100,000	743,707
150,000	150,000	150,000	150,000	150,000	150,000	150,000	150,000	150,000	150,000	150,000	3,000,000	1,529,174
150,000	100,000	100,000	100,000	75,000	75,000	50,000	50,000	50,000	50,000	50,000	2,500,000	1,522,721
200,000	150,000	150,000	150,000	150,000	150,000	100,000	100,000	100,000	100,000	100,000	3,500,000	2,006,303
79,205	70,105	70,105	70,105	68,355	68,355	22,400	22,400	22,400	22,400	22,400	2,639,665	1,835,294
64,421	50,511	50,511	50,511	47,836	47,836	34,240	34,240	34,240	34,240	34,240	1,301,967	781,465
708,628	666,616	666,616	666,616	626,191	626,191	376,640	376,640	376,640	376,640	376,640	14,321,632	8,596,112
1,275,126	1,122,116	1,122,116	1,122,116	1,092,691	1,092,691	376,640	376,640	376,640	376,640	376,640	41,651,132	26,835,096
325,000	325,000	325,000	325,000	325,000	325,000	325,000	325,000	325,000	325,000	325,000	6,500,000	3,313,210
150,000	150,000	150,000	150,000	150,000	150,000	150,000	150,000	150,000	150,000	150,000	3,000,000	1,529,174
50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	1,900,000	1,225,878
150,000	150,000	150,000	150,000	150,000	150,000	150,000	150,000	150,000	150,000	150,000	2,950,000	1,482,662
100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	1,875,000	906,415
75,000	75,000	75,000	75,000	75,000	75,000	75,000	75,000	75,000	75,000	75,000	1,425,000	696,442
25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	500,000	254,862
150,000	150,000	150,000	150,000	150,000	150,000	150,000	150,000	150,000	150,000	150,000	2,925,000	1,459,406
102,500	102,500	102,500	102,500	102,500	102,500	102,500	102,500	102,500	102,500	102,500	2,107,500	1,086,805
1,127,500	1,127,500	1,127,500	1,127,500	1,127,500	1,127,500	1,127,500	1,127,500	1,127,500	1,127,500	1,127,500	23,162,500	11,954,854
2,402,626	2,249,616	2,249,616	2,249,616	2,220,191	2,220,191	1,504,140	1,504,140	1,504,140	1,504,140	1,504,140	64,833,632	40,789,951
44,123,704	44,373,320	44,373,320	44,373,320	44,373,320	44,373,320	44,373,320	44,373,320	44,373,320	44,373,320	44,373,320	64,833,632	40,789,951
818,125	818,125	818,125	818,125	818,125	818,125	818,125	818,125	818,125	818,125	818,125	14,609,375	6,851,038
1,275,126	1,122,116	1,122,116	1,122,116	1,092,691	1,092,691	376,640	376,640	376,640	376,640	376,640	41,651,132	26,835,096
(457,001)	(303,991)	(303,991)	(303,991)	(274,566)	(274,566)	441,485	441,485	441,485	441,485	441,485	(27,041,757)	(21,984,058)
(27,798,079)	(28,092,070)	(28,092,070)	(28,092,070)	(28,092,070)	(28,092,070)	(28,092,070)	(28,092,070)	(28,092,070)	(28,092,070)	(28,092,070)	(27,041,757)	(21,984,058)
1,460,448	1,392,543	1,342,350	1,292,157	1,241,964	1,191,771	1,279,090	1,346,697	1,415,304	1,483,911	1,552,518	23,196,105	10,497,448
1,127,500	1,127,500	1,127,500	1,127,500	1,127,500	1,127,500	1,127,500	1,127,500	1,127,500	1,127,500	1,127,500	23,162,500	11,954,854
332,948	245,043	214,850	184,657	114,464	64,271	150,590	219,197	287,804	356,411	425,018	13,605	(1,457,405)
(2,248,700)	(1,983,657)	(1,758,807)	(1,604,150)	(1,489,686)	(1,425,415)	(1,274,925)	(1,055,628)	(787,624)	(411,413)	13,605		
2,278,573	2,210,088	2,180,478	2,110,382	2,060,089	2,008,896	2,068,215	2,184,822	2,233,429	2,302,036	2,370,643	37,805,480	17,346,487
2,402,626	2,249,616	2,249,616	2,249,616	2,220,191	2,220,191	1,504,140	1,504,140	1,504,140	1,504,140	1,504,140	64,833,632	40,789,951
(134,063)	(98,948)	(69,141)	(39,334)	(180,102)	(210,295)	592,075	640,682	729,289	797,896	866,503	(27,028,152)	(23,441,464)
(30,034,779)	(30,075,727)	(30,184,867)	(30,304,201)	(30,444,302)	(30,674,567)	(30,982,522)	(28,421,840)	(26,692,581)	(24,894,655)	(23,028,152)		

Year 10 2007	Year 11 2008	Year 12 2009	Year 13 2010	Year 14 2011	Year 15 2012	Year 16 2013	Year 17 2014	Year 18 2015	Year 19 2016	Year 20 2017	PROJECT TOTAL	NPV @ 7.50%
-	-	-	-	-	-	-	-	-	-	-	15,432,000	12,921,701
-	-	-	-	-	-	-	-	-	-	-	2,250,000	1,983,996
-	-	-	-	-	-	-	-	-	-	-	120,000	100,480
-	-	-	-	-	-	-	-	-	-	-	17,802,000	14,906,177
2,908,034	3,332,123	3,756,211	-	-	-	-	-	-	-	-	19,205,143	10,044,082
-	-	-	-	-	-	-	-	-	-	-	-	-
2,908,034	3,332,123	3,756,211	-	-	-	-	-	-	-	-	19,205,143	10,044,082
2,908,034	3,332,123	3,756,211	-	-	-	-	-	-	-	-	37,007,143	24,950,288
(124,053)	(39,948)	(89,141)	(139,334)	(160,102)	(210,295)	592,075	640,682	729,289	797,896	866,503	(27,028,152)	(23,441,464)
2,783,982	3,293,175	3,667,070	(139,334)	(160,102)	(210,295)	592,075	640,682	729,289	797,896	866,503	9,978,992	1,508,805
-	-	-	139,334	160,102	210,295	-	-	-	-	-	9,591,230	7,350,186
-	-	-	4,877	5,604	7,360	-	-	-	-	-	335,683	257,257
-	-	-	144,210	165,705	217,655	-	-	-	-	-	9,926,923	7,607,443
8,579,827	8,439,332	8,329,107	234,218	406,812	615,456	895,594	370,688	(0)	(0)	(0)	-	-
-	-	-	144,210	165,705	217,655	-	-	-	-	-	9,826,923	7,607,443
2,783,982	3,293,175	3,667,070	-	-	-	592,075	398,480	-	-	-	15,914,341	8,178,001
(2,783,982)	(3,293,175)	(3,667,070)	144,210	165,705	217,655	(592,075)	(398,480)	-	-	-	-	-
643,487	482,950	272,183	28,382	42,939	62,483	67,170	27,802	(0)	(0)	(0)	6,987,418	4,233,872
6,439,332	6,329,107	6,218,982	234,218	406,812	615,456	895,594	370,688	(0)	(0)	(0)	-	-
-	-	-	-	-	-	-	282,192	729,289	797,896	866,503	2,655,680	680,991

Table 4.5. Industrial Park Electrical Demand.

Version Name: CERL1

	Baseline Amount	Year 1 1998	Year 2 1999	Year 3 2000	Year 4 2001	Year 5 2002	Year 6 2003	Year 7 2004	Year 8 2005	Year 9 2006	Year 10 2007
1 CUM. SQ. FT. OF EXISTING OCCUPIED SPACE											
2 Office/Administration	-	9,000	18,000	27,000	36,000	45,000	45,000	45,000	45,000	45,000	45,000
3 Industrial	-	18,000	36,000	54,000	72,000	90,000	90,000	90,000	90,000	90,000	90,000
4 Warehouse	-	63,000	126,000	189,000	252,000	315,000	315,000	315,000	315,000	315,000	315,000
5 Total Amount	-	90,000	180,000	270,000	360,000	450,000	450,000	450,000	450,000	450,000	450,000
6											
7 CUMULATIVE SQ. FT. NEW CONSTRUCTION											
8 Office/Administration	-	-	-	49,005	98,010	147,015	196,020	264,627	333,234	401,841	470,448
9 Industrial	-	-	-	114,345	228,690	343,035	457,380	617,463	777,546	937,629	1,097,712
10 Warehouse	-	-	-	163,350	326,700	490,050	653,400	882,090	1,110,780	1,339,470	1,568,160
11 Total Amount	-	-	-	326,700	653,400	980,100	1,306,800	1,764,180	2,221,560	2,678,940	3,136,320
12											
13 CUMULATIVE TOTAL OCCUPIED SPACE											
14 Office/Administration	-	9,000	18,000	76,005	134,010	192,015	241,020	309,627	378,234	446,841	515,448
15 Industrial	-	18,000	36,000	168,345	300,690	433,035	547,380	707,463	867,546	1,027,629	1,187,712
16 Warehouse	-	63,000	126,000	352,350	578,700	805,050	968,400	1,197,090	1,425,780	1,654,470	1,883,160
17 Total Amount	-	90,000	180,000	596,700	1,013,400	1,430,100	1,764,800	2,214,180	2,671,560	3,128,940	3,586,320
18											
19 WATTS PER SQUARE FOOT											
	Watts/Sq. Ft.										
20 Office/Administration	6.70	60,300	120,600	509,234	897,867	1,286,501	1,614,834	2,074,501	2,534,168	2,993,835	3,453,502
21 Industrial	3.50	63,000	126,000	589,208	1,052,415	1,515,623	1,915,830	2,478,121	3,036,411	3,596,702	4,156,892
22 Warehouse	1.50	94,500	189,000	528,525	868,050	1,207,575	1,452,600	1,795,635	2,138,670	2,481,705	2,824,740
23											
24 KW UTILIZATION (Watts per Sq. Ft./1,000)											
25 Office/Administration	-	60.30	120.60	509.23	897.87	1,286.50	1,614.83	2,074.50	2,534.17	2,993.83	3,453.50
26 Industrial	-	63.00	126.00	589.21	1,052.42	1,515.62	1,915.83	2,478.12	3,036.41	3,596.70	4,156.89
27 Warehouse	-	94.50	189.00	528.53	868.05	1,207.58	1,452.60	1,795.64	2,138.67	2,481.71	2,824.74
28											
29 KW LOAD FACTOR											
	Load Factor										
30 Office/Administration	0.60	36.18	72.36	305.54	538.72	771.90	968.90	1,244.70	1,520.50	1,796.30	2,072.10
31 Industrial	0.50	31.50	63.00	294.60	526.21	757.81	957.92	1,238.06	1,518.21	1,798.35	2,078.50
32 Warehouse	0.70	66.15	132.30	369.97	607.64	845.30	1,016.82	1,256.94	1,497.07	1,737.19	1,977.32
33											
34 KW PER MONTH											
	Hrs per Month										
35 Office/Administration	375	13,568	27,135	114,578	202,020	289,483	363,338	466,783	570,188	673,613	777,038
36 Industrial	300	9,450	18,900	88,381	157,862	227,343	287,375	371,418	455,462	539,505	623,549
37 Warehouse	375	24,806	49,613	138,738	227,863	316,988	381,308	471,354	561,401	651,448	741,494
38 Total kW per Month	-	47,824	95,648	341,696	587,745	833,794	1,032,020	1,309,535	1,587,050	1,884,566	2,142,081
39											
40 KW PER YEAR											
	Hrs per Year										
41 Office/Administration	4,500	162,810	325,620	1,374,930	2,424,241	3,473,551	4,360,052	5,601,152	6,842,253	8,083,354	9,324,454
42 Industrial	3,600	113,400	226,800	1,060,574	1,894,347	2,728,121	3,448,494	4,457,017	5,465,540	6,474,063	7,482,586
43 Warehouse	4,500	297,675	595,350	1,664,854	2,734,358	3,803,861	4,575,690	5,656,250	6,736,811	7,817,371	8,997,931
44 Total kW per Year	-	673,885	1,147,770	4,100,358	7,052,946	10,005,533	12,384,236	15,714,420	19,044,003	22,374,787	25,794,971

1

#	Year 9 2006	Year 10 2007	Year 11 2008	Year 12 2009	Year 13 2010	Year 14 2011	Year 15 2012	Year 16 2013	Year 17 2014	Year 18 2015	Year 19 2016	Year 20 2017	PROJECT TOTAL	NPV @ 7.50%
26													-	-
30	45,000	45,000	39,500	34,200	28,800	23,400	18,000	18,000	18,000	18,000	18,000	18,000	-	-
30	90,000	90,000	79,200	68,400	57,600	46,800	36,000	36,000	36,000	36,000	36,000	36,000	-	-
30	315,000	315,000	277,200	239,400	201,600	163,800	126,000	126,000	126,000	126,000	126,000	126,000	-	-
30	450,000	450,000	396,000	342,000	288,000	234,000	180,000	180,000	180,000	180,000	180,000	180,000	-	-
34	401,841	470,448	539,055	607,662	676,269	744,876	813,483	882,090	950,697	1,019,304	1,087,911	1,156,518	-	-
36	937,629	1,097,712	1,257,795	1,417,878	1,577,961	1,738,044	1,898,127	2,058,210	2,218,293	2,378,376	2,538,459	2,698,542	-	-
30	1,339,470	1,568,160	1,796,850	2,025,540	2,254,230	2,482,920	2,711,610	2,940,300	3,168,990	3,397,680	3,626,370	3,855,060	-	-
30	2,678,840	3,136,320	3,603,700	4,061,080	4,508,460	4,965,840	5,423,220	5,880,600	6,337,980	6,795,360	7,252,740	7,710,120	-	-
34	446,841	515,448	578,655	641,862	705,069	768,276	831,483	900,090	968,697	1,037,304	1,105,911	1,174,518	-	-
36	1,027,629	1,187,712	1,336,995	1,486,278	1,635,561	1,784,844	1,934,127	2,084,210	2,234,293	2,384,376	2,534,459	2,684,542	-	-
30	1,654,470	1,883,160	2,074,050	2,264,940	2,455,830	2,646,720	2,837,610	3,028,500	3,219,390	3,410,280	3,601,170	3,792,060	-	-
30	3,128,840	3,586,320	3,989,700	4,393,080	4,796,460	5,199,840	5,603,220	6,006,600	6,410,000	6,813,380	7,216,760	7,620,140	-	-
38	2,993,835	3,453,502	3,876,989	4,300,475	4,723,962	5,147,449	5,570,936	6,030,603	6,490,270	6,949,937	7,409,604	7,869,271	-	-
38	3,596,702	4,156,992	4,679,483	5,201,973	5,724,464	6,246,954	6,769,445	7,329,735	7,890,026	8,450,316	9,010,607	9,570,897	-	-
30	2,481,705	2,824,740	3,111,075	3,397,410	3,683,745	3,970,080	4,256,415	4,599,450	4,942,485	5,285,520	5,628,555	5,971,590	-	-
37	2,993,835	3,453,502	3,876,989	4,300,475	4,723,962	5,147,449	5,570,936	6,030,603	6,490,270	6,949,937	7,409,604	7,869,271	-	-
37	3,596,702	4,156,992	4,679,483	5,201,973	5,724,464	6,246,954	6,769,445	7,329,735	7,890,026	8,450,316	9,010,607	9,570,897	-	-
37	2,481,705	2,824,740	3,111,075	3,397,410	3,683,745	3,970,080	4,256,415	4,599,450	4,942,485	5,285,520	5,628,555	5,971,590	-	-
30	1,796,30	2,072,10	2,326,19	2,580,29	2,834,38	3,088,47	3,342,56	3,618,36	3,894,16	4,169,96	4,445,76	4,721,56	-	-
30	1,796,35	2,078,50	2,339,74	2,600,99	2,862,23	3,123,48	3,384,72	3,664,87	3,945,01	4,225,16	4,505,30	4,785,45	-	-
37	1,737,19	1,977,32	2,177,75	2,378,19	2,578,62	2,779,06	2,979,49	3,219,82	3,459,74	3,699,86	3,939,99	4,180,11	-	-
38	673,613	777,038	872,322	967,607	1,062,892	1,158,176	1,253,461	1,356,886	1,460,311	1,563,736	1,667,161	1,770,586	16,630,638	-
32	539,505	623,549	701,922	780,296	858,670	937,043	1,015,417	1,099,460	1,183,504	1,267,547	1,351,591	1,435,635	13,410,330	-
31	651,448	741,494	816,657	891,820	966,983	1,042,146	1,117,309	1,207,356	1,297,402	1,387,449	1,477,496	1,567,542	15,337,173	-
30	1,884,566	2,142,061	2,390,902	2,639,723	2,888,544	3,137,365	3,386,186	3,635,007	3,884,217	4,133,032	4,381,847	4,630,662	45,378,340	-
33	8,063,354	9,324,454	10,467,869	11,611,284	12,754,698	13,898,113	15,041,527	16,282,628	17,523,729	18,764,829	20,005,930	21,247,031	199,570,066	-
40	6,474,063	7,482,586	8,423,069	9,363,551	10,304,034	11,244,517	12,185,000	13,125,483	14,065,966	15,006,449	15,946,932	16,887,415	160,923,966	-
31	7,817,371	8,897,931	9,799,886	10,701,842	11,603,797	12,505,752	13,407,707	14,309,662	15,211,617	16,113,572	17,015,527	17,917,482	184,046,074	-
33	22,374,787	25,704,971	28,080,824	31,678,678	34,662,529	37,646,382	40,634,235	43,622,088	46,609,941	49,597,794	52,585,647	55,573,500	544,540,085	-

Table 4.6. Electric System Operations.

Version Name: CERL1

	Baseline Amount	Year 1 1998	Year 2 1999	Year 3 2000	Year 4 2001	Year 5 2002	Year 6 2003	Year 7 2004	Year 8 2005	Year 9 2006	Year 10 2007	Y
ELECTRIC SYSTEM REVENUE												
1 Industrial Park Service Fees -												
2 Park Tenant Rate (kW)	\$ 0.050	\$ 0.050	\$ 0.050	\$ 0.050	\$ 0.050	\$ 0.050	\$ 0.050	\$ 0.050	\$ 0.050	\$ 0.050	\$ 0.050	\$
3 Annual Tenant Utilization (kW)	\$ -	-	1,147,770	4,100,358	7,052,945	10,005,533	12,384,236	15,714,420	19,044,603	22,374,787	25,704,971	28,610,000
4 Total Industrial Park Service Fees	\$ -	\$ -	\$ 57,389	\$ 205,018	\$ 352,647	\$ 500,277	\$ 619,212	\$ 785,721	\$ 952,230	\$ 1,118,739	\$ 1,285,249	\$ 1,450,000
5												
6 Army Service Fees -												
7 7.2kv Service Rate (kW)	\$ 0.110	\$ 0.110	\$ 0.110	\$ 0.110	\$ 0.110	\$ 0.110	\$ 0.110	\$ 0.110	\$ 0.110	\$ 0.110	\$ 0.110	\$
8 Annual 7.2kv Utilization (kW)	\$ -	-	1,920,000	1,920,000	-	-	-	-	-	-	-	-
9 7.2KV Army Service Fees	\$ -	\$ -	\$ 211,200	\$ 211,200	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
10												
11 12.47kv Service Rate (kW)	\$ 0.050	\$ 0.050	\$ 0.050	\$ 0.050	\$ 0.050	\$ 0.050	\$ 0.050	\$ 0.050	\$ 0.050	\$ 0.050	\$ 0.050	\$
12 Annual 12.47kv Utilization (kW)	\$ -	-	54,000,000	40,000,000	42,600,000	42,600,000	42,600,000	42,600,000	42,600,000	42,600,000	42,600,000	42,600,000
13 12.47kv Army Service Fees	\$ -	\$ -	\$ 2,790,000	\$ 2,000,000	\$ 2,130,000	\$ 2,130,000	\$ 2,130,000	\$ 2,130,000	\$ 2,130,000	\$ 2,130,000	\$ 2,130,000	\$ 2,130,000
14												
15 Total Army Service Fees	\$ -	\$ -	\$ 2,811,200	\$ 2,211,200	\$ 2,130,000	\$ 2,130,000	\$ 2,130,000	\$ 2,130,000	\$ 2,130,000	\$ 2,130,000	\$ 2,130,000	\$ 2,130,000
16												
17 Total Revenue from Electric Operations	\$ -	\$ -	\$ 2,968,589	\$ 2,416,218	\$ 2,482,647	\$ 2,630,277	\$ 2,748,212	\$ 2,915,721	\$ 3,082,230	\$ 3,248,739	\$ 3,415,249	\$ 3,560,000
18												
ELECTRIC SYSTEM COSTS-100% Cash												
19 Operating Costs -												
20 Generation/Transmission Wholesale Cost												
21 Rate per kWh	\$ 0.040	\$ 0.040	\$ 0.040	\$ 0.040	\$ 0.040	\$ 0.040	\$ 0.040	\$ 0.040	\$ 0.040	\$ 0.040	\$ 0.040	\$
22 Utilization	\$ -	-	57,067,770	46,020,358	49,652,945	52,605,533	54,984,236	58,314,420	61,644,603	64,974,787	68,304,971	71,635,155
23 Total Wholesale Cost	\$ -	\$ -	\$ 2,282,711	\$ 1,840,814	\$ 1,986,118	\$ 2,104,221	\$ 2,199,369	\$ 2,332,577	\$ 2,465,784	\$ 2,598,991	\$ 2,732,199	\$ 2,865,399
24 Other Operating Cost	\$ -	\$ -	\$ 218,000	\$ 218,000	\$ 218,000	\$ 218,000	\$ 218,000	\$ 218,000	\$ 218,000	\$ 218,000	\$ 218,000	\$ 218,000
25 Total Operating Cost	\$ -	\$ -	\$ 2,500,711	\$ 2,058,814	\$ 2,204,118	\$ 2,322,221	\$ 2,417,369	\$ 2,550,577	\$ 2,683,784	\$ 2,816,991	\$ 2,950,199	\$ 3,083,399
26												
27 Capital Cost -												
28 Start-Up Cost	\$ -	\$ -	\$ 313,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
29 Other Capital Cost	\$ -	\$ -	\$ 567,000	\$ 1,603,000	\$ 192,000	\$ 190,000	\$ 174,000	\$ 259,000	\$ 141,000	\$ 236,000	\$ 69,000	\$ 15,000
30 Total Capital Cost	\$ -	\$ -	\$ 880,000	\$ 1,603,000	\$ 182,000	\$ 180,000	\$ 174,000	\$ 259,000	\$ 141,000	\$ 236,000	\$ 69,000	\$ 15,000
31												
32 Total Electric System Costs	\$ -	\$ -	\$ 3,380,711	\$ 3,661,814	\$ 2,386,118	\$ 2,512,221	\$ 2,591,369	\$ 2,809,577	\$ 2,824,784	\$ 3,052,991	\$ 3,019,199	\$ 3,220,000
33 Cash Increase (Decrease)	\$ -	\$ -	\$ (412,122)	\$ (1,245,596)	\$ 86,529	\$ 118,055	\$ 157,842	\$ 106,144	\$ 257,446	\$ 195,748	\$ 396,050	\$ 330,000
34 Cumulative Cash Increase (Decrease)	\$ -	\$ -	\$ (412,122)	\$ (1,657,719)	\$ (1,571,189)	\$ (1,453,134)	\$ (1,295,292)	\$ (1,189,147)	\$ (931,701)	\$ (735,953)	\$ (339,904)	\$ -
35												
ELECTRIC SYSTEM OPERATIONS												
36												
37												
38 Potential Sources of Capital												
39												
40 Grant Funding -												
41 Federal	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
42 State	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
43 Local	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
44 Total Grant Funding	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
45												
46 Other Sources -												
47 TIF Funds	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
48 Inter-Authority Transfers	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
49 Total Other Sources	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
50 Total Potential Sources of Capital	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
51												
52 Cash Increase (Decrease)	\$ -	\$ -	\$ (412,122)	\$ (1,245,596)	\$ 86,529	\$ 118,055	\$ 157,842	\$ 106,144	\$ 257,446	\$ 195,748	\$ 396,050	\$ 330,000
53 Net Surplus (Shortfall)	\$ -	\$ -	\$ (412,122)	\$ (1,245,596)	\$ 86,529	\$ 118,055	\$ 157,842	\$ 106,144	\$ 257,446	\$ 195,748	\$ 396,050	\$ 330,000
54												
55 Amount to be Financed	\$ -	\$ -	\$ 412,122	\$ 1,245,596	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
56 Underwriting Fees	3.50%	\$ -	\$ 14,424	\$ 43,596	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
57 Total Requirement	\$ -	\$ -	\$ 426,547	\$ 1,289,192	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
58												
59 Debt Issue -												
60 Beginning Balance	\$ -	\$ -	\$ -	\$ 458,538	\$ 1,878,810	\$ 1,933,191	\$ 1,960,125	\$ 1,949,292	\$ 1,989,345	\$ 1,881,099	\$ 1,826,434	\$ 1,567,367
61 Amount Borrowed	\$ -	\$ -	\$ 426,547	\$ 1,289,192	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
62 Amount Repaid	\$ -	\$ -	\$ -	\$ -	\$ 86,529	\$ 118,055	\$ 157,842	\$ 106,144	\$ 257,446	\$ 195,748	\$ 396,050	\$ (330,000)
63 Net Amount	\$ -	\$ -	\$ 426,547	\$ 1,289,192	\$ (86,529)	\$ (118,055)	\$ (157,842)	\$ (106,144)	\$ (257,446)	\$ (195,748)	\$ (396,050)	\$ (330,000)
64 Interest Expense	7.50%	\$ -	\$ 31,991	\$ 131,080	\$ 140,911	\$ 144,989	\$ 147,009	\$ 146,197	\$ 149,201	\$ 141,082	\$ 136,983	\$ 110,000
65 Ending Balance	\$ -	\$ -	\$ 458,538	\$ 1,878,810	\$ 1,933,191	\$ 1,960,125	\$ 1,949,292	\$ 1,989,345	\$ 1,881,099	\$ 1,826,434	\$ 1,567,367	\$ 1,340,000
66												
67 Funds for Debt Paydown or Transfer -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
68												

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Year 9 2006	Year 10 2007	Year 11 2008	Year 12 2009	Year 13 2010	Year 14 2011	Year 15 2012	Year 16 2013	Year 17 2014	Year 18 2015	Year 19 2016	Year 20 2017	PROJECT TOTAL	NPV @ 7.50%
0.050	\$ 0.050	\$ 0.050	\$ 0.050	\$ 0.050	\$ 0.050	\$ 0.050	\$ 0.050	\$ 0.050	\$ 0.050	\$ 0.050	\$ 0.050	\$ 0.050	\$ -
374,787	25,704,971	28,690,824	31,676,676	34,662,529	37,648,382	40,634,235	43,620,088	47,294,602	50,624,786	53,954,970	57,285,154	543,966,200	-
118,739	\$ 1,285,248	\$ 1,434,641	\$ 1,583,834	\$ 1,733,126	\$ 1,882,419	\$ 2,031,712	\$ 2,181,005	\$ 2,364,730	\$ 2,531,239	\$ 2,697,748	\$ 2,864,258	\$ 27,198,310	\$ 10,231,265

0.110	\$ 0.110	\$ 0.110	\$ 0.110	\$ 0.110	\$ 0.110	\$ 0.110	\$ 0.110	\$ 0.110	\$ 0.110	\$ 0.110	\$ 0.110	\$ 0.110	\$ -
-	-	-	-	-	-	-	-	-	-	-	-	3,840,000	-
-	-	-	-	-	-	-	-	-	-	-	-	\$ 422,400	\$ 352,766

0.050	\$ 0.050	\$ 0.050	\$ 0.050	\$ 0.050	\$ 0.050	\$ 0.050	\$ 0.050	\$ 0.050	\$ 0.050	\$ 0.050	\$ 0.050	\$ 0.050	\$ -
600,000	42,600,000	42,600,000	42,600,000	42,600,000	42,600,000	42,600,000	42,600,000	42,600,000	42,600,000	42,600,000	42,600,000	818,200,000	-
130,000	\$ 2,130,000	\$ 2,130,000	\$ 2,130,000	\$ 2,130,000	\$ 2,130,000	\$ 2,130,000	\$ 2,130,000	\$ 2,130,000	\$ 2,130,000	\$ 2,130,000	\$ 2,130,000	\$ 40,910,000	\$ 20,121,466

130,000	\$ 2,130,000	\$ 2,130,000	\$ 2,130,000	\$ 2,130,000	\$ 2,130,000	\$ 2,130,000	\$ 2,130,000	\$ 2,130,000	\$ 2,130,000	\$ 2,130,000	\$ 2,130,000	\$ 41,332,400	\$ 20,474,232
248,739	\$ 3,415,248	\$ 3,684,641	\$ 3,713,834	\$ 3,863,126	\$ 4,012,419	\$ 4,161,712	\$ 4,328,221	\$ 4,494,730	\$ 4,661,239	\$ 4,827,748	\$ 4,994,258	\$ 68,530,710	\$ 30,705,487

0.040	\$ 0.040	\$ 0.040	\$ 0.040	\$ 0.040	\$ 0.040	\$ 0.040	\$ 0.040	\$ 0.040	\$ 0.040	\$ 0.040	\$ 0.040	\$ 0.040	\$ -
974,787	68,304,971	71,290,824	74,276,676	77,262,529	80,248,382	83,234,235	86,220,088	89,894,602	93,224,786	96,554,970	99,885,154	1,368,006,200	-
598,991	\$ 2,732,199	\$ 2,851,633	\$ 2,971,067	\$ 3,090,501	\$ 3,209,935	\$ 3,329,369	\$ 3,462,577	\$ 3,595,784	\$ 3,728,991	\$ 3,862,199	\$ 3,995,406	\$ 64,640,248	\$ 24,410,463
218,000	\$ 218,000	\$ 218,000	\$ 218,000	\$ 218,000	\$ 218,000	\$ 218,000	\$ 218,000	\$ 218,000	\$ 218,000	\$ 218,000	\$ 218,000	\$ 4,142,000	\$ 2,019,608
816,991	\$ 2,950,199	\$ 3,068,633	\$ 3,188,067	\$ 3,308,501	\$ 3,427,935	\$ 3,547,369	\$ 3,680,577	\$ 3,813,784	\$ 3,946,991	\$ 4,080,199	\$ 4,213,406	\$ 58,782,248	\$ 26,430,071

236,000	\$ 69,000	\$ 159,000	\$ 159,000	\$ 159,000	\$ 159,000	\$ 159,000	\$ 159,000	\$ 159,000	\$ 159,000	\$ 159,000	\$ 159,000	\$ 5,021,000	\$ 3,081,136
236,000	\$ 68,000	\$ 158,000	\$ 158,000	\$ 158,000	\$ 158,000	\$ 158,000	\$ 158,000	\$ 158,000	\$ 158,000	\$ 158,000	\$ 158,000	\$ 5,334,000	\$ 3,381,886

052,991	\$ 3,019,199	\$ 3,228,633	\$ 3,348,067	\$ 3,467,501	\$ 3,586,935	\$ 3,706,369	\$ 3,839,577	\$ 3,972,784	\$ 4,105,991	\$ 4,239,199	\$ 4,372,406	\$ 64,116,248	\$ 29,792,057
186,748	\$ 396,050	\$ 335,908	\$ 365,767	\$ 395,625	\$ 425,484	\$ 455,342	\$ 488,644	\$ 521,946	\$ 555,248	\$ 588,550	\$ 621,852	\$ 4,414,462	\$ 913,440
(735,963)	\$ (339,904)	\$ (3,996)	\$ 261,771	\$ 757,397	\$ 1,182,880	\$ 1,638,223	\$ 2,126,967	\$ 2,648,813	\$ 3,204,061	\$ 3,792,610	\$ 4,414,462	-	-

Year 9 2006	Year 10 2007	Year 11 2008	Year 12 2009	Year 13 2010	Year 14 2011	Year 15 2012	Year 16 2013	Year 17 2014	Year 18 2015	Year 19 2016	Year 20 2017	PROJECT TOTAL	NPV @ 7.50%
-	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
-	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
-	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
-	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

-	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
-	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
-	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
-	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

195,748	\$ 396,050	\$ 335,908	\$ 365,767	\$ 395,625	\$ 425,484	\$ 455,342	\$ 488,644	\$ 521,946	\$ 555,248	\$ 588,550	\$ 621,852	\$ 4,414,462	\$ 913,440
195,748	\$ 396,050	\$ 335,908	\$ 365,767	\$ 395,625	\$ 425,484	\$ 455,342	\$ 488,644	\$ 521,946	\$ 555,248	\$ 588,550	\$ 621,852	\$ 4,414,462	\$ 913,440

-	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1,657,719	\$ 1,358,279
-	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 58,020	\$ 47,575
-	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1,715,739	\$ 1,406,854

881,099	\$ 1,826,434	\$ 1,567,367	\$ 1,349,011	\$ 1,084,420	\$ 770,126	\$ 402,402	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
-	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1,715,739	\$ 1,406,854
195,748	\$ 396,050	\$ 335,908	\$ 365,767	\$ 395,625	\$ 425,484	\$ 455,342	\$ 488,644	\$ 521,946	\$ 555,248	\$ 588,550	\$ 621,852	\$ 4,414,462	\$ 913,440
195,748	\$ (396,050)	\$ (335,908)	\$ (365,767)	\$ (395,625)	\$ (425,484)	\$ (455,342)	\$ (488,644)	\$ (521,946)	\$ (555,248)	\$ (588,550)	\$ (621,852)	\$ -	\$ -
141,082	\$ 136,983	\$ 117,553	\$ 101,176	\$ 81,332	\$ 57,759	\$ 30,180	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1,557,442	\$ 905,274
826,434	\$ 1,567,367	\$ 1,349,011	\$ 1,084,420	\$ 770,126	\$ 402,402	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

-	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 22,760	\$ 488,644	\$ 521,946	\$ 555,248	\$ 588,550	\$ 621,852	\$ 2,799,000	\$ 780,351
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Table 4.7. Industrial Park Water Demand.

Version Name: CERL1

	Baseline Amount	Year 1 1998	Year 2 1999	Year 3 2000	Year 4 2001	Year 5 2002	Year 6 2003	Year 7 2004	Year 8 2005	Year 9 2006
1 CUM. SQ. FT. OF EXISTING OCCUPIED SPACE										
2 Office/Administration	-	9,000	18,000	27,000	36,000	45,000	45,000	45,000	45,000	45,000
3 Industrial	-	18,000	36,000	54,000	72,000	90,000	90,000	90,000	90,000	90,000
4 Warehouse	-	63,000	126,000	189,000	252,000	315,000	315,000	315,000	315,000	315,000
5 Total Amount	-	90,000	180,000	270,000	360,000	450,000	450,000	450,000	450,000	450,000
7 CUMULATIVE SQ. FT. NEW CONSTRUCTION										
8 Office/Administration	-	-	-	49,005	98,010	147,015	196,020	264,627	333,234	401,841
9 Industrial	-	-	-	114,345	228,690	343,035	457,380	617,463	777,546	937,629
10 Warehouse	-	-	-	163,350	326,700	490,050	653,400	882,090	1,110,780	1,339,470
11 Total Amount	-	-	-	326,700	653,400	980,100	1,306,800	1,764,180	2,221,560	2,678,940
13 CUMULATIVE TOTAL OCCUPIED SPACE										
14 Office/Administration	-	9,000	18,000	76,005	134,010	192,015	241,020	309,627	378,234	446,841
15 Industrial	-	18,000	36,000	168,345	300,690	433,035	547,380	707,463	867,546	1,027,629
16 Warehouse	-	63,000	126,000	352,350	578,700	805,050	968,400	1,197,090	1,425,780	1,654,470
17 Total Amount	-	90,000	180,000	596,700	1,013,400	1,430,100	1,756,800	2,214,180	2,671,560	3,128,940
19 NUMBER OF EMPLOYEES										
	SqFt/Employee									
20 Office/Administration	250	36	72	304	536	768	964	1,239	1,513	1,787
21 Industrial	750	24	48	224	401	577	730	943	1,157	1,370
22 Warehouse	1,500	42	84	235	386	537	646	798	951	1,103
23 Total Amount	-	102	204	763	1,323	1,882	2,340	2,980	3,620	4,261
25 GALLONS DEMANDED PER DAY										
	Gals p/Capita									
26 Office/Administration	10.00	360	720	3,040	5,360	7,681	9,641	12,385	15,129	17,874
27 Industrial	35.00	840	1,680	7,856	14,032	20,208	25,544	33,015	40,485	47,956
28 Warehouse	25.00	1,050	2,100	5,873	9,645	13,418	16,140	19,952	23,763	27,575
29 Total Amount	-	2,250	4,500	16,769	29,038	41,306	51,325	65,352	79,378	93,404
31 GALLONS DEMANDED PER YEAR										
	Days p/Year									
32 Office/Administration (52 weeks x 5 days per week)	260.00	93,600	187,200	790,452	1,393,704	1,996,956	2,506,608	3,220,121	3,933,634	4,647,146
33 Industrial (52 weeks x 6 days per week)	312.00	262,080	524,160	2,451,103	4,378,046	6,304,990	7,969,853	10,300,661	12,631,470	14,962,278
34 Warehouse (52 weeks x 6 days per week)	312.00	327,600	655,200	1,832,220	3,009,240	4,186,260	5,035,680	6,224,868	7,414,056	8,603,244
35 Total Industrial Park Annual Water Demand	-	683,280	1,366,560	5,073,775	8,780,990	12,488,206	15,512,141	19,745,650	23,979,159	28,212,669

Year 9 2006	Year 10 2007	Year 11 2008	Year 12 2009	Year 13 2010	Year 14 2011	Year 15 2012	Year 16 2013	Year 17 2014	Year 18 2015	Year 19 2016	Year 20 2017	PROJECT TOTAL
45,000	45,000	39,600	34,200	28,800	23,400	18,000	18,000	18,000	18,000	18,000	18,000	-
90,000	90,000	79,200	68,400	57,600	46,800	36,000	36,000	36,000	36,000	36,000	36,000	-
315,000	315,000	277,200	239,400	201,600	163,800	126,000	126,000	126,000	126,000	126,000	126,000	-
450,000	450,000	396,000	342,000	288,000	234,000	180,000	180,000	180,000	180,000	180,000	180,000	-
401,841	470,448	539,055	607,662	676,269	744,876	813,483	882,090	950,697	1,019,304	1,087,911	1,156,518	-
937,629	1,097,712	1,257,795	1,417,878	1,577,961	1,738,044	1,898,127	2,058,210	2,218,293	2,378,376	2,538,459	2,698,542	-
1,339,470	1,568,160	1,796,850	2,025,540	2,254,230	2,482,920	2,711,610	2,940,300	3,168,990	3,397,680	3,626,370	3,855,060	-
2,678,940	3,136,320	3,593,700	4,051,080	4,508,460	4,965,840	5,423,220	5,880,600	6,337,980	6,795,360	7,252,740	7,710,120	-
446,841	515,448	578,655	641,862	705,069	768,276	831,483	900,090	968,697	1,037,304	1,105,911	1,174,518	-
1,027,629	1,187,712	1,336,995	1,486,278	1,635,561	1,784,844	1,934,127	2,094,210	2,254,293	2,414,376	2,574,459	2,734,542	-
1,654,470	1,883,160	2,074,050	2,264,940	2,455,830	2,646,720	2,837,610	3,066,300	3,294,990	3,523,680	3,752,370	3,981,060	-
3,128,940	3,586,320	3,989,700	4,393,080	4,796,460	5,199,840	5,603,220	6,060,600	6,517,980	6,975,360	7,432,740	7,890,120	-
1,787	2,062	2,315	2,567	2,820	3,073	3,326	3,600	3,875	4,149	4,424	4,698	-
1,370	1,584	1,783	1,982	2,181	2,380	2,579	2,792	3,006	3,219	3,433	3,646	-
1,103	1,255	1,383	1,510	1,637	1,764	1,892	2,044	2,197	2,349	2,502	2,654	-
4,261	4,901	5,480	6,059	6,638	7,217	7,797	8,437	9,077	9,718	10,358	10,998	-
17,874	20,618	23,146	25,674	28,203	30,731	33,259	36,004	38,748	41,492	44,236	46,981	441,283
47,956	55,427	62,393	69,360	76,326	83,293	90,259	97,730	105,200	112,671	120,141	127,612	1,192,029
27,575	31,386	34,568	37,749	40,931	44,112	47,294	51,105	54,917	58,728	62,540	66,351	649,193
93,404	107,430	120,107	132,783	145,459	158,136	170,812	184,838	198,865	212,891	226,917	240,944	2,282,504
4,647,146	5,360,659	6,018,012	6,675,365	7,332,718	7,990,070	8,647,423	9,360,936	10,074,449	10,787,962	11,501,474	12,214,987	114,733,476
14,962,278	17,293,087	19,466,647	21,640,208	23,813,768	25,987,329	28,160,889	30,491,698	32,822,506	35,153,315	37,484,123	39,814,932	371,913,142
8,603,244	9,792,432	10,785,060	11,777,688	12,770,316	13,762,944	14,755,572	15,944,760	17,133,948	18,323,136	19,512,324	20,701,512	202,548,060
28,212,669	32,446,178	36,269,719	40,093,260	43,916,802	47,740,343	51,563,884	55,797,394	60,030,903	64,264,412	68,497,921	72,731,431	689,194,678

Table 4.8. Water System Operations.

Version Name: CERL1

	Baseline	(6 Months)									
	Amount	Year 1 1998	Year 2 1999	Year 3 2000	Year 4 2001	Year 5 2002	Year 6 2003	Year 7 2004	Year 8 2005	Year 9 2006	Year 20
WATER SYSTEM REVENUE											
1 Treated Water --											
2 Industrial Park Fee Rate per 1,000 gallons	\$ 3.50	\$ 3.50	\$ 3.50	\$ 3.50	\$ 3.50	\$ 3.50	\$ 3.50	\$ 3.50	\$ 3.50	\$ 3.50	\$ 3.50
3 Industrial Park Utilization	-	341,640	1,366,560	5,073,775	8,780,990	12,488,206	15,512,141	19,745,650	23,979,159	28,212,669	32,446,1
4 Total Industrial Park Fees	-	\$ 1,196	\$ 4,783	\$ 17,758	\$ 30,733	\$ 43,709	\$ 54,292	\$ 69,110	\$ 83,927	\$ 98,744	\$ 113,5
5											
6 Army Fee Rate per 1,000 Gallons	\$ 3.50	\$ 3.50	\$ 3.50	\$ 3.50	\$ 3.50	\$ 3.50	\$ 3.50	\$ 3.50	\$ 3.50	\$ 3.50	\$ 3.50
7 Army Utilization	-	100,000,000	176,666,667	153,333,333	130,000,000	130,000,000	130,000,000	130,000,000	130,000,000	130,000,000	130,000,0
8 Total Army Water Fees	-	\$ 350,000	\$ 618,333	\$ 536,667	\$ 455,000	\$ 455,000	\$ 455,000	\$ 455,000	\$ 455,000	\$ 455,000	\$ 455,0
9											
10 Off-Site Fee Rate per 1,000 Gallons	\$ 3.50	-	-	-	\$ 3.50	\$ 3.50	\$ 3.50	\$ 3.50	\$ 3.50	\$ 3.50	\$ 3.50
11 Off-Site Water Utilization Rate	-	-	-	-	3,600,000	3,600,000	3,600,000	3,600,000	3,600,000	3,600,000	3,600,0
12 Total Off-Site Treated Water Fees	-	-	-	-	\$ 12,600	\$ 12,600	\$ 12,600	\$ 12,600	\$ 12,600	\$ 12,600	\$ 12,6
13											
14 Raw Water --											
15 Off-Site Fee Rate per 1,000 Gallons	\$ 0.625	\$ 0.625	\$ 0.625	\$ 0.625	\$ 0.625	\$ 0.625	\$ 0.625	\$ 0.625	\$ 0.625	\$ 0.625	\$ 0.625
16 Off-Site Water Utilization Rate	-	91,250,000	182,500,000	182,500,000	182,500,000	182,500,000	182,500,000	182,500,000	182,500,000	182,500,000	182,500,0
17 Total Off-Site Raw Water Fees	-	\$ 57,031	\$ 114,063	\$ 114,063	\$ 114,063	\$ 114,063	\$ 114,063	\$ 114,063	\$ 114,063	\$ 114,063	\$ 114,0
18											
19 Total Revenue from Water Operations	-	\$ 408,227	\$ 737,179	\$ 668,487	\$ 812,396	\$ 825,371	\$ 835,955	\$ 850,772	\$ 865,590	\$ 880,407	\$ 895,2
20											
21 WATER SYSTEM COSTS (100% Cash)											
22 Start-Up Costs	\$ -	\$ 275,000	\$ 275,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
23 Operating Costs	\$ -	\$ 75,000	\$ 150,000	\$ 150,000	\$ 150,000	\$ 150,000	\$ 150,000	\$ 150,000	\$ 150,000	\$ 150,000	\$ 150,0
24 Capital Costs	\$ -	\$ 217,350	\$ 264,500	\$ 311,650	\$ 272,550	\$ 232,300	\$ 411,700	\$ 271,400	\$ 407,100	\$ 164,450	\$ 374,5
25 Total Water System Costs	\$ -	\$ 567,350	\$ 689,500	\$ 461,650	\$ 422,550	\$ 382,300	\$ 661,700	\$ 421,400	\$ 557,100	\$ 314,450	\$ 524,9
26 Cash Increase (Decrease)	\$ -	\$ (159,123)	\$ 47,679	\$ 206,837	\$ 189,846	\$ 243,071	\$ 74,255	\$ 229,372	\$ 108,490	\$ 365,957	\$ 170,3
27 Cumulative Cash Increase (Decrease)	\$ -	\$ (159,123)	\$ (111,444)	\$ 95,393	\$ 285,239	\$ 528,310	\$ 602,565	\$ 831,938	\$ 940,427	\$ 1,306,384	\$ 1,476,7
28											
29											
30 WATER SYSTEM OPERATIONS											
31											
32 Potential Sources of Capital											
33											
34 Grant Funding --											
35 Federal	-	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
36 State	-	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
37 Local	-	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
38 Total Grant Funding	-	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
39 Other Sources --											
40 TIF Funds	-	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
41 Inter-Authority Transfers	-	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
42 Total Other Sources	-	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
43 Total Potential Sources of Capital	-	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
44											
45 Cash Increase (Decrease)	-	\$ (159,123)	\$ 47,679	\$ 206,837	\$ 189,846	\$ 243,071	\$ 74,255	\$ 229,372	\$ 108,490	\$ 365,957	\$ 170,3
46 Net Surplus (Shortfall)	-	\$ (159,123)	\$ 47,679	\$ 206,837	\$ 189,846	\$ 243,071	\$ 74,255	\$ 229,372	\$ 108,490	\$ 365,957	\$ 170,3
47											
48 Amount to be Financed	-	\$ 159,123	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
49 Underwriting Fees	3.50%	\$ 5,569	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
50 Total Requirement	-	\$ 164,692	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
51											
52 Debt Issue --											
53 Beginning Balance	-	\$ -	\$ 177,044	\$ 142,644	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
54 Amount Borrowed	-	\$ 164,692	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
55 Amount Repaid	-	\$ -	\$ 47,679	\$ 153,342	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
56 Net Amount	-	\$ 164,692	\$ (47,679)	\$ (153,342)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
57 Interest Expense	7.50%	\$ 12,352	\$ 13,278	\$ 10,698	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
58 Ending Balance	-	\$ 177,044	\$ 142,644	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
59											
60 Funds for Debt Paydown or Transfer --		\$ -	\$ -	\$ 63,496	\$ 189,846	\$ 243,071	\$ 74,255	\$ 229,372	\$ 108,490	\$ 365,957	\$ 170,3

77

Year 9 2006	Year 10 2007	Year 11 2008	Year 12 2009	Year 13 2010	Year 14 2011	Year 15 2012	Year 16 2013	Year 17 2014	Year 18 2015	Year 19 2016	Year 20 2017	PROJECT TOTAL	NPV @ 7.50%
3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	-	-
669	32,446,178	36,269,719	40,093,260	43,916,802	47,740,343	51,563,884	55,397,394	60,030,903	64,264,412	68,497,921	72,731,431	-	-
1,744	\$ 113,562	\$ 126,944	\$ 140,326	\$ 153,709	\$ 167,091	\$ 180,474	\$ 193,857	\$ 210,108	\$ 224,925	\$ 239,743	\$ 254,560	\$ 2,410,986	\$ 906,079
3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	-	-
000	130,000,000	130,000,000	130,000,000	130,000,000	130,000,000	130,000,000	130,000,000	130,000,000	130,000,000	130,000,000	130,000,000	-	-
000	\$ 455,000	\$ 455,000	\$ 455,000	\$ 455,000	\$ 455,000	\$ 455,000	\$ 455,000	\$ 455,000	\$ 455,000	\$ 455,000	\$ 455,000	\$ 9,240,000	\$ 4,747,896
3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	-	-
000	3,600,000	3,600,000	3,600,000	3,600,000	3,600,000	3,600,000	3,600,000	3,600,000	3,600,000	3,600,000	3,600,000	-	-
600	\$ 12,600	\$ 12,600	\$ 12,600	\$ 12,600	\$ 12,600	\$ 12,600	\$ 12,600	\$ 12,600	\$ 12,600	\$ 12,600	\$ 12,600	\$ 214,200	\$ 95,684
625	0.625	0.625	0.625	0.625	0.625	0.625	0.625	0.625	0.625	0.625	0.625	-	-
000	182,500,000	182,500,000	182,500,000	182,500,000	182,500,000	182,500,000	182,500,000	182,500,000	182,500,000	182,500,000	182,500,000	-	-
063	\$ 114,063	\$ 114,063	\$ 114,063	\$ 114,063	\$ 114,063	\$ 114,063	\$ 114,063	\$ 114,063	\$ 114,063	\$ 114,063	\$ 114,063	\$ 2,224,219	\$ 1,109,757
407	\$ 895,224	\$ 708,607	\$ 721,989	\$ 735,371	\$ 748,754	\$ 762,136	\$ 776,953	\$ 791,771	\$ 806,588	\$ 821,405	\$ 836,223	\$ 14,089,404	\$ 6,859,415
000	150,000	150,000	150,000	150,000	150,000	150,000	150,000	150,000	150,000	150,000	150,000	550,000	493,780
450	\$ 374,900	\$ 560,050	\$ 546,250	\$ 617,550	\$ 1,983,750	\$ 668,150	\$ 553,150	\$ 548,550	\$ 548,550	\$ 626,750	\$ 661,250	\$ 2,925,000	\$ 1,459,406
450	\$ 524,900	\$ 710,080	\$ 696,250	\$ 767,550	\$ 2,133,750	\$ 818,150	\$ 703,150	\$ 698,550	\$ 698,550	\$ 776,750	\$ 811,250	\$ 10,241,900	\$ 4,441,803
957	\$ 170,324	\$ (1,443)	\$ 25,739	\$ (32,179)	\$ (1,384,996)	\$ (56,014)	\$ 73,803	\$ 93,221	\$ 108,038	\$ 44,655	\$ 24,973	\$ 372,504	\$ 464,425
384	\$ 1,476,708	\$ 1,475,265	\$ 1,501,004	\$ 1,468,825	\$ 83,829	\$ 27,815	\$ 101,618	\$ 194,839	\$ 302,877	\$ 347,532	\$ 372,504	-	-

Year 9 2006	Year 10 2007	Year 11 2008	Year 12 2009	Year 13 2010	Year 14 2011	Year 15 2012	Year 16 2013	Year 17 2014	Year 18 2015	Year 19 2016	Year 20 2017	PROJECT TOTAL	NPV @ 7.50%
-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-
957	\$ 170,324	\$ (1,443)	\$ 25,739	\$ (32,179)	\$ (1,384,996)	\$ (56,014)	\$ 73,803	\$ 93,221	\$ 108,038	\$ 44,655	\$ 24,973	\$ 372,504	\$ 464,425
957	\$ 170,324	\$ (1,443)	\$ 25,739	\$ (32,179)	\$ (1,384,996)	\$ (56,014)	\$ 73,803	\$ 93,221	\$ 108,038	\$ 44,655	\$ 24,973	\$ 372,504	\$ 464,425
-	-	1,443	-	32,179	1,384,996	56,014	-	-	-	-	-	1,633,755	683,359
-	-	51	-	1,126	48,475	1,960	-	-	-	-	-	57,181	23,918
-	-	1,494	-	33,305	1,433,471	57,974	-	-	-	-	-	1,690,937	707,277
-	-	-	1,606	-	35,803	1,579,470	1,760,252	1,818,468	1,861,632	1,893,217	1,990,553	-	-
-	-	1,494	-	33,305	1,433,471	57,974	-	-	-	-	-	1,690,937	707,277
-	-	-	1,727	-	-	-	73,803	93,221	108,038	44,655	24,973	547,437	262,454
-	-	1,494	(1,727)	33,305	1,433,471	57,974	(73,803)	(93,221)	(108,038)	(44,655)	(24,973)	-	-
-	-	112	120	2,498	110,196	122,808	132,019	136,385	139,622	141,991	149,291	971,372	304,664
-	-	1,606	-	35,803	1,579,470	1,760,252	1,818,468	1,861,632	1,893,217	1,990,553	2,114,872	-	-
957	\$ 170,324	\$ -	\$ 24,012	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1,468,823	\$ 685,331

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Table 4.9. Sewer System Operations.

Version Name: CERL1

	Baseline	(6 Months)												Yr
	Amount	1998	Year 1 1999	Year 2 1999	Year 3 2000	Year 4 2001	Year 5 2002	Year 6 2003	Year 7 2004	Year 8 2005	Year 9 2006			
SEWER SYSTEM REVENUE														
1 Industrial Park Fee Rate per 1,000 gallons	\$ 5.00	\$ 5.00	\$ 5.00	\$ 5.00	\$ 5.00	\$ 5.00	\$ 5.00	\$ 5.00	\$ 5.00	\$ 5.00	\$ 5.00			
2 Industrial Park Utilization	-	341,840	1,366,560	5,073,775	8,780,990	12,488,206	15,512,141	19,745,650	23,979,159	28,212,669	32,447,178			
3 Total Industrial Park Sewer Fees	-	\$ 1,708	\$ 6,833	\$ 25,369	\$ 43,905	\$ 62,441	\$ 77,561	\$ 98,728	\$ 119,896	\$ 141,063	\$ 162,230			
4														
5 Army Fee Rate per 1,000 Gallons	\$ 5.00	\$ 5.00	\$ 5.00	\$ 5.00	\$ 5.00	\$ 5.00	\$ 5.00	\$ 5.00	\$ 5.00	\$ 5.00	\$ 5.00			
6 Army Utilization	-	11,500,000	20,333,333	17,666,667	15,000,000	15,000,000	15,000,000	15,000,000	15,000,000	15,000,000	15,000,000			
7 Total Army Sewer Fees	-	\$ 57,500	\$ 101,667	\$ 88,333	\$ 75,000	\$ 75,000	\$ 75,000	\$ 75,000	\$ 75,000	\$ 75,000	\$ 75,000			
8														
9 Total Revenue from Sewer Operations	-	\$ 69,208	\$ 108,499	\$ 113,702	\$ 118,905	\$ 137,441	\$ 152,561	\$ 173,728	\$ 194,896	\$ 216,063	\$ 237,230			
10														
SEWER SYSTEM COSTS (100% Cash)														
11 Start-Up Costs	-	\$ 275,000	\$ 275,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -			
12 Operating Costs	-	\$ 75,000	\$ 150,000	\$ 150,000	\$ 150,000	\$ 150,000	\$ 150,000	\$ 150,000	\$ 150,000	\$ 150,000	\$ 150,000			
13 Capital Costs	-	\$ 8,050	\$ 256,450	\$ 127,850	\$ 603,750	\$ 117,300	\$ 299,000	\$ 182,850	\$ 227,700	\$ 184,000	\$ 184,000			
14 Total Sewer System Costs	-	\$ 358,050	\$ 681,450	\$ 277,850	\$ 753,750	\$ 267,300	\$ 449,000	\$ 332,850	\$ 377,700	\$ 334,000	\$ 334,000			
15 Cash Increase (Decrease)	-	\$ (298,842)	\$ (572,951)	\$ (163,948)	\$ (634,845)	\$ (129,859)	\$ (296,439)	\$ (159,122)	\$ (182,804)	\$ (117,937)	\$ (117,937)			
16 Cumulative Cash Increase (Decrease)	-	\$ (298,842)	\$ (871,792)	\$ (1,035,740)	\$ (1,670,585)	\$ (1,800,444)	\$ (2,096,883)	\$ (2,256,005)	\$ (2,438,809)	\$ (2,556,746)	\$ (2,674,683)			
17														
18														
19														
COMBINED WATER & SEWER OPERATIONS														
20														
21 Water Cash Increase (Decrease)	-	\$ (159,123)	\$ 47,679	\$ 206,837	\$ 189,848	\$ 243,071	\$ 74,255	\$ 229,372	\$ 108,490	\$ 365,957	\$ 17,937			
22 Sewer Cash Increase (Decrease)	-	\$ (298,842)	\$ (572,951)	\$ (163,948)	\$ (634,845)	\$ (129,859)	\$ (296,439)	\$ (159,122)	\$ (182,804)	\$ (117,937)	\$ (117,937)			
23 Combined Total Increase (Decrease)	-	\$ (457,965)	\$ (525,272)	\$ (42,890)	\$ (444,999)	\$ 113,212	\$ (222,184)	\$ 70,251	\$ (74,315)	\$ 248,020	\$ 6,000			
24 Cumulative Combined Total Increase (Decrease)	-	\$ (457,965)	\$ (983,237)	\$ (940,347)	\$ (1,385,346)	\$ (1,272,134)	\$ (1,494,318)	\$ (1,424,068)	\$ (1,498,382)	\$ (1,250,362)	\$ (1,250,362)			
25														
26														
SEWER SYSTEM OPERATIONS														
27														
28														
Potential Sources of Capital														
29														
30														
31 Grant Funding -														
32 Federal	-	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -			
33 State	-	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -			
34 Local	-	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -			
35 Total Grant Funding	-	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -			
36 Other Sources -														
37 TIF Funds	-	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -			
38 Inter-Authority Transfers	-	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -			
39 Total Other Sources	-	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -			
40 Total Potential Sources of Capital	-	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -			
41														
42 Cash Increase (Decrease)	-	\$ (298,842)	\$ (572,951)	\$ (163,948)	\$ (634,845)	\$ (129,859)	\$ (296,439)	\$ (159,122)	\$ (182,804)	\$ (117,937)	\$ (117,937)			
43 Net Surplus (Shortfall)	-	\$ (298,842)	\$ (572,951)	\$ (163,948)	\$ (634,845)	\$ (129,859)	\$ (296,439)	\$ (159,122)	\$ (182,804)	\$ (117,937)	\$ (117,937)			
44														
45 Amount to be Financed	-	\$ 298,842	\$ 572,951	\$ 163,948	\$ 634,845	\$ 129,859	\$ 296,439	\$ 159,122	\$ 182,804	\$ 117,937	\$ 117,937			
46 Underwriting Fees	3.50%	\$ 10,459	\$ 20,053	\$ 5,738	\$ 22,220	\$ 4,545	\$ 10,375	\$ 5,569	\$ 6,398	\$ 4,128	\$ 4,128			
47 Total Requirement	-	\$ 309,301	\$ 593,004	\$ 169,686	\$ 657,065	\$ 134,404	\$ 306,815	\$ 164,691	\$ 189,202	\$ 122,064	\$ 122,064			
48														
49 Debt Issue -														
50 Beginning Balance	-	\$ -	\$ 332,499	\$ 994,915	\$ 1,251,946	\$ 2,052,187	\$ 2,350,585	\$ 2,856,705	\$ 3,248,001	\$ 3,694,993	\$ 4,103,337			
51 Amount Borrowed	-	\$ 309,301	\$ 593,004	\$ 169,686	\$ 657,065	\$ 134,404	\$ 306,815	\$ 164,691	\$ 189,202	\$ 122,064	\$ 122,064			
52 Amount Repaid	-	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -			
53 Net Amount	-	\$ 309,301	\$ 593,004	\$ 169,686	\$ 657,065	\$ 134,404	\$ 306,815	\$ 164,691	\$ 189,202	\$ 122,064	\$ 122,064			
54 Interest Expense	7.50%	\$ 23,198	\$ 69,413	\$ 87,345	\$ 143,178	\$ 183,994	\$ 199,305	\$ 226,805	\$ 257,790	\$ 286,279	\$ 315,311			
55 Ending Balance	-	\$ 332,499	\$ 994,915	\$ 1,251,946	\$ 2,052,187	\$ 2,350,585	\$ 2,856,705	\$ 3,248,001	\$ 3,694,993	\$ 4,103,337	\$ 4,564,683			
56														
57 Funds for Debt Paydown or Transfer -		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -			

1

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Year 9 2006	Year 10 2007	Year 11 2008	Year 12 2009	Year 13 2010	Year 14 2011	Year 15 2012	Year 16 2013	Year 17 2014	Year 18 2015	Year 19 2016	Year 20 2017	PROJECT TOTAL	NPV @ 7.50%
5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	-	-
2,669	32,448,178	36,269,719	40,093,260	43,916,802	47,740,343	51,563,884	55,797,394	60,030,903	64,264,412	68,497,921	72,731,431	-	-
1,063	162,231	181,349	200,466	219,584	238,702	257,819	276,937	300,155	321,322	342,490	363,657	3,444,265	\$1,294,399
5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	-	-
1,000	15,000,000	15,000,000	15,000,000	15,000,000	15,000,000	15,000,000	15,000,000	15,000,000	15,000,000	15,000,000	15,000,000	-	-
5,000	75,000	75,000	75,000	75,000	75,000	75,000	75,000	75,000	75,000	75,000	75,000	1,522,500	\$782,116
1,063	237,231	256,349	275,466	294,584	313,702	332,819	351,937	371,055	390,172	409,290	428,407	4,966,765	\$ 2,076,515
-	-	-	-	-	-	-	-	-	-	-	-	550,000	\$ 493,780
1,000	150,000	150,000	150,000	150,000	150,000	150,000	150,000	150,000	150,000	150,000	150,000	2,925,000	\$ 1,459,406
1,000	228,850	249,550	270,250	290,950	311,650	332,350	353,050	373,750	394,450	415,150	435,850	5,468,250	\$ 2,588,084
1,000	378,850	399,550	420,250	440,950	461,650	482,350	503,050	523,750	544,450	565,150	585,850	8,943,250	\$ 4,541,270
937	(141,619)	(143,201)	(109,134)	(94,616)	(126,098)	(822,281)	(57,063)	(17,495)	222	6,440	85,107	(3,976,485)	\$ (2,464,785)
745	(2,098,363)	(2,841,647)	(2,860,700)	(3,048,316)	(3,171,418)	(3,993,695)	(4,050,758)	(4,068,254)	(4,068,032)	(4,061,592)	(3,976,485)	-	-

957	\$ 170,324	\$ (1,443)	\$ 25,739	\$ (32,179)	\$ (1,384,996)	\$ (56,014)	\$ 73,803	\$ 93,221	\$ 108,038	\$ 44,655	\$ 24,973	\$ 372,504	\$ 464,425
937	\$ (141,619)	\$ (143,201)	\$ (109,134)	\$ (94,616)	\$ (126,098)	\$ (822,281)	\$ (57,063)	\$ (17,495)	\$ 222	\$ 6,440	\$ 85,107	\$ (3,976,485)	\$ (2,464,785)
020	\$ 28,705	\$ (144,645)	\$ (83,395)	\$ (126,795)	\$ (1,511,095)	\$ (878,294)	\$ 16,740	\$ 75,725	\$ 108,260	\$ 51,095	\$ 110,080	\$ (3,603,980)	\$ (2,000,330)
352	\$ (1,221,637)	\$ (1,366,302)	\$ (1,449,697)	\$ (1,576,491)	\$ (3,087,586)	\$ (3,965,800)	\$ (3,949,140)	\$ (3,673,415)	\$ (3,765,155)	\$ (3,714,060)	\$ (3,603,980)	-	-

Year 9 2006	Year 10 2007	Year 11 2008	Year 12 2009	Year 13 2010	Year 14 2011	Year 15 2012	Year 16 2013	Year 17 2014	Year 18 2015	Year 19 2016	Year 20 2017	PROJECT TOTAL	NPV @ 7.50%
-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-
37	\$ (141,619)	\$ (143,201)	\$ (109,134)	\$ (94,616)	\$ (126,098)	\$ (822,281)	\$ (57,063)	\$ (17,495)	\$ 222	\$ 6,440	\$ 85,107	\$ (3,976,485)	\$ (2,464,785)
37	\$ (141,619)	\$ (143,201)	\$ (109,134)	\$ (94,616)	\$ (126,098)	\$ (822,281)	\$ (57,063)	\$ (17,495)	\$ 222	\$ 6,440	\$ 85,107	\$ (3,976,485)	\$ (2,464,785)
37	\$ 141,619	\$ 143,201	\$ 109,134	\$ 94,616	\$ 126,098	\$ 822,281	\$ 57,063	\$ 17,495	\$ -	\$ -	\$ -	\$ 4,068,254	\$ 2,486,480
28	\$ 4,957	\$ 5,012	\$ 3,820	\$ 3,312	\$ 4,413	\$ 28,780	\$ 1,897	\$ 612	\$ -	\$ -	\$ -	\$ 142,389	\$ 87,027
64	\$ 146,576	\$ 148,213	\$ 112,953	\$ 97,928	\$ 130,512	\$ 851,060	\$ 89,060	\$ 18,108	\$ -	\$ -	\$ -	\$ 4,210,643	\$ 2,573,507
33	\$ 4,103,337	\$ 4,568,656	\$ 5,070,635	\$ 5,572,357	\$ 6,095,556	\$ 6,693,023	\$ 8,109,890	\$ 8,781,621	\$ 9,459,709	\$ 10,168,965	\$ 10,925,198	\$ -	\$ -
64	\$ 146,576	\$ 148,213	\$ 112,953	\$ 97,928	\$ 130,512	\$ 851,060	\$ 89,060	\$ 18,108	\$ -	\$ -	\$ -	\$ 4,210,643	\$ 2,573,507
-	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 222	\$ 6,440	\$ 85,107	\$ 91,789	\$ 21,725
34	\$ 146,576	\$ 148,213	\$ 112,953	\$ 97,928	\$ 130,512	\$ 851,060	\$ 89,060	\$ 18,108	\$ (222)	\$ (6,440)	\$ (85,107)	\$ -	\$ -
19	\$ 318,743	\$ 353,785	\$ 388,789	\$ 425,271	\$ 466,955	\$ 565,806	\$ 612,671	\$ 659,980	\$ 709,478	\$ 762,672	\$ 819,390	\$ 7,540,607	\$ 2,902,050
17	\$ 4,568,656	\$ 5,070,635	\$ 5,572,357	\$ 6,095,556	\$ 6,693,023	\$ 8,109,890	\$ 8,781,621	\$ 9,459,709	\$ 10,168,965	\$ 10,925,198	\$ 11,659,480	\$ -	\$ -
-	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

Table 4.10. Utility system NPVs based on LIDA recommended rates.

Utility System	20-Yr Utility NPV @ 7.5%
Electric	\$913,440
Water	\$464,425
Sewer	\$(2,464,755)
Total	\$(1,086,890)

Table 4.11. USACERL recommended utility rate ranges.

Utility System	LIDA Rate & CERL1 Model	Army Unburdened*	Burden ⁰	Army Fully Burdened Rate	USACERL Recommended Rate Range
Electric 12.47 KWH	0.05	0.0425	0.0263	0.0688	0.055 - .065
Electric 7.2 KWH	0.11	0.0641	0.0263	0.0904	0.055 - .065
Water/Kgal	3.5	1.4305	1.7544	3.899	3.5 - 4.0
Sewer/Kgal	5.0	5.674	1.7334	7.4074	5.5 - 6.0

Table 4.12. Projected NPV impact of modified USACERL utility rates.

Utility System	Rate	Total	20-Year NPV @ 7.5%
Electric	\$0.060	\$17,844,124	\$6,823,638
Water	\$3.50	\$373,504	\$464,425
Sewer	\$5.50	\$(3,479,808)	\$(2,257,104)
Total		\$14,736,820	\$5,030,960

* LEAD data from FY 1996.

⁰ LEAD data from FY 1997.

Table 4.13. Projected Property Tax Revenue.

Version Name: CERL1

Land Sales and New Improvements Only	Baseline Amount	Year 1 1998	Year 2 1999	Year 3 2000	Year 4 2001	Year 5 2002	Year 6 2003	Year 7 2004	Year 8 2005	Year 9 2006	Year 10 2007	Year 11 2008
Number of Acres Sold	-	-	25.00	25.00	25.00	25.00	35.00	35.00	35.00	35.00	35.00	35.00
Land Square Feet	-	-	1,089,000	1,089,000	1,089,000	1,089,000	1,524,600	1,524,600	1,524,600	1,524,600	1,524,600	1,524,600
Cumulative	-	-	1,089,000	2,178,000	3,267,000	4,356,000	5,880,600	7,405,200	8,929,800	10,454,400	11,979,000	13,503,600
FAR	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30
Improvements in Square Feet	-	-	326,700	653,400	980,100	1,306,800	1,764,180	2,221,560	2,678,940	3,136,320	3,593,700	4,051,080
Office/Administration	15.00%	-	-	49,005	98,010	147,015	196,020	264,627	333,234	401,841	470,448	539,055
Industrial	35.00%	-	-	114,345	228,690	343,035	457,380	617,463	777,546	937,629	1,097,712	1,257,795
Distribution	50.00%	-	-	163,350	326,700	490,050	653,400	882,090	1,110,780	1,339,470	1,568,160	1,796,850
Total Square Feet	-	-	-	326,700	653,400	980,100	1,306,800	1,764,180	2,221,560	2,678,940	3,136,320	3,593,700
Value of Improvements per Square Foot												
Office/Administration	\$ 140.00	\$ -	\$ -	\$ 6,860,700	\$ 13,721,400	\$ 20,582,100	\$ 27,442,800	\$ 37,047,780	\$ 46,652,760	\$ 56,257,740	\$ 65,862,720	\$ 75,467,700
Industrial	\$ 110.00	\$ -	\$ -	\$ 12,577,950	\$ 25,155,900	\$ 37,733,850	\$ 50,311,800	\$ 67,920,930	\$ 85,530,060	\$ 103,139,190	\$ 120,748,320	\$ 138,357,450
Distribution	\$ 50.00	\$ -	\$ -	\$ 9,167,500	\$ 18,335,000	\$ 27,502,500	\$ 36,670,000	\$ 49,564,500	\$ 62,459,000	\$ 75,353,500	\$ 88,248,000	\$ 101,142,500
Total Value of Improvements	\$ -	\$ -	\$ -	\$ 27,606,150	\$ 55,212,300	\$ 82,818,450	\$ 110,424,600	\$ 149,073,210	\$ 187,721,820	\$ 226,370,430	\$ 265,019,040	\$ 303,667,650
Total Value of Land	\$ -	\$ -	\$ -	\$ 625,000	\$ 1,250,000	\$ 1,875,000	\$ 2,500,000	\$ 3,375,000	\$ 4,250,000	\$ 5,125,000	\$ 6,000,000	\$ 6,875,000
Combined Total Value	\$ -	\$ -	\$ -	\$ 28,231,150	\$ 56,462,300	\$ 84,693,450	\$ 112,924,600	\$ 152,448,210	\$ 191,971,820	\$ 231,495,430	\$ 271,019,040	\$ 310,542,650
Assessed Value (% of Market Value)	7.40%	\$ -	\$ -	\$ 2,089,105	\$ 4,178,210	\$ 6,267,315	\$ 8,356,420	\$ 11,281,168	\$ 14,205,915	\$ 17,130,662	\$ 20,055,409	\$ 22,980,156
Property Tax Rate	14.50%	0.1450	0.1450	0.1450	0.1450	0.1450	0.1450	0.1450	0.1450	0.1450	0.1450	0.1450
Property Tax Revenue	\$ -	\$ -	\$ -	\$ 302,920	\$ 606,840	\$ 909,761	\$ 1,211,681	\$ 1,635,798	\$ 2,059,858	\$ 2,483,946	\$ 2,908,034	\$ 3,332,123
Cumulative Property Tax Revenue	\$ -	\$ -	\$ -	\$ 302,920	\$ 909,761	\$ 1,817,521	\$ 3,029,202	\$ 4,664,972	\$ 6,724,829	\$ 9,208,775	\$ 12,116,810	\$ 15,448,932

Table 4.14. Projected Sources and Uses of Cash.

Version Name: CERL1

- Includes Electric and Water/Sewer Utilities -

SOURCES OF CASH	Year 1 1998	Year 2 1999	Year 3 2000	Year 4 2001	Year 5 2002	Year 6 2003	Year 7 2004	Year 8 2005	Year 9 2006	Year 10 2007	Year 11 2008
1 Revenue Items -											
2 Net Revenue from Land Sales	\$ -	\$ 584,375	\$ 584,375	\$ 584,375	\$ 584,375	\$ 818,125	\$ 818,125	\$ 818,125	\$ 818,125	\$ 818,125	\$ 818,125
3 Net Annual Building Rent	\$ 140,220	\$ 324,720	\$ 509,220	\$ 693,720	\$ 878,220	\$ 922,500	\$ 922,500	\$ 922,500	\$ 922,500	\$ 922,500	\$ 922,500
4 Common Area Maintenance Charges	\$ 13,500	\$ 27,000	\$ 40,500	\$ 54,000	\$ 71,515	\$ 263,520	\$ 332,127	\$ 400,734	\$ 469,341	\$ 537,948	\$ 606,555
5 Electric Utility Operating Revenue	\$ -	\$ 2,968,589	\$ 2,416,218	\$ 2,482,647	\$ 2,630,277	\$ 2,749,212	\$ 2,915,721	\$ 3,082,230	\$ 3,248,739	\$ 3,415,249	\$ 3,581,758
6 Water/Sewer Operating Revenue	\$ 467,435	\$ 845,678	\$ 782,190	\$ 731,301	\$ 782,812	\$ 788,516	\$ 824,501	\$ 860,485	\$ 896,470	\$ 932,455	\$ 968,440
7 Total Projected Revenue	\$ 621,155	\$ 4,760,362	\$ 4,381,507	\$ 4,466,033	\$ 5,076,199	\$ 5,841,872	\$ 6,812,074	\$ 7,084,078	\$ 7,355,178	\$ 7,626,277	\$ 7,897,375
8											
9 Other Cash Inflow -											
10 Grants	\$ 4,450,500	\$ 4,450,500	\$ 4,450,500	\$ 4,450,500	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
11 TIF Funds	\$ -	\$ -	\$ 302,920	\$ 605,840	\$ 909,761	\$ 1,211,681	\$ 1,635,798	\$ 2,059,858	\$ 2,483,946	\$ 2,908,034	\$ 3,332,123
12 Inter-Authority Transfers	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
13 Debt Obligations (including accrued interest)	\$ 2,717,067	\$ 2,960,304	\$ 3,058,934	\$ 1,796,495	\$ 5,630,734	\$ 1,511,670	\$ 1,401,641	\$ 1,427,211	\$ 1,307,876	\$ 1,245,789	\$ 1,183,702
14 Total Other Cash Inflow	\$ 7,167,567	\$ 7,410,804	\$ 7,812,354	\$ 6,852,836	\$ 6,539,464	\$ 2,723,351	\$ 3,037,611	\$ 3,487,069	\$ 3,791,822	\$ 4,153,823	\$ 4,515,825
15											
16 Total Sources of Cash	\$ 7,788,722	\$ 12,161,166	\$ 12,193,861	\$ 11,468,869	\$ 11,609,663	\$ 8,265,224	\$ 8,850,384	\$ 9,571,143	\$ 10,146,997	\$ 10,780,100	\$ 11,413,200
17											
18 USES OF CASH											
19 Development/Operations -											
20 LIDA Development Cost	\$ 5,625,788	\$ 5,614,018	\$ 5,549,283	\$ 5,543,396	\$ 5,478,663	\$ 1,304,551	\$ 1,275,126	\$ 1,275,126	\$ 1,275,126	\$ 1,275,126	\$ 1,275,126
21 LIDA Operating Cost	\$ 962,500	\$ 1,265,000	\$ 1,347,500	\$ 1,347,500	\$ 1,347,500	\$ 1,127,500	\$ 1,127,500	\$ 1,127,500	\$ 1,127,500	\$ 1,127,500	\$ 1,127,500
22 LIDA Financing Cost	\$ 223,456	\$ 333,648	\$ 410,669	\$ 450,891	\$ 947,053	\$ 858,541	\$ 864,149	\$ 831,018	\$ 758,450	\$ 643,487	\$ 528,414
23 Total LIDA Cost	\$ 6,811,744	\$ 7,212,667	\$ 7,307,453	\$ 7,341,787	\$ 7,773,217	\$ 3,290,592	\$ 3,266,774	\$ 3,233,643	\$ 3,161,075	\$ 3,046,113	\$ 2,931,040
24											
25 Electric Utility -											
26 Electric Utility Operating Cost	\$ -	\$ 2,500,711	\$ 2,058,814	\$ 2,204,118	\$ 2,322,221	\$ 2,417,369	\$ 2,550,577	\$ 2,683,784	\$ 2,816,991	\$ 2,950,199	\$ 3,083,406
27 Electric Utility Capital Cost	\$ -	\$ 880,000	\$ 1,603,000	\$ 192,000	\$ 190,000	\$ 174,000	\$ 259,000	\$ 141,000	\$ 236,000	\$ 89,000	\$ -
28 Electric Utility Financing Cost	\$ -	\$ 46,415	\$ 174,676	\$ 140,911	\$ 144,989	\$ 147,009	\$ 146,197	\$ 149,201	\$ 141,062	\$ 136,983	\$ 132,864
29 Total Electric Utility Cost	\$ -	\$ 3,427,126	\$ 3,836,490	\$ 2,537,029	\$ 2,657,211	\$ 2,738,379	\$ 2,955,774	\$ 3,073,985	\$ 3,194,074	\$ 3,168,181	\$ 3,306,270
30											
31 Water/Sewer -											
32 Water/Sewer Operating Cost	\$ 150,000	\$ 300,000	\$ 300,000	\$ 300,000	\$ 300,000	\$ 300,000	\$ 300,000	\$ 300,000	\$ 300,000	\$ 300,000	\$ 300,000
33 Water/Sewer Capital Cost	\$ 775,400	\$ 1,070,950	\$ 439,300	\$ 878,600	\$ 349,600	\$ 710,700	\$ 454,250	\$ 634,800	\$ 348,450	\$ 603,750	\$ 856,500
34 Water/Sewer Financing Cost	\$ 51,578	\$ 102,744	\$ 103,782	\$ 165,395	\$ 168,539	\$ 209,680	\$ 232,174	\$ 264,188	\$ 290,407	\$ 323,700	\$ 356,912
35 Total Water/Sewer Cost	\$ 976,978	\$ 1,473,694	\$ 843,082	\$ 1,344,595	\$ 818,139	\$ 1,220,380	\$ 986,424	\$ 1,198,988	\$ 938,857	\$ 1,227,450	\$ 1,513,412
36											
37 Funds for Debt Paydown or Transfer											
38 Development/Operations	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 783,775	\$ 1,305,896	\$ 1,798,591	\$ 2,291,286	\$ 2,783,982	\$ 3,276,678
39 Electric Utility	\$ -	\$ -	\$ -	\$ 86,529	\$ 118,055	\$ 157,842	\$ 106,144	\$ 257,446	\$ 195,748	\$ 396,050	\$ 396,050
40 Water/Sewer Utility	\$ -	\$ 47,679	\$ 206,837	\$ 189,846	\$ 243,071	\$ 74,255	\$ 229,372	\$ 108,490	\$ 365,957	\$ 170,324	\$ -
41 Total Surplus Funds	\$ -	\$ 47,679	\$ 206,837	\$ 276,375	\$ 361,127	\$ 1,615,873	\$ 1,641,612	\$ 2,164,527	\$ 2,852,991	\$ 3,350,358	\$ 3,866,128
42											
43 Total Uses of Cash	\$ 7,788,722	\$ 12,161,166	\$ 12,193,861	\$ 11,468,869	\$ 11,609,663	\$ 8,265,224	\$ 8,850,384	\$ 9,571,143	\$ 10,146,997	\$ 10,780,100	\$ 11,413,200

	Year 10 2007	Year 11 2008	Year 12 2009	Year 13 2010	Year 14 2011	Year 15 2012	Year 16 2013	Year 17 2014	Year 18 2015	Year 19 2016	Year 20 2017	PROJECT TOTAL	NPV @ 7.50%
35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00	825.00	-
1,524,600	1,524,600	1,524,600	1,524,600	1,524,600	1,524,600	1,524,600	1,524,600	1,524,600	1,524,600	1,524,600	1,524,600	27,225,000	-
11,979,000	13,503,600	15,028,200	16,552,800	18,077,400	19,602,000	21,126,600	22,651,200	24,175,800	25,700,400	27,225,000	27,225,000	-	-
0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	-
3,593,700	4,051,080	4,508,460	4,965,840	5,423,220	5,880,600	6,337,980	6,795,360	7,252,740	7,710,120	8,167,500	8,167,500	-	-
470,448	539,055	607,662	676,269	744,876	813,483	882,090	950,697	1,019,304	1,087,911	1,156,518	1,156,518	-	-
1,097,712	1,257,795	1,417,878	1,577,961	1,738,044	1,898,127	2,058,210	2,218,293	2,378,376	2,538,459	2,698,542	2,698,542	-	-
1,568,160	1,796,850	2,025,540	2,254,230	2,482,920	2,711,610	2,940,300	3,168,990	3,397,680	3,626,370	3,855,060	3,855,060	-	-
3,136,320	3,593,700	4,051,080	4,508,460	4,965,840	5,423,220	5,880,600	6,337,980	6,795,360	7,252,740	7,710,120	7,710,120	-	-
\$ 65,862,720	\$ 75,467,700	\$ 85,072,680	\$ 94,677,660	\$ 104,282,640	\$ 113,887,620	\$ 123,492,600	\$ 133,097,580	\$ 142,702,560	\$ 152,307,540	\$ 161,912,520	\$ 161,912,520	\$ -	\$ -
\$ 120,748,320	\$ 138,357,450	\$ 155,966,580	\$ 173,575,710	\$ 191,184,840	\$ 208,793,970	\$ 226,403,100	\$ 244,012,230	\$ 261,621,360	\$ 279,230,490	\$ 296,839,620	\$ 296,839,620	\$ -	\$ -
\$ 78,408,000	\$ 89,842,500	\$ 101,277,000	\$ 112,711,500	\$ 124,146,000	\$ 135,580,500	\$ 147,015,000	\$ 158,449,500	\$ 169,884,000	\$ 181,318,500	\$ 192,753,000	\$ 192,753,000	\$ -	\$ -
\$ 265,019,040	\$ 303,667,650	\$ 342,316,260	\$ 380,964,870	\$ 419,613,480	\$ 458,262,090	\$ 496,910,700	\$ 535,559,310	\$ 574,207,920	\$ 612,856,530	\$ 651,505,140	\$ 651,505,140	\$ -	\$ -
\$ 6,000,000	\$ 6,875,000	\$ 7,750,000	\$ 8,625,000	\$ 9,500,000	\$ 10,375,000	\$ 11,250,000	\$ 12,125,000	\$ 13,000,000	\$ 13,875,000	\$ 14,750,000	\$ 14,750,000	\$ -	\$ -
\$ 271,019,040	\$ 310,542,650	\$ 350,066,260	\$ 389,589,870	\$ 429,113,480	\$ 468,637,090	\$ 508,160,700	\$ 547,684,310	\$ 587,207,920	\$ 626,731,530	\$ 666,255,140	\$ 666,255,140	\$ -	\$ -
\$ 20,055,409	\$ 22,980,156	\$ 25,904,903	\$ 28,829,650	\$ 31,754,398	\$ 34,679,145	\$ 37,603,892	\$ 40,528,639	\$ 43,453,386	\$ 46,378,133	\$ 49,302,880	\$ 49,302,880	\$ -	\$ -
0.1450	0.1450	0.1450	0.1450	0.1450	0.1450	0.1450	0.1450	0.1450	0.1450	0.1450	0.1450	-	-
\$ 2,908,034	\$ 3,332,123	\$ 3,756,211	\$ 4,180,299	\$ 4,604,388	\$ 5,028,476	\$ 5,452,564	\$ 5,876,653	\$ 6,300,741	\$ 6,724,829	\$ 7,148,918	\$ 7,148,918	\$ 64,522,011	\$ 823,580,917
\$ 12,116,810	\$ 15,448,932	\$ 18,781,054	\$ 22,113,176	\$ 25,445,298	\$ 28,777,420	\$ 32,109,542	\$ 35,441,664	\$ 38,773,786	\$ 42,105,908	\$ 45,438,030	\$ 45,438,030	\$ 64,522,011	\$ 823,580,917

	Year 9 2006	Year 10 2007	Year 11 2008	Year 12 2009	Year 13 2010	Year 14 2011	Year 15 2012	Year 16 2013	Year 17 2014	Year 18 2015	Year 19 2016	Year 20 2017	PROJECT TOTAL	NPV @ 7.50%
318,125	\$ 818,125	\$ 818,125	\$ 818,125	\$ 818,125	\$ 818,125	\$ 818,125	\$ 818,125	\$ 818,125	\$ 818,125	\$ 818,125	\$ 818,125	\$ 818,125	\$ 14,806,375	\$ 6,851,038
722,500	\$ 922,500	\$ 794,088	\$ 663,388	\$ 572,688	\$ 481,988	\$ 351,288	\$ 369,000	\$ 369,000	\$ 369,000	\$ 369,000	\$ 369,000	\$ 369,000	\$ 11,887,040	\$ 6,212,435
469,341	\$ 537,948	\$ 598,455	\$ 658,962	\$ 719,469	\$ 779,976	\$ 840,483	\$ 900,990	\$ 977,897	\$ 1,048,304	\$ 1,114,911	\$ 1,183,518	\$ 1,252,125	\$ 11,328,065	\$ 4,285,014
248,739	\$ 3,415,249	\$ 3,564,541	\$ 3,713,834	\$ 3,863,126	\$ 4,012,419	\$ 4,161,712	\$ 4,328,221	\$ 4,494,730	\$ 4,661,239	\$ 4,827,748	\$ 4,994,257	\$ 5,160,766	\$ 68,530,710	\$ 30,705,467
796,470	\$ 932,455	\$ 964,955	\$ 997,455	\$ 1,029,955	\$ 1,062,455	\$ 1,094,955	\$ 1,130,940	\$ 1,166,925	\$ 1,202,910	\$ 1,238,895	\$ 1,274,880	\$ 1,310,865	\$ 19,056,170	\$ 8,635,830
186,178	\$ 6,626,277	\$ 6,740,164	\$ 6,871,764	\$ 7,003,364	\$ 7,134,964	\$ 7,266,564	\$ 7,398,164	\$ 7,529,764	\$ 7,661,364	\$ 7,792,964	\$ 7,924,564	\$ 8,056,164	\$ 125,392,380	\$ 56,889,914
-	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 17,902,000	\$ 14,806,177
483,946	\$ 2,908,034	\$ 3,332,123	\$ 3,756,211	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 19,206,143	\$ 10,044,092
107,876	\$ 1,245,789	\$ 1,104,087	\$ 875,202	\$ 812,926	\$ 2,407,537	\$ 1,907,968	\$ 870,920	\$ 842,274	\$ 849,101	\$ 904,864	\$ 968,681	\$ 1,032,498	\$ 34,801,080	\$ 20,640,840
791,822	\$ 4,153,823	\$ 4,438,210	\$ 4,631,413	\$ 812,926	\$ 2,407,537	\$ 1,907,968	\$ 870,920	\$ 842,274	\$ 849,101	\$ 904,864	\$ 968,681	\$ 1,032,498	\$ 71,808,223	\$ 45,591,209
146,997	\$ 10,780,100	\$ 11,176,374	\$ 11,503,177	\$ 7,816,289	\$ 9,542,500	\$ 9,174,531	\$ 8,426,296	\$ 8,668,751	\$ 8,946,679	\$ 9,273,343	\$ 9,600,462	\$ 9,927,581	\$ 197,000,583	\$ 102,581,123
375,126	\$ 1,275,126	\$ 1,122,116	\$ 1,122,116	\$ 1,122,116	\$ 1,092,691	\$ 1,092,691	\$ 376,640	\$ 376,640	\$ 376,640	\$ 376,640	\$ 376,640	\$ 376,640	\$ 41,851,132	\$ 28,835,096
27,500	\$ 1,127,500	\$ 1,127,500	\$ 1,127,500	\$ 1,127,500	\$ 1,127,500	\$ 1,127,500	\$ 1,127,500	\$ 1,127,500	\$ 1,127,500	\$ 1,127,500	\$ 1,127,500	\$ 1,127,500	\$ 23,182,500	\$ 11,864,854
58,450	\$ 643,487	\$ 482,950	\$ 272,183	\$ 33,259	\$ 48,542	\$ 69,844	\$ 67,170	\$ 27,802	\$ -	\$ -	\$ -	\$ -	\$ 7,323,111	\$ 4,481,129
61,076	\$ 3,046,113	\$ 2,732,646	\$ 2,521,799	\$ 2,282,974	\$ 2,268,733	\$ 2,290,034	\$ 1,571,310	\$ 1,631,842	\$ 1,604,140	\$ 1,604,140	\$ 1,604,140	\$ 1,604,140	\$ 72,156,743	\$ 45,281,079
116,991	\$ 2,950,199	\$ 3,069,633	\$ 3,189,067	\$ 3,308,501	\$ 3,427,935	\$ 3,547,369	\$ 3,666,803	\$ 3,813,784	\$ 3,946,991	\$ 4,080,199	\$ 4,213,406	\$ 4,346,613	\$ 54,782,248	\$ 26,430,671
38,000	\$ 69,000	\$ 159,000	\$ 159,000	\$ 159,000	\$ 159,000	\$ 159,000	\$ 159,000	\$ 159,000	\$ 159,000	\$ 159,000	\$ 159,000	\$ 159,000	\$ 5,334,000	\$ 3,361,886
41,082	\$ 136,983	\$ 117,553	\$ 101,176	\$ 81,332	\$ 57,759	\$ 30,180	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1,815,462	\$ 852,848
194,074	\$ 3,156,181	\$ 3,346,185	\$ 3,448,243	\$ 3,548,333	\$ 3,644,086	\$ 3,736,550	\$ 3,839,577	\$ 3,972,784	\$ 4,105,991	\$ 4,239,199	\$ 4,372,406	\$ 4,505,613	\$ 65,731,711	\$ 30,744,905
300,000	\$ 300,000	\$ 300,000	\$ 300,000	\$ 300,000	\$ 300,000	\$ 300,000	\$ 300,000	\$ 300,000	\$ 300,000	\$ 300,000	\$ 300,000	\$ 300,000	\$ 8,860,000	\$ 2,918,813
48,450	\$ 603,750	\$ 809,800	\$ 780,850	\$ 856,750	\$ 2,273,550	\$ 1,673,250	\$ 814,200	\$ 791,200	\$ 794,650	\$ 887,800	\$ 864,800	\$ 864,800	\$ 16,810,150	\$ 8,017,448
90,407	\$ 323,700	\$ 358,840	\$ 392,709	\$ 432,207	\$ 630,039	\$ 719,355	\$ 746,687	\$ 796,977	\$ 849,101	\$ 904,864	\$ 968,681	\$ 1,032,498	\$ 8,711,549	\$ 3,317,658
338,857	\$ 1,227,460	\$ 1,468,640	\$ 1,473,569	\$ 1,688,957	\$ 3,203,689	\$ 2,892,805	\$ 1,880,887	\$ 1,888,177	\$ 1,843,751	\$ 2,092,464	\$ 2,133,481	\$ 31,371,689	\$ 14,253,918	\$ 14,253,918
91,286	\$ 2,783,982	\$ 3,293,175	\$ 3,667,070	\$ -	\$ -	\$ -	\$ 592,075	\$ 660,682	\$ 729,289	\$ 797,896	\$ 866,503	\$ 935,110	\$ 19,570,221	\$ 8,858,991
95,748	\$ 396,050	\$ 335,906	\$ 365,767	\$ 395,625	\$ 425,484	\$ 455,342	\$ 488,644	\$ 521,946	\$ 555,248	\$ 588,550	\$ 621,852	\$ 655,154	\$ 6,072,181	\$ 2,272,719
65,957	\$ 170,324	\$ -	\$ 25,739	\$ -	\$ -	\$ -	\$ 73,803	\$ 93,221	\$ 108,260	\$ 123,299	\$ 138,338	\$ 153,377	\$ 2,098,029	\$ 1,189,510
152,991	\$ 3,350,356	\$ 3,629,063	\$ 4,068,576	\$ 396,625	\$ 425,484	\$ 455,342	\$ 1,164,523	\$ 1,275,849	\$ 1,392,797	\$ 1,437,941	\$ 1,688,434	\$ 27,740,431	\$ 12,301,220	\$ 12,301,220
146,997	\$ 10,780,100	\$ 11,176,374	\$ 11,503,177	\$ 7,816,289	\$ 9,542,500	\$ 9,174,531	\$ 8,426,296	\$ 8,668,751	\$ 8,946,679	\$ 9,273,343	\$ 9,600,462	\$ 9,927,581	\$ 197,000,583	\$ 102,581,123

Table 4.15. Projected Revenue and Cost Summary.

Version Name: CERL1

-- Includes Electric and Water/Sewer Utilities --

	Year 1 1998	Year 2 1999	Year 3 2000	Year 4 2001	Year 5 2002	Year 6 2003	Year 7 2004	Year 8 2005	Year 9 2006	Year 10 2007
Revenue Items										
1 Net Revenue from Land Sales	\$ -	\$ 584,375	\$ 584,375	\$ 584,375	\$ 584,375	\$ 818,125	\$ 818,125	\$ 818,125	\$ 818,125	\$ 818,125
2 Net Annual Building Rent	\$ 140,220	\$ 324,720	\$ 509,220	\$ 693,720	\$ 878,220	\$ 922,500	\$ 922,500	\$ 922,500	\$ 922,500	\$ 922,500
3 Common Area Maintenance Charges	\$ 13,500	\$ 27,000	\$ 89,505	\$ 152,010	\$ 214,515	\$ 263,520	\$ 332,127	\$ 400,734	\$ 469,341	\$ 537,948
4 Electric Utility Operating Revenue	\$ -	\$ 2,968,589	\$ 2,416,218	\$ 2,482,847	\$ 2,630,277	\$ 2,749,212	\$ 2,915,721	\$ 3,082,230	\$ 3,248,739	\$ 3,415,249
5 Water/Sewer Operating Revenue	\$ 467,435	\$ 845,678	\$ 782,190	\$ 731,301	\$ 762,812	\$ 788,516	\$ 824,501	\$ 860,485	\$ 896,470	\$ 932,455
6 Total Projected Revenue	\$ 621,155	\$ 4,780,362	\$ 4,381,507	\$ 4,644,053	\$ 5,070,199	\$ 5,541,872	\$ 6,112,974	\$ 6,084,075	\$ 6,355,176	\$ 6,626,277
Cost Items (100% Cash)										
Development/Operations --										
10 LIDA Development Cost	\$ 5,625,788	\$ 5,614,018	\$ 5,549,283	\$ 5,543,398	\$ 5,478,663	\$ 1,304,551	\$ 1,275,126	\$ 1,275,126	\$ 1,275,126	\$ 1,275,126
11 LIDA Operating Cost	\$ 962,500	\$ 1,265,000	\$ 1,347,500	\$ 1,347,500	\$ 1,347,500	\$ 1,127,500	\$ 1,127,500	\$ 1,127,500	\$ 1,127,500	\$ 1,127,500
12 Total LIDA Cost	\$ 6,588,288	\$ 6,879,018	\$ 6,896,783	\$ 6,890,898	\$ 6,826,163	\$ 2,432,051	\$ 2,402,626	\$ 2,402,626	\$ 2,402,626	\$ 2,402,626
Electric Utility --										
15 Electric Utility Operating Cost	\$ -	\$ 2,500,711	\$ 2,058,814	\$ 2,204,118	\$ 2,322,221	\$ 2,417,369	\$ 2,550,577	\$ 2,683,784	\$ 2,816,991	\$ 2,950,199
16 Electric Utility Capital Cost	\$ -	\$ 880,000	\$ 1,603,000	\$ 192,000	\$ 190,000	\$ 259,000	\$ 259,000	\$ 141,000	\$ 236,000	\$ 69,000
17 Total Electric Utility Cost	\$ -	\$ 3,380,711	\$ 3,661,814	\$ 2,396,118	\$ 2,512,221	\$ 2,691,369	\$ 2,809,577	\$ 2,824,784	\$ 3,052,991	\$ 3,019,199
Water/Sewer --										
20 Water/Sewer Operating Cost	\$ 150,000	\$ 300,000	\$ 300,000	\$ 300,000	\$ 300,000	\$ 300,000	\$ 300,000	\$ 300,000	\$ 300,000	\$ 300,000
21 Water/Sewer Capital Cost	\$ 775,400	\$ 1,070,950	\$ 439,300	\$ 878,300	\$ 349,600	\$ 710,700	\$ 454,250	\$ 634,800	\$ 348,450	\$ 603,750
22 Total Water/Sewer Cost	\$ 925,400	\$ 1,370,950	\$ 739,300	\$ 1,178,300	\$ 649,600	\$ 1,010,700	\$ 784,250	\$ 934,800	\$ 648,450	\$ 903,750
23										
24 Total Projected Costs	\$ 7,513,688	\$ 11,630,679	\$ 11,297,898	\$ 10,463,316	\$ 9,967,985	\$ 6,034,120	\$ 5,966,482	\$ 6,162,210	\$ 6,104,067	\$ 6,325,874
25 Cash Increase (Decrease)	\$ (6,892,533)	\$ (6,849,317)	\$ (6,916,390)	\$ (5,819,263)	\$ (4,897,786)	\$ (492,247)	\$ (183,479)	\$ (78,135)	\$ 251,109	\$ 300,702
26 Cumulative Cash Increase (Decrease)	\$ (6,892,533)	\$ (13,772,850)	\$ (20,689,241)	\$ (26,508,504)	\$ (31,426,289)	\$ (31,918,537)	\$ (32,072,015)	\$ (32,180,151)	\$ (31,899,042)	\$ (31,598,340)

Table 4.16. Projected Revenue and Cost Summary.

Version Name: CERL1

-- Includes No Utilities --

	Year 1 1998	Year 2 1999	Year 3 2000	Year 4 2001	Year 5 2002	Year 6 2003	Year 7 2004	Year 8 2005	Year 9 2006	Year 10 2007
Revenue Items										
1 Net Revenue from Land Sales	\$ -	\$ 584,375	\$ 584,375	\$ 584,375	\$ 584,375	\$ 818,125	\$ 818,125	\$ 818,125	\$ 818,125	\$ 818,125
2 Net Annual Building Rent	\$ 140,220	\$ 324,720	\$ 509,220	\$ 693,720	\$ 878,220	\$ 922,500	\$ 922,500	\$ 922,500	\$ 922,500	\$ 922,500
3 Common Area Maintenance Charges	\$ 13,500	\$ 27,000	\$ 89,505	\$ 152,010	\$ 214,515	\$ 263,520	\$ 332,127	\$ 400,734	\$ 469,341	\$ 537,948
4 Total Projected Revenue	\$ 163,720	\$ 936,095	\$ 1,183,100	\$ 1,430,105	\$ 1,677,110	\$ 2,004,145	\$ 2,072,752	\$ 2,141,359	\$ 2,209,966	\$ 2,278,573
Cost Items (100% Cash)										
Development/Operations --										
8 LIDA Development Cost	\$ 5,625,788	\$ 5,614,018	\$ 5,549,283	\$ 5,543,398	\$ 5,478,663	\$ 1,304,551	\$ 1,275,126	\$ 1,275,126	\$ 1,275,126	\$ 1,275,126
9 LIDA Operating Cost	\$ 962,500	\$ 1,265,000	\$ 1,347,500	\$ 1,347,500	\$ 1,347,500	\$ 1,127,500	\$ 1,127,500	\$ 1,127,500	\$ 1,127,500	\$ 1,127,500
10 Total LIDA Cost	\$ 6,588,288	\$ 6,879,018	\$ 6,896,783	\$ 6,890,898	\$ 6,826,163	\$ 2,432,051	\$ 2,402,626	\$ 2,402,626	\$ 2,402,626	\$ 2,402,626
11										
12 Total Projected Costs	\$ 6,588,288	\$ 6,879,018	\$ 6,896,783	\$ 6,890,898	\$ 6,826,163	\$ 2,432,051	\$ 2,402,626	\$ 2,402,626	\$ 2,402,626	\$ 2,402,626
13 Cash Increase (Decrease)	\$ (6,424,568)	\$ (5,942,923)	\$ (5,713,683)	\$ (5,460,793)	\$ (5,149,053)	\$ (427,906)	\$ (329,874)	\$ (261,267)	\$ (182,660)	\$ (124,053)
14 Cumulative Cash Increase (Decrease)	\$ (6,424,568)	\$ (12,377,492)	\$ (18,091,175)	\$ (23,551,968)	\$ (28,701,022)	\$ (29,128,927)	\$ (29,458,801)	\$ (29,720,067)	\$ (29,912,727)	\$ (30,036,779)

Table 4.17. Projected Revenue and Cost Summary.

Version Name: CERL1

-- Includes Water/Sewer Utilities Only --

	Year 1 1998	Year 2 1999	Year 3 2000	Year 4 2001	Year 5 2002	Year 6 2003	Year 7 2004	Year 8 2005	Year 9 2006	Year 10 2007
Revenue Items										
2 Net Revenue from Land Sales	\$ -	\$ 584,375	\$ 584,375	\$ 584,375	\$ 584,375	\$ 818,125	\$ 818,125	\$ 818,125	\$ 818,125	\$ 818,125
3 Net Annual Building Rent	\$ 140,220	\$ 324,720	\$ 509,220	\$ 693,720	\$ 878,220	\$ 922,500	\$ 922,500	\$ 922,500	\$ 922,500	\$ 922,500
4 Common Area Maintenance Charges	\$ 13,500	\$ 27,000	\$ 89,505	\$ 152,010	\$ 214,515	\$ 263,520	\$ 332,127	\$ 400,734	\$ 469,341	\$ 537,948
5 Water/Sewer Operating Revenue	\$ 467,435	\$ 845,678	\$ 782,190	\$ 731,301	\$ 762,812	\$ 788,516	\$ 824,501	\$ 860,485	\$ 896,470	\$ 932,455
6 Total Projected Revenue	\$ 621,155	\$ 1,781,773	\$ 1,965,290	\$ 2,161,406	\$ 2,439,922	\$ 2,792,561	\$ 2,897,253	\$ 3,001,844	\$ 3,106,436	\$ 3,211,028
Cost Items (100% Cash)										
Development/Operations --										
10 LIDA Development Cost	\$ 5,625,788	\$ 5,614,018	\$ 5,549,283	\$ 5,543,398	\$ 5,478,663	\$ 1,304,551	\$ 1,275,126	\$ 1,275,126	\$ 1,275,126	\$ 1,275,126
11 LIDA Operating Cost	\$ 962,500	\$ 1,265,000	\$ 1,347,500	\$ 1,347,500	\$ 1,347,500	\$ 1,127,500	\$ 1,127,500	\$ 1,127,500	\$ 1,127,500	\$ 1,127,500
12 Total LIDA Cost	\$ 6,588,288	\$ 6,879,018	\$ 6,896,783	\$ 6,890,898	\$ 6,826,163	\$ 2,432,051	\$ 2,402,626	\$ 2,402,626	\$ 2,402,626	\$ 2,402,626
Water/Sewer --										
15 Water/Sewer Operating Cost	\$ 150,000	\$ 300,000	\$ 300,000	\$ 300,000	\$ 300,000	\$ 300,000	\$ 300,000	\$ 300,000	\$ 300,000	\$ 300,000
16 Water/Sewer Capital Cost	\$ 775,400	\$ 1,070,950	\$ 439,300	\$ 878,300	\$ 349,600	\$ 710,700	\$ 454,250	\$ 634,800	\$ 348,450	\$ 603,750
17 Total Water/Sewer Cost	\$ 925,400	\$ 1,370,950	\$ 739,300	\$ 1,178,300	\$ 649,600	\$ 1,010,700	\$ 784,250	\$ 934,800	\$ 648,450	\$ 903,750
18										
19 Total Projected Costs	\$ 7,513,688	\$ 8,249,968	\$ 7,636,083	\$ 8,067,198	\$ 7,475,763	\$ 3,442,751	\$ 3,156,876	\$ 3,337,426	\$ 3,051,076	\$ 3,306,376
20 Cash Increase (Decrease)	\$ (6,892,533)	\$ (6,468,195)	\$ (5,670,794)	\$ (5,905,793)	\$ (5,035,841)	\$ (650,090)	\$ (259,623)	\$ (333,581)	\$ 55,361	\$ (95,347)
21 Cumulative Cash Increase (Decrease)	\$ (6,892,533)	\$ (13,360,728)	\$ (19,031,522)	\$ (24,937,314)	\$ (29,973,155)	\$ (30,623,245)	\$ (30,882,868)	\$ (31,218,449)	\$ (31,163,089)	\$ (31,258,436)

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Year 10 2007	Year 11 2008	Year 12 2009	Year 13 2010	Year 14 2011	Year 15 2012	Year 16 2013	Year 17 2014	Year 18 2015	Year 19 2016	Year 20 2017	PROJECT TOTAL	NPV @ 7.50%
\$ 818,125	\$ 818,125	\$ 818,125	\$ 818,125	\$ 818,125	\$ 818,125	\$ 818,125	\$ 818,125	\$ 818,125	\$ 818,125	\$ 818,125	\$ 14,609,375	\$ 6,851,038
\$ 922,500	\$ 794,088	\$ 683,388	\$ 572,688	\$ 461,988	\$ 351,288	\$ 369,000	\$ 369,000	\$ 369,000	\$ 369,000	\$ 369,000	\$ 11,867,040	\$ 6,212,435
\$ 537,948	\$ 598,455	\$ 658,962	\$ 719,469	\$ 779,976	\$ 840,483	\$ 909,090	\$ 977,697	\$ 1,046,304	\$ 1,114,911	\$ 1,183,518	\$ 11,329,065	\$ 4,285,014
\$ 3,415,249	\$ 3,564,541	\$ 3,713,834	\$ 3,863,126	\$ 4,012,419	\$ 4,161,712	\$ 4,328,221	\$ 4,494,730	\$ 4,661,239	\$ 4,827,748	\$ 4,994,258	\$ 68,530,710	\$ 30,705,497
\$ 932,455	\$ 964,955	\$ 997,455	\$ 1,029,955	\$ 1,062,455	\$ 1,094,955	\$ 1,130,940	\$ 1,166,925	\$ 1,202,910	\$ 1,238,895	\$ 1,274,880	\$ 19,056,170	\$ 8,935,930
\$ 6,626,277	\$ 6,740,164	\$ 6,871,764	\$ 7,003,364	\$ 7,134,964	\$ 7,266,563	\$ 7,555,376	\$ 7,826,477	\$ 8,097,578	\$ 8,368,679	\$ 8,639,780	\$ 125,392,360	\$ 66,989,814

\$ 1,275,126	\$ 1,122,116	\$ 1,122,116	\$ 1,122,116	\$ 1,092,691	\$ 1,092,691	\$ 376,640	\$ 376,640	\$ 376,640	\$ 376,640	\$ 376,640	\$ 41,651,132	\$ 28,835,096
\$ 1,127,500	\$ 1,127,500	\$ 1,127,500	\$ 1,127,500	\$ 1,127,500	\$ 1,127,500	\$ 1,127,500	\$ 1,127,500	\$ 1,127,500	\$ 1,127,500	\$ 1,127,500	\$ 23,182,500	\$ 11,954,854
\$ 2,402,626	\$ 2,249,616	\$ 2,249,616	\$ 2,249,616	\$ 2,220,191	\$ 2,220,191	\$ 1,504,140	\$ 1,504,140	\$ 1,504,140	\$ 1,504,140	\$ 1,504,140	\$ 64,833,632	\$ 40,789,961

\$ 2,950,199	\$ 3,069,633	\$ 3,189,067	\$ 3,308,501	\$ 3,427,935	\$ 3,547,369	\$ 3,680,577	\$ 3,813,784	\$ 3,946,991	\$ 4,080,199	\$ 4,213,406	\$ 58,782,248	\$ 26,430,071
\$ 69,000	\$ 159,000	\$ 159,000	\$ 159,000	\$ 159,000	\$ 159,000	\$ 159,000	\$ 159,000	\$ 159,000	\$ 159,000	\$ 159,000	\$ 3,334,000	\$ 3,361,966
\$ 3,019,199	\$ 3,228,633	\$ 3,348,067	\$ 3,467,501	\$ 3,586,935	\$ 3,706,369	\$ 3,839,577	\$ 3,972,784	\$ 4,105,991	\$ 4,239,199	\$ 4,372,406	\$ 64,116,248	\$ 29,792,037

\$ 300,000	\$ 300,000	\$ 300,000	\$ 300,000	\$ 300,000	\$ 300,000	\$ 300,000	\$ 300,000	\$ 300,000	\$ 300,000	\$ 300,000	\$ 5,850,000	\$ 2,918,813
\$ 603,750	\$ 809,600	\$ 780,850	\$ 856,750	\$ 2,273,550	\$ 1,673,250	\$ 814,200	\$ 791,200	\$ 794,650	\$ 887,800	\$ 864,800	\$ 16,810,150	\$ 8,017,448
\$ 903,750	\$ 1,109,600	\$ 1,080,850	\$ 1,156,750	\$ 2,573,850	\$ 1,973,250	\$ 1,114,200	\$ 1,091,200	\$ 1,094,650	\$ 1,187,800	\$ 1,164,800	\$ 22,660,150	\$ 10,936,260

\$ 6,325,574	\$ 6,587,848	\$ 6,678,533	\$ 6,873,867	\$ 8,380,676	\$ 7,899,610	\$ 6,487,917	\$ 6,568,124	\$ 6,704,781	\$ 6,931,139	\$ 7,041,348	\$ 181,610,030	\$ 81,518,268
\$ 300,702	\$ 152,316	\$ 193,231	\$ 129,497	\$ (1,245,712)	\$ (633,247)	\$ 1,097,460	\$ 1,258,353	\$ 1,392,797	\$ 1,437,841	\$ 1,898,434	\$ (26,217,670)	\$ (24,528,344)
\$ (31,598,340)	\$ (31,446,024)	\$ (31,252,792)	\$ (31,123,299)	\$ (32,369,008)	\$ (33,002,254)	\$ (31,904,795)	\$ (30,646,442)	\$ (29,283,645)	\$ (27,616,104)	\$ (26,217,670)		

Year 10 2007	Year 11 2008	Year 12 2009	Year 13 2010	Year 14 2011	Year 15 2012	Year 16 2013	Year 17 2014	Year 18 2015	Year 19 2016	Year 20 2017	PROJECT TOTAL	NPV @ 7.50%
\$ 818,125	\$ 818,125	\$ 818,125	\$ 818,125	\$ 818,125	\$ 818,125	\$ 818,125	\$ 818,125	\$ 818,125	\$ 818,125	\$ 818,125	\$ 14,609,375	\$ 6,851,038
\$ 922,500	\$ 794,088	\$ 683,388	\$ 572,688	\$ 461,988	\$ 351,288	\$ 369,000	\$ 369,000	\$ 369,000	\$ 369,000	\$ 369,000	\$ 11,867,040	\$ 6,212,435
\$ 537,948	\$ 598,455	\$ 658,962	\$ 719,469	\$ 779,976	\$ 840,483	\$ 909,090	\$ 977,697	\$ 1,046,304	\$ 1,114,911	\$ 1,183,518	\$ 11,329,065	\$ 4,285,014
\$ 2,278,673	\$ 2,210,668	\$ 2,160,473	\$ 2,110,282	\$ 2,060,089	\$ 2,009,896	\$ 2,096,216	\$ 2,164,822	\$ 2,233,429	\$ 2,302,036	\$ 2,370,643	\$ 37,806,480	\$ 17,348,487

\$ 1,275,126	\$ 1,122,116	\$ 1,122,116	\$ 1,122,116	\$ 1,092,691	\$ 1,092,691	\$ 376,640	\$ 376,640	\$ 376,640	\$ 376,640	\$ 376,640	\$ 41,651,132	\$ 28,835,096
\$ 1,127,500	\$ 1,127,500	\$ 1,127,500	\$ 1,127,500	\$ 1,127,500	\$ 1,127,500	\$ 1,127,500	\$ 1,127,500	\$ 1,127,500	\$ 1,127,500	\$ 1,127,500	\$ 23,182,500	\$ 11,954,854
\$ 2,402,626	\$ 2,249,616	\$ 2,249,616	\$ 2,249,616	\$ 2,220,191	\$ 2,220,191	\$ 1,504,140	\$ 1,504,140	\$ 1,504,140	\$ 1,504,140	\$ 1,504,140	\$ 64,833,632	\$ 40,789,961
\$ 2,402,626	\$ 2,249,616	\$ 2,249,616	\$ 2,249,616	\$ 2,220,191	\$ 2,220,191	\$ 1,504,140	\$ 1,504,140	\$ 1,504,140	\$ 1,504,140	\$ 1,504,140	\$ 64,833,632	\$ 40,789,961
\$ (124,053)	\$ (38,846)	\$ (89,141)	\$ (138,334)	\$ (160,102)	\$ (210,295)	\$ 692,072	\$ 660,682	\$ 729,289	\$ 797,896	\$ 864,503	\$ (27,028,162)	\$ (23,441,444)
\$ (20,036,779)	\$ (20,075,727)	\$ (20,164,867)	\$ (20,304,201)	\$ (20,464,302)	\$ (20,674,997)	\$ (20,082,522)	\$ (20,421,840)	\$ (20,892,551)	\$ (21,894,688)	\$ (27,028,162)		

Year 10 2007	Year 11 2008	Year 12 2009	Year 13 2010	Year 14 2011	Year 15 2012	Year 16 2013	Year 17 2014	Year 18 2015	Year 19 2016	Year 20 2017	PROJECT TOTAL	NPV @ 7.50%
\$ 818,125	\$ 818,125	\$ 818,125	\$ 818,125	\$ 818,125	\$ 818,125	\$ 818,125	\$ 818,125	\$ 818,125	\$ 818,125	\$ 818,125	\$ 14,609,375	\$ 6,851,038
\$ 922,500	\$ 794,088	\$ 683,388	\$ 572,688	\$ 461,988	\$ 351,288	\$ 369,000	\$ 369,000	\$ 369,000	\$ 369,000	\$ 369,000	\$ 11,867,040	\$ 6,212,435
\$ 537,948	\$ 598,455	\$ 658,962	\$ 719,469	\$ 779,976	\$ 840,483	\$ 909,090	\$ 977,697	\$ 1,046,304	\$ 1,114,911	\$ 1,183,518	\$ 11,329,065	\$ 4,285,014
\$ 932,455	\$ 964,955	\$ 997,455	\$ 1,029,955	\$ 1,062,455	\$ 1,094,955	\$ 1,130,940	\$ 1,166,925	\$ 1,202,910	\$ 1,238,895	\$ 1,274,880	\$ 19,056,170	\$ 8,935,930
\$ 3,211,028	\$ 3,175,623	\$ 3,157,930	\$ 3,140,237	\$ 3,122,644	\$ 3,104,852	\$ 3,227,185	\$ 3,331,747	\$ 3,436,339	\$ 3,540,931	\$ 3,645,523	\$ 55,661,650	\$ 26,284,418

\$ 1,275,126	\$ 1,122,116	\$ 1,122,116	\$ 1,122,116	\$ 1,092,691	\$ 1,092,691	\$ 376,640	\$ 376,640	\$ 376,640	\$ 376,640	\$ 376,640	\$ 41,651,132	\$ 28,835,096
\$ 1,127,500	\$ 1,127,500	\$ 1,127,500	\$ 1,127,500	\$ 1,127,500	\$ 1,127,500	\$ 1,127,500	\$ 1,127,500	\$ 1,127,500	\$ 1,127,500	\$ 1,127,500	\$ 23,182,500	\$ 11,954,854
\$ 2,402,626	\$ 2,249,616	\$ 2,249,616	\$ 2,249,616	\$ 2,220,191	\$ 2,220,191	\$ 1,504,140	\$ 1,504,140	\$ 1,504,140	\$ 1,504,140	\$ 1,504,140	\$ 64,833,632	\$ 40,789,961

\$ 300,000	\$ 300,000	\$ 300,000	\$ 300,000	\$ 300,000	\$ 300,000	\$ 300,000	\$ 300,000	\$ 300,000	\$ 300,000	\$ 300,000	\$ 5,850,000	\$ 2,918,813
\$ 603,750	\$ 809,600	\$ 780,850	\$ 856,750	\$ 2,273,550	\$ 1,673,250	\$ 814,200	\$ 791,200	\$ 794,650	\$ 887,800	\$ 864,800	\$ 16,810,150	\$ 8,017,448
\$ 903,750	\$ 1,109,600	\$ 1,080,850	\$ 1,156,750	\$ 2,573,850	\$ 1,973,250	\$ 1,114,200	\$ 1,091,200	\$ 1,094,650	\$ 1,187,800	\$ 1,164,800	\$ 22,660,150	\$ 10,936,260

\$ 3,306,376	\$ 3,359,216	\$ 3,330,466	\$ 3,406,366	\$ 4,793,741	\$ 4,193,441	\$ 2,618,340	\$ 2,595,340	\$ 2,598,790	\$ 2,691,940	\$ 2,668,940	\$ 87,493,782	\$ 81,726,211
\$ (95,347)	\$ (183,892)	\$ (172,835)	\$ (266,128)	\$ (1,671,196)	\$ (1,088,889)	\$ 608,815	\$ 736,407	\$ 837,649	\$ 848,991	\$ 976,583	\$ (30,632,132)	\$ (25,441,793)
\$ (31,258,436)	\$ (31,442,028)	\$ (31,614,564)	\$ (31,880,692)	\$ (33,551,888)	\$ (34,640,477)	\$ (34,031,662)	\$ (33,295,254)	\$ (32,457,705)	\$ (31,608,715)	\$ (30,632,132)		

5 Need and Extent of Proposed Infrastructure Improvements

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Introduction

Objective

The objective of this chapter is to evaluate the Letterkenny Army Depot (LEAD) Reuse Strategy and the Application for a Rural Economic Development Conveyance (EDC) for the need and extent of proposed infrastructure improvements required for economic growth.

Background and Approach

The USACERL engineering team visited LEAD on 7-9 January 1998. After meeting with LIDA and the LEAD Directorate of Public Works (DPW), the USACERL team toured the Depot to observe the installation's infrastructure condition and to determine potential infrastructure repairs and improvements. With this information, USACERL could then validate the LIDA's proposed infrastructure costs and proposed need and extent of improvements.

Infrastructure Improvements

Need and Extent of Infrastructure Improvements

To evaluate the validity of the LIDA unit rates used to estimate proposed infrastructure improvements, USACERL conducted an independent facility condition assessment, gathered supplemental information, and developed independent cost estimates. USACERL's unit rate estimates were then compared to estimates furnished by LIDA. USACERL's unit price estimates were developed using standard construction cost estimating procedures and engineering management principles. A description of project time and costs methodology is included below.

Unit Rate Comparison

Subsystems were randomly selected for a cost evaluation of the LIDA estimates. MCACES[†] Estimating Database, *RS Means*, and actual vendor and subcontractor quotations were used to create the composite unit rates used to evaluate LIDA's unit rates. Appendix D contains a detailed breakdown of the development of the unit prices.

The cost estimating procedure used for the analysis of the estimated infrastructure improvements is slightly different than that used on previous EDC evaluations. However, the procedure used is an acceptable method of cost estimating and USACERL agrees with the project time and cost results from using this procedure. A brief of explanation of the two different types of estimating procedures follows.

Estimators typically perform at least five different types of estimates depending on the situation. These estimates include preliminary or "ballpark" estimates, unit estimates, assembly or conceptual estimates, bid estimates, and owner estimates. For the purposes of this report, only two of the five methods will be discussed here.

* Project time and cost was retained through a contract mechanism to perform USACERL's infrastructure need and extent analysis. Although project time and cost makes use of an approach that differs methodologically from USACERL's approach, it is defensible and provides sound results.

[†] MCACES = Military Construction, Army, Cost Estimating System.

USACERL commonly uses the assembly or conceptual estimating method. Assembly or conceptual estimates are groups of work by several trades combined into a single cost element. For example, the installation of a pipeline may include surveyors, heavy equipment operators, pipefitters, road workers, and common laborers. The assembly cost includes the cost of participation from each trade, materials used to do the work, and project overhead. Cost data books such as those published by R.S. Means and MCACES are used to develop intermediate or conceptual cost estimates. Assembly cost estimating can be fine-tuned to the local area and type of project. This capability makes this methodology a powerful tool that both saves time and improves accuracy in doing repetitive work on the same types of projects, such as evaluation of proposed improvement costs for EDCs.

For this project USACERL approved the methodology of doing unit estimating. Unit estimating is another method of developing a preliminary estimate based on historical data from a variety of sources. These sources include the R.S. Means square foot books, Dodge cost books, MCACES, and experience. This technique is effective in preparing advanced preliminary estimates when features of the proposed project(s) are known, but not yet designed. To use this method, it is necessary to know only the type of facility, the proposed units of the facility, and the cost per unit. Then the quantities are multiplied to arrive at a total cost.

Using this methodology, USACERL estimated the total capital improvement costs and compared them to those presented by LIDA as shown in Table 5.1. Total cost for capital improvements as estimated by LIDA are approximately \$43,500,000, while USACERL estimated \$42,300,000. The differences in each of the different categories are explained following the table.

Table 5.1. Capital improvements summary.

Infrastructure Division	Infrastructure System	LIDA Estimate	USACERL Estimate
Transportation	Roads	\$13,968,885	\$13,678,971
	Parking Lots	Inc. w/roads	Inc. w/roads
	Railroads	\$5,514,000	\$3,922,000
Total Transportation		\$19,482,885	\$17,600,971
Utilities – water	Domestic water	\$10,465,000	\$10,241,900
	Storm Sewer	\$3,537,500	\$3,537,500
	Sanitary Sewer	\$5,468,250	\$5,468,250
Total Utilities - water		\$19,470,750	\$19,247,650

Infrastructure Division	Infrastructure System	LIDA Estimate	USACERL Estimate
Utilities – energy			
	Electrical	\$3,246,000	\$3,246,000
	Heating	\$275,000	\$275,000
Total Utilities - energy		\$3,521,000	\$3,521,000
Buildings			
	Demolition	\$1,024,574	\$1,952,018
Total Buildings		\$1,024,574	\$1,952,018
Total		\$43,499,209	\$42,321,639

Condition Assessment Procedure

Due to time constraints and the independent third-party review role of USACERL, it was impractical to thoroughly assess the condition of all infrastructure elements at LEAD. Based on the engineering management system technology developed by USACERL, the assessment procedure has been streamlined to give an accurate evaluation of Letterkenny without incurring undue costs. The condition assessment was developed using a four-part process, which Appendix D details.

USACERL separated the infrastructure into the following five categories: Transportation, Utilities-water, Utilities-energy, Buildings, and Miscellaneous. Each division was further divided into systems and subsystems. Once each division was identified, randomly selected systems or subsystems were visually inspected and rated.

In general, most infrastructure systems were found to be in “Good” condition, with the lowest condition going to streetlights and communications, and the highest to selected buildings. The following subsections provide the results of the condition survey gathered by USACERL corresponding cost estimates. The survey considered the condition of the infrastructure system, LIDA requests, and the ongoing Army requirements to maintain current and future functions of Letterkenny.

Transportation.

Roads. LEAD is served by approximately 24 miles of asphalt roads and 12 miles of unimproved roads. The asphalt roads are observed to be in good condition, while the unimproved roads are in good to fair condition.

The existing road network supports Districts 1, 2, 3, and 4 very well (Figure 3 contains the LIDA's District Plan). LIDA has expressed concern over access into Districts 5 and 6. It is LIDA's view that primary access to these two areas should be via the California Avenue section of Loop Road. This section goes through a portion of the base referred to as "The Boot," which the Army and its contractors plan to retain for equipment storage, communications, and manufacturing.

The Army intends to retain Pennsylvania and Georgia avenues, along with The Boot section of California Avenue. The Army believes access into Districts 5 and 6 from Carbaugh Road is feasible by dirt roads such as Sandbag Road. If Carbaugh Road becomes the major access into these two areas, then the California Avenue section of Loop Road can be retained solely for Army use. The Army has also expressed concern about California Avenue becoming available for public use because of the extensive Pennsylvania Department of Transportation (DOT) permitting required for transport of equipment along the road to support everyday operations.

According to the Army, the paved primary roads for the Depot (including Spine and Loop roads) as well as paved secondary roads (including sections of Michigan and Oregon avenues) were resurfaced or repaired within the past 3 years. The shoulders were repaired and drainage improved recently on Coffee Road (also known as Spine Road).

In District 1, the tertiary roads (Illinois, Kansas, Indiana, Oklahoma, and Arkansas) intersecting Michigan, Oregon, and New York avenues are in need of repair and upgrade.

In District 5, the gravel access to the humidity-controlled circular storage tanks was almost washed out in several places as a result of extensive rains observed during the week of 5 January 1998. Dirt roads such as East Patrol Road (leading to District 7) and Sandbag Road were observed to be in fair condition (requiring some pothole fill-in and scraping), but are suitable for a paved base.

LIDA proposes that Coffee Avenue (Spine Road) be widened, possibly adding a third turning lane, or be converted into a four-lane road.

LIDA's estimate to do the above road repairs is **\$13,968,885** while USACERL's estimate is slightly lower at **\$13,679,000** due to differences in quantity take off for the projects.

Parking lots. Total existing parking lots for LEAD exceed 61 acres, of which 14 acres will be retained for Army use. The remaining ± 47 acres consist of ± 10 acres of gravel lots.

District 1 contains a majority of asphalt paving used for parking and storage. According to the Army and field observation, the overall condition is good to fair. From observation, there is no evidence of standing water. Unimproved roads in this district appear to be in fair condition. Several other paved parking areas in Districts 3 and 4 appear to be in good to fair condition.

District 6A consists of a combination of concrete pavement, gravel, and dirt areas used for miscellaneous storage and parking. Resurfacing this area will be required after demolition of the corrugated metal structures. In other areas of Districts 6 and 5B, wood scrap yards and wood chip piles were observed and will have to be removed before construction begins. The hilly terrain in these two districts will require grading prior to development.

LIDA's and USACERL's estimates to do parking lot repairs are included in the cost to repair the roadways.

Railroads. The EDC area of LEAD contains approximately 24 miles of rail, including two classification yards. Approximately 15 miles of the 24 miles are currently active. The active sections of the rail are in good condition; however, a large portion of inactive rail is in very poor to failed condition. For this reason, the rail system is given an overall rating of fair.

According to the Army, rail switches are inspected and greased semi-annually in both the conveyance and retained areas of the base. Several of the switches tested were found to be in very good condition. With the exception of the rails ending at the brick warehouses in District 1 and Warehouses 651 and 652, the primary rail system for most of the conveyed area has been rebuilt and/or repaired recently. The rails in Switchyard 2 (approximately 25,000 linear feet [LF]) and leading from the Switchyard 2 to the Ammunition Workshop/Dump were repaired last year.

According to the Army, LIDA, and field observation, the rail spurs leading to the brick and metal warehouses in District 1 (excluding the roundhouse spur recently rebuilt) are in poor condition. Some of the abandoned rails in this area have vegetation growing between the tracks. Rails need to be aligned, and new ties, plates, and ballast are required. In several places, pumping action was observed and will require repair. Switchyard 1 (approximately 25,500 LF) requires major replacement of ties, addition of ballast, and rail realignment. For

this switchyard, only the rail that CSX uses to bring cars into the base has been replaced recently. Most of the rails on the base are 80- to 90-lb rated for a 10 mile per hour (mph) rail car speed per Army Technical Manual 5-624.

According to the Army and LIDA, most of the rails and pavement at 16 grade crossings will require some attention. A warning system such as crossing gates and flashing lights will probably be installed upon conveyance to the local community.

LIDA's estimate to do the above railroad repairs is **\$5,514,000**, while USACERL's estimate is **\$3,922,000** due to differences in the scope of work required to make the improvements.

Bicycle paths. No separate bicycle paths exist on the installation; therefore, USACERL did not evaluate this system.

Sidewalks. No sidewalks exist on the installation; therefore, USACERL did not evaluate this system.

Traffic control. One traffic signal is currently used at the intersection of Carbaugh and Coffee avenues, and is in excellent condition.

Heliport. The two helicopter landing pads are slated for demolition and therefore were not rated.

Utilities – water.

Domestic water. Over 43 miles of domestic water piping serve the base; 15 miles were recently tested using ground penetrating radar and acoustic leak detection. Although 25 anomalies were detected, estimated breakage rates of 2 to 4 breaks/year appear to be well within industry guidelines, and overall integrity of the system is very good.

A watershed 6 miles away serves the LEAD through two 16-in. diameter PVC pipelines. The water treatment plant was built between 1943 and 1944 with some instrumentation upgraded in the 1970s. According to the Army, preventive maintenance is performed regularly.

Some concern has been expressed over the discrepancy in distributed water versus treated water. Total capacity for this system is 1,000,000 gal. Current intake is 600,000 gal with 150,000 gal treated daily. The Army believes that the transmission loss in the system does not exceed 25,000 gal. However, the plant

operator has indicated that current intake is closer to 300,000 gal with loss in the system at no more than 15,000 gal.

LIDA proposes that ownership of this distribution system, including the reservoir, transmission lines, right of way, water treatment plant, and fire hydrants, be conveyed to the local community. Permit renewal will be required for this system upon transfer of ownership.

According to LIDA, a 100,000-gal leaking water tower with lines servicing the ammunition dump (to be retained) will need to be repaired or replaced as necessary. Also, additional water meters would be required for existing buildings to be retained by the Army.

LIDA's estimate to do the above domestic water repairs is **\$10,465,000**, while USACERL's estimate is **\$10,242,000** due to differences in quantity take offs.

Storm sewer. The storm sewer collection system, consisting of 20 miles of underground piping (with over 4 miles of piping under areas to be retained by the Army), is in good condition. Open drainage on site is generally in very good condition with very little ponding. According to the Army, the brick manholes are in good condition. District 1, which contains the largest concentration of storm water piping, contains concrete box culverts, reinforced concrete pipe (RCP), vitreous clay pipe, and corrugated metal pipe.

Two outfalls accommodate the storm water: an industrial waste outfall near gate 6A and an outfall next to the 12.4 kV substation. Both discharges are currently covered by the industrial waste treatment plant NPDES* permit and will have to be separated out for future use.

LIDA has expressed concern over discharge into the outfalls and the absence of a storm water treatment plant. Presently no oil/water separators are required in parking areas for the storm drain system. Without a storm water treatment system, a significant volume of storm water must be treated by the sanitary wastewater treatment plant before being discharged.

Standing water was noticed in Districts 7 and 6C from the heavy rains experienced over 3 consecutive days. According to the Army, these are slow-

* NPDES = National Pollutant Discharge Elimination System.

draining areas. In District 7, some trenching work and culverts might alleviate this problem. In District 6C, cleaning out an existing culvert might reduce this problem.

LIDA's and USACERL's estimates to do the above repairs to the storm sewer are both **\$3,537,500**.

Sanitary Sewer. The sanitary sewer treatment plant that serves LEAD was built in 1972. The equipment is generally in good condition despite its age. Two years ago, the digester was cleaned and two of the three pumps/blowers/motors were rebuilt. The sanitary sewer treatment plant (part of the conveyance) does not have a backup system, although the lift station does have a 30 kW backup generator. LIDA recommends installation of a redundant sewage treatment system.

The capacity for the activated sludge plant is 500,000 gal. Peak usage is 150,000 gal. The Army believes the current leakage to be about 50,000 gal/day (GPD). However, plant operators reported 250,000 gal (primarily from excess storm water inflows) during peak usage with normal flow approximately one-fifth of this amount, indicating a significant infiltration and inflow (I/I) problem. A flow of 225,000 gal was observed during inspection of the plant on 9 January 1998.

Maintenance is performed as needed on the cast iron segments of the sewer system, and precast manholes are inspected regularly. According to an investigation performed last year using ground penetrating radar, no critical leaks were found in 2.5 miles of sanitary force mains and overall physical integrity of the system was determined to be good. According to the Army, the 8-in./10-in. gravity main from manhole 79 (near the water treatment plant) to the sewer treatment plant was replaced in 1988. The 12-in. sanitary sewer discharge into the Potomac Aquifer was built in 1972. Other sewer upgrades to buildings in District 1 were performed in 1997.

LIDA's and USACERL's estimates to do the above repairs to the sanitary sewer system are both **\$5,468,000**.

Industrial wastewater. Presently, the Army uses an industrial wastewater treatment plant adjacent to Building 350. According to the Army, the industrial wastewater system, which includes approximately 3.3 miles of piping, has been regularly maintained. The current industrial wastewater plant (retained by the Army) was upgraded 4 months ago. One mile of the 8-in. force main from this plant into District 1 was slip lined in 1993.

In 1997, the capacity of the Army's industrial wastewater plant was doubled. LIDA has expressed concern that the capacity of culverts leading to the industrial waste outfall adjacent to gate 6A are not adequate to handle current demands of the base and future demands of the conveyed area.

The Army suggests that the Letterkenny community build a treatment plant to handle future economic development in the conveyance. Upon conveyance, the Army will cap the industrial force mains that are not retained.

Utilities – energy.

Electrical. In 1941, a 7.2 kV substation and switchyard were installed for the base. Currently, the only service for the 7.2 kV substation is a 20-mile loop for the ammunition dump and workshop that is to be upgraded to 12.47 kV as part of the conveyance. The poles for this service are in poor condition. The Army believes there are no PCB-type transformers in this area.

In 1981, a 12.4 kV substation and switchyard were built for the base. Currently, the 12.4 kV substation has eight active circuits with space for two more. Each active circuit has a load of 80 amperes (A) with a 300 A capacity. A newer set of poles was added as needed to accommodate the 12.4 kV substation. The older poles (originally used by the 7.2 kV system) were left in place and are used primarily for base communications (telephone and broad band LAN*). Overall condition of these systems is judged to be good with the exception of the older 7.2 kV pole-line poles and older communication poles.

Both LIDA and the Army agree that the two substations are included in the conveyance and may be transferred to a local utility company. It is the Army's understanding that the 12.4 kV substation will be modified to serve the ammunition dump and workshop and the 7.2 kV substation will be removed from service.

LIDA's and USACERL's estimates to do the above repairs to the electrical distribution system are both **\$3,246,000**. This does not include the upgrade of the 7.2 kV system to a 12.47 kV electrical system in the Ammunition Area.

* LAN = local area network.

Natural Gas. A natural gas distribution system does not exist for the base. For steam production, the Army uses fuel oil burners located throughout the base. In 1995, the Army replaced six boilers in District 1 and one boiler in the DPW with dual fuel burners. In the conveyance, the LIDA will receive four boiler plants. In District 1, additional boiler plants will be required for conveyed buildings currently served by Army buildings.

Recently, steps were taken to award a contract for installation of a natural gas distribution system. This plan was suspended when BRAC included LEAD in its realignment plan. LIDA indicates that this distribution system will be an important asset to the economic development and marketability of the conveyed area. A natural gas pipeline might come from I-81 approximately 5 miles away.

LIDA's and USACERL's developed estimates to do some minor repairs (replace broken valves) on the existing heating distribution systems are both **\$275,000**.

Buildings.

Demolition. District 1 contains primarily three- and four-sided metal sheds as well as 500,000 sq ft of brick frame/wooden truss warehouses to be demolished (some having been recently reroofed). The brick warehouses appear to be in good condition overall; however, according to LIDA and the Army, the land without the buildings could have greater economic value and future business development potential. According to LIDA, the nearest landfill to accept nonhazardous materials is 25 miles from the base in Green Castle, PA. LIDA proposed onsite crushing as a possible alternative to offsite landfill disposal of the masonry components should the brick warehouses be demolished.

The three- and four-sided corrugated metal sheds found in District 1 are representative of the majority of metal sheds found in District 5. It was observed that these sheds will require minimal demolition effort. In addition, approximately 160 circular humidity-controlled metal storage tanks are to be demolished. Considerable demolition is required for the fabricated onsite metal tanks. Although extensive demolition is required, the annual cost of maintaining these humidity-controlled tanks is quite high, according to the Army.

In addition to the corrugated metal sheds and wood truss/brick frame buildings in District 1, Building S-238 (a wooden barracks suspected of having asbestos and lead based paint) and Building T-591 are to be demolished. According to LIDA, either Blender's Landfill in Scotland, PA, or Mt. View Reclamation in Green Castle should be able to accept these materials with certain exceptions.

Other buildings inspected include Warehouses 651 and 652 in District 6A. Both buildings are concrete block shell and contain five firewall separated bays of 40,000 sq ft each. The masonry and internal structure of these buildings are in good to excellent condition; however, the Army asserts that both buildings require new roofs that will cost approximately \$500,000 each.

Adjacent to Buildings 651, 652, and the DPW building are an assortment of corrugated metal sheds, shelters, and storage racks that require demolition.

LIDA's estimate to demolish the above buildings is **\$1,024,574**. USACERL's estimate to do the same work is **\$1,952,000**. The major difference between the estimates is because the LIDA estimate did not include a demolition price for the 160 humidity-controlled tanks.

Miscellaneous.

Street lights. Overall condition of street lighting is judged to be poor because a considerable number of street lights were taken out of service in the early 1980s.

LIDA proposes addition of street lights if required by code. Lighting along major roads such as Loop and Spine roads needs improvement. Many of the unpaved roads such as Sandbag and East Patrol roads have little or no lighting.

Fencing. Overall, existing fencing is judged to be in good condition. Fencing and gates will be required regardless of the outcome of The Boot section of California Avenue. Fencing off all but two spurs is proposed between Districts 5 and 6 at Classification Yard #2 and Classification Yard #1 in District 1.

Galvanized chain link fencing without barbed wire is used onsite primarily. The fencing at the 12.74 kV substation/switchyard is new. Fencing will divide District 1C to separate retained buildings (10, 3, 2, 11, 12, 13, and 14) from conveyed buildings. Other fencing will be added around leaseback properties such as the Roundhouse and several corrugated metal buildings in District 5B.

Some chain link fencing with serrated barbed wire was used at the humidity-controlled storage tanks. According to the Army, this area was used to store warheads and other classified equipment. Upon conveyance, this fencing will be demolished. Presently, additional fencing is proposed to run parallel to Georgia Avenue and encompassing District 7.

Communications. Overall condition of the existing communication systems (telephone and broad band LAN) is judged to be good to fair when considering

the older poles used throughout the base. Consolidation of communications and power is needed so these older poles can be removed from service. From field observation, the placement of these poles and the newer utility poles do not allow for adequate future road widening in many cases. LIDA suggests conveyance of the telephone system to the local community for sale to a local provider.

Conclusions

Under BRAC, LIDA is to receive roughly 1,500 acres of LEAD to develop into an industrial park. The Army is to retain the remainder of the facility. A team visited the LEAD site to investigate the condition of the area to be turned over to LIDA and concluded that LEAD is in good condition. Even though the systems of the Depot are generally old, they have been well maintained.

Total civil capital improvement costs proposed by USACERL are \$42,321,639 versus LIDA's estimate of \$43,499,209. Therefore, USACERL feels that the total proposed capital improvement costs should be considered reasonable. Areas in which major discrepancies were noted are road paving costs, rail activation costs, building demolition, and transformer costs:

- Road paving cost differences amount to a decrease of \$1,023,000 in LIDA's estimate in Appendix 11 of the Letterkenny Reuse Strategy.
- Total rail activation cost differences amount to a decrease of \$3,553,900 to \$3,412,000 in LIDA's estimate for minimal track repairs as explained in the assumptions. An extremely conservative figure for rail activation costs in District 1 would result in a decrease of \$1,772,000 in LIDA's estimate.
- Total demolition costs estimated by LIDA are \$1,024,574. USACERL's estimate for total demolition costs are \$1,962,000.
- Transformer costs amount to an increase of \$666,288 in LIDA's estimate.

Capital improvements not estimated by LIDA and not considered in USACERL's evaluation include upgrade of the existing 12.4 kV system. Other expenses such as startup costs and operating costs could not be confirmed. Even though there are some concerns in the estimate, LEAD is in good condition.

6 Extent of State and Local Investment and Risk

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Background

Local investment at LEAD is expected to be made in four primary components, (1) real estate infrastructure improvements, (2) real estate operations and maintenance, including administration and marketing, (3) utility system capital improvements, and (4) utility system operations and maintenance (O&M). (Note: For a discussion on USACERL's finding as to need and extent of infrastructure improvements, see Chapter 5). When real estate and utility operational and capital costs are combined, USACERL estimates that nearly \$142 million in investment will be required to achieve Reuse Strategy objectives over a 20-yr planning horizon. It is the intent of the participating local governments to fund these sizable costs with revenues generated from the LEAD redevelopment efforts, including the sale of developable land and rental income from reusable buildings and utility operations.

Unfortunately, the EDC application is deficient with respect to project financing. USACERL's third-party independent investigation of business plan assumptions revealed that real estate operating and capital costs were understated. Correcting this limitation produced a business plan with a net present value (NPV) of *negative* \$24.5 million, suggesting that significant levels of state and local investment will be required to ensure project financial feasibility. According to the LIDA, project risk and investment will be partially underwritten by state and Federal sources. The LIDA has indicated a reasonable probability that over \$17 million in infrastructure grant funding may be available for the redevelopment of LEAD. Although it is difficult to verify state and

Federal financial contributions, the LIDA has aggressively sought grant funding and has measurable success to that end. Therefore, it is not unreasonable to assume that the LIDA will continue to pursue state and Federal assistance to fund required capital improvements.

However, the inclusion of grant funding does not fully mitigate annual operational deficits or a negative project NPV. To overcome this limitation, USACERL developed an independent tax increment finance (TIF) district analysis. Although not included or formally discussed in the EDC application, discussions with representatives of the LIDA during USACERL's site visit indicated that a TIF district was being planned for the EDC parcel. Because useful details were not available at the time of the site visit, USACERL relied on a set of conservative assumptions to forecast 20-yr tax increment revenues. USACERL concluded that over \$19 million in tax increment revenue could feasibly be generated, effectively mitigating fiscal shortfalls and negative project NPV.

Conclusion

It is the conclusion of USACERL that the redevelopment of LEAD will incur substantial project investment and risk that will require external subsidization to ensure financial feasibility and that Reuse Strategy objectives are effectively accommodated. USACERL's independent review and analysis suggest that a large portion of project investment and risk can be directly underwritten by the LIDA through real estate and utility revenues. However, substantial operational deficits will persist in the absence of additional local and non-local investment. Fortunately, project financial feasibility stands a reasonable probability of being attained through a mixture of Federal and state grant funding and TIF financing, which are both being actively investigated and sought by the LIDA.

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 LEAD EDC application and Reuse Plan. Real estate market data were collected from a variety of sources including the LEAD caretaker force, the U.S. Army Corps of Engineers Baltimore District appraisers, government studies conducted in conjunction with BRAC initiatives, and various other market sources. Independently gathered data were used, in part, to confirm or dispute claims made in the EDC application and reuse plan related to real estate conditions, impacts due to base closure, and anticipated economic redevelopment from an EDC.

Background

As part of the process of evaluating the Franklin County market, USACERL examined the area surrounding the EDC parcel, the locations and characteristics of the regional submarkets relevant to LEAD, and recent regional economic and demographic trends.

Site Configuration

The realigned portion of the LEAD facility covers about 1,500 acres of land and lies within Franklin County, PA. The focus of the EDC application includes

about 4.3 million sq ft of building space and various capital facilities, including water, wastewater, storm water, and electric and telecommunications systems.

LEAD's general location is within the heart of Franklin County, a rural community of about 124,000 residents that is about 100 miles outside of Washington, DC. The community sits directly north of the border between Pennsylvania and Maryland, and has a population density of only 161 persons per square mile; nearly half of the county's land is agricultural.

Because of its general location, the LEAD site enjoys good transportation access. The facility features some 20 miles of railway, and about 36 miles of existing roadway. As the site currently exists, it is adjacent to the intersection of Routes 997 and 433, and lies about 4 miles from I-81, the major interstate in the area. Additionally, U.S. Routes 11 and 30 are about a mile east via Route 433. Also, the configuration of the site is such that there are several other potential secondary access locations. Finally, the facility is reasonably close to several area airports.

Regional Economic and Demographic Trends

In general, USACERL was able to corroborate the cogent conclusions presented in the EDC application relating to the local economic and demographic trends. In particular, the labor force in the region has grown by more than 11,000 jobs during the past decade, with much of the growth occurring in private service and retail sectors. Notably, Franklin County maintained its manufacturing base at over 20 percent of total employment throughout this period, which is encouraging, given the downsizing of more than 20 percent in government employment.

Demographic trends also generally suggest that Franklin County and the surrounding areas will continue to experience employment and population growth. Of particular note is that Franklin County grew at four times the rate of the state over the 1980-90 period; county population growth over the past 60 years has also been consistently higher than that of the state. Additionally, unemployment rates actually dropped during the last decade, despite downsizing of both government and various private employment sectors. In fact, a key concern for area businesses is the ability to attract and retain available workers. Finally, one potential limitation exists in that the majority of new jobs will have lower wage rates than previous Depot employment; while some manufacturing wages will approach former Depot wages, the more common support jobs will not.

Market Analysis

The following presents a general analysis of the Franklin County regional real estate market. Since reuse of LEAD will center on commercial uses, particular emphasis was placed on these market segments. Finally, although this market analysis focused only on the two-county area around LEAD, it is important to realize that many relevant market factors and conditions exist far outside this area. In particular, the economic significance of the Washington, DC, market and the fact that LEAD will be marketed to attract businesses with a statewide or multistate scope, suggest that a broad view be taken.

Office Lease Rates

Within the Franklin County market, current office conditions appear stable. For example, many of the area's industrial parks include and can accommodate more traditional office developments, and many new industrial developments are planned to include an office component. Current market rents for office and commercial space, including utilities, range from about \$7 to \$14/sq ft triple-net (NNN), depending on the nature of the property, location, and fit-up. Finally, note that some area industrial parks accept office uses.

Retail Lease Rates

Retail conditions also appear to be fairly stable, with an abundant existing stock, although the retail market has recently experienced moderate growth. In fact, the number of retail establishments in Franklin County has grown by about 38 percent in the last decade, compared to about a 20 percent increase statewide. Current rents for retail space range from \$5 to \$12/sq ft NNN, although some mall rents approach \$20/sq ft. Current inventory estimates suggest that roughly 70,000 sq ft of unoccupied space is available, with an additional 55,000 sq ft to be vacated as part of a local J.C. Penney's relocation.

Industrial and Distribution Lease Rates

Industrial market conditions suggest increasing vigor, although one of the potential limitations for the LEAD redevelopment is simply the sheer volume of potential space, compared to the relatively small size of the local market. For example, if only half of the space at LEAD (about 750 acres) were made available for industrial development, total inventories in the four counties around LEAD would increase by about 30 percent. For comparison, consider that current inventories for the entire quad-state region include only about 2,600 acres of

available space, although only about 10 percent of that space is located within Franklin County.

Estimated lease rates for industrial space range around \$3 to \$5/sq ft NNN, while rates for distribution space are somewhat less, about \$2 to \$4/sq ft NNN.

Commercial Land Sales Rates

Finally, the area land sales market has also been increasingly strong. For example, the business park constructed by the Chambersburg Area Development Corporation (CADC), which was founded in 1988 and featured about 400 acres of inventory. According to discussions with CADC management, nearly all of this space has been spoken for. Current quoted asking rates for industrial and commercial property at area business parks range from \$40,000 to \$90,000 per acre, depending on specific amenities and proximity to or frontage along major highways. CADC absorption averaged roughly 30 acres per year during 1989-1995, although this information is more useful as a benchmark than as an absolute absorption rate. Typical sales commission and closing cost rates range around 6.5 percent.

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 for LEAD, the Letterkenny Industrial Development Authority (LIDA) requested the EDC parcel for \$0 under a zero cost rural EDC request, consistent with the legislation found at 32 CFR Part 91.5 (f)(5). In Chapter 1, **Adverse Economic Impact of the Closure on the Region and the Potential for Recovery After the EDC**, USACERL independently validates the applicant's claim of "substantial adverse economic impact," thus supporting a rural zero-cost finding. Therefore, this chapter will not address potential monetary consideration for the surplus EDC parcels because the LIDA is entitled under Federal law to receive the property at no cost, although the Army must make a final determination

However, the applicant argues that by rapidly assuming responsibility for the LEAD property, the Army may realize substantial operations and maintenance cost savings. Moreover, because the BRAC Commission elected to realign LEAD, rather than recommend a full operational closure, a retained Army force will remain at the installation indefinitely. Consistent with current Army policy to privatize installation utilities and the LIDA's desire to comprehensively plan and control the redevelopment of LEAD, the LIDA has requested all installation

utilities under the proposed EDC in return for a long-term rate structure that is cost effective for the retained Army mission. In an attempt to independently evaluate 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 are potential utility rate structures that could be defended in a negotiated arrangement.

Conclusions

Layaway and Annual M&R Cost Savings

Without a timely conveyance of the 1,500 acre EDC parcel after all realigned Army uses for the property cease, USACERL assumed that the Army would be compelled to mothball or "layaway" the facilities and infrastructure at LEAD except for those uses being retained by the Federal Government. 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 (TN) 420-10-08 and USACERL Technical Report (TR) 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 LEAD facilities engineers and from the experience of USACERL researchers.

USACERL estimated the layaway and annual M&R costs for the buildings and supporting infrastructure at LEAD based on three levels of layaway: Levels One, Two, and Three. Each of these layaway levels corresponds to a decreasing level of care. For example, Layaway Level One 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 Three 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). An expanded discussion of these one-time layaway costs and annual M&R costs follows.

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 "as needed" for the security force, inspectors, and caretaker force.

Annual M&R 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 TR 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 M&R is minimal. However, security for the installation will still be required with some facilities to house the security force and some minor landscape maintenance.

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

If the EDC is not approved in a timely manner, and the Army is forced to continue its caretaker function at LEAD, 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 Reuse Strategy for LEAD. 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 to willing buyers. Table 9.1 provides a range of costs for this scenario.

Based on the projected costs presented in Table 9.1, the Army could expect to incur at least \$2.2 million in annual carrying costs for LEAD in the absence of an

Table 9.1. Likely Army layaway and M&R commitments.

	LAYAWAY LEVEL ONE	
	Total min	Total high
EDC Parcel	\$1.0M	\$2.1M
	M&R LEVEL ONE	
	Total min	Total high
EDC Parcel	\$2.2M	\$4.0M
Total	\$3.2M	\$6.1M

EDC. Since the LIDA is prepared to assume responsibility for LEAD as soon as possible, the Army should consider an M&R cost avoidance to the extent that a successful conveyance cannot be achieved in a timely manner.

Utility System Conveyance Considerations

Summary of LIDA Proposal

The LIDA EDC application proposes the conveyance of water, sewer, and electrical systems to provide service to the proposed industrial park and Army retained areas. Specifically, two objectives would be fulfilled:

1. Transfer of the systems to LIDA and/or its operating agent will provide the Authority with the necessary ability to comprehensively manage the industrial park by providing affordable, reliable service.
2. Transfer of the systems to LIDA and/or its future operating agent will promote the Army's privatization mandate by relieving the retained operations of utility management responsibility.

USACERL Findings

USACERL provided extensive discussion in Chapter 4, **Business Plan Review and Market and Financial Feasibility Analysis**, regarding the analysis of the applicant's utility business plans and corresponding utility rates. In summary, USACERL concluded that the applicant did not adequately present utility system financial feasibility findings and proposed utility rates for electric, water, and sewer systems within the EDC application. Only upon extensive review and analysis of referenced source documents was USACERL capable of coupling projected revenues and costs into a pro forma analysis. It is unclear why utilities documentation was presented in such a fragmented manner by the LIDA considering the importance of utilities to the LIDA and the Army.

Nevertheless, USACERL was able to recast business plans for electric, water, and sewer at the LIDA's estimated utility rates and found that electric and water systems were financially feasible over a 20-yr horizon but sewer was not. USACERL corrected several oversights the LIDA made with respect to required Army capital improvements to the electric and water systems and to utility system utilization by the Army to arrive at a defensible range of utility rates that provide more cost-effective service to the Army while simultaneously maintaining overall LIDA financial feasibility for all three systems. Table 9.2 is a comparative summary of LIDA, Army, and USACERL recommended utility rates.

Table 9.2. LEAD Comparative Utility Rate Analysis.

Utility System	LIDA Rate & CERL1 Model	Army Unburdened [*]	Burden [†]	Army Fully Burdened Rate	USACERL Recommended Rate Range
Electric 12.47 kWh	0.05	0.0425	0.0263	0.0688	0.055 - 0.065
Electric 7.2 kWh	0.11	0.0641	0.0263	0.0904	0.055 - 0.065
Water/Kgal	3.50	1.4305	1.7544	3.8990	3.500 - 4.000
Sewer/Kgal	5.00	5.6740	1.7334	7.4074	5.500 - 6.000

As Table 9.2 shows, USACERL's recommended utility rate range provides lower rates relative to the fully burdened rates currently being paid by the Army. Moreover, USACERL's analysis of utility rates in the communities surrounding LEAD revealed that USACERL's recommended rates fall within market ranges, thus supporting the LIDA's objective to provide competitive rates to industrial park users.

Recommendation

Based on the eligibility factors and criteria reviewed for this report, it is USACERL's opinion that the applicant is eligible for a zero-cost rural EDC. USACERL recommends that the Army consider \$3.1 to \$6.2 million in facility layaway and annual M&R costs when negotiating the final terms and conditions of the conveyance. It is also the recommendation of USACERL that the Army

^{*} LEAD data from FY 1996.

[†] LEAD data from FY 1997.

consider the conveyance of LEAD electric, water, and sewer systems to the LIDA for the following reasons:

1. It is likely that the LIDA can manage the utility distribution systems and provide services to LEAD and park users at reasonable rates.
2. Transferring water, sewer, and electric allows revenues gained from electric operations to offset losses from the other utility services.
3. Transfer of all systems to the LIDA enhances park marketability to clients, provides LIDA more leverage when negotiating bulk rates, and eliminates uncertainties caused by future BRAC actions.
4. The conveyance of these systems to the LIDA will provide an immediate and measurable reduction in ongoing utility operations and capital costs to the Army, consistent with DoD utility privatization mandates and anticipated cost savings from BRAC actions.
5. USACERL's analysis indicates that a reasonable probability exists for the Army to negotiate a lower utility rate structure than is currently being borne, thus increasing anticipated economic benefits.
6. The Army should ensure that the LIDA has the ability to manage utility operations by requiring the following: (1) that the LIDA produce a well-defined financing plan, (2) that an installation mobilization plan be provided to the LIDA so surge utility requirements are defined and understood, (3) that contracts be awarded to utility operators *prior to* conveyance and that the Army retain a right of first refusal on contract awardees, (4) that an excess profits clause provision be included in any utilities contract, and (5) that a reversion clause be included in any utilities contract so the Army can seek alternative utility service arrangements in the event that the LIDA is no longer capable or willing to provide utility service to the Army.

10 Review of Application for Completeness

This chapter summarizes USACERL's review of the LIDA's EDC application 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. Note that the EDC application requirements prescribed in the BRIM are reduced for rural EDCs.

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 in the application, but included a stipulation that parcels be drawn down from the Army in an incremental manner as the LIDA is able to assume additional ownership and management responsibilities. From an Army policy standpoint, incremental or "phased" approaches to property transfer based on LRA market and financial feasibility rather than ongoing Army missions and environmental encumbrances is generally unacceptable and inconsistent with governing legislation.
 - b. *Description of intended uses.* The EDC application generally failed to include a cogent summary of intended land uses, but the Reuse Strategy included a detailed description.
 - c. *Description of the economic impact of the closure on local communities.* A description is provided per the rural EDC requirements contained in the BRIM.
 - d. *Description of the financial condition of the community.* No description was included.
 - e. *Statement of how the EDC is consistent with the overall Reuse Plan.* No description was included.
3. *Description of how the EDC will contribute to short- and long-term job creation and economic redevelopment.* Twenty-year job creation forecasts were included.

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.*

Element 4(a) was included, but certain key assumptions concerning infrastructure phasing were completely absent from the analysis. To overcome these limitations, USACERL extracted infrastructure-phasing assumptions from other referenced documents for inclusion in the LIDA pro forma. Element 4(b) was not explicitly included in the EDC application, but was adequately supported through other source documents. Element 4(c) was included and found to be deficient due to the omission of infrastructure soft cost assessments. In addition, explicit assumptions concerning the phasing of infrastructure improvements in the cash flow analysis were absent. Finally, review element 4(d) was indirectly included, but lacked information concerning reserve contingencies, debt service, and gap financing.

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 qualifies for a zero-cost EDC under governing EDC legislation.

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

Appendix A: Technical Documentation

DAIM-BO

MEMORANDUM FOR U.S. ARMY CONSTRUCTION ENGINEERING RESEARCH
LABORATORY, ATTN: CECER-PL-N (MR. J. BOGG)
P.O. BOX 9005, CHAMPAGNE, IL 61826-9005

SUBJECT: Rural Determination Review for Letterkenny Army Depot

1. References:

- a. Conference Call Discussion, 7 Oct 97, Subject: Rural Determinations.
- b. Letterkenny Army Depot (LEAD) Rural Economic Development Conveyance application submitted by the Letterkenny Industrial Development Authority (LIDA).
- c. The DoD Base Reuse Implementation Manual (BRIM) update for Rural Base Determination, as provided by Mr. Tom Low, Office of Economic Adjustment. Copy is enclosed.

2. Under the former BRIM Rural Base guidelines it had been determined that LEAD met criteria one and two. However, the results of criteria three remained in question. It is the opinion of the Army proponent for BRAC actions, that the adjusted guidelines for criteria three give the Army flexibility to review and make a finding based on the unique and specific factors that affect the installation involved in the closure or realignment action. Further, it is felt that the local redevelopment authority is the best entity to identify, explain and justify those factors.

3. As such, request that US CERL render a recommendation on criteria three with regard to LEAD. The recommendation should be based on, but not limited to the information provided in the EDC application. The LIDA should be given the opportunity to provide clarification and or additional information as appropriate. It is in the best interest of all for US CERL to render its recommendation prior to commencing a detail review of the EDC application.

4. My POC for this action is Ms. Susan H. Bauer, (703) 697-0126.

Encl

R. GARY DINSICK
Colonel, EN
Chief, Base Realignment
and Closure Office

Appendix B: Employment Multipliers by Standard Industrial Classification (SIC) Code

<i>SIC</i>	<i>Commercial Industries</i>	<i>Direct Effects per Million \$</i>	<i>Total Jobs per Million \$</i>	<i>Type I Multiplier</i>	<i>Type II Multiplier</i>
1	Dairy Farm Products	29.142567	35.200016	1.003917	1.207856
2	Poultry and Eggs	11.534001	15.42315	1.030969	1.33719
3	Ranch Fed Cattle	194.6642	199.034113	1.000536	1.022449
4	Range Fed Cattle	462.709747	467.301617	1.000211	1.009924
5	Cattle Feedlots	45.8605	50.349428	1.002231	1.097882
6	Sheep, Lambs and Goats	129.684875	136.597283	1.00363	1.053302
7	Hogs, Pigs and Swine	53.63567	59.812871	1.012488	1.11517
9	Miscellaneous Livestock	149.775146	155.403167	1.000629	1.037576
11	Food Grains	37.966789	41.186601	1.008737	1.084806
12	Feed Grains	23.68721	26.372576	1.014752	1.113368
15	Tobacco	68.208908	73.612094	1.011446	1.079215
16	Fruits	26.497417	32.642399	1.039718	1.231909
18	Vegetables	10.614024	15.544393	1.154789	1.464515
21	Oil Bearing Crops	31.215809	34.561954	1.018824	1.107194
23	Greenhouse and Nursery Products	17.881241	25.494102	1.035	1.425746
24	Forestry Products	3.919111	25.569067	5.457458	6.524202
25	Commercial Fishing	59.782436	64.177196	1.018741	1.073513
26	Agricultural, Forestry, Fishery Services	41.9687	52.153603	1.038716	1.242679
27	Landscape and Horticultural Services	37.172585	48.975904	1.077395	1.317528
37	Coal Mining	4.175514	10.2438	1.486391	2.453303
38	Natural Gas & Crude Petroleum	11.216173	22.978014	1.690745	2.04865
40	Dimension Stone	10.313169	17.216505	1.199129	1.669371
41	Sand and Gravel	16.11334	22.558475	1.082164	1.399988
48	New Residential Structures	16.793673	27.362004	1.319985	1.629304
49	New Industrial and Commercial Buildings	20.299419	29.087236	1.068486	1.43291
50	New Utility Structures	16.51136	24.254335	1.092892	1.468948
51	New Highways and Streets	11.415071	18.981969	1.253977	1.662887
52	New Farm Structures	4.735613	11.559051	1.838097	2.440877

<i>SIC</i>	<i>Commercial Industries</i>	<i>Direct Effects per Million \$</i>	<i>Total Jobs per Million \$</i>	<i>Type I Multiplier</i>	<i>Type II Multiplier</i>
53	New Mineral Extraction Facilities	22.084314	31.101439	1.008911	1.408305
54	New Government Facilities	1.506961	8.920377	4.466536	5.919446
55	Maintenance and Repair, Residential	14.397702	25.965508	1.405198	1.803448
56	Maintenance and Repair Other Facilities	12.436721	20.284831	1.227696	1.631043
57	Maintenance and Repair Oil and Gas Wells	39.321007	48.225368	1.008957	1.226453
58	Meat Packing Plants	2.580474	14.835762	5.094391	5.749238
65	Fluid Milk	3.143155	6.933527	1.635773	2.205913
67	Canned Fruits and Vegetables	6.763358	12.161473	1.389486	1.798141
78	Prepared Feeds, N.E.C	2.830836	4.991775	1.348908	1.763357
79	Bread, Cake, and Related Products	6.385706	12.078656	1.293476	1.891514
80	Cookies and Crackers	4.744952	9.655486	1.393154	2.034896
82	Confectionery Products	4.891516	10.883242	1.731979	2.224922
91	Malt Beverages	4.116028	7.780234	1.360638	1.890229
100	Potato Chips & Similar Snacks	4.858079	10.303082	1.589482	2.120814
101	Manufactured Ice	33.620274	40.611393	1.037744	1.207944
103	Food Preparations, N.E.C	5.530573	11.30907	1.548137	2.044828
108	Broadwoven Fabric Mills and Finishing	9.02135	14.281212	1.17272	1.583046
124	Apparel Made From Purchased Materials	15.148333	20.800513	1.115861	1.373122
125	Curtains and Draperies	19.381428	26.201975	1.110624	1.351912
130	Automotive and Apparel Trimmings	9.915784	15.039772	1.239193	1.516751
133	Logging Camps and Logging Contractors	6.520175	9.495523	1.184679	1.45633
134	Sawmills and Planing Mills, General	7.76798	14.821825	1.537705	1.908067
137	Millwork	13.573457	22.101569	1.290928	1.628293
138	Wood Kitchen Cabinets	17.785143	25.150376	1.113831	1.414123
140	Structural Wood Members, N.E.C	10.30667	19.99529	1.548465	1.940034
142	Wood Pallets and Skids	15.855598	25.611734	1.293069	1.615312
144	Prefabricated Wood Buildings	7.325431	15.750637	1.613697	2.150131
147	Wood Products, N.E.C	14.171563	22.698642	1.177202	1.601704
148	Wood Household Furniture	14.678204	22.191984	1.197181	1.511901
157	Wood Partitions and Fixtures	15.207397	22.990969	1.127053	1.511828
162	Paper Mills, Except Building Paper	4.787305	11.035574	1.446933	2.305175
164	Paperboard Containers and Boxes	6.08917	10.665984	1.199834	1.751632
174	Newspapers	20.514187	26.93748	1.04884	1.313115
175	Periodicals	9.720875	16.212696	1.235583	1.667823
176	Book Publishing	6.702349	11.769842	1.34272	1.756077
178	Miscellaneous Publishing	8.229514	13.859853	1.213197	1.684164
179	Commercial Printing	12.231222	18.039697	1.158152	1.474889
180	Manifold Business Forms	8.590116	13.381823	1.169515	1.557816

<i>SIC</i>	<i>Commercial Industries</i>	<i>Direct Effects per Million \$</i>	<i>Total Jobs per Million \$</i>	<i>Type I Multiplier</i>	<i>Type II Multiplier</i>
181	Greeting Card Publishing	10.135044	15.103976	1.166467	1.490272
184	Typesetting	22.866196	31.517008	1.072518	1.378323
203	Fertilizers, Mixing Only	3.609252	7.954768	1.469673	2.203993
211	Paving Mixtures and Blocks	2.999478	8.400299	1.869496	2.800587
219	Fabricated Rubber Products, N.E.C.	8.340589	14.852788	1.263392	1.780784
220	Miscellaneous Plastics Products	6.477951	12.143204	1.299853	1.874544
221	Leather Tanning and Finishing	5.394891	12.177553	1.750029	2.257238
230	Glass and Glass Products, Exc Containers	7.31063	15.026315	1.355684	2.055406
242	Concrete Block and Brick	7.883565	14.348041	1.328275	1.819994
243	Concrete Products, N.E.C	10.483562	17.352978	1.208958	1.655256
244	Ready-mixed Concrete	8.067225	14.077533	1.283799	1.745028
247	Cut Stone and Stone Products	12.634535	19.932486	1.140322	1.577619
258	Steel Pipe and Tubes	4.577265	8.864471	1.278534	1.93663
259	Iron and Steel Foundries	10.218553	18.646334	1.279793	1.824753
281	Heating Equipment, Except Electric	7.474652	12.82347	1.202859	1.715594
282	Fabricated Structural Metal	6.696687	12.374707	1.244791	1.847885
283	Metal Doors, Sash, and Trim	9.684689	16.567793	1.243103	1.71072
285	Sheet Metal Work	8.647226	14.47978	1.231286	1.6745
286	Architectural Metal Work	10.018452	16.573799	1.151327	1.654327
287	Prefabricated Metal Buildings	6.352997	11.524579	1.269411	1.814038
295	Plating and Polishing	15.243524	23.447832	1.113482	1.538216
303	Pipe, Valves, and Pipe Fittings	9.578771	16.26983	1.160778	1.69853
304	Miscellaneous Fabricated Wire Products	22.432652	27.938729	1.070688	1.245449
306	Fabricated Metal Products, N.E.C.	9.768085	15.107314	1.277584	1.546599
309	Farm Machinery and Equipment	7.411855	13.35396	1.381587	1.801703
311	Construction Machinery and Equipment	4.96762	10.221625	1.437089	2.057651
314	Elevators and Moving Stairways	10.72023	18.225868	1.184104	1.700138
318	Machine Tools, Metal Cutting Types	11.453256	19.495501	1.158045	1.70218
319	Machine Tools, Metal Forming Types	10.383584	17.788618	1.164145	1.713148
320	Industrial Patterns	22.751192	32.121316	1.026055	1.411852
321	Special Dies and Tools and Accessories	12.549469	21.492297	1.108483	1.712606
327	Woodworking Machinery	8.732685	15.334948	1.208342	1.75604
333	Ball and Roller Bearings	7.164207	13.670305	1.197606	1.908139
336	Power Transmission Equipment	7.411666	13.299965	1.208651	1.794464
347	Refrigeration and Heating Equipment	5.165026	11.13586	1.453876	2.156013
354	Industrial Machines N.E.C.	11.86337	18.674852	1.167109	1.574161
356	Switchgear and Switchboard Apparatus	7.160259	13.830888	1.321674	1.931619
357	Motors and Generators	7.740123	14.171129	1.231921	1.830866

<i>SIC</i>	<i>Commercial Industries</i>	<i>Direct Effects per Million \$</i>	<i>Total Jobs per Million \$</i>	<i>Type I Multiplier</i>	<i>Type II Multiplier</i>
359	Relays & Industrial Controls	6.870985	14.415246	1.481007	2.097989
368	Wiring Devices	9.276883	16.058755	1.180086	1.731051
378	Electronic Components, N.E.C.	5.639335	10.97258	1.477674	1.945722
381	Engine Electrical Equipment	9.011163	16.703946	1.332949	1.853695
385	Truck and Bus Bodies	6.170883	11.208396	1.276188	1.816336
400	Search & Navigation Equipment	7.208163	14.455313	1.326185	2.005409
401	Laboratory Apparatus & Furniture	4.444275	10.275031	1.631617	2.31197
407	Surgical and Medical Instrument	6.741324	12.8347	1.253638	1.903884
415	Jewelry, Precious Metal	13.283741	19.241309	1.178182	1.448486
419	Dolls	26.165504	31.556147	1.102237	1.206021
430	Burial Caskets and Vaults	14.410037	21.491795	1.252804	1.491446
433	Railroads and Related Services	7.895711	18.485154	1.711356	2.341164
434	Local, Interurban Passenger Transit	45.273987	55.825475	1.101948	1.233058
435	Motor Freight Transport and Warehousing	11.783608	24.123507	1.624921	2.047209
436	Water Transportation	4.667565	10.896773	1.655453	2.334573
437	Air Transportation	5.586554	12.215018	1.604244	2.186503
438	Pipe Lines, Except Natural Gas	1.087071	5.421577	3.278047	4.987325
439	Arrangement Of Passenger Transportation	26.062309	36.270348	1.16274	1.391678
440	Transportation Services	14.043066	22.400857	1.249216	1.595154
441	Communications, Except Radio and TV	4.250055	11.021168	1.711316	2.593183
442	Radio and TV Broadcasting	8.744913	19.151787	1.768096	2.190049
443	Electric Services	3.28315	9.009525	1.795163	2.744171
444	Gas Production and Distribution	2.305665	5.021383	1.440444	2.177845
445	Water Supply and Sewerage Systems	6.850157	18.02744	1.893497	2.631683
446	Sanitary Services and Steam Supply	5.974829	14.920321	1.753867	2.497196
447	Wholesale Trade	13.054399	22.279078	1.310966	1.706634
448	Building Materials & Gardening	26.009304	35.185474	1.064836	1.352803
449	General Merchandise Stores	39.985447	48.749483	1.047383	1.219181
450	Food Stores	35.586617	44.742797	1.042866	1.257293
451	Automotive Dealers & Service Stations	20.76371	30.087528	1.113341	1.449044
452	Apparel & Accessory Stores	37.238613	45.825958	1.076884	1.230603
453	Furniture & Home Furnishings Stores	24.344009	33.470178	1.084726	1.374884
454	Eating & Drinking	31.402187	39.548645	1.103612	1.259423
455	Miscellaneous Retail	38.700344	47.658174	1.046784	1.231466
456	Banking	7.159469	14.572444	1.547864	2.035408
457	Credit Agencies	29.03754	42.064689	1.152418	1.448631
458	Security and Commodity Brokers	9.336881	15.664158	1.315075	1.677665
459	Insurance Carriers	9.286265	23.054187	1.904633	2.482611

<i>SIC</i>	<i>Commercial Industries</i>	<i>Direct Effects per Million \$</i>	<i>Total Jobs per Million \$</i>	<i>Type I Multiplier</i>	<i>Type II Multiplier</i>
460	Insurance Agents and Brokers	22.571285	32.087972	1.075547	1.421628
462	Real Estate	6.9242	12.361804	1.564541	1.785304
463	Hotels and Lodging Places	27.833891	38.211719	1.163912	1.372849
464	Laundry, Cleaning and Shoe Repair	51.272278	62.341542	1.0734	1.215892
465	Portrait and Photographic Studios	36.303368	47.037522	1.153771	1.295679
466	Beauty and Barber Shops	45.168415	53.900686	1.044145	1.193327
467	Funeral Service and Crematories	19.060089	27.396835	1.067421	1.437393
468	Miscellaneous Personal Services	23.891199	34.674831	1.287231	1.451364
469	Advertising	35.670727	44.294856	1.011821	1.241771
470	Other Business Services	16.946486	24.022924	1.109091	1.417576
471	Photofinishing, Commercial Photography	37.074978	45.750185	1.06144	1.233991
472	Services To Buildings	42.997337	53.184262	1.066553	1.23692
473	Equipment Rental and Leasing	12.490168	20.042341	1.241731	1.60465
474	Personnel Supply Services	53.827663	64.997082	1.007401	1.207503
475	Computer and Data Processing Services	10.33392	18.321042	1.133866	1.772903
476	Detective and Protective Services	70.89016	82.153946	1.022115	1.158891
477	Automobile Rental and Leasing	10.261054	20.194493	1.498909	1.968072
478	Automobile Parking and Car Wash	17.087898	26.564373	1.304726	1.554572
479	Automobile Repair and Services	15.404871	24.355264	1.265886	1.58101
480	Electrical Repair Service	25.122959	30.700012	1.048826	1.22199
481	Watch, Clock, Jewelry and Furniture Repair	16.66683	24.582308	1.264757	1.474924
482	Miscellaneous Repair Shops	19.791946	26.900448	1.124537	1.359161
483	Motion Pictures	13.184301	22.19999	1.447625	1.68382
484	Theatrical Producers, Bands Etc.	18.908209	34.160927	1.573874	1.806672
485	Bowling Alleys and Pool Halls	51.045429	61.760393	1.086699	1.20991
487	Racing and Track Operation	30.624563	39.693222	1.090616	1.296124
488	Amusement and Recreation Services, N.E.C.	30.594664	39.848781	1.09531	1.302475
489	Membership Sports and Recreation Clubs	47.46484	58.748208	1.022512	1.23772
490	Doctors and Dentists	12.685605	21.794895	1.143463	1.718081
491	Nursing and Protective Care	32.192818	43.076423	1.07031	1.338076
492	Hospitals	17.546524	26.718547	1.082199	1.522726
493	Other Medical and Health Services	19.569403	27.65516	1.119702	1.413184
494	Legal Services	15.626617	25.65052	1.036962	1.641463
495	Elementary and Secondary Schools	23.040918	35.375776	1.233335	1.535346
496	Colleges, Universities, Schools	33.189114	43.573982	1.123387	1.3129
497	Other Educational Services	32.032021	41.699859	1.167557	1.301818
498	Job Trainings & Related Services	32.229626	42.964919	1.11662	1.333088
499	Child Day Care Services	44.190144	51.946332	1.071059	1.175519

SIC	Commercial Industries	Direct Effects per Million \$	Total Jobs per Million \$	Type I Multiplier	Type II Multiplier
500	Social Services, N.E.C.	29.792896	40.306688	1.101088	1.352896
501	Residential Care	47.029625	57.210855	1.030608	1.216485
502	Other Nonprofit Organizations	24.98575	35.341794	1.12456	1.414478
503	Business Associations	13.563183	22.238073	1.158526	1.639591
504	Labor and Civic Organizations	38.113583	49.188987	1.11369	1.290589
506	Engineering, Architectural Services	17.278582	28.160516	1.224579	1.629793
507	Accounting, Auditing and Bookkeeping	19.002146	29.730756	1.221755	1.5646
508	Management and Consulting Services	13.780956	23.723048	1.326877	1.721437
509	Research, Development & Testing Services	29.43609	39.762685	1.125827	1.350814
511	State and Local Electric Utilities	4.708826	11.757838	1.783637	2.496979
512	Other State and Local Govt Enterprises	5.916618	16.678547	2.064301	2.818932
513	U.S. Postal Service	14.105649	26.566379	1.271682	1.883386
515	Other Federal Government Enterprises	19.656004	25.417829	1.05597	1.293133
519	Federal Government - Military	89.439552	101.179317	1	1.131259
520	Federal Government - Non-Military	33.001591	44.741356	1	1.355733
522	State & Local Government - Education	31.61808	43.357845	1	1.371299
523	State & Local Government - Non-Education	37.95813	49.697895	1	1.309282
525	Domestic Services	162.359009	174.098774	1	1.072307

Appendix C: Input-Output Analysis

It should be noted that USACERL's independent analysis rests primarily on projections developed with Implan Pro v1.1, an input-output modeling program that is commonly used in the economic development, urban and regional planning, and BRAC communities. Since the input-output approach is both linear and tied to a specific point in time (e.g., it is an economic "snapshot" of a particular time and does not address long-term structural economic effects), several caveats and assumptions must be made in order to allow its use. Note that "assumptions" are facts that are deemed to be true for analytical purposes; "caveats" are simply cautions that warn the reader when the results of this analysis may not be reliable.

Assumptions

- Approximately 19 percent of employee's 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 the Franklin County region
- The average consumption patterns for all military personnel (i.e., at or above \$30,000 per year gross income) were assumed to be similar to consumption patterns of other middle-income area residents†
- Spousal employment patterns for LEAD employees are similar to spousal employment patterns for the Franklin County ROI

* 19 percent 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.

† Based on the total salary-related expenditures that occurred during the year of closure, LEAD employees earned a yearly average of \$34,837 per employee.

- “Employee compensation” includes all salaries and wages, as well as life and health insurance, pension payments, and any other non-cash compensation.
- Since post-realignment budget data were unavailable, it was assumed that reduction patterns in post-realignment non-salary expenditures would mimic the reduction patterns in employment.

Caveats

- This analysis is based on static modeling techniques which cannot capture dynamic economic effects that may manifest over a longer period of time, such as 5 to 10 years.
- This analysis cannot fully reflect the possibility that former employees will be able to find new employment only at a lower compensation level, since this methodology does not capture underemployment effects and equates all jobs equally.
- This analysis relied on the ROI used by the Draft EA (which included only Franklin County) instead of a larger area that USACERL’s economic models indicated may be appropriate in order to maintain compatibility with the DEA.

Appendix D: Infrastructure Need and Extent Technical Support

The four-part condition assessment process included the following:

1. The infrastructure was separated into groups of logically related systems and an inspection made of the systems and their components.
2. Specific information was gathered from LIDA and the LEAD DPW concerning the current state of the systems within the facility.
3. The data were converted into a condition rating by comparing the current state of each subsystem with its ideal condition.
4. A cost comparison was developed to show the variances between the LIDA and USACERL unit rates.

The infrastructure divisions of the LEAD infrastructure were visually inspected and rated using Table D.1.

Table D.1. Condition rating determination.

Condition Rating Category	Condition Rating Range	Condition Descriptions		
		Amount of Deterioration Present	How the Distress Affects the Functionality	Type of M & R Required to Repair the Distress
Excellent	86-100	Minimal deterioration	Functionality is unimpaired	Preventive/minor maintenance or minor repair
Very Good	71-85	Minor deterioration	Functionality is slightly impaired	Preventive/minor maintenance or minor repair
Good	56-70	Moderate deterioration	Functionality is somewhat impaired	Moderate maintenance or minor repair
Fair	41-55	Significant deterioration	Functionality is seriously impaired	Significant maintenance or moderate repair
Poor	26-40	Severe deterioration over a small amount (10 to 25% of area)	Functionality is critically impaired	Major repair but less than total restoration
Very Poor	11-25	Severe deterioration over a moderate amount	Functionality barely exists	Major repair but less than total restoration
Failed	0-10	Severe deterioration over a large portion (>66% of area)	Functionality is lost	Total restoration

Condition Survey

Table D.2 shows the overall condition of the infrastructure systems.

Table D.2. Infrastructure condition rating.

Infrastructure Division	Infrastructure System	Existing Condition Rating
Transportation	Roads	Good
	Parking areas	Good
	Railroads	Fair
	Bike Paths	N/A
	Sidewalks	N/A
	Traffic Control	Good
	Heliports	N/A
	Average	Good
Utilities - water	Domestic Water	Good
	Storm Sewer	Good
	Sanitary Sewer	Good
	Industrial Wastewater	N/A
	Average	Good
Utilities - energy	Electrical	Good
	Natural Gas	N/A
	Heating	N/A
	A/C	N/A
	Compressed Air	N/A
	Average	Good
Buildings	Existing	Very Good
	Improvements	Very Good
	Service Facilities	Good
	Average	Very Good
Miscellaneous	Street Lights	Poor
	Communications	Fair
	Fencing	Good
	Average	Fair
	OVERALL	GOOD

Roadway Unit Prices

Full Depth Repair

Saw cut and remove existing 5-in. pavement; excavate up to 6 in. and prepare subgrade; place and compact 6-in. thick crushed aggregate base course, prime coat; place 2 in. Bituminous Base Course, tack coat; place 1.5 in. Bituminous Binder Course, tack coat; place 1.5 in. Bituminous Wearing Course.

Full Depth New

Excavate up to 6 in. and prepare subgrade; place and compact 6-in. thick crushed aggregate base course, prime coat; place 2 in. Bituminous Base Course, tack coat; place 1.5 in. Bituminous Binder Course, tack coat; place 1.5 in. Bituminous Wearing Course.

Curb, Sidewalk, Miscellaneous Drainage

Install a 6 in. by 24 in. concrete curb and gutter on both sides of roadway, 5-ft wide by 4-in. thick concrete sidewalk on both sides of roadway, 18 in. diameter RCP Storm sewer run parallel with roadway and 12 in. diameter RCP laterals with 2 to 4 ft deep catch basins every 300 LF.

Rail Unit Prices

Quotes obtained from railroad contractors directly reflected the varying extent of work required for the railroad system. The prices LIDA used for existing line activation and siding work fall in the middle of these prices. The median price of \$75,000 for signalized crossings, however, is slightly higher than LIDA's price of \$65,000 per crossing. Over the past 4 years, the Army spent \$3,000,000 upgrading 14.5 miles of active track (\$40/track foot) primarily in the ammunition dump area. A 1997 rail inspection report indicates that 9 miles of track in the realignment area (mostly District 1) need rework of existing rail and replacement of existing ties (not to exceed 10 percent of total ties) with some minor switch work (instead of major rail replacement). Based on these assumptions, track prices of \$7 to \$10/track foot are more reasonable than the \$80/track foot used for the Letterkenny Reuse Strategy. However, for new rail construction (in District 6), \$80/track foot appears to be reasonable (based on quotes obtained and assuming subgrade preparatory work is required).

Water and Sewer Unit Prices

Assumptions made for these two systems are in line with the parcel connection costs (Schedule A of the Utility Transfer Analysis) determined by LIDA. Spot checks of pipe network replacement (Schedules I and B) and other tables such as pump stations (Schedule C) and treatment storage schedule (Schedule H) appear to have reasonable costs. Due to lack of supporting information, treatment plant (Schedule G) and raw water (Schedule F) improvements could not be confirmed.

Electrical Unit Prices

Assumptions made for the electrical scope are based on the parcel connection costs (Schedule A of the Utility Transfer Analysis) determined by LIDA. Design costs in the Capital Improvements Summary as well as Wholesale Purchase Expense (in the Business Pro Forma of the EDC application) could not be confirmed due to a lack of supporting documents but appear to be reasonable. Utility and service pole costs were estimated separately due to a difference in cost and the number of each that might be required.

Demolition

Brick building demolition (\$2/SF) was priced separately from corrugated metal building demolition (\$0.43/SF). LIDA's estimate did not take into account demolition of any of the 160 humidity-controlled tanks in District 5A. In USACERL's opinion, brick building demolition costs are applicable for demolishing these tanks. Based on the pricing of the different structures, USACERL estimated demolition costs overall to be \$1.60/sq ft versus LIDA's estimate of \$1.19/sq ft.

Operating expenses and nonrecurring startup costs for water, sewer, and electrical could not be confirmed.

Table D.3 shows the comparisons between the LIDA unit rates found in Appendix 11 of the Letterkenny Reuse Strategy and USACERL's estimated unit rates.

Table D.3. Unit rate comparison.

	Unit	LIDA Estimate	USACERL Estimate
Roads			
Full Depth Repair	SY	\$25	\$44
Full Depth New	SY	\$45	\$27
3.5 in. Bituminous Surface	SY	\$10	\$11
1.5 in. Overlay Surface	SY	\$4	\$4
Curb Sidewalk Misc. Drainage	LF	\$80	\$101
Railway			
Existing Line Activation (see assumption 1)	LF	\$80	\$80
Signalized Rail Crossings	EA	\$65,000	\$75,000
Dock Level Siding Improvements	LF	\$80	\$80
Building Demolition			
Building Demolition (see assumption)	SF	\$1.19	\$1.60
Water Service Connection			
Main Extension	LF	\$50	\$50
Lateral Extension, Domestic	LF	\$50	\$43
Lateral Extension, Fire	LF	\$65	\$76
Meter	EA	\$2,500	\$1,268
Backflow Preventer, Domestic	EA	\$2,600	\$3,008
Backflow Preventer, Fire	EA	\$5,500	\$5,171
Filter	EA	\$2,500	\$2,451
Booster Pump, Domestic	EA	\$8,000	\$7,746
Booster Pump, Fire	EA	\$18,000	\$19,768
Hydrant	EA	\$4,000	\$2,009
Curb Stop Valve	EA	\$500	\$423
Sewer Service Connection			
Main Extension, Gravity	LF	\$50	\$64
Main Extension, Force	LF	\$35	\$42
Main Replacement, Gravity	LF	\$60	\$76
Lateral Extension, Gravity	LF	\$45	\$53
Lateral Extension, Force	LF	\$30	\$32
Ejector Pump @Building	EA	\$5,000	\$8,946
Pump Station, Network	EA	\$150,000	\$150,641
Precast Concrete Manhole	EA	\$2,000	\$1,774
Electrical			
<i>Service Connection Costs-Utility</i>			
Main Circuit Extension	LF	\$20	\$24
Primary Service Extension	LF	\$20	\$26
Transformer Installation	EA	\$15,000	\$25,031
Meter Connection	EA	\$300	\$461
Poles (see comments)	EA	\$2,000	\$2140
<i>Service Connection Costs-Developer</i>			
Primary Service Extension	EA	\$20	\$37
Transformer Pad & Sec Wiring	LF	\$5,000	\$8,850
Meter Connection	EA	\$1,700	\$667

Excluding utilities, major discrepancies found for the infrastructure were the paving rates and existing railroad activation. According to the LEAD Reuse Strategy, Appendix 11, approximately 8.3 miles of rail in District 1 are priced at \$80/track foot resulting in a cost of \$3,544,000 to activate. USACERL's estimate for minimal rail activation is \$310,100 to \$443,000 (\$7 to \$10/track foot). Cost for new track work required in District 6 is \$320,000 (\$80/track foot, LIDA's estimate), which is consistent with USACERL's findings.

It also appears that LIDA's unit cost for full depth paving repair and full depth new paving is reversed. Table D.4 uses the quantities from Appendix 11 of the LEAD Reuse Strategy to determine an overall cost savings of \$1,023,213.

Table D.4. Paving comparison.

	Quantity	Unit	LIDA Estimate	USACERL Estimate
Full Depth Repair				
District 1	22827	SY	\$25	\$44
District 2	2773	SY	\$25	\$44
District 3	1760	SY	\$25	\$44
District 4	5689	SY	\$25	\$44
District 5	4871	SY	\$25	\$44
District 6	3520	SY	\$25	\$44
District 7	1991	SY	\$25	\$44
Total Variance-Repair				
Full Depth New				
District 1	6600	SY	\$45	\$27
District 2	3111	SY	\$45	\$27
District 3	533	SY	\$45	\$27
District 4	1334	SY	\$45	\$27
District 5	49778	SY	\$45	\$27
District 6	29689	SY	\$45	\$27
District 7	11644	SY	\$45	\$27
Total Variance-Full Depth New Paving				
Net Savings				

Table D.5 shows overall civil capital improvements by district and type. USACERL's estimate is \$19,552,989 and LIDA's estimate is \$20,507,459.

Table D.5. Civil capital improvements.

	Quantity	Unit	LIDA Estimate	LIDA Cost	USACERL Estimate	USACERL Cost
ROADS						
Full Depth Repair						
District 1	22827	SY	\$25	\$570,675	\$44	\$1,004,388
District 2	2773	SY	\$25	\$69,325	\$44	\$122,012

[illegible]

	Quantity	Unit	LIDA Estimate	LIDA Cost	USACERL Estimate	USACERL Cost
District 1	1	LS	\$520,000	\$520,000	\$520,000	\$520,000
District 3	1	LS	\$150,000	\$150,000	\$150,000	\$150,000
District 4	1	LS	\$190,000	\$190,000	\$190,000	\$190,000
District 5	1	LS	\$320,000	\$320,000	\$320,000	\$320,000
Total				\$11,488,885		\$11,198,971
1st Five Years				\$9,170,000		\$9,170,000
Remaining Years				\$2,318,885		\$2,028,971
Existing Line Activation – Rework						
District 1	44300	LF	\$80	\$3,544,000	\$40	\$1,772,000
Existing Line Activation – New						
District 6	4000	LF	\$80	\$320,000	\$80	\$320,000
Signalized Rail Crossings						
District 1	16	EA	\$65,000	\$1,040,000	\$75,000	\$1,200,000
District 5	2	EA	\$65,000	\$130,000	\$75,000	\$150,000
Dock Level Siding Improvements						
District 1	6000	LF	\$80	\$480,000	\$80	\$480,000
Total				\$5,514,000		\$3,922,000
1st Five Years				\$3,540,000		\$3,540,000
Remaining Years				\$1,974,000		\$382,000
BUILDING DEMOLITION						
Tanks						
District 5	365666	SF	\$0	\$0	\$2	\$731,332
Brick Warehouses						
District 1	542121	SF	\$1.25	\$677,651	\$2	\$1,084,242
Metal Buildings						
District 1	118931	SF	\$1.25	\$148,664	\$0.43	\$51,140
District 2	12000	SF	\$1.00	\$12,000	\$0.43	\$5,160
District 3	0	SF	\$1.00	\$0	\$0.43	\$0
District 4	484	SF	\$0.75	\$363	\$0.43	\$208
District 5	185896	SF	\$1.00	\$185,896	\$0.43	\$79,935
District 6	0	SF	\$1.00	\$0	\$0.43	\$0
District 7	0	SF	\$1.00	\$0	\$0.43	\$0
Total				\$1,024,574		\$1,952,018
OFFSITE ROAD IMPROVEMENTS						
Total		LS	\$0.00	\$2,480,000	\$0.00	\$2,480,000
TOTALS				\$20,507,459		\$19,552,989

Table D.6 shows transformer unit rate comparison using the quantities from the parcel development worksheets of the Utility Transfer Analysis - Volume 1 and the overall cost impact for Years 1 through 9. Overall cost difference for utility- and developer-supplied transformers is an increase of \$666,288.

Table D.6. Transformer unit rate comparison.

	Quantity	Unit	LIDA Estimate	USACERL Estimate
Transformers-Util. Supp.				
<i>Years 1-9</i>				
District 1	36	EA	\$15,000	\$25,031
District 2	5	EA	\$15,000	\$25,031
District 3	0	EA	\$15,000	\$25,031
District 4	0	EA	\$15,000	\$25,031
District 5	7	EA	\$15,000	\$25,031
District 6	0	EA	\$15,000	\$25,031
District 7	0	EA	\$15,000	\$25,031
Variance Transformers-Utilities supplied				
Transformers-Dev. supplied				
District 1	36	EA	\$5,000	\$8,850
District 2	5	EA	\$5,000	\$8,850
District 3	0	EA	\$5,000	\$8,850
District 4	0	EA	\$5,000	\$8,850
District 5	7	EA	\$5,000	\$8,850
District 6	0	EA	\$5,000	\$8,850
District 7	0	EA	\$5,000	\$8,850
Variance Transformers-Dev. Supplied				
Net Variance – Transformers				

A power pole unit rate comparison was developed using the quantities from the parcel development worksheets of the Utility Transfer Analysis-Volume 1 and the overall cost impact for Years 1 through 9. It is unclear in the Utility Analysis what ratio of service poles to utility poles was used. Assuming 1 in 10 service poles are used, USACERL estimates a cost of \$2,140 (9 poles estimated at \$1,085, and 1 pole estimated at \$11,634) compared to LIDA's cost of \$2,000. The total cost increase is \$6,860.

Distribution

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