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Technical Review of the Economic Development Conveyance Application for the Defense Depot Ogden, Utah

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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 Ogden Local Redevelopment Authority filed an EDC application for transfer of the Defense Depot Ogden, a U.S. Army installation slated for closure under BRAC 95. The U.S. Army Construction Engineering Research Laboratory was tasked by Headquarters, U.S. Army Corps of Engineers to (1) review the EDC application for compliance with DoD rules implementing the Federal EDC policy, (2) analyze the findings, and (3) report to the sponsor.

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Executive Summary

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

The U.S. Army Construction Engineering Research Laboratory's (CERL's) analysis generally failed to support the closure impacts and potential for recovery suggested by the Economic Development Conveyance (EDC) application. In particular, CERL determined that total likely detrimental impacts will probably amount to about 350 direct and indirect jobs, or about \$70 million in gross output.

CERL's estimates varied from those presented in the EDC application primarily because of a methodological shortcoming in the calculation approach used in the EDC application, which failed to account for the offsetting positive impacts of various job placement programs and other impact-mitigation efforts that have been in operation since the closure was announced. CERL's estimates correct this omission.

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

CERL's analysis of potential long-term job creation suggests that about 22,000 jobs will eventually be created as a result of redevelopment. While the estimates presented in the EDC application are higher (about 29,000 jobs), CERL's review suggests that these estimates were generated in a methodologically sound manner. Since the discrepancy between this estimate and CERL's estimate resulted mainly from the Ogden Local Redevelopment Authority's (OLRA's) use of an earlier data set, and slightly more aggressive assumptions about the volume of economic activity taking place at the facility, it may be viewed as reasonable.

Note, however, that these projections are based on the assumption employment densities will approximate local industry standards; other specific assumptions were also made. These projections suggest that total closure impacts (as calculated by CERL) will be fully mitigated during the first year or second year of the redevelopment.

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

After reviewing the OLRA EDC application and January 1997 Reuse Plan, CERL finds that the application is generally consistent with the goals, objectives, and implementation strategies set forth in the Reuse Plan. Although CERL observed minor inconsistencies relative to business plan and infrastructure assumptions and costs, it was concluded that they were reasonable given the inherent flexibility of the reuse planning process which must be able to effectively respond to changing fiscal and market conditions.

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

The OLRA is requesting an EDC to acquire approximately 1,009 acres of DDO along with water, wastewater, storm water, gas and street utility systems, and 6.1 million sq ft of building space for a proposed consideration of \$1 million. It is the conclusion of CERL that the applicant's proposed business plan for the redevelopment of DDO tenuously demonstrates financial feasibility due to substantial levels of investment, but is enhanced through CERL scenario development. The net present value (NPV) of the Business Plan for the 15-yr project analysis period, as estimated by the OLRA, was calculated to be *positive* \$1 million. CERL's developed alternative scenario for the business plan produced a net present value range of *positive* \$3.1 to \$12.1 million.

The applicant's business plan is based on a mixture of business park, mixed-use, office/light industrial, and industrial uses programmed over 15 years with the intent of creating a diversified commercial site that maximizes job creation goals. Key components and assumptions of the OLRA's Business Plan include:

- 373,500 sq ft/yr of manufacturing, distribution, and office absorption through Year 15 (2013) resulting in a full build-out of over 5.6 million sq ft
- Opportunity development, including the leasing of 560,000 sq ft to a local manufacturing concern beginning in Year 1 and the sale of Building 11 to the *Standard Examiner* newspaper bringing total site build-out to 6.4 million sq ft
- 15-yr effective gross revenues of \$93.6 million, the majority of which (\$60 million) is derived from the leasing of existing DDO space, and the balance

comprising existing building sales, land sales, and opportunity development revenues

- 15-yr projected operating expenses total over \$43 million, the majority of which (\$34.8 million) stem from building maintenance
- To attract and support over 5.6 million sq ft of commercial development, the OLRA has programmed over \$81.2 million in infrastructure improvements over 15 years. The largest single improvement is the renovation of existing buildings at \$19.3 million. Other notable site improvements include \$14.1 million in road upgrades and \$13.7 million in water system improvements and expansion.
- The OLRA proposed to fund 15-yr operational shortfalls through the use of tax increment finance (TIF) bond issues totaling \$18.1 million and EDA grant funding totaling \$12 million
- Sale of DDO to a private investor is assumed for Year 15 resulting in a one-time cash flow that is applied to the net present value of project cash flows
- A project discount rate of 12 percent is applied to pro forma cash flows.

The CERL1 Scenario represents two independently supportable project assumption changes that enhance the overall financial feasibility of the OLRA Business Plan. First, CERL's market feasibility analysis revealed that the OLRA's projected absorption rates and full build-out are achievable given forecasted economic growth for Weber County, a dwindling supply of industrial space to accommodate future real estate needs, and the OLRA's infrastructure improvement program, which soundly supports the OLRA's mix of onsite end users. In fact, the OLRA has experienced early reuse success as evidenced by over 1.5 million sq ft of existing space under lease. CERL estimates that absorption of OLRA-offered space may be increased to accommodate full build-out within 15 years to reflect robust employment growth in that industrial sector, lack of an available supply of land and space, and early project momentum. This project assumption results in the following business plan changes:

- Total 15-yr site absorption increases to accommodate full build-out by Year 15.
- Total 15-yr effective gross revenues increase from \$93.6 million to \$126.9 million.

The second assumption change recognizes that the proposed TIF district represents a fiscal opportunity cost to the City of Ogden. Although the TIF was found to be financially feasible, and vastly improves the performance of the OLRA Business Plan, it is appropriate to exclude the proceeds on a scenario basis reflecting the lost property tax revenue that would typically flow to other municipal concerns including the local school district. In effect, it represents an additional government subsidy that can theoretically be removed from a valuation perspective. Moreover, it is a source and level of local investment seldom seen in EDCs. The removal of TIF proceeds significantly reduced the performance of the business plan, resulting in a scenario range of NPV of *positive* \$3.1 to *positive* \$7.3 million.

When CERL1 assumptions are applied to the OLRA Business Plan, a new range of project NPVs is calculated. Without a Year 15 reversion, the OLRA Business Plan is found to be partially financially feasible as shown by calculated NPVs ranging from *negative* \$2.6 million to *positive* \$6.3 million at a 16 percent discount rate. When Year 15 reversion of \$5.8 million is applied, the indicated value of the OLRA Business Plan rises to *positive* \$3.1 million to \$12.1 million, and thus is the amount of monetary consideration that could be defended in negotiations with the ORLA.

Need and Extent of Proposed Infrastructure Improvements (Chapter 5)

According to the OLRA, infrastructure costs required to bring DDO up to marketable, code-compliant, and functional standards total \$87 million (constant dollars). The largest categories of infrastructure improvements include: (1) building renovation - \$34.5 million, (2) roads - \$14.2 million, (3) domestic water - \$13.7 million, (4) storm water - \$7.7 million, and (5) central heating plant - \$6.9 million. However, only \$64.8 million of the \$87 million infrastructure improvement program is programmed within the 15-yr pro forma, leaving the balance to be executed beyond Year 15 (2013). In terms of infrastructure phasing, the OLRA has proposed a judicious strategy where only 34 percent of infrastructure improvements are programmed within the first 5 years of redevelopment while the market for DDO property is tested. It was the finding of CERL that the OLRA's infrastructure costs as a total fall within a cost range of reasonableness, although variances do exist with some specific improvements.

Under the high range of the CERL1 Scenario, estimated DDO infrastructure improvement costs total \$83.0 million compared with the OLRA's estimate of

\$81.2 million. This finding would suggest that the OLRA's infrastructure improvement costs are substantially similar to CERL's estimated range of cost reasonableness.

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

The two major investments that incur financial risk are in (1) operational expenditures and (2) infrastructure improvements. The OLRA proposes to underwrite a majority of project investment as shown by 100 percent funding of \$43.3 million in operating expenses and 85 percent, or \$69.2 million, in infrastructure improvements. External sources of project funding include \$12 million in EDA grants and \$1 million in planning assistance from the DoD's Office of Economic Adjustment (OEA).

The level of investment and scope of redevelopment observed at DDO is indeed substantial, when viewed in absolute terms or relative to other EDC redevelopment efforts. The OLRA has outlined an investment strategy that soundly accommodates job creation goals while simultaneously reducing operating and infrastructure investment risks through prudent infrastructure phasing and multiple sources of funding. However, the business plan pro forma is marked by a 15-yr cumulative *negative* cash flow, which suggests financial subsidization from external sources, increased revenues, or reduced expenditures to ensure financial feasibility. The CERL1 Scenario improves the prospects for financial feasibility through independently supportable assumptions that result in positive cash flows and higher business plan value ranges. This level of investment for such a large BRAC facility should be looked upon favorably by the Army in negotiating the final terms and conditions of the transfer agreement.

Local and Regional Real Estate Market Conditions (Chapter 7)

CERL's review of market conditions generally supported the conclusions reached by the EDC application with respect to local real estate markets. CERL's independent market analysis suggests that the Weber County area real estate market is 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 there will likely be continued steady demand for commercial space for the foreseeable future.

However, CERL also cautions that the uniqueness of much of the space at the DDO facility, in comparison to other area commercial properties, necessarily imposes qualitative limits on future sales and lease value estimates. However, this potential limitation has not yet been manifested as indicated by the current interest in DDO facilities.

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, CERL has been asked to defer comment on these issues to the Real Estate Directorate at HQUSACE and the Corps of Engineers District, Sacramento. 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 CERL's scope of technical review.

Economic Benefit to the Federal Government (Chapter 9)

One of the criteria for EDC applicant eligibility that may be considered by the military department is the economic benefit to the Federal Government that will be derived from the proposed EDC. The military department is asked to consider the protection and maintenance cost savings that would be avoided by a swift conveyance of the EDC parcel, as well as anticipated consideration from the transfer. Based on the eligibility factors/criteria reviewed for this report, it is the opinion of CERL that the applicant is eligible for an EDC. Further, the Army should consider one-time facility layaway costs of \$684,129 to \$1,368,375 and recurring annual maintenance and repair costs of \$860,043 to \$1,548,078 when deciding the eligibility of the EDC applicant.

CERL also recommends that the Army look favorably upon the OLRA's substantial level of investment, which will likely create over 8,000 jobs when deciding if a discount from fair market value (FMV) is warranted. Finally, the CERL estimated range of business plan value is *positive* \$3.1 million to \$12.1 million, which contrasts with the OLRA's offer of \$1 million. However, the Army's final determination of value and possible consideration must rest largely on the

results of a negotiation process between the Army and the OLRA and the results of the Army's FMV appraisal process.

Review of the Application for Completeness (Chapter 10)

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

Foreword

This study was conducted for the Base Realignment and Closure (BRAC) Office, Headquarters, U.S. Army Corps of Engineers, and funded through the BRAC Officer, Office of the Assistant Chief of Staff for Installation Management (ACSIM-DAIM-BO), under Military Interdepartmental Purchase Request (MIPR) 7ACERB30001, 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 Laboratory (CERL), Installations Division (CN), and Facilities Division (CF). Dr. John Bandy is Chief, CN, and Michael Golish is Chief, CF.

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Introduction

Background

The Defense Depot Ogden (DDO) Economic Development Conveyance (EDC) parcel consists of approximately 1,009 acres and 6.1 million sq ft of building space in Weber County, Utah, about 35 miles north of Salt Lake City (see Figure 1, p 21). The entire DDO facility is 1,145 acres. Primary site ingress and egress is by an entrance on 12th Street that serves as an interchange with Interstate 15, only 1.3 miles to the west (Figure 2, p 22). Secondary site access is by State Road 400, which intersects with Interstate 15 to the west and 2nd Street to east. The areas immediately contiguous to DDO are predominately open space, agricultural, and some industrial and office uses.

When DDO was slated for closure by the 1995 Base Realignment and Closure (BRAC) Commission, Ogden City stepped forward and established the DDO Reuse Committee (DRC) and subsequent Ogden Local Redevelopment Authority (OLRA) to facilitate the reuse and economic redevelopment of the surplus parcels. Since the 1995 announcement, the facility has essentially demobilized in preparation for disposal, with the exception of the continuing Deployable Medical Systems (DEPMEDS) mission, which will be phased out in 2001. Figures 1 and 2 are maps that show the site's geographic relationship to key transportation corridors from regional and local perspectives and the market area, respectively. Figures 3 and 4 (pp 23 and 25) are the site and phasing plans, respectively.

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

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

These new regulations created the 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 OLRA, 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 (HQUSACE), for the conveyance of certain parcels at DDO. Included as part of the EDC application was a copy of the DDO Reuse Plan.

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

1. The Army will negotiate a Master Lease/Purchase Agreement covering all 1,009 acres included in the EDC parcel of land, buildings, storm water utility systems, roads and related infrastructure and personal property. This request would also include those parcels and buildings occupied by the DEPMEDS mission, but currently unavailable.
2. The OLRA offers to pay \$1,000,000 in current dollars to the Army in 1999 upon conveyance of the DDO surplus parcel.

The OLRA's EDC application provides discussion 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, the U.S. Army Construction Engineering Research Laboratory (CERL) requested additional Business Plan support from the OLRA's Business Plan contractor, Economic Research Associates (ERA) on 2 December 1997. ERA responded on 12 December 1997, but Business Plan shortcomings were only marginally improved. Despite these limitations, however, CERL successfully recasted the OLRA Business Plan and demonstrated project financial feasibility through alternative scenario development.

Subsequent to the receipt of the application by HQUSACE, CERL was tasked by headquarters to provide a technical review of the EDA application, evaluating it for compliance with 32 CFR Part 91 and related regulations. This report comprises CERL's findings and conclusions.

Objective

The objective of this study was to technically evaluate the OLRA's EDC application in terms of:

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

This report documents the study's findings, noting any deficiencies found in the application, and attempts 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 CERL Installations Division (CN). In anticipation of the EDC application, the work group conducted a site visit to the DDO region during the week of 3 November 1997. The purpose of the site visit was to coordinate the application review with DDO Army Caretaker Force personnel and to collect preliminary source data. Most of the group's analytical work and documentation occurred between 10 November 1997 and 5 January 1998. Additionally, CERL (in conjunction with DAIM-BO) submitted a memorandum on 8 July 1997 to communicate CERL's concerns with the EDA's proposed EDC application in attempt to better understand weakly supported key assumptions (see Appendix A).

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, CERL evaluated the application according to the following criteria and factors:

- adverse economic impact of closure on the region and potential for economic recovery after an EDC
- extent of short- and long-term job generation
- consistency with the overall Redevelopment Plan (i.e., the DDO Reuse Plan)
- financial feasibility of the proposed development, including market analysis, and the need and extent of proposed infrastructure improvements
- extent of state and local investment and risk incurred
- current local and regional real estate market conditions in the affected area
- 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
- 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 CERL's tasking and expertise, and is not addressed in this report.

After evaluating the validity of the information provided in the EDC application, CERL 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 Application for Completeness.**)

Finally, the CERL work group compiled its findings into this report and a briefing for the sponsor. The final briefing was given to Army decision-makers on 12 August 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			

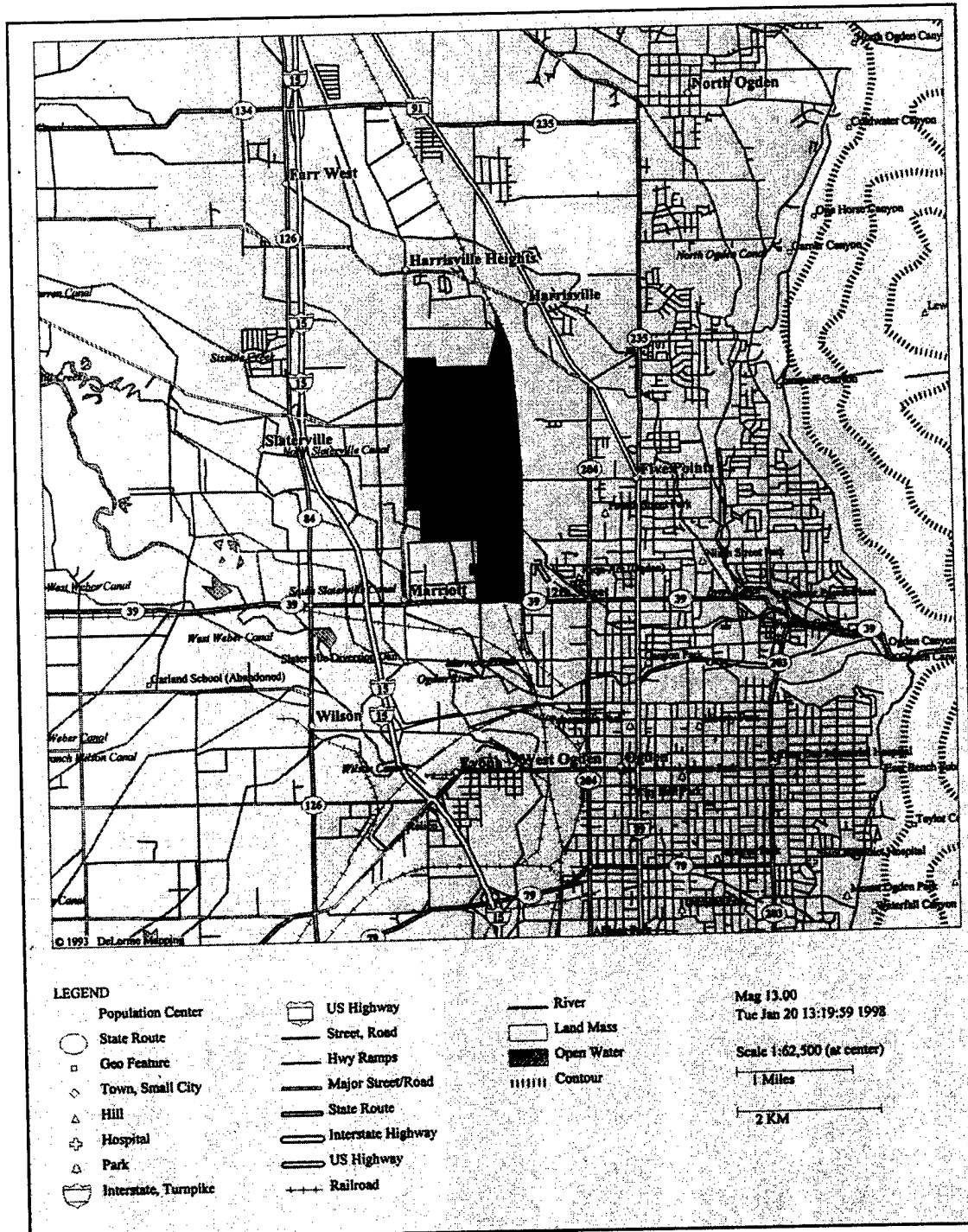


Figure 1. Geographic relationship of DDO with the greater Salt Lake City region.

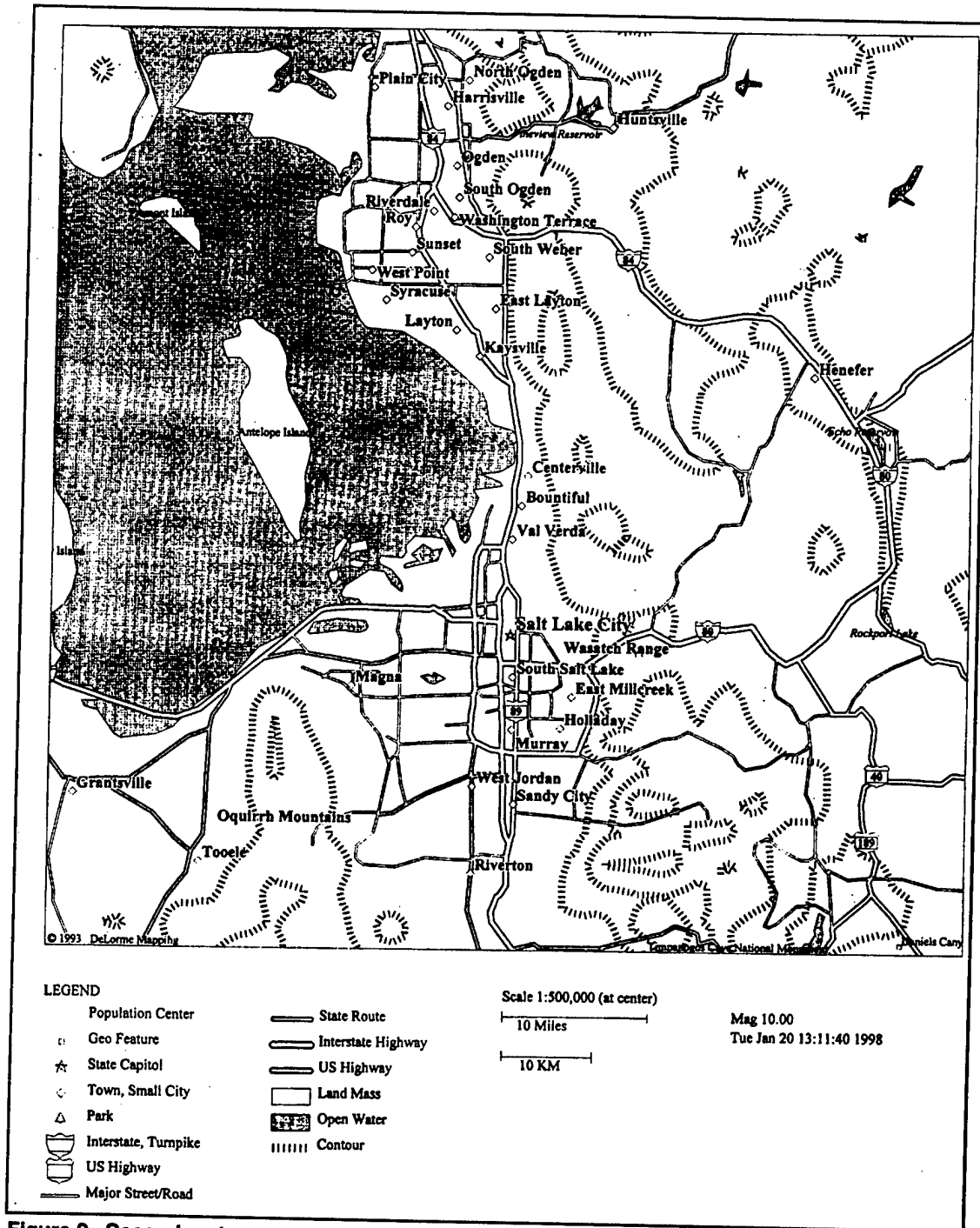
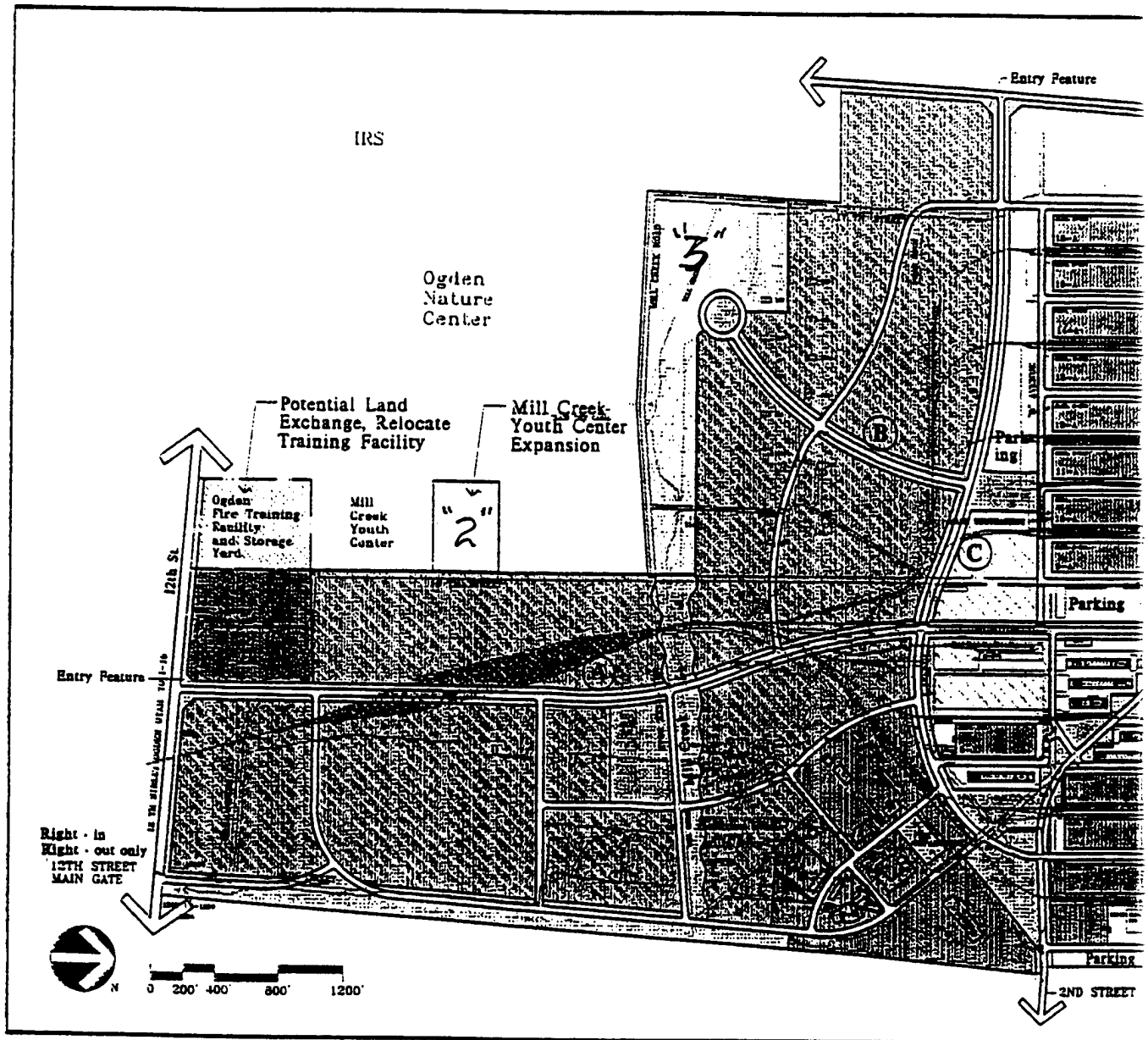


Figure 2. Secondary transportation corridors and geographic relationship of DDO.



Master Plan
Map 4.1

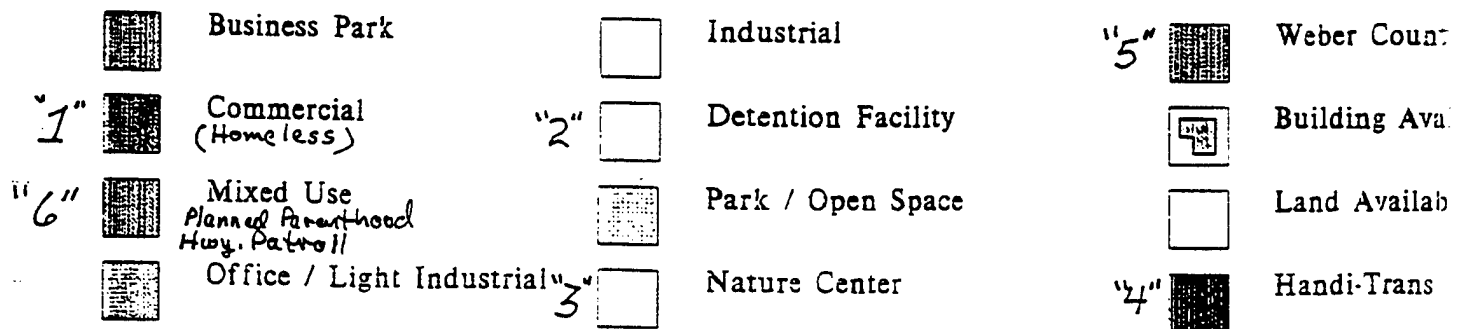
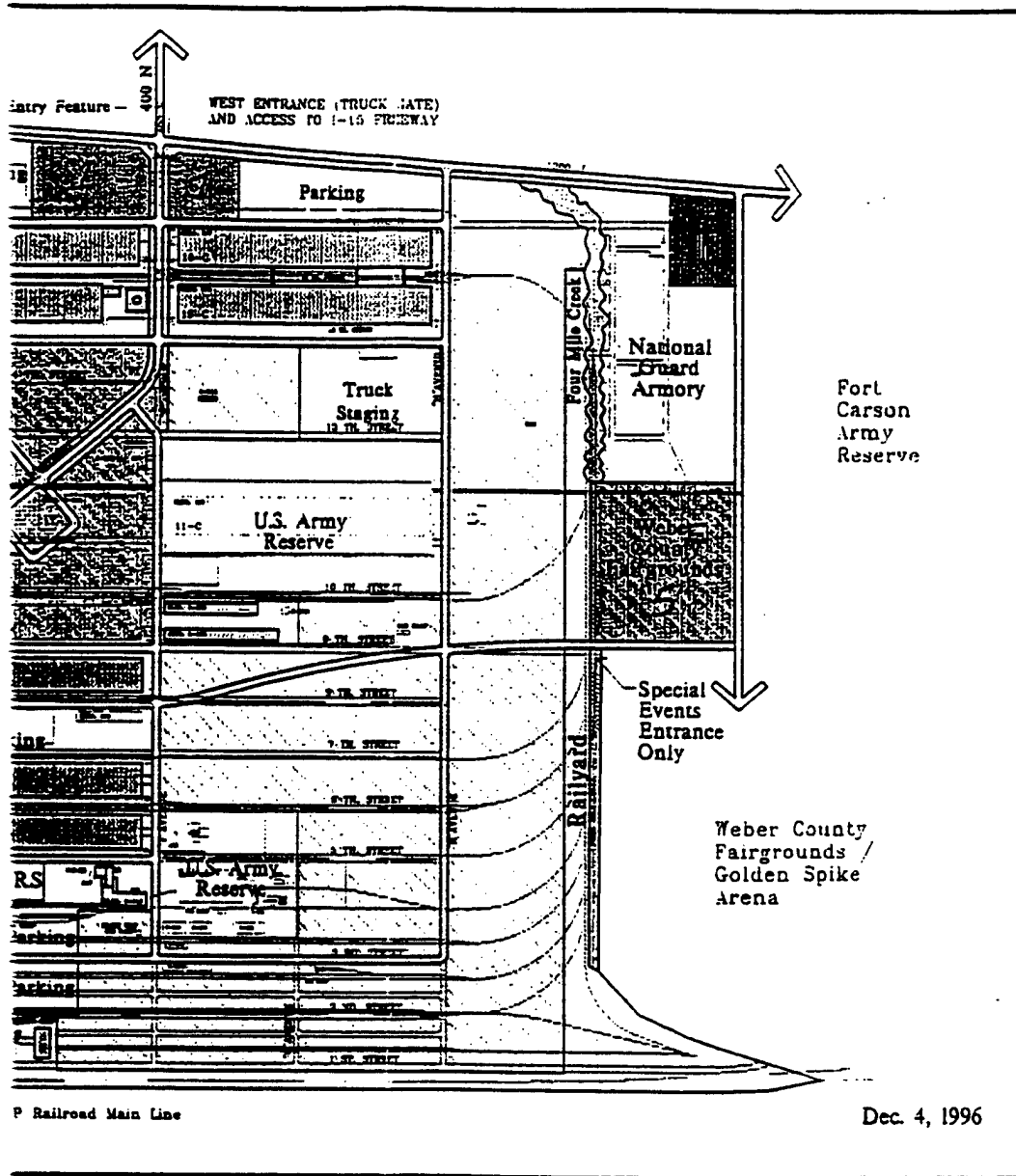


Figure 3. DDO site plan.



Defense Depot Ogden Reuse Plan

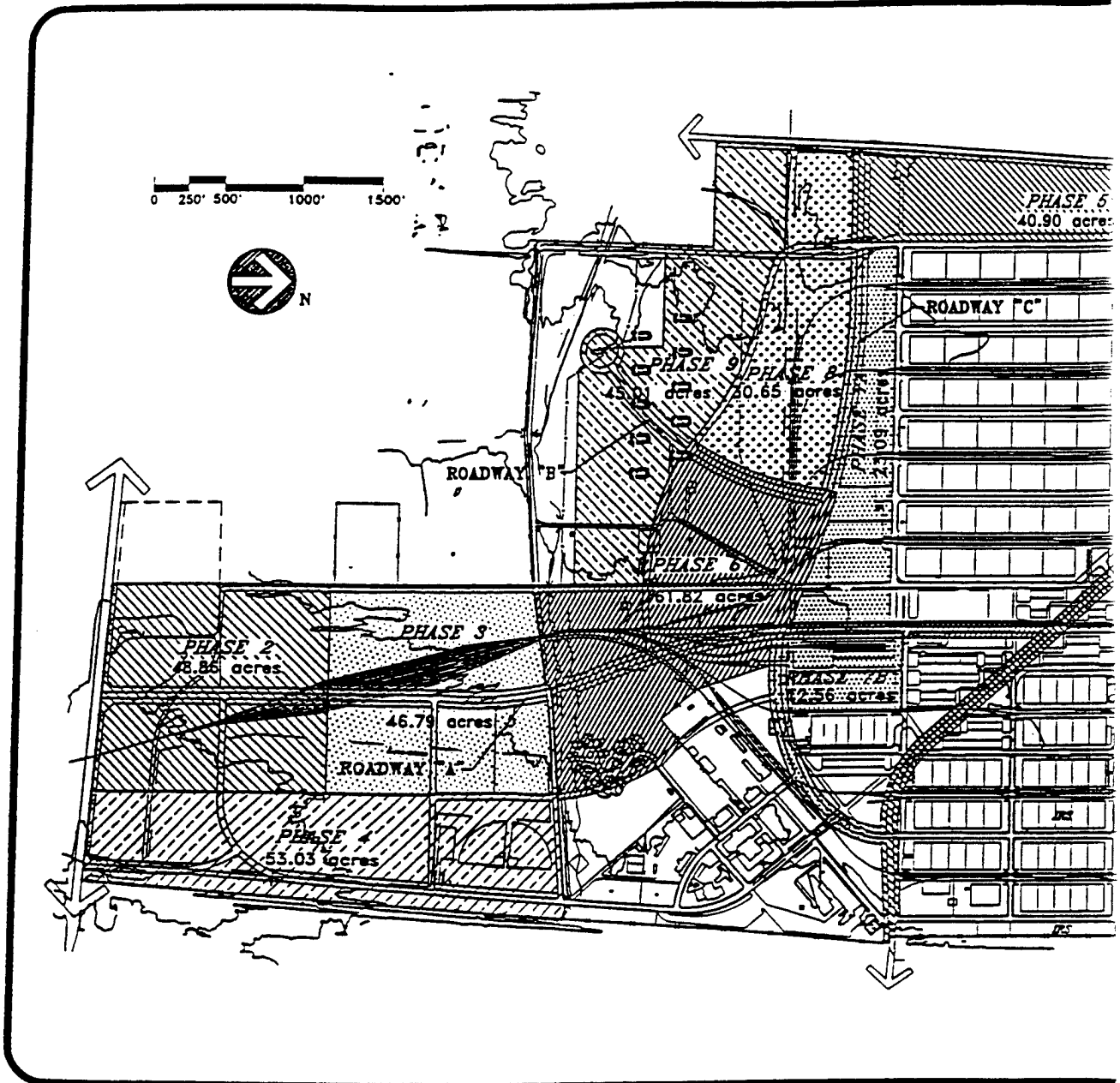


(A) Major Roadway















□ Unavailable for Reuse

"7" Swanson Foundation

"8" Ogden/Weber School District
& Applied Tech. Center

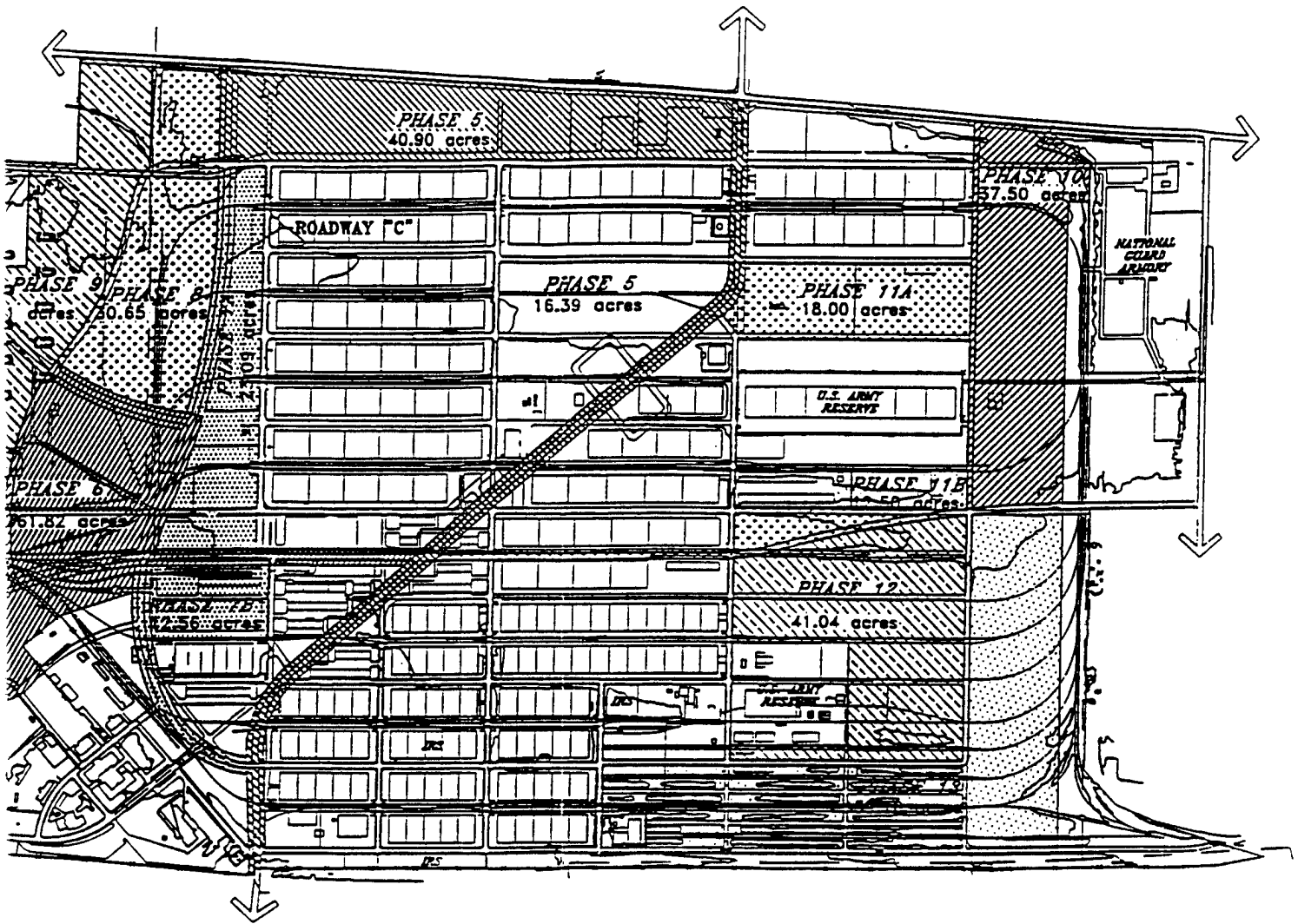


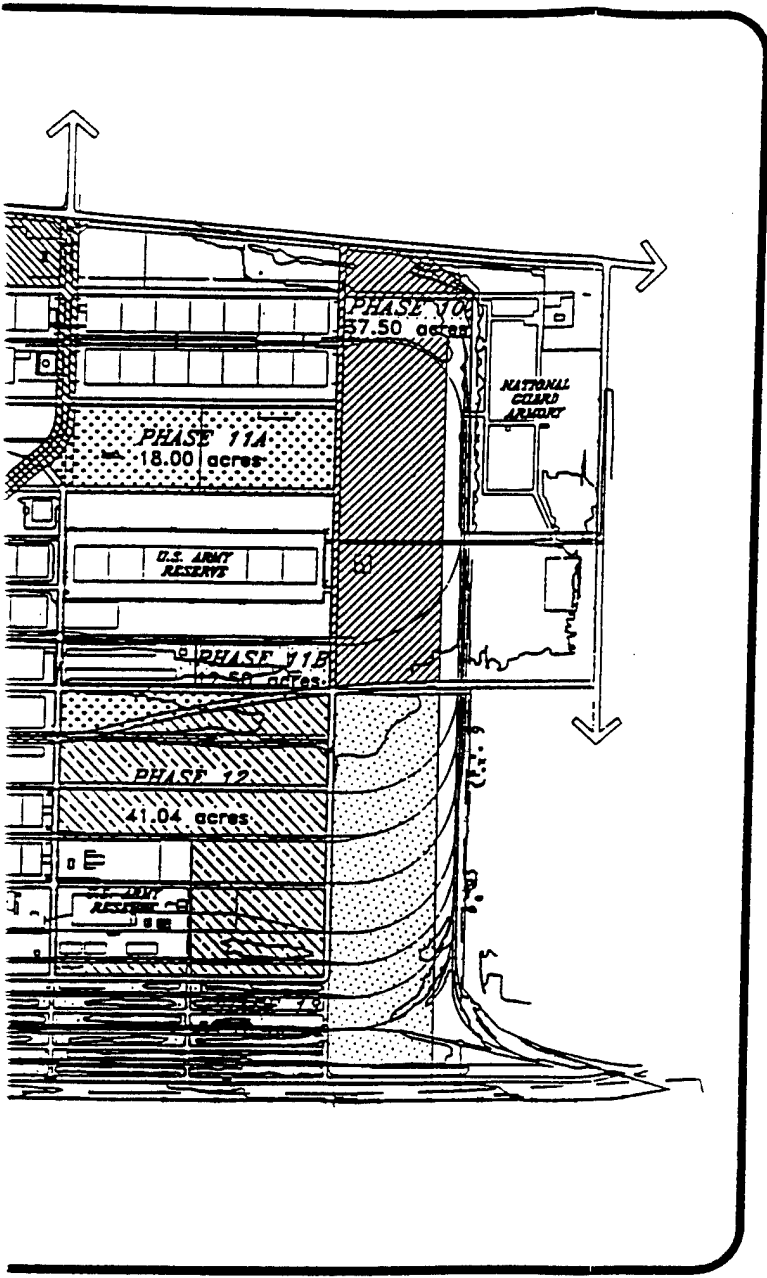
LEGEND

 PHASE 2 - 48.86 acres	 PHASE 8 - 30.65 acres
 PHASE 3 - 46.79 acres	 PHASE 9 - 45.01 acres
 PHASE 4 - 53.03 acres	 PHASE 10 - 35.16 acres
 PHASE 5 - 40.90 acres	 PHASE 11A - 18.00 acres
 PHASE 6 - 54.39 acres	 PHASE 11B - 9.33 acres
 PHASE 7A - 23.09 acres	 PHASE 12 - 41.04 acres
 PHASE 7B - 28.86 acres	 PHASE 13 - 59.16 acres

RAILROAD

Figure 4. DDO infrastructure phasing plan.





OGDEN CITY
LRA

DDOU
REUSE
PLAN

PHASING
MASTER
PLAN

JUNE 1997

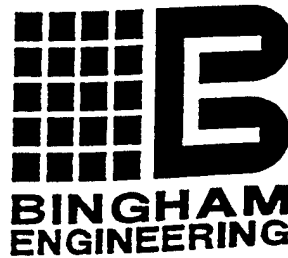


FIGURE 4.1

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, the prescribed content of the Economic Development Conveyance (EDC) application must include a description of the economic impact of a base closure on the local communities. This chapter addresses these concerns by examining the extent of closure impacts and whether the proposed Defense Depot Ogden (DDO) EDC request will facilitate a recovery of lost jobs and revenues.

Methodology

To determine economic impacts from the closure of DDO, CERL first reviewed the January 1997 Reuse Plan, the U.S. Army Final Environmental Assessment (FEA), and other referenced documents to determine the extent of the adverse economic impact experienced in the Weber County region as a result of the closure. CERL found that, while these documents describe some of the adverse impacts that have resulted from the closure, they do not present a sufficiently comprehensive socioeconomic analysis of possible closure and reuse scenarios.

Accordingly, CERL chose to use a two-part analysis for evaluating the DDO EDC application. For part one, CERL examined the assumptions and methodologies used to develop the impact estimates in the EDC application for their internal consistency and appropriateness. In part two, CERL developed independent

estimates of the likely impacts of the closure. In developing these independent estimates, CERL relied primarily on Implan Pro v1.1, a software program that uses a standard input-output modeling methodology to generate impact multipliers from county-level economic data. Implan Pro has been used extensively by private and public entities to quantify positive and negative economic effects that may result from a wide array of investment scenarios, including the closure of military bases.

Review of EDC Application Assumptions and Methodology

CERL's review of the economic impact estimates in the EDC application suggested that the application suffers from a significant shortcoming in the area of job placement efforts, which probably caused the impact estimate to be overstated. The primary reason that the economic impacts are likely overstated relates to the fact that the net positive impacts of job placement efforts in an impacted region were not considered. While it is true that lost employment detrimentally affects 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 in the same region.^{*} The EDC application trivializes the significance of this fact by basing its impact analysis on the assumption that every former DDO employee will either leave the area or be unable to find a new job. More simply, the EDC application calculates what might have been the theoretical "worst-case" scenario for economic impact, rather than the likely actual impact. These omissions were particularly evident given that about 750 of the 1,129 employees present at the date of closure have gained employment at nearby Hill Air Force Base. Furthermore, according to the job placement specialist working at DDO[†], at least half of the remaining 379 employees have since been placed. The EDC application does not address these efforts, nor do the calculations show any inclusion of their effects. For these reasons, CERL finds it highly likely that the total impact estimates in the EDC application are overstated.

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

† Per Gail Eachel, job placement specialist at DDO.

Adverse Economic Impact of the Closure of DDO

After developing independent estimates of the closure impacts for DDO, CERL could not confirm the estimates presented in the EDC application. Although the EDC application correctly notes that DDO was one of the larger employers in Weber County, CERL finds that actual closure impacts will probably be substantially lower than the estimates presented in the EDC application. CERL does not generally share the view that “the State of Utah has been significantly impacted by the drawdown (at DDO and other facilities).”

Assumptions

CERL’s independent impact estimates relied on the following assumptions:

- Approximately 20 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 Weber County and the surrounding counties
- Spousal employment patterns for DDO employees are similar to spousal employment patterns for Weber County and the surrounding counties
- “Employee compensation” includes all salaries and wages, as well as life and health insurance, pension payments, and any other noncash compensation.

Findings

CERL’s independent analysis indicates that the total impacts associated with the closure of DDO will generally be about 75 to 80 percent larger than the direct losses associated with the base closure itself. More specifically, CERL found that, for each dollar spent directly on base activities, the surrounding communities will lose about \$1.78 in total output, and for each job lost at DDO, the area will lose a total of about 1.66 jobs. CERL’s findings are consistent with

* 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.

similar findings presented in studies of short-term base closure impacts.* Note that short-term impacts will generally be the most obvious until the local economy stabilizes and clears excess capacity and resources.

CERL's independent analysis also indicated that many, if not most, of the civilian employees and contractors of DDO will probably not leave the area to seek new employment, further limiting likely impacts on the area. CERL did not develop exact estimates of the number of people leaving, both because of the volume of available data and the lack of consistency within it. It appears clear, however, that at least 920 (about 78 percent) of the 1,179 employees present during the closure year of 1995 have been able to find new jobs.† Table 1.1 shows CERL's findings in more absolute terms.

Table 1.1. Economic losses incurred as a result of DDO closure.

Type of Impact	Gross Output (\$)	Employment
Direct	39.3 million	210
Indirect and induced	30.7 million	139
Total Impacts	70.0 million	349
Note: Estimates of salary and nonsalary expenditures at DDO for the closure period were taken from the U.S. Army FEA.		

Note that estimates for lost gross output are not directly comparable to the job loss estimates, because of various inconsistencies and lack of detail in the available DDO budget data. Because CERL was able to obtain only gross figures that did not delineate specific budget expenditures, the above lost output and lost income figures do not fully reflect possible mitigation measures taken since the closure was announced. Thus, these estimates probably overstate actual impacts. However, because CERL was able to extrapolate some necessary information from average compensation and total employment figures, the magnitude of these discrepancies should be fairly insignificant.

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

† To reach this estimate, CERL queried a variety of sources, including the Final Environmental Assessment (FEA), and personnel associated with both the Transition Office and the Priority Placement Program; anecdotal reports from local news services were also considered. Although most of these sources suggested that somewhat fewer than 210 people had suffered lack of employment because of the closure, CERL's analysis relies on this figure in order to generate a more conservative estimate.

Significance of Impacts

Analysis of the regional economy surrounding DDO also fails to support a claim of severe closure impacts. According to the 1997 Utah Economic Report to the Governor, "for the fourth straight year, Utah's employment growth exceeded 5 percent—a feat unprecedented in the post World War II era." The report also notes that "Utah's jobless rate has dropped from 3.6 percent in 1995 to 3.4 percent in 1996, the lowest level in decades."^{*} According to the same report, the Wasatch Front region, which includes Weber County and DDO, has recently experienced an even lower unemployment rate of 3.3 percent.

As of 1997, many of the people that used to work at DDO should have already been laid off or left the area, so it would be reasonable to expect some effect in available economic indicators for the region of impact (ROI) during the years since the closure was announced in 1995. Instead, the unemployment rate in the area actually continued to drop during this period. Analysis of other area economic indicators suggests that the Weber County region is experiencing a period of sustained economic prosperity that will continue over at least the short term.

Caveats

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

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

^{*} Page 75 of the 1997 Utah Economic Report to the Governor.

[†] Ibid.

Note also that CERL's analysis relied on the larger ROI used by the FEA, which included both Weber County and two other surrounding counties (Davis and Salt Lake), instead of the area used for the study in the EDC application, which included only Weber County. Although CERL has determined that this larger area better represents the economic activities occurring in the area, the selection of a larger ROI also spreads the calculated impacts out over a larger area, which may mask local impacts that are not evenly dispersed.

Potential for Economic Recovery

CERL's independent analysis indicates that the total closure impacts will be fairly insignificant, which also suggests a strong potential for a full recovery in the region. Although job creation is discussed in more detail in Chapter 2, **Extent of Short- and Long-Term Job Creation**, a full recovery appears likely even with very conservative job-creation estimates. Even if it is assumed that redevelopment will track CERL's constrained development schedule (see Chapter 4, **Business Plan Review and Market and Financial Feasibility Analysis**), it appears very likely that all of the jobs lost because of DDO's closure will be recovered during the first few years of redevelopment.

Conclusion

The EDC application states that primary redevelopment goals are to replace jobs being lost in Weber County as a result of the closing of DDO and to encourage further economic development. Although the impact analysis presented in the EDC application suffers from some limitations, CERL has determined that, even under the most conservative assumptions, a full economic recovery from the closure of DDO will be likely, particularly given the relative insignificance of the closure on the local economy.

2 Extent of Short- and Long-Term Job Creation

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Background and Approach

The EDC application for DDO is required by Federal law to discuss job creation prospects for the proposed reuse of the DDO facility. One of the principal eligibility criteria 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 Ogden Local Redevelopment Authority (OLRA) makes a persuasive case for its economic projections, CERL's analysis in this particular case was limited primarily to an independent validation of the calculation methodology and source data. The DDO application clearly delineates both the manner in which calculations were made, and the underlying rationales for necessary assumptions. Because of this level of detail, and because a well-prepared OLRA is frequently in a better position to evaluate important local factors, CERL's scope of review in this case was considerably more deferential than has been the case for other less complete EDC applications.

Regardless of this deference, however, it is important to note that, although the forecasting procedures used by both the OLRA and CERL will generate sound estimates, the resulting projections are only as useful as the validity of the underlying assumptions. Major changes in key assumptions may lead to dramatic differences between these projections and the number of jobs actually created, especially changes (1) 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), (2) in the

aggregate economic activities of the tenants, or (3) a downturn in the economic cycle.

General Methodology

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

In this particular review, CERL elected not to further consider short-term employment impacts. Although these impacts will undoubtedly be present over the 15-yr projected development schedule, these impacts were not considered for several reasons. First, CERL's deferential scope of review, and the absence of short-term estimates in the EDC application, suggested against development of independent short-term estimates. Second, the complications caused by the lengthiness of the 15-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 volume to similar activities already occurring in the local economy, CERL was able to construct a series of multipliers describing the likely impact that any new (but similar) business activities would have on the local area, and to compare these multipliers with the EDC estimates. Because the elements of a regional economy are inherently interrelated, this approach effectively measures the entire impact of a given event. For example, each particular programmed capital improvement (or permanent end-user) will create a particular set of on-site jobs at DDO. Since these employees will purchase goods and services in the surrounding community, these on-site jobs will also create additional off-site jobs located in the surrounding economic area. A local economic multiplier will capture both the impact of on-site job creation (a direct effect), as well as the number of additional jobs created as a result of on-site jobs and economic activity (an indirect effect). Once these effects are calculated for each activity, they can be grouped to find total employment impacts.

Extent of Long-term Job Creation

Although it is impossible to definitively project job creation that may occur over a 15-yr period, CERL's analysis generally confirmed the job creation estimates presented in the EDC application.

Like the OLRA, CERL generated long-term job creation estimates by first considering the types of activities that are 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 that are likely to lease space at the redeveloped facility, and also about the volume of economic activity these end-users are likely to generate. Thus, although both the OLRA and CERL were able to generate gross estimates based on various assumptions about the total number of people that tenants at DDO might employ and assumptions about the type of tenants likely to locate at DDO, the inaccuracies inherent in this approach likely will result in a model less accurate than one based on actual gross revenue data.

Multiplier Calculation

Since specific estimates of employment density were unavailable, both the OLRA and CERL extrapolated potential employment densities from typical industry standards present in the Wasatch Front region. This factor is important in estimating gross economic activity because employment projections are a function of both how fast the local market absorbs new space and how intensively the new space is used.

In general, the estimates presented in the EDC application varied from about 250 to 1,500 usable square feet of space per employee, depending on the type of use. CERL evaluated these estimates by comparing them to industry norms for the area and found them to be reasonable, if somewhat aggressive, estimates. CERL's calculations relied on slightly more conservative estimates of employment density, which are presented in Table 2-1.

CERL's analysis also generally supported the multiplier estimates presented in the EDC application. Although discrepancies exist between specific estimates, CERL found that the estimates presented in the EDC application were based on a sound methodological approach and were reasonable.

Table 2.1. CERL long-term job creation estimate.

Employment from New Development	Developed Square Footage	Jobs per sq ft	On-site Jobs Created	CERL Multiplier	Totals Jobs Created
Business Park	3,397,680	900	3,775	1.87	7,060
Retail	261,360	450	581	1.32	767
Office	45,738	300	152	2.08	317
Light Industrial	731,808	1,500	488	1.81	883
Warehousing/Distribution	2,861,892	1,750	1635	2.31	3,778
Totals:			6,632		12,805

Employment from Existing Development	Developed Square Footage	Jobs per sq ft	On-site Jobs Created	CERL Multiplier	Total Jobs Created
Retail	25,670	450	57	1.32	75
Office	330,395	300	1,101	2.08	2,291
Recreation & Miscellaneous	40,379	1,500	27	1.27	34
Warehousing/Distribution	5,619,032	1,750	3,211	2.31	7,417
Totals:			4,396		9,817

Grand Totals:			11,028		22,621
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Note: (1) Some jobs per acre figures were converted to jobs per square foot using a coverage ratio of 30%.
(2) Multipliers listed in the EDC application must be added to one for comparison with these figures.

Note that the lack of firm employer and revenue data forced both CERL and the OLRA to make some general assumptions about the types of end-users likely to lease space at the redeveloped facility. Thus, both analyses assume that the activities of future tenants will be functionally similar to those of similar firms in the local area. Making this assumption allows 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 validating these aggregations, CERL found that typical employment multipliers for local industrial activities probably range from 1.7 to 1.9 (depending on the specific use). Similarly, employment multipliers for office uses were found to be about 2.08, while multipliers for distribution uses were found to be about 2.31. Thus, while these figures are somewhat lower than similar findings presented in the EDC application, CERL finds that the estimates presented in the EDC application are reasonable.

Long-term Employment Projections

After developing an idea of the economic volume that will occur after redevelopment, and the types of activities it will probably involve, CERL developed a comparable forecast for likely long-term job creation. Table 2.1

summarizes the long-term employment projections calculated as part of CERL's independent analysis.

These figures vary somewhat from estimates cited in the EDC application, although the same calculation methodology was used. In particular, estimates provided in the EDC application predict that roughly 6,700 jobs will be created from new development, and almost 4,900 will be created in renovated areas, for a total of about 11,600 jobs on-site.* These figures are comparable to the "on-site jobs created" figures presented in Table 2.1.

Since the EDC application calculates indirect and induced job creation from salary data (instead of directly from an employment multiplier, as was done above), multipliers are not comparable, although the application predicts that a total of about 29,000 jobs will be created at full build-out.

Other discrepancies were due to the OLRA's use of older data (from 1992, instead of 1994) and the fact that the EDC estimates rely on more highly aggregated data, instead of the more granular data relied upon by CERL. These aggregations were not reproduced in the above calculations, although the OLRA 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 CERL has attempted to present conservative estimates that minimize the possibility of overstating job creation estimates where possible, potential problems can always arise when economic forecasts are based on such a large assumption set.

First, as noted, assumptions were made about both the volume and the types of economic activities that will take place at DDO, which are both crucial to the projections. While CERL 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 the intensity of reuse would further reduce job creation. For example, the employment per square foot estimates were derived

* The EDC application uses a somewhat more dense ratio of 1 job per 250 square feet of office space and 1 per 1,400 sq ft of "warehousing and maintenance" space for these calculations; CERL's ratios were 1 per 300 sq ft and 1 per 1,750 sq ft for the same calculations.

from broad industry-average standards; less intense reuse, such as that associated with purely warehousing uses, would also likely result in the creation of fewer jobs. Note that changes in these assumptions would be particularly significant, because they would affect both the direct and indirect forecast figures.

Second, the modeling procedure used to construct these estimates (a standard input-output model) assumes that an underlying regional economy is static in nature; therefore, it cannot capture essential long-term structural changes. Thus, fundamental shifts in a local economy may render its 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 redevelopment at DDO. For example, none of the short-term economic effects related to the refitting of existing buildings by eventual tenants were considered, although this construction will undoubtedly affect area employment. CERL elected not to model these effects both because they will likely be transitory in nature and because it would have been difficult to obtain necessary cost or revenue data from private developers. This omission will likely cause total job creation effects to be understated, although the degree of error will be small.

Finally, no attempt was made to adjust for inflationary effects, because the lack of data about future gross output precluded CERL 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, CERL compared the various employment generation forecasts to the economic impacts of the DDO 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 is intended to offer an idea of when total closure impacts might reasonably be offset, and to offer a general qualitative picture of how programmed capital expenditures affect job creation. CERL's projections suggest that most of the employment impacts of the closure will have been fully mitigated between the first and second years of 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, CERL finds it probable that between roughly 22,000 and 29,000 jobs will be created as a result of the DDO redevelopment.

3 EDC Application's Consistency With the Overall Redevelopment Plan

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Background

The reuse planning process for DDO began promptly after the 1995 BRAC Commission closure announcement with the creation of the DDO Reuse Committee (DRC). These planning efforts were manifested in the DDO Reuse Plan prepared by EDAW, Inc. in association with ERA and Bingham Engineering, and approved in January 1997 by the OLRA.

As the LRA, Ogden City is a municipal corporation under state enabling legislation, giving it the legal capacity to enter into agreements concerning the acquisition and disposal of real and personal property, tax real property, enter into contracts, issue development bonds, approve zoning, and program infrastructure improvements.

The DRC-developed redevelopment mission at DDO is:

To maximize the economic potential of this opportunity from a regional perspective focusing on diversified commercial activity and desirable job creation while enhancing the quality of life in the area.

Objective

The objective of this chapter of the review is to determine whether the redevelopment implementation strategy proposed in the OLRA EDC and related Business Plan are consistent with the adopted 1997 Reuse Plan and other

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

Conclusions

After reviewing the OLRA EDC application and Preferred Reuse Plan, CERL finds that the application is generally consistent with the goals, objectives, and implementation strategies set forth in the Reuse Plan. Although CERL observed minor inconsistencies relative to business plan and infrastructure assumptions and costs, it was concluded that they were reasonable given the inherent flexibility of the reuse planning process which must be able to effectively respond to changing fiscal and market conditions. CERL's specific consistency findings follow below.

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

1. The proposed reuse soundly accommodates Ogden City's desire to transition DDO into a first-class commercial park, recognized as a preferred site for economic enterprise by directing facility reuse toward a mixture of synergistic land uses, including commercial, mixed-use, office, and light industrial.
2. The proposed reuse provides a mixture of development incentives and infrastructure improvements that will go a long way toward securing private sector investment to create new, quality jobs and expand the tax base.
3. The proposed reuse makes available competitively priced buildings and land to provide opportunities for expanding and creating new locally owned businesses.
4. The proposed reuse accommodates public uses with land and facility set asides for open areas, a nature center, a youth center, homeless providers, and educational uses.
5. The reuse plan proposes the necessary infrastructure improvements to integrate DDO into the social and economic fabric of the City; in effect, creating a focal point of activity that enhances community development.

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

1. The application effectively identifies and programs infrastructure improvements necessary to make DDO a high quality industrial and business park that will be competitive on a regional basis. These infrastructure improvements will likely result in improved transportation, marketability, access, and end-user services.
2. The application advances a realistic phasing plan that should facilitate orderly development through flexibility to changing market demands, needed infrastructure improvements, demolition of obsolescent buildings, and environmental clean-up.
3. The application correctly positions DDO to appeal to a diverse range of industrial and office users with varying space requirements. By marketing to a large and vibrant regional business sector, yet retaining the flexibility to accommodate changing market demands, the likelihood of successful reuse implementation increases.
4. The application attempts to forecast potential cash flows that indicate financial feasibility and, ultimately, the ability to implement the Reuse Plan. However, CERL experienced a degree of difficulty in terms of interpreting the OLRA's Business Plan assumptions and recasting the 15-yr pro forma consistent with the EDC application. Despite these limitations, CERL was able to independently reconstruct the OLRA's pro forma in a manner reflective of proffered business plan assumptions.

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 DDO EDC application and its business and operations plan. CERL'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 OLRA is requesting an EDC to acquire approximately 1,009 acres of DDO along with water, wastewater, stormwater, gas and street utility systems, for a proposed consideration to the Department of the Army of \$1,000,000 (Ogden 1997, p 25). The EDC parcel contains approximately 138 existing buildings representing over 6.1 million sq ft of total floor space. The remaining building inventory has been claimed by McKinney Act homeless providers under public benefit conveyances or will be retained by the Defense Logistics Agency, Department of the Army, or Internal Revenue Service. However, the DEPMEDS function at DDO will be privatized or realigned by 2001, adding an additional 253,385 sq ft of inventory to the EDC parcel at that time. Including DEPMEDS, there will be over 6.3 million sq ft of existing building space contained within the EDC parcel, of which, roughly 894,161 sq ft has been programmed for demolition by the OLRA, leaving 5.46 million sq ft of predominately industrial space for reuse.

According to the January 1997 Preferred Reuse Plan, the mission of DDO's reuse is "(t)o maximize the economic potential of this opportunity from a regional perspective focusing on diversified commercial activity and desirable job creation while enhancing the quality of life in the area" (Ogden Reuse Plan, 1997, p 1-1). To accomplish this mission, the primary focus of the Reuse Plan is to transition DDO into a first-class commercial park recognized as a preferred site in the region for economic enterprise. To accommodate job creation and economic development goals, the Reuse Plan has identified four major future uses: business park, mixed use, office/light industrial, and industrial programmed over 13 phases. See Figures 3 and 4 for the Master and Phasing Plans, respectively. Table 4.11^a summarizes the OLRA's land-use mix and existing building space for each district.

Table 4.11. Proposed EDC land uses and existing acreage and building space.

Proposed Land Use	Updated EDC Request	
	Acres	Existing Sq Ft ^a
Industrial Development	549	5,542,728
Business Park Development	260	43,940
Open Space	103	25,486
Office/Light Industrial	56	512,634
Mixed Use	41	233,119
Total	1,009	6,359,153

^a Includes DEPMEDS building #256, which is scheduled to transfer to the OLRA in 2001.

* Tables 4.1 through 4.10 are oversized tables printed at the end of this chapter. They will be referenced and described later in the chapter.

It is worth noting that the OLRA requested 1,045 of the 1,128 acres at DDO in the EDC application. As Table 4.11 suggests, only 1,009 acres are actually contained in the EDC parcel. This difference is because of several public benefit conveyances (PBCs) that will likely be approved, resulting in reduced acreage and building inventory. The changes from the EDC application include the following real property deductions:

Industrial Development

- Swanson Foundation PBC request for Building 204 – 104,968 sq ft and 2.9 acres
- Ogden/Weber School District & Applied Technology Center PBC request for Building 312 – 260,891 sq ft and 7.5 acres

Mixed Use

- Planned Parenthood and Highway Patrol PBC requests for Buildings 42 and 43 – 12,293 sq ft and 2 acres

Commercial

- Homeless Provider Request – 4,174 sq ft and 24 acres.

Approach

The approach to the technical review included a review of the entire EDC application package, supporting documents, and reports. CERL also conducted interviews with the DDO Caretaker Force personnel, U.S. Army Corps of Engineers (USACE), Sacramento District, action officers who are currently handling the real estate disposal of DDO, and local economic development officials (CERL site visit to DDO 4-7 November 1997). With necessary site data collection complete, CERL was then able to perform market and financial feasibility analysis through the development of spreadsheet-based models, pro formas, and tables. In general, the enclosed spreadsheets are organized in two principle groups: (1) a recast of the EDA Business Plan assumptions and discounted cash flow results and (2) CERL-developed data tables, analyses, and findings of financial feasibility. After a general discussion of these two sets of analyses, CERL will present its findings.

Recast of OLRA Business and Operations Plan Scenario. To aid in the analysis and documentation of the financial feasibility of the OLRA business and operations plan, CERL 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 allow CERL analysts to fully understand the assumptions that support the applicant's cost and revenue projections. Once reconciled and understood, this recast serves as a baseline model for developing and testing alternative business plan scenarios.

In this case, OLRA's EDC business and operations plan and supporting narrative in the application tenuously support projected real estate revenues, operating costs, and debt service. In the course of the EDC review, CERL encountered several technical limitations and information gaps that hindered business plan recast efforts. To gain a thorough understanding of and reconcile key business plan assumptions, CERL submitted a list of questions on 2 December 1997 to the OLRA's Business Plan consultant, Economics Research Associates (ERA). ERA's response was received 12 December 1997, but after review offered only marginal support to business plan recast efforts (Appendix A). Nevertheless, CERL was able to replicate the EDC Business Plan, drawing upon experience gained from previous technical reviews and through the creation of an independently defensible set of assumptions. The following paragraphs list and describe the tables supporting the OLRA Business Plan recast.

Tables 4.1 through 4.6, which follow the end of this chapter, relate the baseline set of assumptions used by CERL to evaluate the financial feasibility of the OLRA Business Plan. A description of each of these tables follows. As noted above, however, CERL was unable to independently recast the EDA's business and operations plan accurately because of the observed use of inconsistent or poorly defined assumptions in the OLRA plan. These findings will be discussed in further detail in the section on Business Plan Review and Findings.

Table 4.1, Building and Land Inventory, provides a database of EDC buildings by land use, the OLRA's proposed reuse for the building, and attendant square footage.

Table 4.2, Summary of Absorption and Revenue Schedule, was not directly provided by the applicant, but was independently created by CERL with information found in the Business and Reuse Plans, in addition to ERA's 12 December 1997 response. The table contains 15-yr real estate absorption and revenue projections for leasable space, land sales, building sales, and

opportunity revenues. All revenue projections are inflated by 3 percent per annum, effective in 2001.

Table 4.3, Summary of Capital Improvements and Property Maintenance Expenditures, details OLRA's estimated infrastructure costs by phase. Also, a 15-yr property maintenance expenditure model was developed to forecast annual costs based on a baseline reusable inventory of buildings which must be maintained and annual property absorption. All cost assumptions are inflated by 3 percent beginning in Year 1 (1999) of the pro forma.

Table 4.4, TIF Bond Issues and Debt Service, was partially based on bond issue projections made by the OLRA in the business and operations plan and independent assumptions developed by CERL. The table summarizes projected TIF bond issues and attendant debt service over the 15-yr pro forma.

Table 4.5, Projected Tax Increment Finance Revenues, is partially replicated from ERA's 12 December 1997 response and independent assumptions developed by CERL. The table projects the growth in DDO property value and resulting tax increment, which is captured and applied to annual debt service calculations developed in Table 4.4.

Table 4.6, Business Plan Pro Forma Summary, projects 15-yr revenues, operating expenses, net operating income (NOI), infrastructure costs, cash flow, and bond issues in addition to providing project net present value (NPV) calculations at 12 and 8 percent discount rates.

With these baseline analyses, CERL developed an alternative scenario to test the sensitivity of key assumptions and demonstrate the impact on the discounted NPV of the cash flows after making defensible changes to assumptions.

CERL Scenario Development. CERL developed the alternative scenario to test the sensitivity of certain key assumptions proposed in the OLRA Business Plan. CERL also challenged several assumptions based on review findings and documented the impact of these changes to project cash flows and the NPV of the Business Plan. The tables that document these findings are briefly discussed in this section. However, the analysis and findings that lead to the development of the alternative scenario are discussed in detail in ***Business Plan Review and Findings*** (p 48). The scenario described below uses cash flow projections that are inflated 3 percent per annum beginning in 1999 and 2001 for costs and revenues, respectively. Discount rates of 16 and 13 percent were used, reflecting a somewhat higher and more conservative range around the OLRA's designated project discount rate of 12 percent. Accordingly, since an inflation premium of 3

percent per annum is factored into pro forma cash flows, constant (1999) dollar discount rates of 13 and 10 percent are calculated, which is roughly equivalent to the OLRA's cost of capital and the cost of capital *plus* a redevelopment risk premium, respectively. Note that real estate financial analysts would likely use higher discount rates in private sector real estate development projects of this size and scope to account for the inherent risks involved in tying up capital over long periods of time.

Table 4.7, CERL1 Absorption and Revenues Summary, provides 15-yr real estate absorption and revenue projections for leasable space, land sales, building sales, and opportunity revenues under the CERL1 developed scenario.

Table 4.8, CERL1 Projected Tax Increment Finance Revenues, projects retained tax increment under CERL1 Scenario assumptions in an attempt to demonstrate TIF district financial feasibility.

Table 4.9, CERL1 Business Plan Pro forma Summary (with TIF Contributions), projects 15-yr revenues, operating expenses, NOI, infrastructure costs, cash flow, and TIF bond issues, in addition to NPV calculations at 16 and 13 percent under CERL1 Scenario assumptions.

Table 4.10, CERL1 Business Plan Pro forma Summary (without TIF Contributions), projects 15-yr revenues, operating expenses, NOI, infrastructure costs, cash flow, in addition to NPV calculations at 16 and 13 percent under CERL1 Scenario assumptions.

Business Plan Review and Findings

Introduction

According to the OLRA, the proposed EDC and supporting business plan is consistent with the dictates of the Reuse Plan completed in January 1997. Specifically, the Reuse Plan identifies a range of redevelopment alternatives for the EDC parcel that includes industrial, distribution, office, and warehouse uses. More importantly, from a project implementation standpoint, the proposed EDC allows Ogden City to gain ownership and control of the site at a "cost which recognizes the significant increment of risk that Ogden City is assuming in redevelopment of DDO" (OLRA, p 5).

The OLRA further asserts that a \$60 million infrastructure investment required to bring buildings within compliance of modern codes, improve access, create

needed sewer and water capacity, and allowing for the development of quality business park sites. It is the conclusion of the applicant, as developed through financial pro forma analysis, that the Reuse Plan would not be financially feasible without the significant participation proposed by Ogden City. Finally, the OLRA states that the proposed EDC benefits both the Army and Ogden in that it allows the OLRA to play an active role in DDO reuse, recovering early costs through long-term cash flows, and providing the Army with a cash payment for the property transfer. The following report section is dedicated to the review and analysis of the OLRA's Business Plan, which is the instrument through which financial feasibility and potential monetary consideration to the Army is developed.

As noted earlier in this chapter, the Business Plan provided in the EDC application suffered from several assumption limitations that complicated CERL's Business Plan recast and review. These limitations were most pronounced in potential lease revenue, and TIF and debt service calculations and projections. Nevertheless, CERL obtained ample supporting documentation and developed independently defensible Business Plan assumptions to perform an effective and thorough review and analysis. Attempts have been made to organize the following review of the Business Plan to correspond with the application's Business Plan.

Description of Intended Uses

An important first step in developing the Reuse and Business Plan is to inventory land and existing facilities at DDO, which could be offered, to the private sector for reuse and redevelopment. The intended purpose of this analysis was to develop a reasonable estimate of total land area that could potentially be marketed for sale, the number of marketable permanent-use buildings on the site, the amount of acreage that would be needed to support these uses, and the remaining acreage that will be transferred PBCs or will remain under Government ownership.

Land. The Reuse Plan for DDO identifies a range of intended uses for the surplus parcel that includes industrial, office, retail, business park, and hotel, along with provisions for open space and recreation. CERL's reconciliation of the OLRA's intended uses and eligible EDC acreage resulted in the following land-use mix: 549 acres for industrial development; 260 acres for business park development; 103 acres of open/recreation space; 56 acres of office/light industrial; and 41 acres of mixed use (Table 4.1). This land-use composition results in a total of 906 revenue-generating acres relative to the total 1,009 acre EDC request. As discussed earlier in this report, developable acreage was minimally impacted from PBCs, with the exception of the 24 acres originally

proposed for retail use that will likely be conveyed to Weber County homeless providers pursuant to the mandates of the McKinney Act. Finally, ongoing Federal Government operations at DDO include the Army Reserve, DEPMEDS, and IRS facilities, all of which occupy 83 acres. Although it is anticipated that the IRS and Army Reserve will continue to have a presence at DDO over the long-term, the DEPMEDS operation will be phased out or privatized between 1998 and 2001, returning 253,385 sq ft of industrial inventory to the EDC parcel for reuse.

Buildings. DDO's variety of buildings serve many mission-related purposes. However, the primary purpose of any depot activity is typically the assembly, storage, and distribution of military goods and supplies. DDO is no exception, with warehouse facilities comprising a majority of the total 6.36 million sq ft site inventory (Table 4.1). Warehouses in the industrial area vary in size from 2,500 to 295,000 sq ft. Generally, the facilities that offer the most reuse and revenue generating potential are the larger warehouse facilities, which are grouped into three discrete categories according to construction type: brick, wood, and concrete. The largest of the three categories, the concrete warehouses, generally average over 290,000 sq ft each and total over 1.1 million sq ft. Conversely, the brick warehouses average around 105,000 sq ft each, but are nearly equivalent to the concrete warehouses in terms of total floor space relative to the DDO inventory. Some warehouses have specialized equipment and operations, including large storage vaults with added security. Finally, most, if not all, the warehouses at DDO have both rail and truck access, and most enclosed facilities contain heated bays.

In terms of revenue-generating uses of existing buildings not programmed for immediate demolition,^{*} the OLRA has designated nearly 5.46 million sq ft for leasing and sales activities. Manufacturing and distribution tenants seeking low costs are anticipated to be most, if not all, leasing and sales activity of existing buildings. However, ERA has indicated that the potential exists to lease over 29,000 sq ft of existing administrative space.

Market Analysis

Demand. Once a development strategy has been formulated based on a bottoms-up assessment of existing facilities, a market analysis is performed to estimate

* Nearly 15 percent or 894,161 sq ft of the existing building space is to be demolished because of functional and economic obsolescence and the need to create developable land for the private sector.

the potential marketability of land and buildings based on real estate market demand and supply drivers. In this case, income projections for manufacturing, distribution, and office space are based on market research conducted by ERA. The market findings developed by ERA serve as the basis for developing annual property absorption and revenue projections from the sale of land and existing buildings, and space designated for leasing activity.

Demand for DDO land and facilities was driven by regional employment forecasts developed by the Utah Governors Office of Planning and Budget for Weber County and the Wasatch Front region.* According to ERA, DDO is expected to reach an employment level of over 4,100 positions in 2005, growing to 8,825 by 2013 (Year 15). Based on current projections calculated by the Governors Office of Planning and Budget and the anticipated market position of DDO through Reuse Plan implementation, 60 percent (5,115 positions) of employment will be in manufacturing, with distribution and office jobs comprising the balance (2,029 and 1,681 positions, respectively).

In terms of space and land absorption, separate projections were derived from Weber County and the Wasatch Front region to arrive at total demand for DDO space. The underlying rationale for this segmentation likely rests with perceived differences between Weber and Wasatch industrial-user demand profiles. Accordingly, Weber County is anticipated to generate a majority of the demand for DDO space, with nearly 60 percent of the total 5.6 million sq ft of space forecast for absorption. Moreover, Weber County industrial users will likely be in favor of existing space as indicated by ERA's 60 percent capture rate of existing DDO inventory (133,948 sq ft) relative to total DDO demand captured (219,665 sq ft). New space captured, as derived through annual land absorption projections, is calculated to be 88,715 sq ft/yr of the total projected Weber County demand of 219,665 sq ft. The distribution of new manufacturing, distribution, and office space is calculated to be 44, 17, and 39 percent, respectively.

In a similar manner, Wasatch Front demand projections were developed to arrive at the second component of DDO space absorption. ERA assumed that, as renovation of existing space at DDO occurred, the property would increasingly be in position to capture demand from the larger and growing Wasatch Front region. Given current patterns of urban real estate development, which generally suggest outward movement of employment and population growth from Salt

* The Wasatch Front generally includes the counties of Utah, Box Elder, Davis, and Weber.

Lake City, it is anticipated that DDO will capture a share of regional demand based on the following factors:

- proximity to the interstate highway system (I-15 exit on 12th Street)
- 30-40 minute drive to Salt Lake City International Airport
- escalating costs and dwindling supply of industrial space in Salt Lake City
- competitive leasing and land prices
- the planned high quality of the development.

Accordingly, ERA forecasts an annual Wasatch Front capture of 153,800 sq ft. Of the total, approximately 110,700 sq ft and 43,000 sq ft are forecast to be absorbed in existing and new space, respectively. Unlike demand projections for Weber County, ERA is not convinced that the site will be in a strong position to capture near-term regional demand for office space given current office patterns in Salt Lake City.

Table 4.12 summarizes ERA's estimates of Weber County and Wasatch Front regional demand for DDO existing space and vacant land. The table shows that DDO is forecast to capture a total of 5,602,920 sq ft of Weber County and Wasatch Front regional demand. Of this demand total, an estimated 3,670,695 sq ft is to be existing DDO space and 1,932,225 sq ft is to be new construction on 118.95 acres of developable land. In terms of space usage, a majority of space (3,068,700 sq ft) will likely be occupied by manufacturing, with the balance occupied by distribution and a small amount for office users.

Table 4.12. Summary of DDO annual and total property absorption.

Category	Manufacturing		Distribution		Office		Total	
	Annual	15-Yr	Annual	15-Yr	Annual	15-Yr	Annual	Total
Total Demand Captured (sq ft)	204,590	3,068,700	135,297	2,029,455	33,625	504,375	373,500	5,602,920
Existing DDO Space (sq ft)	147,300	2,209,500	97,413	1,461,195	0	0	244,713	3,670,695
New Construction (sq ft)	57,300	859,500	37,890	568,350	33,625	504,375	128,815	1,932,225
New Construction (acres)	3.59	53.85	2.52	37.8	1.82	27.3	7.93	118.95

In addition to the space demand forecasts shown in Table 4.12, OLRA officials have indicated that specific interest currently exists for DDO facilities. Two such opportunities appear to have a strong chance of materialization. The first is for Building 11, which the *Standard Examiner* has proposed to purchase for \$1 million in 2001, with additional requirements for developable acreage for a new

printing press facility. The second is from Peterson Fabrication, a Weber County manufacturing concern, which at the time of this writing occupies two bays of Building 357 and intends to expand into the remaining bays and, ultimately, Building 365 as well. These buildings are of the "concrete" variety, which provides the most floor space per building of the entire DDO inventory. The annual leasing rate for Buildings 357 and 365 is anticipated to be \$1.26 per sq ft for 560,000 leasable sq ft.

Competitive supply. In the course of ERA's real estate market analysis, three competitive industrial/business parks emerged as strong market comparables for DDO given their location within the Wasatch Front and user mix, although each serves slightly different market segments.

- The 551-acre Weber County Business Park located directly off of I-15 generally caters to larger heavy and light industrial, warehousing, distribution, and office users. Notable companies located in the Park include Parker Hannifin and Kimberly Clark. All utilities and rail are provided, and the Park is generally positioned to attract a higher quality of development through restrictive design covenants. Currently, 70 acres of the site is available for new development.
- The 325-acre Ogden Industrial Park has been positioned in the regional real estate market to attract smaller industrial, warehousing, distribution, and office users, generally in the 3 to 5 acre range. This park was also developed with restrictive covenants, but a majority of earlier users in the park were not required to follow design codes, thus diminishing the overall quality of development. According to ERA, roughly 15 acres of vacant land have been absorbed and developed per year for the past 4 years. According to the *1997 Industrial/Business Park Profile*, nearly 18 acres of developable land is available for new construction. Also, Ogden has scheduled the purchase of additional land totaling \$460,400 in the Capital Improvements Plan for 1998-2002. Assuming an acquisition cost of \$20,000 acre for unimproved land, the City may be expanding the park by at least 23 acres, for a total of 348 acres.
- The 725-acre Freeport Center, a former Navy depot, provides a large amount of existing multi-tenant space for a range of distribution and manufacturing tenants. Like DDO, the center is marked by large warehouse facilities which were constructed in the 1940s. Improvements to buildings have been made gradually, with a portion of the cost covered by rent payments. According to Freeport officials, demand generally is from 30,000 to 50,000 sq ft users as opposed to large-space users. Freeport officials also stated that 130 to 135

acres of developable land exist for new construction, but have remained vacant for several years.

Based on the foregoing, ERA concludes that all three parks have largely exhausted their respective supplies of well-located developable land that would be in direct competition with DDO for Weber County and Wastach Front regional demand. Moreover, as ERA notes, most of the available acreage at these sites remains unimproved, thus reducing overall site marketability to potential end users. Alternatively, DDO will offer over 1,000 acres of improved land and 5.46 million sq ft of building space that is prepared for immediate development.

Real estate pricing and revenues. The final element of the market analysis is real estate pricing, which in micro-economic terms reconciles demand and supply forces to arrive at an equilibrium price for a given real estate product. According to ERA, the most applicable rental rates for DDO buildings come from the Freeport Center, which offers a decidedly similar building inventory both in terms of building size and design and site layout. Rental rates for manufacturing and distribution tenants at Freeport generally range from \$1.44 to \$3.84 per sq ft on a modified gross basis depending on tenant size and obsolescence of the building. Given this pattern, ERA concludes that rental rates for DDO manufacturing and distribution space will be \$2.50 and \$2.00, respectively, (NNN) assuming programmed building renovations occur.* Similarly, office rents are expected to reach \$9 per sq ft (NNN), which is generally consistent with current Class B and C office rents in the region. Again, the rate is based on the assumption that buildings are renovated.

In terms of land sales, ERA is assuming that DDO developable land will be fully improved with site infrastructure, as opposed to selling raw land, which poses marketing limitations for a variety of reasons. In the case of land, the Ogden Industrial Park offered the best sales comparisons given its proximity to DDO and its end-user mix. Prices for improved land range between \$35,000 and \$45,000 per acre. Alternatively, unimproved land in the real estate submarket ranges between \$20,000 to \$25,000 per acre. Therefore, it is the conclusion of ERA that land sales at DDO for industrial, distribution, and office uses will average \$40,000 per acre.

* Triple net or NNN leases typically assign insurance, maintenance, and property tax cost responsibilities to the tenant. In other words, the tenant bears the entire risk of unexpected changes in operating expenses.

As indicated in Table 4.2, over 3.6 million sq ft of existing DDO space is forecast for absorption over 15 years, of which ERA estimates 734,000 sq ft will be sold. However, no market-comparable building sales were presented in ERA's market analysis, suggesting an absence of quality and applicable sales information for DDO. Nevertheless, ERA estimates DDO building sales at \$15 per sq ft with renovations, although no underlying support was apparently advanced. Table 4.13 summarizes the DDO real estate pricing program. Table 4.2 also summarizes key pricing and absorption assumptions.

Table 4.13. Estimated OLRA/ERA real estate pricing for DDO.

Product Type	Space Absorbed	Unit Pricing	Baseline Revenue (1999S)	Projected 15-Yr Revenue
Existing Leasable Space*	2,936,562 SF		\$10,306,754	\$65,423,611
Manufacturing	1,747,237 SF	\$2.50 SF (NNN)	NA	N/A
Distribution	1,159,924 SF	\$2.00 SF (NNN)	NA	N/A
Office	29,400 SF	\$9.00 SF (NNN)	NA	N/A
Land Sales	118.95 acres 1,932,225 SF	\$40,000 acre	\$4,758,000	\$7,496,780
Existing Building Sales	734,133	\$15 SF	\$11,011,995	\$13,277,780
Manufacturing	440,480 SF	\$15 SF	\$6,607,200	\$7,966,574
Distribution	293,653 SF	\$15 SF	\$4,404,795	\$5,310,868
Opportunity Revenue				\$13,791,710
Peterson Fabrication	560,000 SF	\$1.26 (NNN)	\$705,600	\$12,761,710
Standard Examiner	55,102 SF	\$18.15 SF(sale)	\$1,000,000	\$1,030,000
Total (w/out Opportunity Rev)	5,602,920 SF	NA	NA	\$86,198,171
Total	6,218,022 SF	NA	NA	\$99,989,881

CERL Findings Related to Market Analysis and Revenue Assumptions

Market analysis. It is the conclusion of CERL that ERA's real estate market analysis approach and findings as they relate demand and competitive supply are generally defensible, if not conservative. Demand forecasts are based on State of Utah employment projections for Weber County and the Wasatch Front region. However, CERL observed a wide variation in manufacturing and distribution employment projections during its investigation of the EDC request. The 1997 Reuse Plan makes use of projections developed by the Utah State Department of Employment Security, which forecasts the creation of 9,213 manufacturing and 1,533 distribution jobs over 15 years (2011) for a total of

* Note that ERA has estimated demand for existing space at roughly 60 percent manufacturing and 40 percent distribution. Therefore, *existing building sales* of 734,133 SF was bifurcated into its manufacturing and distribution components so they could be subtracted from *total existing space* (Table 4.12) to arrive at *existing leasable space*.

10,746 positions. According to the ERA, DDO would likely capture 4,411 (41 percent) of these jobs over 15 years assuming full implementation of the Reuse Plan. This roughly translates to demand for over 5.6 million sq ft of DDO space assuming an average employment density ratio for manufacturing and distribution uses of 1,275 sq ft per employee.

In contrast, the Governor's Office of Planning and Budget forecasts that the Weber County manufacturing job base will grow by only 3,584 over 15 years, nearly 62 percent less than Employment Security's forecast, but distribution is anticipated to experience a marked increase of nearly 9,658 jobs. Assuming ERA's assumptions of a 41 percent capture and 1,275 sq ft per employee, DDO space demand could likely total 6.9 million sq ft, compared with 5.6 million sq ft estimated under employment security forecasts.

It was unclear from referenced documents why the observed variations of the Weber County job projections would be so notably acute given that both come from Utah state agencies. Differences in economic projections between analysts and over time periods is common given that economics is not a science, and that unforeseen economic and demographic changes over time are the rule rather than the exception. In light of these limitations, CERL elected to average the respective forecasts from the two agencies to better reflect differences in technical opinion between Utah economists. By doing so, 15-yr manufacturing employment is forecast to grow by 6,398 and distribution by 5,595, for a total of 11,993 jobs. Assuming ERA's 41 percent capture rate, likely 15-yr DDO job creation would total 2,623 and 2,293 for manufacturing and distribution, respectively. This compares with ERA's employment forecasts for manufacturing and distribution of 5,115 and 2,029 jobs, respectively, which suggests that EDC manufacturing job creation and property absorption forecasts are overstated.

However, it is CERL's belief that ERA incorrectly estimated DDO's capture rate for manufacturing and distribution jobs and space. Recall from the earlier competitive supply analysis that the only viable competitors for DDO's share of manufacturing and distribution jobs within Weber County are essentially built out, suggesting a near- to mid-term shortage of industrial space, assuming job creation estimates are accurate. In the worst-case scenario, nearly 246 acres of Weber, Ogden, and Freeport industrial park land would be improved and actively marketed in the short term.* Assuming a floor area ratio (FAR) of 0.35 and an

* Weber County Industrial Park – 70 acres; Ogden Industrial Park – 41 acres; and Freeport Center – 135 acres.

average employment density ratio of 1,000 sq ft per employee, over 3,700 of the 12,000 jobs forecast for the county could potentially be captured by existing industrial park vacant land. In effect, the remaining job growth for Weber County over 15 years (8,200) would be captured by DDO, assuming that no new industrial parks were developed.* If competitive supply assumptions are relaxed, perhaps reducing supply by one-third (to 164 acres), likely DDO capture of job growth could exceed 9,500 over 15 years, with manufacturing comprising over 5,000 jobs. That estimate is within the same order of magnitude as ERA's 5,115 15-yr DDO job creation capture, but with a more conservative manufacturing employment forecast and larger capture of county job growth as a result of the dwindling supply of competitive industrial land.† In real estate terms, 9,500 jobs could potentially represent a demand for 9.5 million sq ft of space at DDO, assuming an employment density ratio of 1,000 sq ft per employee, which is more conservative than ERA's use of 1,275 sq ft per employee.

Revenue assumptions. Job creation forecasts are inextricably related to the resulting revenue generated from real estate demands fostered by new jobs and economic activity. As already mentioned, ERA forecasts DDO job growth of 5,115 and 2,029 for manufacturing and distribution, respectively. These forecasts translate into an indicated real estate demand of more than 3 million sq ft for manufacturing and 2 million sq ft for distribution, according to ERA (see Table 4.12).‡ However, as noted by CERL in the 2 December 1997 memorandum to ERA, estimated real estate demands for leasable space, which is the largest revenue component (Table 4.13), do not reconcile with projected revenues at estimated rental rates. As Table 4.2 shows, total 15-yr absorption of 1,537,185 sq ft (line 63) and 1,034,640 sq ft (line 64) of *existing* leasable manufacturing and distribution space is calculated to replicate the OLRA's 15-yr leasing revenue stream (line 38). When building sales are added, total absorption equals 1,977,660 sq ft and 1,328,280 sq ft. These figures compare with ERA's calculation of 2,209,500 sq ft and 1,461,195 sq ft for the same uses. Therefore, the

* Phone conversations with Mr. Randy Sant of the Weber County Economic Development Office indicated that the only new industrial park product that will be made available to the real estate market in the foreseeable future is DDO.

† Assumes manufacturing represents 53 percent of total industrial job growth, which, for the purposes of this analysis, includes manufacturing and distribution.

‡ ERA made use of employment density ratios of 600 and 1,000 for manufacturing and distribution uses. These ratios were used to calculate real estate demand for the EDC Business Plan. CERL finds them reasonable based upon similar ranges observed at other industrial parks in the region.

indicated differential between ERA's and CERL's existing inventory absorption calculations is 364,755 sq ft.*

However, in order to recast ERA's 15-yr "Land Sales" of nearly \$7.5 million, CERL calculated annual land absorption of 10.36 acres as opposed to ERA's revised estimate of 7.93 acres per year. Over 15 years, CERL calculates total land absorption of 155 acres in contrast to ERA's calculation of 118.95 acres (Table 4.13). Assuming ERA's weighted average FAR of 0.38 for new development, CERL calculates a 15-yr build-out on developable land of over 2.56 million sq ft compared with 1.93 million sq ft calculated in the EDC Business Plan. Subtracting the balance of 364,755 sq ft of leasable space calculated above, total 15-yr build-out as calculated by CERL totals 5.53 million sq ft compared with ERA's projection of 5.6 million sq ft (Table 4.12).

Aside from the calculation errors observed for Lease Revenue and Land Sales, CERL was able to successfully recast Building Sales and Opportunity Revenues without limitations. Because total absorption as calculated by CERL closely matches ERA's calculations, CERL elected to use independent calculations of real estate revenue, which yield identical 15-yr revenues of \$99.9 million (Table 4.2, line 56). The breakdown is as follows:

- \$65.4 million – Lease Revenue
- \$7.5 million – Land Sales
- \$13.3 million – Building Sales
- \$13.8 million – Opportunity Revenues.

It is CERL's conclusion that these revenue forecasts are reasonable, and most likely conservative, in light of current and projected employment projection, current private sector interest in DDO, and the OLRA's real estate pricing schedule. One methodological shortcoming noted by CERL was the apparent absence of broker's commissions for real estate leasing and sales. CERL corrected this apparent omission in the CERL1 Scenario by applying an overall 4

* CERL assumed that existing buildings which are included in "Opportunity Revenues" were not included in ERA's existing DDO space capture calculations. CERL's assumption was confirmed upon review of ERA's TIF District analysis presented later in this chapter.

percent commission to all leases and sales. Overall market feasibility will be discussed further in a later section of this chapter.

The final component of project revenue is OEA grant funds which total \$1,000,000, putting total 15-yr gross revenues at \$100.9 million. To arrive at effective gross revenues (Table 4.6, line 12), the OLRA has subtracted local matches for grant funding and vacancy and credit loss. Total local match for OEA and EDA grant funds totals \$2.34 million over the first 5 years of redevelopment. Likewise, an 8 percent vacancy rate has been applied to Potential Lease Revenue, resulting in a 15-yr revenue loss of \$5.2 million (line 11). CERL determined both of these revenue offsets to be reasonable and relatively consistent with past EDC reviews. Therefore, total 15-yr effective gross revenue equals \$93.4 million.

Operating expenses. The OLRA has divided operating expenses into six general categories: (1) salaries and benefits, (2) administrative, (3) marketing, (4) maintenance, (5) Army repayment, and (6) property management. As mentioned earlier, operating expenses are inflated at 3 percent per year beginning in 1999 throughout the 15-yr pro forma horizon. A description of each operating expense line item follows:

- *Salaries and benefits* begin at \$240,000 per year, and escalate to \$363,022 by Year 15 (2013) when inflation is applied. This level of expense would provide for a full-time staff of four to five employees, which is reasonable given the size and depth of the DDO redevelopment effort.
- *Administrative* costs include equipment leasing, office supplies, data processing, and general administrative function, as well as nominal fees for professional services. Expenses begin at \$60,000 per year and escalate to \$90,755 by Year 15. Total 15-yr administrative costs equal \$1.1 million.
- *Marketing* is a critical expense that must be incurred to attract private sector investment to DDO. First year marketing expenses total \$75,000 and decrease by 5 percent per year through Year 5 (2003), when expenses decrease by 10 percent a year through Year 15. Total 15-yr marketing costs are \$675,357.
- *Maintenance* expenses cover basic maintenance and repair for vacant and leased space at the DDO site. According to ERA's 12 December 1997 memorandum, the baseline inventory of building space that must be maintained is 3.9 million sq ft, which decreases as property is absorbed until Year 3, when over 1.6 million additional square feet not previously under

OLRA control are entered into the inventory. A maintenance cost of \$0.50 per sq ft was developed, resulting in total expenses of \$34.7 million over 15 years.

- *Army repayment* totals \$1,000,000 and is incurred in Year 1 as an up-front payment. The reasonableness of the OLRA's offer is one of the key business plan review elements investigated in this chapter.
- *Property management* expenses according to the OLRA will include a variety of marketing, general maintenance, brokerage services, and leasing activities. For the purposes of the Business Plan, it is assumed that property management costs equal 1.5 percent of gross revenues from land sales, leasing, and building sales. Expenses total \$1.2 million over 15 years.

CERL Operating Expense Findings

On balance, CERL finds business plan operating expenses to be reasonable and directly related to the OLRA's ability to generate revenues from leasing and sales activity. When operating costs are viewed in relation to effective gross revenues, CERL concludes that, over the long run, expenses fall within a range of reasonableness. As would be expected with any large-scale real estate development, operating expenses consume most, if not all, of effective revenues in the early lean years of development. DDO is no different, as shown by an average 5-yr operating cost ratio of 96 percent. However, by Year 15 the operating cost ratio drops to 22 percent as revenues increase and operating costs decline, exceeding most industry benchmarks for income producing properties.

CERL did, however, experience complications in terms of calculating real property inventories that must be maintained. CERL's independent property inventory reconciliation of EDC buildings that will be reused resulted in a total baseline inventory of 5.2 million sq ft. Accordingly, when Year 1 property absorption is subtracted, Year 1 inventory of property that must be maintained equals 4.4 million sq ft (Table 4.3, line 37). This figure accounts for an additional 0.5 million sq ft of inventory that must be maintained. Additional incongruencies were noted for property that will remain under Federal control until 2001, at which time it will be transferred to the OLRA's baseline inventory. At best, CERL calculated the potential for nearly 1.2 million sq ft, which is less than OLRA's estimate of over 1.6 million sq ft. This essentially assumes all Federal and PBC property is transferred in 2001. In reality, CERL calculated a total of 253,385 sq ft of DEPMEDS (Army) property that will become available in 2001 as the mission is realigned or privatized. There is no indication that the Army Reserve, IRS, or PBC recipients will relinquish ownership of their respective buildings to the OLRA in 2001. Thus, CERL based 15-yr maintenance

calculations on a reusable inventory of 5.46 million sq ft (5.2 million sq ft plus DEPMEDS in 2001).

Infrastructure Phasing and Cost Assumptions

When phased cost estimates provided in Attachment 3 of the EDC application are used in conjunction with the infrastructure assessment presented in the 1997 Reuse Plan, a comprehensive infrastructure cost analysis and investment plan clearly emerges. CERL provides its infrastructure findings in Chapter 5, **Need and Extent of Proposed Infrastructure Improvements**, of this review. Table 4.3 provides an overview of the OLRA's proposed infrastructure investment into job creation and economic development. A summary of those costs, including a 30 percent design and construction contingency, follows:

- \$14.2 million – improvements to existing roads
- \$7.7 million – improvements to the existing stormwater system plus new construction
- \$13.7 million – improvements to the existing domestic water system plus new construction
- \$5.3 million – improvements to the existing sanitary sewer system plus new construction
- \$6.9 million – repair and replacement of the central heating plant
- \$4.4 million – building demolition.

Total infrastructure costs are \$53.5 million and are programmed over 12 phases. However, only 11 phases are actually programmed in the OLRA's Business Plan pro forma, totaling \$49.3 million in 1999 dollars, or \$61.87 million when 3 percent inflation is applied. Early phases of the infrastructure program focus on road, water, and sanitary sewer improvements to improve service delivery and rapid access to new tenants and end users.

Building fit-up and renovation (Table 4.3, line 28) is also included as an element of the infrastructure investment program. The OLRA has estimated building renovation costs respectively at an average of \$5 and \$4 per sq ft for manufacturing and distribution reuse. Renovations generally include mechanical, electrical, cosmetic, structural, and plumbing repairs depending on the condition of building and reuse requirements. Building renovation costs are incurred in the Business Plan pro forma when existing DDO buildings are leased or sold to

end users. Therefore, costs bear a direct relationship to annual property absorption plus a 12 percent contingency to account for gross building square footage and potential vacancies.* Because of the straight-line approach to absorption in the Business Plan, renovation costs remain constant in 1999 dollars and total \$15.6 million over 15 years (line 27). When inflation of 3 percent is factored in, the cost of renovations escalate to \$19.34 million.

CERL findings. When \$19.35 million in building renovation costs are combined with the \$61.8 million infrastructure improvement estimates, the total cost estimate of the OLRA's commitment is \$81.2 million for the reuse and redevelopment of DDO. CERL's conclusions as substantiated in Chapter 5 are that the OLRA's total infrastructure redevelopment costs fall within a cost range of reasonableness, although large variances exist for some individual capital investment line items. Key differences are as follows:

- In terms of the nearly \$7 million in improvements proposed for the DDO central heating plant, CERL was unable to justify the need for replacement of nearly 70,000 lineal feet (LF) of steam and condensate lines. OLRA officials indicated to CERL that Questar, a company that provides heating fuel, would take over central heating plant operations and maintenance after the conveyance of the EDC parcel. Given that Questar is a profit-maximizing company and considering current patterns of market demand, it is likely that Questar will transition the site from centralized heating to individual boilers and heating, ventilation, and air conditioning (HVAC) systems. This approach is likely more cost effective from an operations standpoint and is congruent with industrial buildings in the submarket. For example, the Freeport Center, which was a Navy depot and is marked by buildings of a similar age and design as DDO, transitioned from the central heating plant early in redevelopment to provide reliable and flexible heating service for tenants. The impact to heating plant costs total almost \$3.3 million, reflecting the replacement of only 25 percent of the 70,000 LF proposed for replacement. This replacement scenario would provide reliable heating service to existing buildings that have not been renovated with new boilers or HVAC systems. Therefore, total heating plant costs are \$3.6 million over the OLRA's 12 phases.

* Note that ERA expresses property absorption in terms net leasable SF as opposed to gross building SF throughout the analysis. Assigning a contingency accounts for the difference between net and gross square footage, thus addressing the possible renovation of an entire building rather than just the net leasable space.

- As noted, the OLRA proposes a \$14.2 million investment into road improvements and expansions. Although CERL generally agrees with the circulation concept contained in Reuse Plan, differences in cost calculations and the apparent need for some improvements resulted in a CERL estimate of \$10.5 million, some \$3.7 million less than the OLRA estimate.
- In terms of domestic water improvements, CERL disagreed with some elements of the OLRA's \$13.7 million investment plan. In contrast, CERL estimated that a 15-yr investment of \$5.0 million could reasonably accommodate redevelopment goals and projected build-out.
- Finally, CERL's estimated building fit-up costs are higher than those proposed by the OLRA. First, the findings contained in the Market Feasibility section of this chapter indicate that the OLRA's reusable inventory could be absorbed over 15-year, suggesting that the entire building fit-up program would have to occur in that time. Thus, over 4.8 million sq ft of inventory would be renovated over the pro forma horizon.[†] In addition, CERL has estimated the cost to renovate manufacturing and distribution space to be \$5.86 and \$3.93 per sq ft, respectively. Given the stronger weighting toward manufacturing reuse in the business plan, and a higher CERL cost for manufacturing space fit-up, overall costs increased. In total, CERL estimates 15-yr building renovation costs at roughly \$30.4 million (\$24.5 million in constant dollars) versus the OLRA estimate of \$19.34 million.

To conclude, CERL estimates the total capital investment required at DDO to redevelop the site in accordance with the approved redevelopment plan to be *nearly \$83 million*, which falls near the OLRA's total estimate of *\$81.2 million*.

Infrastructure Funding

Tax increment finance district. The OLRA pro forma incorporates additional funding to offset infrastructure investment in response to the fact that effective gross revenues in the early years of redevelopment are barely sufficient to offset

[†] The total reusable inventory is estimated to be 5.46 million sq ft. Based on discussions with the OLRA, and stated business plan assumptions, only 4.8 million sq ft would be subject to building renovation due to Peterson Manufacturing and the Standard Examiner financing improvements to their respective buildings. In addition, the OLRA has assumed that administrative/office space would not be subject to building renovation investments financed by the OLRA.

operating expenses. To overcome these fiscal limitations, the OLRA has proposed the creation of a tax increment finance (TIF) district to fund infrastructure investment. The mechanics of a TIF are straightforward. Tax assessments are frozen at levels calculated at the time of the TIF district's inception. Typically, bonds are issued to fund improvements that will benefit the TIF district exclusively, thus creating direct and deliberate economic value within the district. Increases in assessed value from the frozen baseline, or increment, is then used to amortize the bonds issued for district improvements. In the State of Utah, a municipality may create a TIF district for economic development purposes and retain 100 percent of tax increment for 10 years and 50 percent for an additional 10 years, or 75 percent for 20 years. The OLRA has elected to follow the former tax increment capture option for DDO. Other key TIF assumptions include the following:

- Bond issuance costs of 2.5 percent are charged against new bond issues
- Initial property values for largely unrenovated real property begin at \$10 per sq ft and appreciate at 5 percent a year
- Assessed value for commercial property within Ogden City equals 100 percent of fair market value.

According to the OLRA's Business Plan, a total of \$18 million in bond issues is necessary to fund required infrastructure investment and cover operational shortfalls. This amount exceeds 22 percent of total infrastructure improvement costs, suggesting that the proposed TIF district is a prudent and required element of the OLRA's Business Plan, ensuring fiscal solvency. Nearly 50 percent of the issues are incurred in the first 5 years of plan implementation. That correctly corresponds with the pronounced average operating cost ratio of 96 percent observed for the same period. The final bond issue is made in Year 10 (2008) in the amount of \$3.35 million. No additional bond issues are necessary beyond Year 10 given the observed sufficiency of effective gross revenue to cover operating expenses and programmed infrastructure improvements.

To evaluate the feasibility of the TIF district in terms of its capacity to generate taxable increment, CERL requested the supporting TIF analysis from ERA. Unfortunately, review of the analysis revealed several fundamental methodological errors that bring into question the feasibility of the TIF district as a whole. The first error relates to the manner in which the tax increment was calculated. Recall that ERA's baseline tax assessment for DDO property is frozen at \$10 per sq ft and values appreciate at 5 percent per annum. This assessment suggests that the OLRA would realize a 5 percent increment from

the previous year's taxable assessment for the purposes of debt amortization. However, CERL observed that all property tax revenue generated, in contrast to the incremental increase from the baseline, was applied to yearly debt service. Although this may be reasonable in some circumstances where other government bodies such as school districts, which depend on property tax revenue, forego their allocated share, no explicit assumption was made. Indeed, the tax dollars generated by DDO may be needed for other city and county projects, services, and agencies.

For the sake of comparison, ERA's methodology of 100 percent tax revenue (including increments) results in a 15-yr revenue stream of \$12.9 million compared with a standard TIF calculation, which yields \$10.4 million in total tax increment for debt retirement.* When Utah capture laws are correctly applied, the 15-yr tax increment decreases, resulting in \$8.2 million in tax increment revenues for bond amortization purposes.

The second observed error relates to the amortization of \$18 million in bond issues incurred over the 15-yr pro forma. Although Ogden has likely earned a strong credit rating through a proven record of fiscal responsibility and intends to issue municipal bonds, which typically carry a more favorable interest rate, it is highly unlikely that a bond underwriter would charge zero percent interest. Unfortunately, debt service calculations provided by ERA only provide amortization on the principal borrowed with no interest charges. Accordingly, debt service calculations are woefully understated. The problem is further amplified because only taxable increment on property assessments can be applied to debt service in the absence of explicit assumptions that state otherwise. The net result is a TIF district that cannot support \$18 million in bond issues under current Business Plan and TIF assumptions.

Grant funding. The Business Plan pro forma also includes annual project funds from the EDA for infrastructure investment. According to ERA, up to \$12 million in EDA grant funds is possible, representing a more than 14 percent infrastructure cost offset (Table 4.6, line 33).

* Note that ERA's calculations are based on 100 percent capture of tax increment for the first 10 years of redevelopment and 75 percent for the second ten. Utah state law specifies that only 50 percent of tax increment may be retained by a municipality for the second 10 years of a project.

CERL findings. Table 4.5 presents CERL's recast of the OLRA's TIF analysis and demonstrates similar results as the ERA analysis. In effect, \$9.2 million in TIF revenue is available for \$16.2 million in debt service (including interest), resulting in a \$6.9 million shortfall, compared with the \$8 million shortfall observed in the ERA analysis. Assuming 20-yr amortization on each bond issue, the OLRA will have debt obligations extending for 33 years, resulting in a total debt service of \$31.8 million on borrowed capital of \$18.2 million (Table 4.4). In CERL's opinion, bond underwriters would not support over \$18 million in bond issues given current TIF district economics. However, there are three independently supportable approaches that could be applied individually or jointly to mitigate TIF district feasibility limitations.

First, the use of \$10 per sq ft as the TIF district assessment basis is, in CERL's opinion, an understatement of potential assessed value. Recall, that ERA's baseline estimate assumes that the building inventory is comprised of mostly existing, and "largely unrenovated" real property. However, Table 4.5 indicates that over 2.5 million sq ft of new industrial, distribution, and office inventory will be constructed over 15 years. A recent market study conducted for the proposed Ogden Intermodal Transportation Center indicates that recent industrial building sales ranged from \$24.09 to \$40.54 per sq ft, and that new property for sale averaged around \$60 per sq ft. These building values would seem to suggest that the use of \$10 per sq ft, despite the use of a 5 percent per annum appreciation rate, underestimates the assessed value of new DDO building inventory. Also, in terms of existing building inventory, the assumption that buildings are unrenovated is internally inconsistent with the Business Plan assumption that buildings are renovated at \$4 to \$5 per sq ft as they are absorbed by the market. If buildings are assessed at \$10 per sq ft unrenovated, renovations of \$4 to \$5 per sq ft would increase assessed value linearly to a new range of \$14 to \$15 per sq ft, denoting an increase in market value. Therefore, it is the opinion of CERL that baseline assessed value for DDO be at least \$15 per sq ft, which is consistent with the OLRA's estimated price of the same value for existing buildings. Finally, it is worth noting that ERA estimated average assessment fair market values of \$45 to \$75 for existing and new space in the January 1997 Reuse Plan (OLRA, p 4-23).

The second approach to TIF district feasibility relates to DDO property absorption assumptions. Naturally, as the market absorbs more property, a larger taxable base at DDO is created. CERL demonstrated in the *Market Analysis* (p 124) that the potential absorption capture rate for DDO is likely understated given job growth forecasts for Weber County and the apparent lack of existing and anticipated industrial competitive supply. An expanded discussion of

increased market capture will follow in the *Market Feasibility Analysis* section of this chapter.

Finally, in terms of project grant funding from the EDA totaling nearly \$12 million, CERL finds such an estimate inconsistent with previous BRAC actions. While it is true that most BRAC communities are eligible for infrastructure grant assistance, it is also true that such a large amount is generally the exception rather than the rule. It is CERL's contention that the OLRA will receive grant funding, especially in light of the need for specific projects to support early tenants, but that the amount will be less than estimated. For the purpose of the business plan review the EDC infrastructure grant estimate has been revised downward to \$6 million, or half of the original estimate.

CERL will further discuss and develop these alternatives in the *Scenario and Sensitivity Analysis* section of this chapter.

OLRA Business and Operations Plan Summary

To this point, CERL has provided a detailed account of each business plan revenue and cost center. This section summarizes the key findings of CERL's recast of the OLRA business and operations plan summary, which are contained in Table 4.6. A discussion of the findings follows:

- CERL forecast 15-yr effective gross revenue at \$93.3 million assuming 3 percent annual inflation beginning in Year 3 (line 12). Year 1 revenues total \$2 million and increase at a relatively constant rate to \$11 million in Year 15, representing absorption of over 2.6 million sq ft. As discussed earlier in the chapter, potential lease revenue represents the largest single line-item of revenues at 64 percent of total effective gross revenues.*
- CERL calculated operating costs total \$43.9 million over 15 years (line 21). Operating expenses are highest in Year 1 at \$3.6 million and decrease for 2 years, until they increase again in 2001 to \$3.1 million reflecting OLRA's absorption of additional surplus Army inventory. After 2001, expenses gradually decrease to \$2.5 million in Year 15. As indicated before, maintenance costs represent the largest component of operating expenses, comprising 80 percent of the 15-yr total.

* Includes vacancy and collection loss of 8 percent.

- Net operating income (NOI) equals effective gross revenue *minus* total operating expenses (line 25). As is common for large-scale redevelopment projects, NOI begins negative at \$1.57 million in Year 1. However, NOI exhibits stable growth over the 14 remaining years of the pro forma, escalating to nearly \$8.6 million by Year 15. Total 15-yr NOI equals \$50 million and is applied directly to infrastructure costs of \$81.2 million.
- Infrastructure costs total \$81.2 million over 15 years assuming 3 percent inflation per year. Proportionally, building renovation costs total \$19.3 million, representing improvements to over 3.3 million sq ft of existing inventory (Table 4.3). Remaining infrastructure costs of \$61.8 million are phased judiciously in the first 5 years of redevelopment totaling only \$17.7 million, perhaps reflecting a desire to “test the market” before full-scale implementation. Alternatively, nearly \$25 million in improvements is programmed for the last 5 years of the pro forma when the DDO has become well established in the regional real estate market and NOI exceeds \$5 million a year. The 15-yr low and high expenditures equal \$1 million and \$8.4 million, respectively.
- Associated with infrastructure costs is infrastructure funding from EDA totaling \$12 million (line 33). Grant installments begin in Year 1 and extend to Year 7. Funding is applied directly to infrastructure costs of \$81.2 million.
- Annual cash flows are calculated by subtracting infrastructure costs from NOI, and applying grant funding as an offset (line 35). Net deficits or surpluses in annual cash flow provide the basis for bond issues. Because NOI and grant funding are insufficient to offset infrastructure costs over the life of the pro forma, 15-yr cash flow equals *negative* \$19.1 million and is marked by inconsistent annual growth and decline. Negative annual cash flows grow as large as \$5.5 million as calculated for Year 5. Based on CERL’s recast of the OLRA Business Plan, only 4 years exhibit *positive* cash flows, with the highest being \$2.3 million in Year 15.
- As calculated by CERL, cumulative 15-yr cash flow for DDO totals a *negative* \$19.2 million. Accordingly, \$18.3 million in TIF bond issues is applied to stabilize net cash flow over the life of the pro forma (line 37). Because annual cash flows total a *negative* \$13.6 million for the first 5 years, over \$10 million of the \$18.3 million in bonds are issued.
- When \$18.3 million in bond issues is applied to annual cash flow, net cash flow is calculated (line 39). The 15-yr cumulative net cash flow totals *negative* \$963,200, with annual flows of *negative* \$1.4 million and *positive*

\$2.3 million representing the low and high ranges, respectively. Cumulative net cash flow is erratic as well, but remains *negative* for the entire Business Plan.

- Project discount rates for the OLRA Business Plan range from 12 to 8 percent and are applied to annual net cash flows (lines 43 and 49) to arrive at the net present value (NPV) of the Business Plan (lines 45 and 51). At a project discount rate of 12 percent, CERL calculates an indicated NPV of *negative* \$1,854,372 million. When a discount rate of 8 percent is applied to net cash flows, indicated Business Plan NPV increases minimally to *negative* \$1,811,879.

However, ERA has assumed that the OLRA's holding period for DDO is 15 years, resulting in the sale of the property to an investor in Year 15. To calculate property value in Year 15, ERA applied a 10 percent capitalization rate to Year 15 net cash flow, resulting in discounted reversions of \$4.2 million and \$7.3 million at 12 and 8 percent discount rates, respectively. When calculated Year 15 reversion values are applied to NPV, total business plan value ranges from *positive* \$2.4 million to \$5.5 million at 12 and 8 percent discount rates, which is comparatively higher than the OLRA's \$1 million estimate.

CERL Findings

CERL calculated a higher range business plan residual value, ranging from *positive* \$2.4 million to \$5.5 million at 12 and 8 percent discount rates (Table 4.6, lines 47 and 53). The higher range is ostensibly due to a higher Year 15 net cash flow calculated under CERL's recast, which yields a higher Year 15 residual value for DDO at a 10 percent capitalization rate. However, CERL takes exception to ERA's income capitalization methodology to arrive at the DDO residual value. Although capitalization rates remain relatively stable in a given market over time, it CERL's opinion that age and functional obsolescence issues were not appropriately considered in the development of the 10 percent terminal capitalization rate. By the end of the OLRA's holding period in Year 15, a majority of the existing buildings at DDO will be in excess of 70 years old. An investor would likely assess a high risk premium to reflect the functional and economic obsolescence of the buildings relative to competitive modern products in the market. To account for this, and the fact that revenue and cost projections become increasingly uncertain as they are forecast over time, CERL recommends a 15 percent terminal capitalization rate to calculate property value in Year 15. CERL's revised assumptions and findings for DDO reversion value are addressed in the ***Scenario and Sensitivity Analysis*** section of this chapter.

Market Feasibility Analysis

In determining the financial feasibility of a development, it is necessary to first establish market feasibility, that is, whether demand is sufficient to absorb the offered space within the projected time frame and at pro forma market rates. The data and information gathered and reviewed by CERL suggest that it is highly feasible to absorb over 5.6 million sq ft of existing and new space by the market in a timely manner. Furthermore, it can be seen from the following discussion that market absorption of DDO land and inventory could be accelerated from the OLRA's originally forecasted rates to potentially accommodate full build-out within the 15-yr pro forma.

CERL Findings

The OLRA's absorption rate assumptions are principally a function of area employment and demographic trends. That is, the OLRA estimated potential absorption rates by estimating the potential degree of future demand caused by area job and economic growth. This method of projecting potential future demand is generally accepted within the real estate industry. However, because this method is based on economic forecasting, it can be sensitive to inaccuracies in available economic predictions, particularly over the long term. Also, even where this approach does accurately forecast future demand, it may not directly address the possibility that a particular property will achieve estimated market capture.

To offset these forecasting limitations, CERL relied upon two employment growth forecasts developed by two Utah state agencies. By balancing the respective differences in economic assumptions and model methodology, it is CERL's opinion that a blended forecast offers a more robust decision-support tool than one forecast with the attendant technical biases of the agency that created it. Table 4.14 summarizes the 15-yr employment forecast results for Weber County from the Utah State Department of Employment Security and the Utah Governor's Office of Planning and Budget.

Table 4.14. CERL 15-yr average manufacturing and distribution employment growth for Weber County, Utah.

Utah State Agency	15-Yr MFG Employment	15-Yr DIST Employment	Total Employment
Employment Security	9,213	1,533	10,746
Planning and Budget	3,584	9,658	13,242
CERL Average	6,398	5,595	11,993

Assuming ERA's market capture rate of 41 percent, DDO job creation would total 2,623 and 2,293 for manufacturing and distribution, respectively. Prima facie,

these figures generally compare unfavorably with OLRA's employment forecasts for manufacturing and distribution of 5,115 and 2,029 jobs, suggesting that EDC job creation and property absorption forecasts are overstated in terms of manufacturing.

However, it is the belief of CERL that ERA underestimated DDO's capture rate for manufacturing and distribution jobs and space, based on available supply. In fact, available data suggest that less than 146,000 sq ft (two buildings plus some older facilities) of industrial space is available, and that only about 60,000 sq ft of new space is currently under construction. Conversations with Weber County economic development personnel indicated that no major new industrial parks are currently in the development stages, although scattered parcels are available for development or are undergoing development. For example, both the Weber County Industrial Park and the Ogden Commercial & Industrial Park collectively have about 110 acres of land available, and additional smaller parcels exist around the county. However, no large-scale park appears to be under or near construction. Since the current development pipeline features little or no product of this type that can be brought to market over the short term, CERL concludes that the short-term portion of the Business Plan faces a reduced degree of market risk.

Accordingly, DDO capture rates for manufacturing and distribution space were calculated by assuming 164 acres of non-DDO land is available for industrial development, at a FAR of 0.35 and 1,000 sq ft per employee. The results indicate that existing competitive supply could serve employment growth of 2,500 jobs, creating a balance of roughly 9,500. In other words, existing supply can only accommodate 2,500 new jobs, leaving a balance of 9,500 jobs and attendant real estate demand underserved. Assuming CERL's average employment forecasts, the proportion of underserved demand is roughly 5,000 manufacturing and 4,500 distribution jobs.

Thus, it is the conclusion of CERL that property absorption could be accelerated over the 15-yr pro forma to reflect robust employment growth and limited existing competitive supply. In fact, CERL's findings are currently supported by the market itself as evidenced by the current interim leasing activity at DDO. According to the Base Transition Office, DDO caretaker, and OLRA personnel, over 20 interim lease applications for well over 2 million sq ft of existing DDO space have been filed, and as of this report, nearly 1.5 million sq ft of space is under lease. In addition, the Army Corps of Engineers has indicated that DDO land is currently under lease, although a specific amount was not available. Naturally, not all applicants will be accepted (i.e., because of credit problems, lack of tenant job creation, and competition for the same building[s]), but the

initial market response should be viewed in a positive light when considering that the DDO facility has not yet been conveyed to the OLRA by the Army, and the buildings requested have not yet been renovated.

A final consideration with respect to accelerated property absorption is the market findings presented in the 1997 January Reuse Plan. According to the Plan, nearly 260 acres of developable land would be absorbed over 9 years as compared with the OLRA's EDC business plan assumption that 105 acres of inventory would remain after 15 years. Moreover, the Reuse Plan contemplates full existing building absorption within 20 years versus the EDC, which calculates a remaining inventory of nearly 2.0 million sq ft after 15 years. It is understood that market conditions can change rapidly; however, the spirit and intent of the Reuse Plan remains intact with the proposed EDC (see Chapter 3, **EDC Application's Consistency With the Overall Redevelopment Plan**), especially with respect to proposed capital investments and land uses. Moreover, overall real estate market conditions in the Salt Lake City metropolitan area have continued to improve since the development of the Reuse Plan. These considerations would seem to suggest that the more conservative market assumptions proffered in the EDC application are unsupported in relation to Reuse Plan findings.

CERL-Developed Scenario

Based on the conclusions and findings discussed at length earlier in this chapter, CERL developed the CERL1 Scenario to provide an analysis of the impact to the OLRA Business Plan cash flows and NPV. CERL1 was developed using three major assumptions and three project views, which are discussed below. Also highlighted in the discussion are the impacts to forecasted revenues and costs (see Tables 4.7, 4.8, 4.9, and 4.10). It is worth noting that following assumption changes have been made in an effort to correct OLRA business plan assumptions, but do not represent separate scenarios:

- brokers' commissions totaling over \$4.5 million (Table 4.7, line 59) for DDO land and space were included under the CERL1 Scenario
- 15-yr EDA grant funding was reduced from \$12 million to \$6 million
- inventory for 15-yr property maintenance was reduced to 5.4 million sq ft and is commensurately reduced based upon property leasing and sales
- the project capitalization rate was increased from 10 to 15 percent

- project discount rates were increased from the OLRA range of 8 to 12 percent to a new range of 13 to 16 percent to better reflect the large size and length of the redevelopment effort.

CERL1 Scenario Assumptions

1. Increases the absorption of existing distribution space and Business Park land to accommodate project full build-out by Year 15 to reflect the anticipated gap between robust Weber County employment growth, diminishing regional supply of industrial land and space, and early project momentum (Table 4.7).

- all other business plan assumptions are held constant
- increases 15-yr existing space absorbed from 3.9 million sq ft to 5.26 million sq ft (gross sq ft) and Business Park land from 155 acres to 260 acres
- *revenue impact* – 15-yr effective revenues increase from \$93.6 million to \$126.9 million
- *TIF bond issue impact* – reduces 15-yr TIF bond issues from \$18.2 million to \$14.0 million
- *cash flow impact* – cumulative 15-yr cash flow increases sharply from *negative* \$963,200 to *positive* \$33.5 million
- *NPV impact* (excluding property residual) – project NPV increases from roughly *negative* \$1.8 million at 14 and 10 percent discount rates to a new range of *positive* \$6.3 million to *positive* \$8.3 million at 16 and 13 percent discount rates.
- Year 15 residuals capitalized at a 15 percent rate are *positive* \$5.8 and \$8.6 million at 16 and 13 percent discount rates, respectively
- 15-year business plan net present value (NPV) ranges from *positive* \$12.1 to \$16.9 million at 16 and 13 percent discount rates, respectively.

2. Removes \$14 million in tax increment finance (TIF) district proceeds from the analysis, recognizing that TIF represents a fiscal opportunity cost to the City of Ogden (i.e., Ogden's other taxing bodies and agencies forgo newly generated tax revenue at DDO to subsidize job creation) (Table 4.10).

- all other business plan assumptions are held constant
- *TIF bond issue impact* – reduces 15-yr TIF bond issues from \$14.0 million to \$0.0 million
- *cash flow impact* – cumulative 15-yr cash flow *decreases* sharply from *positive* \$33.5 million to *positive* \$19.4 million (Table 4.9)
- *NPV impact* (excluding property residual) – project NPV decreases from a range of *positive* \$5.8 million to 8.6 million at 16 and 13 percent discount rates to a new range of *negative* \$2.6 million to \$1.3 million (Table 4.10).
- Year 15 residuals capitalized at a 15 percent rate are *positive* \$5.8 and \$8.6 million at 16 and 13 percent discount rates, respectively
- 15-year Business plan net present value (NPV) ranges from *positive* \$3.2 to \$7.3 million at 16 and 13 percent discount rates, respectively.

Scenario and Sensitivity Analysis

The CERL1 Scenario significantly impacted the OLRA's Business Plan pro forma. The two alternative scenario assumptions combined for a total revenue increase of \$33.5 million, reduced operating expenses by \$16.7 million, increased NOI by \$46.3 million, and reduced TIF bond issues by nearly \$4.3 million (Table 4.9) under Scenario 1. The total impact to project cash flows amounted to an increase of \$34.4 million under Scenario 1 and a still significant increase of \$20.3 million under Scenario 2.

The positive impact from CERL's independently defensible alternative scenario substantially improved the NPV of the Business Plan. The improvement to project cash flows resulted in NPV range estimations of *positive* \$12.1 million to *positive* \$16.9 million under the CERL1 Scenario 1 and *positive* \$3.1 million to *positive* \$7.26 million under Scenario 2. This results in a CERL1 combined range of *positive* \$3.1 to *positive* \$16.9 million.

Financial Feasibility Analysis

Traditional commercial real estate investment financial feasibility analysis requires investors to make reasonable forecasts of potential gains and exercise sound judgment as to the level of risk to which they are exposed. A technique to

assist in this evaluation is the discounting, back to NPV, of the forecasted future cash flows and estimated residual value of the development at the end of the investment period. The discount rate is determined by an assessment of the level of risk and can be equated to the required rate of return the investor seeks with similar investments. The OLRA's cost of capital for TIF bond issues has been estimated at 6 percent, resulting in a project discount rate of 10 percent when 3 percent inflation premium and 1 percent risk premium is assigned to the cost of capital. However, the risk associated with bond payback essentially lies with the project itself and its ability to generate tax increment revenues to retire outstanding debt obligations. As proposed, the OLRA advances a financially untenable TIF analysis. However, CERL's developed scenario clearly demonstrates that the proposed TIF district is financially feasible, as evidenced by an \$4.8 million tax increment revenue surplus in Year 15, suggesting that debt retirement could be accelerated (Table 4.8, line 49).

Additionally, CERL analysis determined that using a discount rate range of 16 to 13 percent was warranted because of the high level of risk and investment the OLRA is proposing to underwrite, coupled with the uncertainty inherent in any long-term pro forma forecast for a large property. This range is more reflective of private sector rates of return, but it is important from an analysis standpoint that the high degree of project risk be captured through a higher discount rate despite the fact that the OLRA is a public body that does not maximize profit.

Finally, unlike the OLRA scenario, the CERL1 Scenario demonstrates financial feasibility on a cash flow basis, as opposed to applying positive Year 15 reversions to negative NPV to achieve an overall positive project value. Scenario 2 results in *negative* 15-yr cash flow due to the removal of TIF proceeds. However, this scenario simply does not attribute those revenues to the pro forma in recognition of the community's fiscal opportunity cost. Finally, significant unforeseen increases in project costs or reductions in project revenues from the CERL1 Scenario would have to occur in order to turn the plan negative on a cash flow basis.

Conclusion

CERL finds that the OLRA's Business Plan has a high probability of achieving market and financial feasibility as proposed in the OLRA's EDC application and further developed through CERL's alternative scenario. In terms of market feasibility, DDO lies within the rapidly growing Wasatch Front region, which is marked by robust employment growth in manufacturing and distribution. In particular, DDO should capture a large share of this economic growth as a result

of the complementary real estate products it will offer through redevelopment and also the dwindling supply of industrial land.

In terms of financial feasibility, although CERL noted deficiencies with respect to the proposed TIF district that would affect the ability of the OLRA to issue bonds, CERL's developed scenario clearly demonstrates that the TIF district is viable and substantially enhances overall project financial feasibility. CERL recommends that the Army consider the combined CERL1 results, which reflect the inclusion and exclusion of the TIF proceeds. Further, CERL recommends that NPV estimates based on a 16 percent discount rate be considered due to the large size and scope of the redevelopment effort. Based on these recommendations, CERL finds the NPV of the business plan to be as shown in Table 4.15.

Table 4.15. CERL-recommended range of business plan NPV.

CERL Scenario	NPV at 16% Discount Rate
Scenario 1. Inclusion of TIF proceeds	\$3.1 million
Scenario 2. Exclusion of TIF proceeds	\$12.1 million

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Table 4.1. Building and Land Inventory.

**EDC Building and Land Inventory
Defense Depot Ogdén**

Building Number	Land Use District	Proposed Action	Proposed Release	Call Code	Construction	Square Feet (Green List)	Square Feet (White List)	Acres	Current Use
101	Business Park	Demo	Demo	13160	brick	2,050	2,050		Radio Transmission bldg.
102	Business Park	Demo	Demo	42180	concrete	1,808	1,808		Igloo
103	Business Park	Demo	Demo	42180	concrete	1,808	1,808		Igloo
104	Business Park	Demo	Demo	42180	concrete	1,808	1,808		Igloo
105	Business Park	Demo	Demo	42180	concrete	1,808	1,808		Igloo
106	Business Park	Demo	Demo	42180	concrete	1,808	1,808		Igloo
107	Business Park	Demo	Demo	42180	concrete	1,808	1,808		Igloo
108	Business Park	Demo	Demo	42180	concrete	1,808	1,808		Igloo
109	Business Park	Demo	Demo	42180	concrete	1,808	1,808		Igloo
110	Business Park	Demo	Demo	42180	concrete	1,808	1,808		Igloo
111	Business Park	Demo	Demo	42180	concrete	1,808	1,808		Igloo
114	Business Park	Demo	Demo	44285	wood	712	712		WH
117	Business Park	Demo	Demo	74049	wood	10,000	10,000		Horse barn
118	Business Park	Demo	Demo	44275	wood	712	712		WH
1206	Business Park	Demo	Demo	87230	brick	62	62		Sentry
17	Business Park	Demo	Demo	21840	wood	6,186	6,186		Roundhouse
18	Business Park	Demo	Demo	21910	metal	4,200	4,200		Sand stor.
49	Business Park	Demo	Mfr.	44270	brick	800	800		WH
51	Business Park	Demo	Demo	44275	brick	1,200	1,200		WH
	Subtotal					44,002	44,002	260	
150	Industrial	Demo	Demo	71113	brick	1375	1375		Family housing
151	Industrial	Demo	Demo	71113	brick	1375	1375		Family housing
152	Industrial	Demo	Demo	71113	brick	1375	1375		Family housing
153	Industrial	Demo	Demo	71113	brick	1375	1375		Family housing
154	Industrial	Demo	Demo	71112	brick	1640	1640		Family housing
155	Industrial	Demo	Demo	71112	brick	1640	1640		Family housing
156	Industrial	Demo	Demo	71113	brick	1375	1375		Family housing
157	Industrial	Demo	Demo	71113	brick	1375	1375		Family housing
158	Industrial	Demo	Demo	71113	brick	1375	1375		Family housing
159	Industrial	Demo	Demo	71113	brick	1375	1375		Family housing
160	Industrial	Demo	Demo	71113	brick	1375	1375		Family housing
161	Industrial	Demo	Demo	71113	brick	1375	1375		Family housing
162	Industrial	Demo	Demo	71113	brick	1375	1375		Family housing
163	Industrial	Demo	Demo	71113	brick	1375	1375		Family housing
164	Industrial	Demo	Demo	71115	brick	2450	2450		Family housing
165	Industrial	Demo	Demo	71115	brick	2450	2450		Family housing
166	Industrial	Demo	Demo	73055	wood	200	200		Bus shelter
199	Industrial	Demo	Demo	83311	concrete	210	210		Inchewator
202	Industrial	Demo	Demo	44275	metal	2,509	2,509		WH
203	Industrial	Demo	Demo	44220	wood	56,560	56,570		WH
219	Industrial	Demo	Demo	44260	metal	11,200	11,200		WH
239	Industrial	Demo	Demo	14160	metal	3,856	3,856		Packaging
247	Industrial	Demo	Demo	44240	metal	800	800		Haz. Mat. Stor.
258	Industrial	Demo	Demo	44240	brick	151	151		Haz mat
267	Industrial	Demo	Demo	44150	brick	151	151		Haz mat
281	Industrial	Demo	Demo	44180	wood	173,746	173,746		WH



155	Industrial	Demo	71112	brick	1640	1640	Family housing
156	Industrial	Demo	71113	brick	1375	1375	Family housing
157	Industrial	Demo	71113	brick	1375	1375	Family housing
158	Industrial	Demo	71113	brick	1375	1375	Family housing
159	Industrial	Demo	71113	brick	1375	1375	Family housing
160	Industrial	Demo	71113	brick	1375	1375	Family housing
161	Industrial	Demo	71113	brick	1375	1375	Family housing
162	Industrial	Demo	71113	brick	1375	1375	Family housing
163	Industrial	Demo	71113	brick	1375	1375	Family housing
184	Industrial	Demo	71115	brick	2460	2460	Family housing
165	Industrial	Demo	71116	brick	2450	2450	Family housing
166	Industrial	Demo	73055	wood	200	200	Bus shelter
199	Industrial	Demo	83311	concrete	210	210	Inclinator
202	Industrial	Demo	44275	metal	2,509	2,509	WH
203	Industrial	Demo	44220	wood	56,570	56,570	WH
219	Industrial	Demo	44260	metal	11,200	11,200	WH
239	Industrial	Demo	14160	metal	3,856	3,856	Packaging
247	Industrial	Demo	44240	metal	800	800	Haz. Mat. Stor.
258	Industrial	Demo	44240	brick	151	151	Haz mat
267	Industrial	Demo	44150	brick	151	151	Haz mat
281	Industrial	Demo	44180	wood	173,746	173,746	WH
283	Industrial	Demo	44150	brick	18,050	18,050	Haz mat
293	Industrial	Demo	44180	brick	6,175	6,175	WH
294	Industrial	Demo	13110	brick	170	1	Cabling bldg.
308	Industrial	Demo	82115	brick	3,483	3,483	High pres. Boiler plant
323	Industrial	Demo	73075	wood	216	216	Toilet
331	Industrial	Demo	44240	brick	105	105	Rifle range
344	Industrial	Demo	17121	wood	2,036	2,036	Truck scale
390	Industrial	Demo	87290	brick	2,019	0	Sentry
391	Industrial	Demo	87230	brick	120	120	Bus shelter
702	Industrial	Demo	73055	brick	68	...	WH
205	Industrial	Reuse	44110	brick	104968	104968	Haz mat
207	Industrial	Reuse	44150	brick	12800	12800	Admin.
208	Industrial	Reuse	61050	brick	513	513	Recreation
216	Industrial	Reuse	74069	brick	104967	104968	WH
217	Industrial	Reuse	44110	brick	104968	104968	WH
218	Industrial	Reuse	44110	brick	104968	104968	WH
229	Industrial	Reuse	44110	brick	104968	104968	WH
231	Industrial	Reuse	44220	brick	20836	20836	WH
240	Industrial	Reuse	44110	brick	104968	104968	WH
242	Industrial	Reuse	44110	brick	104968	104968	WH
244	Industrial	Reuse	44110	brick	104968	104968	WH
252	Industrial	Reuse	21885	brick	21381	21381	WH
253	Industrial	Reuse	44110	brick	12298	12298	WH
254	Industrial	Reuse	44110	brick	110483	113665	WH with boiler plant
262	Industrial	Reuse	21420	brick	13669	13669	WH
264	Industrial	Reuse	44110	brick	20836	20836	WH
265	Industrial	Reuse	44110	brick	104968	104968	WH
266	Industrial	Reuse	44110	brick	263269	263269	WH
268	Industrial	Reuse	44150	concrete	50765	50765	Haz mat
273	Industrial	Reuse	44270	wood	48384	48384	WH
274	Industrial	Reuse	44110	brick	20836	20836	WH
275	Industrial	Reuse	44240	brick	8550	8550	Haz mat
276	Industrial	Reuse	44110	brick	6175	6175	WH
278	Industrial	Reuse	74060	metal	1553	1553	Haz mat
279	Industrial	Reuse	44110	brick	20836	20836	WH
280	Industrial	Reuse	44110	brick	12298	12298	WH
291	Industrial	Reuse	44110	brick	6175	6175	WH
292	Industrial	Reuse	44110	brick	12298	12298	WH
295	Industrial	Reuse	44110	wood	260891	260891	WH
3	Industrial	Reuse	61011	brick	7729	8415	Admin.
304	Industrial	Reuse	44110	wood	218303	220881	WH

Line	Material	Quantity	Unit	Description	Price	Total
217	Reuse	74069	Mfr.	brick	104968	104968
218	Reuse	44110	Mfr.	brick	104968	104968
229	Reuse	44110	Mfr.	brick	104968	104968
231	Reuse	44220	Mfr.	brick	104968	104968
240	Reuse	44110	Mfr.	brick	20836	20836
242	Reuse	44110	Mfr.	brick	104968	104968
243	Reuse	44110	Mfr.	brick	104968	104968
244	Reuse	21885	Mfr.	brick	104968	104968
252	Reuse	44110	Mfr.	brick	21381	21381
253	Reuse	44110	Mfr.	brick	12298	12298
254	Reuse	44110	Mfr.	brick	113665	113665
262	Reuse	21420	Mfr.	brick	13669	13669
264	Reuse	44110	Mfr.	brick	20836	20836
265	Reuse	44110	Mfr.	brick	104968	104968
266	Reuse	44110	Mfr.	brick	263269	263269
268	Reuse	44150	Mfr.	brick	50765	50765
273	Reuse	44270	Dist.	concrete	48384	48384
274	Reuse	44110	Mfr.	wood	20836	20836
275	Reuse	44240	Mfr.	brick	8550	8550
276	Reuse	44110	Mfr.	brick	6175	6175
278	Reuse	74060	Mfr.	metal	1663	1663
279	Reuse	44110	Mfr.	brick	20836	20836
280	Reuse	44110	Mfr.	brick	12298	12298
291	Reuse	44110	Mfr.	brick	6175	6175
292	Reuse	44110	Mfr.	brick	12298	12298
295	Reuse	44110	Dist.	wood	260891	260891
3	Reuse	61011	Admin.	brick	7729	7729
301	Reuse	44110	Dist.	wood	218303	218303
309	Reuse	44260	Mfr.	metal	38400	38400
310	Reuse	44260	Mfr.	metal	34800	34800
319	Reuse	44110	Dist.	wood	260891	260891
330	Reuse	44110	Dist.	wood	275291	275291
339	Reuse	44110	Dist.	wood	260891	260891
349	Reuse	44110	Dist.	wood	260891	260891
357	Reuse	44110	Dist.	wood	260891	260891
358	Reuse	44110	Dist.	concrete	249037	249037
359	Reuse	44110	Opp	concrete	291070	291070
365	Reuse	44110	Dist.	wood	260891	260891
366	Reuse	44110	Mfr.	concrete	295321	295321
367	Reuse	44110	Opp	concrete	291407	291407
46	Reuse	74065	Admin.	metal	2500	2500
					5,298,343	5,298,343
					5,781,440	5,781,440

Table 4.1. Building and Land Inventory.

304	Office/Light Industrial	Demo	44180	wood	224,505	224,505	WH
313	Office/Light Industrial	Demo	21430	wood	21,801	21,801	Shop-maint.
315	Office/Light Industrial	Demo	44180	wood	159,280	159,280	WH
318	Office/Light Industrial	Demo	14180	brick	98	98	Weigh station.
320	Office/Light Industrial	Demo	21470	brick	192	192	Cov. Stor.
321	Office/Light Industrial	Demo	12310	wood	164	164	Gas station
322	Office/Light Industrial	Demo	83312	metal	0	0	Garbage Incinerator
325	Office/Light Industrial	Demo	44180	wood	101,414	101,414	WH
333	Office/Light Industrial	Demo	84141	wood	860	860	Pump station
	Subtotal				512,634	508,304	88
1204	Park/Open Space	Demo	73075	wood	80	80	Public Toilets
1205	Park/Open Space	Demo	87230	brick	654	654	Sentry
29	Park/Open Space	Demo	61028	brick	2,685	4,107	Admin.
30	Park/Open Space	Demo	87230	brick	170	170	Sentry
302	Park/Open Space	Demo	44180	wood	21,600	21,600	WH
306	Park/Open Space	Demo	44275	wood	920	920	WH
34	Park/Open Space	Demo	87230	brick	111	111	Sentry
1203	Park/Open Space	Reloc.	21920	brick	258	258	Gas meter
	Subtotal				26,478	27,900	103
1	Mixed Use	Reuse	61011	brick	55228	56573	Admin.
10	Mixed Use	Reuse	81150	metal	500	500	Uninterrupted power sup.
11	Mixed Use	Reuse	61031	brick	52800	55102	Admin./Office
2	Mixed Use	Reuse	61011	wood	66472	66476	Admin.
21	Mixed Use	Reuse	21922	brick	1600	1600	Pest control
22	Mixed Use	Reuse	44282	metal	3360	3360	WH
23	Mixed Use	Reuse	21910	brick	7535	7535	Shop
24	Mixed Use	Reuse	21910	brick	6962	6962	Shop
38	Mixed Use	Reuse	74064	wood	10211	10211	Officers club
4	Mixed Use	Reuse	21910	...	192	192	Utility
40	Mixed Use	Reuse	72410	wood	6828	6980	Barracks
47	Mixed Use	Reuse	21412	brick	1223	1223	Storage
5	Mixed Use	Reuse	21910	brick	5940	5940	Shop-carpentry
6	Mixed Use	Reuse	21920	concrete	6720	6720	Shop-plumber
9	Mixed Use	Demo	44262	metal	4,800	4,800	WH
8	Mixed Use	Reuse	21910	wood	3040	3040	Shop-carpentry
	Subtotal				233,311	237,094	41
	TOTAL				5,105,768	5,554,740	1,008

Total square footage on the Office/Light Industrial Area	512,634
Total square footage to be demolished on the Office/Light Industrial Area	512,634
Total square footage to be reused on the Office/Light Industrial Area	0
Total square footage on the Park/Open Space Area	26,478
Total square footage to be demolished on the Park/Open Space Area	26,220
Total square footage to be reused on the Park/Open Space Area	258
Total square footage on the Mixed Use Area	233,311
Total square footage to be demolished on the Mixed Use Area	4,800
Total square footage to be reused on the Mixed Use Area	228,511
Total square footage on the Industrial Area	5,289,343
Total square footage to be demolished on the Industrial Area	306,506
Total square footage to be reused on the Industrial Area	4,982,838
Total square footage on the Business Park Area	44,002
Total square footage to be demolished on the Business Park Area	44,002
Total square footage to be reused on the Business Park Area	0

Total square footage to be reused on the Park/Open Space Area	26,476
Total square footage to be demolished on the Park/Open Space Area	26,220
Total square footage to be reused on the Park/Open Space Area	258
Total square footage on the Mixed Use Area	233,311
Total square footage to be reused on the Mixed Use Area	4,800
Total square footage to be demolished on the Mixed Use Area	228,511
Total square footage on the Industrial Area	5,289,343
Total square footage to be reused on the Industrial Area	396,505
Total square footage to be demolished on the Industrial Area	4,982,838
Total square footage on the Business Park Area	44,002
Total square footage to be reused on the Business Park Area	44,002
Total square footage to be demolished on the Business Park Area	0
Total square footage on the PBC Area	1,185,796
Total Square footage of Buildings	7,291,584
Total square footage to be demolished	894,161
Total square footage to be reused	5,211,607
Total Square footage potentially available in 2001	1,185,796

Table 4.2. Summary of Absorption and Revenue Schedule.

**15-Year Absorption and Revenue Projection
Defense Depot Ogden**

Scenario: OLRA Business e

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
	1999	2000	2001	2002	2003	2004	2005
1 ABSORPTION							
2 Existing Leasable Space (SF)							
3 Manufacturing	102,479	102,479	102,479	102,479	102,479	102,479	102,479
4 Distribution	68,976	68,976	68,976	68,976	68,976	68,976	68,976
5 Office	9,800	9,800	9,800	-	-	-	-
6 Annual Leasing Absorption	181,255	181,255	181,255	171,465	171,465	171,465	171,465
7							
8 Cumulative Existing Space Leased (SF)							
9 Manufacturing	102,479	204,958	307,437	409,916	512,395	614,874	717,353
10 Distribution	68,976	137,952	206,928	275,904	344,880	413,856	482,832
11 Office	9,800	19,600	29,400	29,400	29,400	29,400	29,400
12 Total Annual Leased SF	181,255	362,510	543,765	715,220	886,675	1,058,130	1,229,585
13							
14 Land Sales (AC)							
15 Business Park	10.36	10.36	10.36	10.36	10.36	10.36	10.36
16							
17 Existing Building Sales (SF)							
18 Manufacturing	29,365	29,365	29,365	29,365	29,365	29,365	29,365
19 Distribution	19,576	19,576	19,576	19,576	19,576	19,576	19,576
20 Office	-	-	-	-	-	-	-
21 Annual Building Absorption	48,941	48,941	48,941	48,941	48,941	48,941	48,941
22							
23 Opportunity Revenue							
24 Buildings 15-C & 16-C (Peterson Mfg)	560,000	-	-	-	-	-	-
25 Building 11	-	-	55,102	-	-	-	-
26 Total Annual Leased SF	560,000	560,000	560,000	560,000	560,000	560,000	560,000
27							
28 Total Existing Space Absorbed	790,196	230,196	285,298	220,396	220,396	220,396	220,396
29 Cumulative Space Absorbed	790,196	1,020,392	1,305,690	1,526,086	1,746,482	1,966,878	2,187,274
30 Total Acreage Absorbed	10.4	10.4	10.4	10.4	10.4	10.4	10.4
31 Cumulative Acreage Absorbed	10.4	20.7	31.1	41.4	51.8	62.2	72.6
32							
33 REVENUES							
34 Existing Leasable Space (SF)							
35 Manufacturing	\$ 256,196	\$ 512,395	\$ 791,650	\$ 1,087,200	\$ 1,399,770	\$ 1,730,115	\$ 2,079,022
36 Distribution	\$ 137,952	\$ 275,904	\$ 426,272	\$ 585,413	\$ 753,719	\$ 931,597	\$ 1,119,469
37 Office	\$ 88,200	\$ 176,400	\$ 272,538	\$ 280,714	\$ 289,136	\$ 297,810	\$ 306,744
38 Annual Lease Revenue	\$ 482,350	\$ 964,699	\$ 1,490,460	\$ 1,953,327	\$ 2,442,625	\$ 2,959,522	\$ 3,505,235
39							
40							
41 Land Sales (AC)							
42 Business Park	\$ 414,400	\$ 414,400	\$ 426,832	\$ 439,637	\$ 452,826	\$ 466,411	\$ 480,403
43							
44 Existing Building Sales (SF)							
45 Manufacturing	\$ 440,475	\$ 440,475	\$ 453,689	\$ 467,300	\$ 481,319	\$ 495,758	\$ 510,631
46 Distribution	\$ 293,640	\$ 293,640	\$ 302,449	\$ 311,523	\$ 320,868	\$ 330,494	\$ 340,400
47 Office	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
48 Annual Building Sales Revenues	\$ 734,115	\$ 734,115	\$ 756,138	\$ 778,823	\$ 802,187	\$ 826,253	\$ 851,040
49							
50 Opportunity Revenue							
51 Buildings 15-C & 16-C (Peterson Mfg)	\$ 705,600	\$ 705,600	\$ 726,768	\$ 748,571	\$ 771,028	\$ 794,159	\$ 817,984
52 Building 11	\$ -	\$ -	\$ 1,030,000	\$ -	\$ -	\$ -	\$ -
53 Total Opportunity Revenue	\$ 705,600	\$ 705,600	\$ 1,756,768	\$ 748,571	\$ 771,028	\$ 794,159	\$ 817,984
54							
55 Annual Revenues	\$ 2,336,485	\$ 2,818,814	\$ 4,430,198	\$ 3,920,398	\$ 4,488,986	\$ 5,046,345	\$ 5,684,862
56 Cumulative Revenues	\$ 2,336,485	\$ 5,155,279	\$ 9,585,477	\$ 13,505,834	\$ 17,974,901	\$ 23,020,845	\$ 28,675,506
57							
58							
59							
60							
61 ABSORPTION ASSUMPTIONS							
	Total Acreage	Total Existing SF	Build-out Program (SF or Units)	Absorption Period Begin YR	End YR	Absorption Rate AC/SF/YR	Total Absorption
62 Existing Leasable Space (SF)	-	4,594,810	-	-	-	-	-
63 Manufacturing	-	2,733,125	2,733,125	1	15	102,479	1,537,185
64 Distribution	-	1,822,084	1,822,084	1	15	68,976	1,034,640
65 Office	-	29,400	29,400	1	3	9,800	29,400
66							
67 Land Sales (AC)	290	-	-	-	-	-	-
68 Business Park	260	-	260	1	15	10	155
69							
70 Existing Building Sales (SF)		734,133	-	-	-	-	-
71 Manufacturing	-	440,480	440,480	1	15	29,365	440,475
72 Distribution	-	293,653	293,653	1	15	19,576	293,640
73 Office	-	-	-	-	-	-	-
74							
75 Opportunity Revenue							
76 Buildings 15-C & 16-C (Peterson Mfg)		560,000	560,000	1	1	560,000	560,000
77 Building 11		55,102	55,102	3	3	55,102	55,102
78						100%	3,980,442

Scenario: OLRA Business and Operations Plan

Year 3 2001	Year 4 2002	Year 5 2003	Year 6 2004	Year 7 2005	Year 8 2006	Year 9 2007	Year 10 2008	Year 11 2009	Year 12 2010	Year 13 2011	Year 14 2012	
32,479	102,479	102,479	102,479	102,479	102,479	102,479	102,479	102,479	102,479	102,479	102,479	102,479
68,976	68,976	68,976	68,976	68,976	68,976	68,976	68,976	68,976	68,976	68,976	68,976	68,976
9,800	-	-	-	-	-	-	-	-	-	-	-	-
31,255	171,455	171,455	171,455	171,455	171,455	171,455	171,455	171,455	171,455	171,455	171,455	171,455
37,437	409,916	512,395	614,974	717,353	819,832	922,311	1,024,790	1,127,269	1,229,748	1,332,227	1,434,706	1,537,185
36,928	275,904	344,880	413,856	482,832	551,808	620,784	689,760	758,736	827,712	896,688	965,664	1,034,640
39,400	29,400	29,400	29,400	29,400	29,400	29,400	29,400	29,400	29,400	29,400	29,400	29,400
3,765	715,220	886,675	1,058,130	1,229,585	1,401,040	1,572,495	1,743,950	1,915,405	2,086,860	2,258,315	2,429,770	2,601,225
10.36	10.36	10.36	10.36	10.36	10.36	10.36	10.36	10.36	10.36	10.36	10.36	10.36
29,365	29,365	29,365	29,365	29,365	29,365	29,365	29,365	29,365	29,365	29,365	29,365	29,365
19,576	19,576	19,576	19,576	19,576	19,576	19,576	19,576	19,576	19,576	19,576	19,576	19,576
8,941	48,941	48,941	48,941	48,941	48,941	48,941	48,941	48,941	48,941	48,941	48,941	48,941
5,102	-	-	-	-	-	-	-	-	-	-	-	-
0,000	560,000	560,000	560,000	560,000	560,000	560,000	560,000	560,000	560,000	560,000	560,000	560,000
5,296	220,396	220,396	220,396	220,396	220,396	220,396	220,396	220,396	220,396	220,396	220,396	220,396
5,889	1,528,089	1,748,482	1,968,875	2,189,268	2,409,661	2,629,054	2,848,447	3,067,840	3,287,233	3,506,626	3,726,019	3,945,412
10.4	10.4	10.4	10.4	10.4	10.4	10.4	10.4	10.4	10.4	10.4	10.4	10.4
31.1	41.4	51.8	62.2	72.5	82.9	93.2	103.6	114.0	124.3	134.7	145.0	155.4

1,650	\$ 1,087,200	\$ 1,399,770	\$ 1,730,115	\$ 2,079,022	\$ 2,447,306	\$ 2,835,815	\$ 3,245,433	\$ 3,677,076	\$ 4,131,696	\$ 4,610,284	\$ 5,113,869	\$ 5,643,474
5,272	\$ 585,413	\$ 753,719	\$ 931,597	\$ 1,119,469	\$ 1,317,775	\$ 1,526,972	\$ 1,747,535	\$ 1,979,957	\$ 2,224,751	\$ 2,482,452	\$ 2,753,612	\$ 3,036,846
2,538	\$ 280,714	\$ 299,136	\$ 297,810	\$ 306,744	\$ 315,946	\$ 325,425	\$ 335,187	\$ 345,243	\$ 355,600	\$ 366,268	\$ 377,256	\$ 388,674
0,460	\$ 1,953,327	\$ 2,442,825	\$ 2,959,522	\$ 3,505,235	\$ 4,081,027	\$ 4,688,212	\$ 5,328,155	\$ 6,002,276	\$ 6,712,048	\$ 7,459,004	\$ 8,244,738	\$ 9,070,848
5,832	\$ 439,837	\$ 452,826	\$ 466,411	\$ 480,403	\$ 494,815	\$ 509,660	\$ 524,950	\$ 540,688	\$ 556,919	\$ 573,627	\$ 590,835	\$ 608,650
1,689	\$ 467,300	\$ 481,319	\$ 495,758	\$ 510,631	\$ 525,950	\$ 541,729	\$ 557,981	\$ 574,720	\$ 591,962	\$ 609,720	\$ 628,012	\$ 646,846
2,449	\$ 311,523	\$ 320,968	\$ 330,494	\$ 340,409	\$ 350,822	\$ 361,140	\$ 371,974	\$ 383,134	\$ 394,628	\$ 406,466	\$ 418,660	\$ 431,120
3,138	\$ 776,823	\$ 802,187	\$ 826,253	\$ 851,040	\$ 876,572	\$ 902,869	\$ 929,955	\$ 957,854	\$ 986,589	\$ 1,016,187	\$ 1,046,672	\$ 1,078,156
3,768	\$ 748,571	\$ 771,028	\$ 794,159	\$ 817,984	\$ 842,523	\$ 867,799	\$ 893,833	\$ 920,648	\$ 948,267	\$ 976,715	\$ 1,006,017	\$ 1,036,183
3,000	\$ 748,571	\$ 771,028	\$ 794,159	\$ 817,984	\$ 842,523	\$ 867,799	\$ 893,833	\$ 920,648	\$ 948,267	\$ 976,715	\$ 1,006,017	\$ 1,036,183
3,199	\$ 3,920,368	\$ 4,499,988	\$ 5,048,348	\$ 5,664,862	\$ 6,269,937	\$ 6,968,840	\$ 7,776,883	\$ 8,621,475	\$ 9,520,823	\$ 10,478,533	\$ 11,458,282	\$ 12,473,848
5,477	\$ 13,805,834	\$ 17,974,901	\$ 23,020,845	\$ 29,075,908	\$ 36,170,445	\$ 44,338,965	\$ 53,715,878	\$ 64,337,363	\$ 77,241,176	\$ 92,486,710	\$ 110,114,972	\$ 131,298,948

Year	Absorption Period		Absorption Rate AC/SF/YR	Total Absorption	Unit Pricing	Baseline Income
	Begin YR	End YR				
3,125	1	15	102,479	1,537,185	2.50	\$ 3,842,963
2,084	1	15	68,976	1,034,640	2.00	\$ 2,069,280
3,400	1	3	9,800	29,400	9.00	\$ 264,600
260	1	15	10	155	40,000.00	\$ 6,216,000
1,480	1	15	29,365	440,475	15.00	\$ 6,607,125
1,653	1	15	19,576	293,640	15.00	\$ 4,404,600
3,000	1	1	560,000	560,000	1.26	\$ 705,600
5,102	3	3	55,102	55,102	1,000,000	\$ 1,000,000
			100%	3,980,442		\$ 24,110,168

2

Year 10 2008	Year 11 2009	Year 12 2010	Year 13 2011	Year 14 2012	Year 15 2013	Cumulative Forecast		
						5 Year Total	10 Year Total	15 Year Total
102,479	102,479	102,479	102,479	102,479	102,479	512,395	1,024,790	1,537,185
68,976	68,976	68,976	68,976	68,976	68,976	344,880	689,760	1,034,640
-	-	-	-	-	-	29,400	29,400	29,400
171,455	171,455	171,455	171,455	171,455	171,455	886,675	1,743,960	2,601,225
1,024,790	1,127,269	1,229,748	1,332,227	1,434,706	1,537,185			1,537,185
689,760	758,736	827,712	896,688	965,664	1,034,640			1,034,640
29,400	29,400	29,400	29,400	29,400	29,400			29,400
1,743,960	1,915,405	2,086,860	2,258,315	2,429,770	2,601,225			2,601,225
10.36	10.36	10.36	10.36	10.36	10.36	82	104	186
29,365	29,365	29,365	29,365	29,365	29,365	146,825	293,650	440,475
19,576	19,576	19,576	19,576	19,576	19,576	97,880	195,760	293,640
48,941	48,941	48,941	48,941	48,941	48,941	244,705	489,410	734,115
-	-	-	-	-	-			880,000
560,000	560,000	560,000	560,000	560,000	560,000			85,102
								615,102
220,396	220,396	220,396	220,396	220,396	220,396			
2,848,482	3,088,898	3,289,284	3,508,680	3,730,048	3,960,442			3,960,442
10.4	10.4	10.4	10.4	10.4	10.4			
103.6	114.0	124.3	134.7	145.0	155.4			

3,245,433	\$ 3,677,076	\$ 4,131,696	\$ 4,610,284	\$ 5,113,869	\$ 5,643,520	\$ 4,047,212	\$ 16,384,904	\$ 39,561,348
1,747,535	\$ 1,979,957	\$ 2,224,751	\$ 2,482,452	\$ 2,753,612	\$ 3,038,807	\$ 2,179,280	\$ 8,822,608	\$ 21,302,188
335,187	\$ 348,243	\$ 355,600	\$ 366,268	\$ 377,256	\$ 388,574	\$ 1,106,988	\$ 2,688,096	\$ 4,821,041
5,328,155	\$ 6,002,276	\$ 6,712,048	\$ 7,458,004	\$ 8,244,738	\$ 9,070,901	\$ 7,333,480	\$ 27,895,612	\$ 65,384,579
524,950	\$ 540,698	\$ 556,919	\$ 573,627	\$ 590,835	\$ 608,560	\$ 2,148,095	\$ 4,624,334	\$ 7,484,973
557,981	\$ 574,720	\$ 591,982	\$ 609,720	\$ 628,012	\$ 646,852	\$ 2,283,258	\$ 4,916,307	\$ 7,948,574
371,974	\$ 383,134	\$ 394,628	\$ 406,466	\$ 418,660	\$ 431,220	\$ 1,522,120	\$ 3,276,780	\$ 5,310,868
929,955	\$ 957,854	\$ 986,580	\$ 1,016,187	\$ 1,046,672	\$ 1,078,073	\$ 3,808,378	\$ 8,192,067	\$ 13,277,442
893,833	\$ 920,648	\$ 948,267	\$ 976,715	\$ 1,006,017	\$ 1,036,197	\$ 3,667,867	\$ 7,673,865	\$ 12,781,710
863,833	\$ 920,648	\$ 948,267	\$ 976,715	\$ 1,006,017	\$ 1,036,197	\$ 1,030,000	\$ 1,030,000	\$ 1,030,000
7,876,883	\$ 8,421,475	\$ 9,203,823	\$ 10,028,533	\$ 10,898,262	\$ 11,793,732	\$ 4,687,867	\$ 8,903,865	\$ 13,781,710
48,815,579	\$ 58,037,363	\$ 67,241,176	\$ 77,266,710	\$ 86,154,972	\$ 94,948,704		\$ 99,948,704	

Table 4.3. Summary of Capital Improvements and Property Maintenance Expenditures.

**Projected Infrastructure and Property Maintenance Expenditures
Defense Depot Ogden**

Scenario: OLRA

		Year 1 1999	Year 2 2000	Year 3 2001	Year 4 2002	Year 5 2003	Year 6 2004
1	CAPITAL EXPENDITURES	Basic					
2							
3	Infrastructure						
4	Roads	\$ 10,910,047					
5	Parking Lots	\$ -					
6	Storm Sewer	\$ 5,912,868					
7	Domestic Water	\$ 10,562,979					
8	Sanitary Sewer	\$ 4,061,726					
9	Rail	\$ 965,302					
10	Heating	\$ 5,318,433					
11	Building Demolition and Disposal	\$ 3,433,336					
12	Engineering Design Fees	8%					
13	Construction Management	7%					
14	Contingency	15%					
15	Total	\$ 53,488,098					
16	Phasing		\$ 3,656,637	\$ -	\$ 5,904,171	\$ -	\$ 6,934,326
17	Phased Cost plus Inflation @	3%	\$ 3,656,637	\$ -	\$ 6,263,735	\$ -	\$ 7,804,645
18		100%					
19							
20	Building Fit-Up						
21	Total Existing Manufacturing Space Absorbed plus	12%	135,368	135,368	135,368	135,368	135,368
22	Manufacturing Tenant Fit-Up Allowances	\$ 5.00	\$ 676,839	\$ 676,839	\$ 676,839	\$ 676,839	\$ 676,839
23							
24	Total Existing Distribution Space Absorbed	12%	90,901	90,901	90,901	90,901	90,901
25	Distribution Tenant Fit-Up Allowances	\$ 4.00	\$ 363,604	\$ 363,604	\$ 363,604	\$ 363,604	\$ 363,604
26							
27	Total Building Fit-Up		\$ 1,040,443	\$ 1,040,443	\$ 1,040,443	\$ 1,040,443	\$ 1,040,443
28	Building Fit-Up plus Inflation @	3%	\$ 1,040,443	\$ 1,071,657	\$ 1,103,806	\$ 1,136,921	\$ 1,171,028
29							
30							
31	TOTAL CAPITAL EXPENDITURES		\$ 4,697,080	\$ 1,071,657	\$ 7,367,541	\$ 1,136,921	\$ 8,975,673
32							\$ 1,206,159
33							
34	PROPERTY MAINTENANCE						
35	Retained Inventory Available for Reuse	1,185,798			1,185,798		
36	Inventory Absorbed		790,196	230,196	285,298	220,396	220,396
37	Inventory Managed (8F)	5,211,607	4,431,411	4,191,215	5,061,713	4,671,317	4,660,821
38							4,430,825
39	Property Maintenance Cost	\$ 0.50	\$ 2,210,708	\$ 2,095,608	\$ 2,545,857	\$ 2,435,650	\$ 2,325,461
40	Property Maintenance Cost plus Inflation @	3%	\$ 2,210,708	\$ 2,158,478	\$ 2,700,889	\$ 2,661,510	\$ 2,617,326

USACERL Technical Notes

¹ The amount of existing inventory renovated is assumed to exceed the amount leased and sold by 12% to provide for an allowance for vacancy and for the difference between gross building square footage (recall, all building absorption assumptions are based on leasable square footage) and actual leasable square footage.

Scenario: OLRA Business and Operations Plan

Year	Year	Year	Year	Year	Year	Year	Year	Year	Year	Year	Year	Year	Year
2	3	4	5	6	7	8	9	10	11	12	13	14	14
2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2012
-	\$ 5,904,171	\$ -	\$ 6,934,328	\$ -	\$ 5,485,866	\$ -	\$ 4,357,280	\$ 5,481,355	\$ 3,224,956	\$ 3,324,200	\$ 3,324,200	\$ 4,485,426	\$ 3,1
-	\$ 6,263,735	\$ -	\$ 7,804,645	\$ -	\$ 6,550,411	\$ -	\$ 5,519,672	\$ 7,125,830	\$ 4,334,071	\$ 4,601,470	\$ 4,739,514	\$ 6,598,999	\$ 4,2
135,368	135,368	135,368	135,368	135,368	135,368	135,368	135,368	135,368	135,368	135,368	135,368	135,368	1
576,839	\$ 676,839	\$ 676,839	\$ 676,839	\$ 676,839	\$ 676,839	\$ 676,839	\$ 676,839	\$ 676,839	\$ 676,839	\$ 676,839	\$ 676,839	\$ 676,839	\$ 6
90,901	90,901	90,901	90,901	90,901	90,901	90,901	90,901	90,901	90,901	90,901	90,901	90,901	3
363,604	\$ 363,604	\$ 363,604	\$ 363,604	\$ 363,604	\$ 363,604	\$ 363,604	\$ 363,604	\$ 363,604	\$ 363,604	\$ 363,604	\$ 363,604	\$ 363,604	\$ 3
140,443	\$ 1,040,443	\$ 1,040,443	\$ 1,040,443	\$ 1,040,443	\$ 1,040,443	\$ 1,040,443	\$ 1,040,443	\$ 1,040,443	\$ 1,040,443	\$ 1,040,443	\$ 1,040,443	\$ 1,040,443	\$ 1,0
771,657	\$ 1,103,806	\$ 1,136,921	\$ 1,171,028	\$ 1,206,159	\$ 1,242,344	\$ 1,278,514	\$ 1,318,003	\$ 1,357,543	\$ 1,396,269	\$ 1,440,217	\$ 1,483,434	\$ 1,527,926	\$ 1,5
771,657	\$ 7,367,541	\$ 1,136,921	\$ 6,975,673	\$ 1,206,159	\$ 7,792,755	\$ 1,278,514	\$ 6,837,675	\$ 6,483,372	\$ 5,732,340	\$ 6,041,687	\$ 6,222,938	\$ 6,114,926	\$ 6,2
230,198	1,185,796	220,396	220,396	220,396	220,396	220,396	220,396	220,396	220,396	220,396	220,396	220,396	2
191,216	285,298	4,871,317	4,650,821	4,430,825	4,210,129	3,988,733	3,769,337	3,548,941	3,328,545	3,108,149	2,887,753	2,667,357	2,4
165,608	\$ 2,545,857	\$ 2,435,659	\$ 2,325,461	\$ 2,215,263	\$ 2,105,065	\$ 1,994,867	\$ 1,884,669	\$ 1,774,471	\$ 1,664,273	\$ 1,554,075	\$ 1,443,877	\$ 1,333,679	\$ 1,2
158,476	\$ 2,700,899	\$ 2,661,510	\$ 2,617,326	\$ 2,568,096	\$ 2,513,557	\$ 2,453,434	\$ 2,387,442	\$ 2,315,282	\$ 2,238,643	\$ 2,151,203	\$ 2,058,823	\$ 1,958,582	\$ 1,8

12%
 *
 able

Plan

Year 9 2007	Year 10 2008	Year 11 2009	Year 12 2010	Year 13 2011	Year 14 2012	Year 15 2013	Cumulative Forecast		
							5 Year Total	10 Year Total	15 year Total
							\$ -	\$ -	\$ -
							\$ -	\$ -	\$ -
							\$ -	\$ -	\$ -
							\$ -	\$ -	\$ -
							\$ -	\$ -	\$ -
							\$ -	\$ -	\$ -
							\$ -	\$ -	\$ -
157,280	\$ 6,461,355	\$ 3,224,966	\$ 3,324,200	\$ 3,324,200	\$ 4,485,426	\$ 3,101,725	\$ 16,495,134	\$ 31,799,635	\$ 49,290,142
119,672	\$ 7,125,630	\$ 4,334,671	\$ 4,601,470	\$ 4,738,514	\$ 6,588,999	\$ 4,881,837	\$ 17,725,017	\$ 36,920,929	\$ 61,674,621
							\$ -	\$ -	\$ -
35,368	135,368	135,368	135,368	135,368	135,368	135,368	676,839	1,353,678	2,030,517
76,839	\$ 676,839	\$ 676,839	\$ 676,839	\$ 676,839	\$ 676,839	\$ 676,839	\$ 3,384,195	\$ 6,768,390	\$ 10,152,585
90,901	90,901	90,901	90,901	90,901	90,901	90,901	454,506	909,011	1,363,517
63,604	\$ 363,604	\$ 363,604	\$ 363,604	\$ 363,604	\$ 363,604	\$ 363,604	\$ 1,818,022	\$ 3,636,045	\$ 5,454,067
40,443	\$ 1,040,443	\$ 1,040,443	\$ 1,040,443	\$ 1,040,443	\$ 1,040,443	\$ 1,040,443	\$ 5,202,217	\$ 10,404,435	\$ 15,606,652
18,003	\$ 1,357,543	\$ 1,386,289	\$ 1,440,217	\$ 1,483,424	\$ 1,627,926	\$ 1,673,764	\$ 5,823,866	\$ 11,627,516	\$ 16,351,119
37,675	\$ 8,483,372	\$ 5,732,340	\$ 6,041,667	\$ 6,222,938	\$ 8,114,926	\$ 6,265,401	\$ 23,248,673	\$ 46,848,448	\$ 61,226,740
20,396	220,396	220,396	220,396	220,396	220,396	220,396	1,746,482	2,848,482	3,950,442
66,337	3,548,941	3,326,545	3,108,149	2,887,753	2,667,357	2,446,961			
84,689	\$ 1,774,471	\$ 1,684,273	\$ 1,554,075	\$ 1,443,877	\$ 1,333,679	\$ 1,223,481	\$ 11,613,289	\$ 21,587,621	\$ 28,807,004
67,442	\$ 2,315,262	\$ 2,236,643	\$ 2,151,203	\$ 2,066,623	\$ 1,958,552	\$ 1,850,624	\$ 12,348,916	\$ 24,566,727	\$ 34,842,371

3

Table 4.4. TIF Bond Issue and Debt Service.

**Annual Tax Increment Financing Debt Service Calculations
Defense Depot Ogden**

Scenario: OLRA Bu

		Year 1 1999	Year 2 2000	Year 3 2001	Year 4 2002	Year 5 2003	Year 6 2004	
1	Cash Flow Deficit/Surplus ¹	\$ (3,774,372)	\$ (630,443)	\$ (3,753,538)	\$ (12,412)	\$ (5,520,733)	\$ 571,677	\$ (2,4
2	Plus Debt Service Reserve ²	2.5% \$ (94,359)	\$ (15,761)	\$ (93,838)	\$ (310)	\$ (138,018)	\$ 14,292	\$ (
3								
4	Principal Borrowed	73% \$ (2,824,174)	\$ (471,729)	\$ (2,808,585)	\$ (9,287)	\$ (4,130,889)	\$ -	\$ (1,8
5								
6	Interest Rate ³		6%					
7	Term		20					
8	Annual Debt Service (Principal + Interest) ⁴	0.087185						
9								
10	Year	1	(246,224)					
11		2	(246,224)	(41,127)				
12		3	(246,224)	(41,127)	(244,865)			
13		4	(246,224)	(41,127)	(244,865)	(810)		
14		5	(246,224)	(41,127)	(244,865)	(810)	(360,150)	
15		6	(246,224)	(41,127)	(244,865)	(810)	(360,150)	-
16		7	(246,224)	(41,127)	(244,865)	(810)	(360,150)	- (1
17		8	(246,224)	(41,127)	(244,865)	(810)	(360,150)	- (1
18		9	(246,224)	(41,127)	(244,865)	(810)	(360,150)	- (1
19		10	(246,224)	(41,127)	(244,865)	(810)	(360,150)	- (1
20		11	(246,224)	(41,127)	(244,865)	(810)	(360,150)	- (1
21		12	(246,224)	(41,127)	(244,865)	(810)	(360,150)	- (1
22		13	(246,224)	(41,127)	(244,865)	(810)	(360,150)	- (1
23		14	(246,224)	(41,127)	(244,865)	(810)	(360,150)	- (1
24		15	(246,224)	(41,127)	(244,865)	(810)	(360,150)	- (1
25		16	(246,224)	(41,127)	(244,865)	(810)	(360,150)	- (1
26		17	(246,224)	(41,127)	(244,865)	(810)	(360,150)	- (1
27		18	(246,224)	(41,127)	(244,865)	(810)	(360,150)	- (1
28		19	(246,224)	(41,127)	(244,865)	(810)	(360,150)	- (1
29		20	(246,224)	(41,127)	(244,865)	(810)	(360,150)	- (1
30		21		(41,127)	(244,865)	(810)	(360,150)	- (1
31		22			(244,865)	(810)	(360,150)	- (1
32		23				(810)	(360,150)	- (1
33		24					(360,150)	- (1
34		25						- (1
35		26						- (1
36		27						- (1
37		28						- (1
38		29						- (1
39		30						- (1
40		31						- (1
41		32						- (1
42		33						- (1
43		34						- (1
44								- (1
45	TOTALS	\$ (4,924,487)	\$ (822,549)	\$ (4,997,304)	\$ (16,194)	\$ (7,202,994)	\$ -	\$ (3,1
46	Principal	\$ (2,824,174)	\$ (471,729)	\$ (2,808,585)	\$ (9,287)	\$ (4,130,889)	\$ -	\$ (1,8
47	Interest	\$ (2,100,313)	\$ (350,820)	\$ (2,088,720)	\$ (6,907)	\$ (3,072,105)	\$ -	\$ (1,3
48								

USACERL Technical Notes

¹ From Line 35 of Table 4.6. Attempts were made by USACERL to keep total bond issues generally consistent with the OLRA's issuance of \$18,089,880 (Table 6, line 22)

² Page 18 of the OLRA EDC Application

³ TIF bond interest rate and term were not directly provided by the OLRA. Therefore, USACERL developed independent assumptions based on previous EDC experience

⁴ Annual debt service calculation based upon the standard mortgage constant formula.

①

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Year 9 2007	Year 10 2008	Year 11 2009	Year 12 2010	Year 13 2011	Year 14 2012	Year 15 2013	Annual Debt Service
41,146	\$ (4,075,365)	\$ (574,133)	\$ (92,814)	\$ 558,879	\$ (456,009)	\$ 2,316,715	
78,529	\$ (101,884)	\$ (14,353)	\$ (2,320)	\$ 13,972	\$ (11,400)	\$ 57,918	
50,382	\$ (3,049,392)	\$ (429,595)	\$ (99,448)	\$ -	\$ (341,209)	\$ -	\$ (18,287,737)
04,915							\$ (246,224) 1
04,915	(265,860)						\$ (287,352) 2
04,915	(265,860)	(37,454)					\$ (532,217) 3
04,915	(265,860)	(37,454)	(6,055)				\$ (533,027) 4
04,915	(265,860)	(37,454)	(6,055)				\$ (893,178) 5
04,915	(265,860)	(37,454)	(6,055)		(29,748)		\$ (893,178) 6
04,915	(265,860)	(37,454)	(6,055)		(29,748)		\$ (1,050,376) 7
04,915	(265,860)	(37,454)	(6,055)		(29,748)		\$ (1,050,376) 8
04,915	(265,860)	(37,454)	(6,055)		(29,748)		\$ (1,255,291) 9
04,915	(265,860)	(37,454)	(6,055)		(29,748)		\$ (1,521,151) 10
04,915	(265,860)	(37,454)	(6,055)		(29,748)		\$ (1,558,605) 11
04,915	(265,860)	(37,454)	(6,055)		(29,748)		\$ (1,564,660) 12
04,915	(265,860)	(37,454)	(6,055)		(29,748)		\$ (1,564,660) 13
04,915	(265,860)	(37,454)	(6,055)		(29,748)		\$ (1,594,408) 14
04,915	(265,860)	(37,454)	(6,055)		(29,748)		\$ (1,594,408) 15
04,915	(265,860)	(37,454)	(6,055)		(29,748)		\$ (1,594,408) 16
04,915	(265,860)	(37,454)	(6,055)		(29,748)		\$ (1,594,408) 17
04,915	(265,860)	(37,454)	(6,055)		(29,748)		\$ (1,594,408) 18
04,915	(265,860)	(37,454)	(6,055)		(29,748)		\$ (1,594,408) 19
04,915	(265,860)	(37,454)	(6,055)		(29,748)		\$ (1,594,408) 20
04,915	(265,860)	(37,454)	(6,055)		(29,748)		\$ (1,348,184) 21
04,915	(265,860)	(37,454)	(6,055)		(29,748)		\$ (1,307,056) 22
04,915	(265,860)	(37,454)	(6,055)		(29,748)		\$ (1,062,191) 23
04,915	(265,860)	(37,454)	(6,055)		(29,748)		\$ (1,061,381) 24
04,915	(265,860)	(37,454)	(6,055)		(29,748)		\$ (701,232) 25
04,915	(265,860)	(37,454)	(6,055)		(29,748)		\$ (701,232) 26
04,915	(265,860)	(37,454)	(6,055)		(29,748)		\$ (644,032) 27
04,915	(265,860)	(37,454)	(6,055)		(29,748)		\$ (644,032) 28
04,915	(265,860)	(37,454)	(6,055)		(29,748)		\$ (339,117) 29
04,915	(265,860)	(37,454)	(6,055)		(29,748)		\$ (73,257) 30
04,915	(265,860)	(37,454)	(6,055)		(29,748)		\$ (35,803) 31
04,915	(265,860)	(37,454)	(6,055)		(29,748)		\$ (29,748) 32
04,915	(265,860)	(37,454)	(6,055)		(29,748)		\$ (29,748) 33
28,306	\$ (8,317,197)	\$ (749,082)	\$ (121,096)	\$ -	\$ (894,963)	\$ -	\$ (31,898,164)
50,382	\$ (3,049,392)	\$ (429,595)	\$ (99,448)	\$ -	\$ (341,209)	\$ -	\$ (18,287,737)
47,944	\$ (2,267,808)	\$ (319,486)	\$ (51,648)	\$ -	\$ (253,754)	\$ -	\$ (13,600,428)

3

Table 4.5. Projected Tax Increment Finance Revenues.

Projected Tax Increment Financing (TIF) Revenues Defense Depot Ogden				Scenario:					
				Year 1 1999	Year 2 2000	Year 3 2001	Year 4 2002	Year 5 2003	Year 6 2004
1	DEVELOPMENT YEAR								
2									
3	TAXABLE DDO INVENTORY	FAR ¹	%						
4									
5	Existing Space			230,196	230,196	230,196	220,306	220,306	220,306
6	New Inventory	100%	2,523,907	168,254	168,254	168,254	168,254	168,254	168,254
7	New Industrial	0.37	48%	74,833	74,833	74,833	74,833	74,833	74,833
8	New Distribution	0.35	32%	49,492	49,492	49,492	49,492	49,492	49,492
9	New Office	0.42	23%	43,929	43,929	43,929	43,929	43,929	43,929
10	Opportunity Revenues			580,000	-	55,102	-	-	-
11	Total Annual Space			968,450	398,480	483,582	398,650	398,650	398,650
12	Cumulative Taxable Inventory			968,450	1,366,900	1,810,481	2,199,101	2,597,751	2,976,401
13									
14	Building Value Appreciation		5%		1	1.05	1.10	1.16	1.22
15									
16	Growth in Assessed Value @	\$ 10.00	SF	10	10.50	11.03	11.58	12.16	12.71
17		\$ 15.00	SF	15	15.75	16.54	17.38	18.23	19.08
18		\$ 20.00	SF	20	21.00	22.05	23.15	24.31	25.46
19									
20	Assessed Valuation @ ²	\$ 10.00	SF	\$ 9,584,498	\$ 14,247,448	\$ 19,960,226	\$ 25,457,345	\$ 31,454,274	\$ 37,987,292
21		\$ 15.00	SF	\$ 14,376,747	\$ 21,371,168	\$ 29,940,339	\$ 38,186,017	\$ 47,181,412	\$ 56,980,811
22		\$ 20.00	SF	\$ 19,168,996	\$ 28,494,891	\$ 39,920,453	\$ 50,914,689	\$ 62,908,549	\$ 75,974,581
23									
24	Total Property Taxes @ ³	\$ 10.00	SF	1,786.9%	\$ 171,265	\$ 254,588	\$ 356,669	\$ 454,807	\$ 562,056
25		\$ 15.00	SF	1,786.9%	\$ 256,898	\$ 381,881	\$ 535,004	\$ 682,346	\$ 843,085
26		\$ 20.00	SF	1,786.9%	\$ 342,531	\$ 509,175	\$ 713,339	\$ 909,795	\$ 1,124,113
27									
28	Retained Tax Increment @ ⁴	\$ 10.00	100%	50%	171,265	83,322	185,404	283,632	390,791
29		\$ 15.00	100%	50%	256,898	124,983	278,106	425,448	586,187
30		\$ 20.00	100%	50%	342,531	166,644	370,808	567,264	781,582
31									
32									
33									
34	Cash Flow Deficit/Surplus			(3,774,372)	(630,443)	(3,753,538)	(12,412)	(5,520,733)	571,611
35	Plus Debt Service Reserve	2.5%		(94,359)	(15,761)	(93,838)	(310)	(138,018)	14,291
36									
37	Principal Borrowed ⁵			(2,824,174)	(471,729)	(2,808,585)	(9,287)	(4,130,889)	-
38									
39	Annual Debt Service ⁵			\$ (246,224)	\$ (287,352)	\$ (532,217)	\$ (533,027)	\$ (893,176)	\$ (893,176)
40									
41	Retained Tax Increment @	\$ 10.00		\$ 171,265	\$ 83,322	\$ 185,404	\$ 283,632	\$ 390,791	\$ 507,582
42	Annual Debt Service			\$ (246,224)	\$ (287,352)	\$ (532,217)	\$ (533,027)	\$ (893,176)	\$ (893,176)
43	Debt Service Deficit/Surplus			\$ (74,959)	\$ (204,030)	\$ (346,813)	\$ (249,395)	\$ (502,385)	\$ (385,594)
44	Cumulative 15-Year Deficit/Surplus								
45									
46	Retained Tax Increment @	\$ 15.00		\$ 256,898	\$ 124,983	\$ 278,106	\$ 425,448	\$ 586,187	\$ 781,582
47	Annual Debt Service			\$ (246,224)	\$ (287,352)	\$ (532,217)	\$ (533,027)	\$ (893,176)	\$ (893,176)
48	Debt Service Deficit/Surplus			\$ 10,674	\$ (162,369)	\$ (254,111)	\$ (107,579)	\$ (306,989)	\$ (131,594)
49	Cumulative 15-Year Deficit/Surplus								
50									
51	Retained Tax Increment @	\$ 20.00		\$ 342,531	\$ 166,644	\$ 370,808	\$ 567,264	\$ 781,582	\$ 1,015,077
52	Annual Debt Service			\$ (246,224)	\$ (287,352)	\$ (532,217)	\$ (533,027)	\$ (893,176)	\$ (893,176)
53	Debt Service Deficit/Surplus			\$ 96,306	\$ (120,707)	\$ (161,409)	\$ 34,237	\$ (111,594)	\$ 121,893
54	Cumulative 15-Year Deficit/Surplus								

USACERL Technical Notes

¹ Floor Area Ratio (FAR) for new development as calculated by Economics Research Associates (ERA).

² Assessed value is calculated as 100% of market value for commercial properties within the City of Ogden. Page 19 of the EDC application states that the initial value of existing, largely unrenovated real property is \$10 per square foot.

³ The commercial property tax rate for the City of Ogden is roughly \$1.79 per \$100 of taxable value, or 1.79% of assessed value.

⁴ Utah law limits the share of property taxes generated by any given project which can be used to offset debt service. Current law specifies that the City could use either 100% of forecast DDO tax increment for the first 10 years and 50% for the second 10 years, of redevelopment, or 75% for 20 years.

ERA's analysis assumed 100% for the first 10 years and 75% for the balance of the 20 year tax increment period which is inconsistent with Utah law.

USACERL corrected this assumption error for the business plan pro forma recast.

⁵ From Table 4.4.



Scenario: OLRA Business and Operations Plan

Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14
2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
230,196	230,196	220,396	220,396	220,396	220,396	220,396	220,396	220,396	220,396	220,396	220,396	220,396
168,254	168,254	168,254	168,254	168,254	168,254	168,254	168,254	168,254	168,254	168,254	168,254	168,254
74,833	74,833	74,833	74,833	74,833	74,833	74,833	74,833	74,833	74,833	74,833	74,833	74,833
49,492	49,492	49,492	49,492	49,492	49,492	49,492	49,492	49,492	49,492	49,492	49,492	49,492
43,929	43,929	43,929	43,929	43,929	43,929	43,929	43,929	43,929	43,929	43,929	43,929	43,929
-	55,102	-	-	-	-	-	-	-	-	-	-	-
398,480	453,582	398,650	398,650	398,650	398,650	398,650	398,650	398,650	398,650	398,650	398,650	398,650
1,368,900	1,810,461	2,199,101	2,587,781	2,976,401	3,365,061	3,753,700	4,142,380	4,531,000	4,919,680	5,308,299	5,696,949	6,085,599
1.05	1.10	1.16	1.22	1.28	1.34	1.41	1.48	1.55	1.63	1.71	1.80	1.89
10.50	11.03	11.58	12.16	12.76	13.40	14.07	14.77	15.51	16.29	17.10	17.96	18.86
15.75	16.54	17.38	18.23	19.14	20.10	21.11	22.16	23.27	24.43	25.66	26.94	28.28
21.00	22.05	23.15	24.31	25.53	26.80	28.14	29.55	31.03	32.58	34.21	35.92	37.71
1,247,448	\$ 19,960,226	\$ 25,457,345	\$ 31,454,274	\$ 37,987,254	\$ 45,094,895	\$ 52,818,333	\$ 61,201,377	\$ 70,290,679	\$ 80,135,909	\$ 90,789,935	\$ 102,309,023	\$ 114,753,046
371,168	\$ 29,940,339	\$ 38,186,017	\$ 47,181,412	\$ 56,980,880	\$ 67,842,343	\$ 79,227,499	\$ 91,802,065	\$ 105,438,019	\$ 120,203,883	\$ 136,184,902	\$ 153,483,535	\$ 172,129,568
1,494,891	\$ 39,920,453	\$ 50,914,689	\$ 62,908,549	\$ 75,974,607	\$ 90,189,790	\$ 105,638,665	\$ 122,402,754	\$ 140,581,359	\$ 160,271,818	\$ 181,579,869	\$ 204,618,046	\$ 229,506,091
254,588	\$ 356,669	\$ 454,897	\$ 562,056	\$ 678,794	\$ 805,801	\$ 943,811	\$ 1,093,607	\$ 1,256,024	\$ 1,431,949	\$ 1,622,325	\$ 1,828,160	\$ 2,050,522
381,881	\$ 535,004	\$ 682,346	\$ 843,085	\$ 1,018,191	\$ 1,208,701	\$ 1,415,716	\$ 1,640,411	\$ 1,884,036	\$ 2,147,923	\$ 2,433,488	\$ 2,742,240	\$ 3,075,783
509,175	\$ 713,339	\$ 909,795	\$ 1,124,113	\$ 1,357,588	\$ 1,611,801	\$ 1,887,822	\$ 2,187,215	\$ 2,512,048	\$ 2,863,897	\$ 3,244,651	\$ 3,656,320	\$ 4,101,044
83,322	185,404	283,832	390,791	507,529	634,535	772,545	922,342	1,084,759	630,342	725,530	828,447	939,628
124,983	278,106	425,448	586,187	761,293	951,803	1,158,818	1,383,513	1,627,138	945,512	1,088,295	1,242,671	1,409,443
166,644	370,808	567,264	781,582	1,015,058	1,269,071	1,545,091	1,844,684	2,169,518	1,260,683	1,451,060	1,656,895	1,879,257
(630,443)	(3,753,538)	(12,412)	(5,520,733)	571,677	(2,409,711)	1,742,469	(3,141,146)	(4,075,365)	(574,133)	(92,814)	558,879	(456,009)
(15,781)	(93,838)	(310)	(138,018)	14,292	(60,243)	43,562	(78,529)	(101,884)	(14,353)	(2,320)	13,972	(11,400)
(471,729)	(2,808,585)	(9,287)	(4,130,889)	-	(1,803,066)	-	(2,350,382)	(3,049,392)	(429,595)	(69,448)	-	(341,209)
(287,352)	(532,217)	(533,027)	(893,176)	(893,176)	(1,050,376)	(1,050,376)	(1,255,291)	(1,521,151)	(1,558,605)	(1,564,660)	(1,564,660)	(1,564,408)
83,322	\$ 185,404	\$ 283,832	\$ 390,791	\$ 507,529	\$ 634,535	\$ 772,545	\$ 922,342	\$ 1,084,759	\$ 630,342	\$ 725,530	\$ 828,447	\$ 939,628
(287,352)	\$ (532,217)	\$ (533,027)	\$ (893,176)	\$ (893,176)	\$ (1,050,376)	\$ (1,050,376)	\$ (1,255,291)	\$ (1,521,151)	\$ (1,558,605)	\$ (1,564,660)	\$ (1,564,660)	\$ (1,564,408)
(204,030)	\$ (346,813)	\$ (249,385)	\$ (502,385)	\$ (385,648)	\$ (415,841)	\$ (277,831)	\$ (332,948)	\$ (428,382)	\$ (628,264)	\$ (839,130)	\$ (736,213)	\$ (854,780)
124,983	\$ 278,106	\$ 425,448	\$ 586,187	\$ 761,293	\$ 951,803	\$ 1,158,818	\$ 1,383,513	\$ 1,627,138	\$ 945,512	\$ 1,088,295	\$ 1,242,671	\$ 1,409,443
(287,352)	\$ (532,217)	\$ (533,027)	\$ (893,176)	\$ (893,176)	\$ (1,050,376)	\$ (1,050,376)	\$ (1,255,291)	\$ (1,521,151)	\$ (1,558,605)	\$ (1,564,660)	\$ (1,564,660)	\$ (1,564,408)
(162,399)	\$ (254,111)	\$ (107,579)	\$ (306,990)	\$ (131,883)	\$ (98,573)	\$ 108,442	\$ 128,222	\$ 105,967	\$ (613,083)	\$ (476,365)	\$ (321,869)	\$ (184,866)
166,644	\$ 370,808	\$ 567,264	\$ 781,582	\$ 1,015,058	\$ 1,269,071	\$ 1,545,091	\$ 1,844,684	\$ 2,169,518	\$ 1,260,683	\$ 1,451,060	\$ 1,656,895	\$ 1,879,257
(287,352)	\$ (532,217)	\$ (533,027)	\$ (893,176)	\$ (893,176)	\$ (1,050,376)	\$ (1,050,376)	\$ (1,255,291)	\$ (1,521,151)	\$ (1,558,605)	\$ (1,564,660)	\$ (1,564,660)	\$ (1,564,408)
(120,707)	\$ (161,409)	\$ 34,237	\$ (111,594)	\$ 121,881	\$ 218,095	\$ 484,715	\$ 588,393	\$ 648,366	\$ (297,922)	\$ (113,800)	\$ 92,234	\$ 284,849

RA).
 Ogden. Page 19 of the EDC application states
 or 1.79% of assessed value.
 fast debt service. Current law specifies that the City
 10 years, of redevelopment, or 75% for 20 years.
 ement period which is inconsistent with Utah law.

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Contributions Plan

Year	Year	Year	Year	Year	Year	Year	Year
2007	2008	2009	2010	2011	2012	2013	2014
220,396	220,396	220,396	220,396	220,396	220,396	220,396	220,396
168,254	168,254	168,254	168,254	168,254	168,254	168,254	168,254
74,833	74,833	74,833	74,833	74,833	74,833	74,833	74,833
49,492	49,492	49,492	49,492	49,492	49,492	49,492	49,492
43,929	43,929	43,929	43,929	43,929	43,929	43,929	43,929
388,650	388,650	388,650	388,650	388,650	388,650	388,650	388,650
4,142,360	4,531,000	4,919,650	5,308,299	5,696,949	6,085,599	6,474,249	
1.48	1.55	1.63	1.71	1.80	1.89	1.98	
14.77	15.51	16.29	17.10	17.96	18.86	19.80	
22.16	23.27	24.43	25.66	26.94	28.28	29.70	
29.55	31.03	32.58	34.21	35.92	37.71	39.60	
\$ 61,201,377	\$ 70,290,679	\$ 80,135,909	\$ 90,789,935	\$ 102,309,023	\$ 114,753,046	\$ 128,185,668	
\$ 91,802,065	\$ 105,436,019	\$ 120,203,863	\$ 136,184,902	\$ 153,483,535	\$ 172,129,568	\$ 192,278,547	
\$ 122,402,754	\$ 140,581,359	\$ 160,271,818	\$ 181,579,869	\$ 204,618,046	\$ 229,506,091	\$ 258,371,396	
\$ 1,093,607	\$ 1,256,024	\$ 1,431,949	\$ 1,622,325	\$ 1,828,160	\$ 2,050,522	\$ 2,290,560	
\$ 1,640,411	\$ 1,884,036	\$ 2,147,923	\$ 2,433,488	\$ 2,742,240	\$ 3,075,783	\$ 3,435,825	
\$ 2,187,215	\$ 2,512,048	\$ 2,863,897	\$ 3,244,651	\$ 3,658,320	\$ 4,101,044	\$ 4,581,100	
922,342	1,084,759	630,342	725,530	828,447	939,628	1,059,642	
1,383,513	1,627,138	945,512	1,088,295	1,242,671	1,409,443	1,589,464	
1,844,684	2,169,518	1,260,683	1,451,060	1,656,895	1,879,257	2,119,285	
(3,141,146)	(4,075,365)	(574,133)	(92,814)	558,879	(456,009)	2,316,715	
(78,529)	(101,884)	(14,353)	(2,320)	13,972	(11,400)	57,918	
(2,350,362)	(3,049,392)	(429,595)	(69,448)	-	(341,209)	-	
(1,255,291)	(1,521,151)	(1,558,605)	(1,564,660)	(1,564,660)	(1,594,408)	(1,594,408)	
\$ 922,342	\$ 1,084,759	\$ 630,342	\$ 725,530	\$ 828,447	\$ 939,628	\$ 1,059,642	
(1,255,291)	(1,521,151)	(1,558,605)	(1,564,660)	(1,564,660)	(1,594,408)	(1,594,408)	
(332,949)	(436,392)	(928,264)	(899,130)	(736,213)	(654,780)	(534,766)	
						(6,919,395)	
\$ 1,383,513	\$ 1,627,138	\$ 945,512	\$ 1,088,295	\$ 1,242,671	\$ 1,409,443	\$ 1,589,464	
(1,255,291)	(1,521,151)	(1,558,605)	(1,564,660)	(1,564,660)	(1,594,408)	(1,594,408)	
\$ 128,222	\$ 105,987	\$ (613,093)	\$ (476,365)	\$ (321,989)	\$ (184,965)	\$ (4,945)	
						(2,309,538)	
\$ 1,844,684	\$ 2,169,518	\$ 1,260,683	\$ 1,451,060	\$ 1,656,895	\$ 1,879,257	\$ 2,119,285	
(1,255,291)	(1,521,151)	(1,558,605)	(1,564,660)	(1,564,660)	(1,594,408)	(1,594,408)	
\$ 589,393	\$ 648,366	\$ (297,922)	\$ (113,600)	\$ 82,234	\$ 284,849	\$ 524,877	
						2,300,319	

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Table 4.6. Business Plan Pro Forma Summary.

15-Year Pro Forma Analysis
Defense Depot Ogden

Scenario: OLRA Busi

	0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
		1999	2000	2001	2002	2003	2004	2005
1 DEVELOPMENT YEAR								
2								
3 REVENUES	<u>BASIS</u>							
4 Potential Lease Revenue		\$ 482,350	\$ 964,699	\$ 1,490,460	\$ 1,953,327	\$ 2,442,625	\$ 2,959,522	\$ 3,505,235
5 Land Sales		\$ 414,400	\$ 414,400	\$ 426,832	\$ 439,637	\$ 452,826	\$ 466,411	\$ 480,403
6 Building Sales		\$ 734,115	\$ 734,115	\$ 766,138	\$ 778,823	\$ 802,187	\$ 826,263	\$ 851,040
7 Opportunity Revenue		\$ 705,600	\$ 705,600	\$ 1,756,788	\$ 748,571	\$ 771,028	\$ 794,159	\$ 817,984
8 OEA Grant Funds		\$ 400,000	\$ 300,000	\$ 200,000	\$ 100,000	\$ -	\$ -	\$ -
9								
10 Less: Local Match Funds		\$ 685,000	\$ 30,000	\$ 770,000	\$ 133,875	\$ 750,000	\$ -	\$ -
11 Less: Vacancy and Collection Loss	8%	38,587.96	77,175.92	119,236.80	156,266.16	195,409.97	236,761.76	280,418.80
12 <u>Effective Gross Revenue</u>		\$ 2,032,877	\$ 3,011,638	\$ 3,740,982	\$ 3,730,216	\$ 3,523,256	\$ 4,909,593	\$ 5,374,244
13								
14 OPERATING EXPENSES								
15 Salaries and Benefits		\$ 240,000	\$ 240,000	\$ 247,200	\$ 254,616	\$ 262,254	\$ 270,122	\$ 278,226
16 Administrative		\$ 60,000	\$ 60,000	\$ 61,800	\$ 63,654	\$ 65,564	\$ 67,531	\$ 69,556
17 Marketing		\$ 75,000	\$ 75,000	\$ 71,250	\$ 67,688	\$ 64,303	\$ 57,873	\$ 52,086
18 Maintenance		\$ 0.50	\$ 2,210,706	\$ 2,158,476	\$ 2,700,899	\$ 2,661,510	\$ 2,617,326	\$ 2,568,096
19 Army Repayment		\$ 1,000,000	\$ 1,000,000	\$ -	\$ -	\$ -	\$ -	\$ -
20 Property Management	1.5%	\$ 24,463	\$ 31,898	\$ 40,101	\$ 47,577	\$ 55,485	\$ 63,783	\$ 72,550
21 <u>Total Operating Expenses</u>		\$ 3,610,168	\$ 2,570,424	\$ 3,126,958	\$ 3,101,208	\$ 3,068,316	\$ 3,031,747	\$ 2,991,200
22 Inflation	3%							
23								
24								
25 <u>NET OPERATING INCOME (NOI)</u>		\$ (1,577,292)	\$ 441,214	\$ 614,003	\$ 629,009	\$ 454,940	\$ 1,777,836	\$ 2,383,044
26								
27 INFRASTRUCTURE COSTS								
28 Infrastructure Improvements		\$ 3,656,637	\$ -	\$ 6,263,735	\$ -	\$ 7,804,645	\$ -	\$ 6,550,411
29 Building Renovation		\$ 1,040,443	\$ 1,071,657	\$ 1,103,806	\$ 1,136,921	\$ 1,171,028	\$ 1,206,159	\$ 1,242,344
30 <u>TOTAL INFRASTRUCTURE COSTS</u>		4,697,080	1,071,657	7,367,541	1,136,921	8,975,673	1,206,159	7,792,755
31								
32 INFRASTRUCTURE FUNDING								
33 EDA Grant Funds		\$ 2,500,000	\$ -	\$ 3,000,000	\$ 495,500	\$ 3,000,000	\$ -	\$ 3,000,000
34								
35 <u>ANNUAL CASH FLOW</u>		\$ (3,774,372)	\$ (630,443)	\$ (3,753,538)	\$ (12,412)	\$ (5,520,733)	\$ 571,577	\$ (2,409,711)
36								
37 TIF BOND ISSUES		\$ 2,824,174	\$ 471,729	\$ 2,809,595	\$ 9,287	\$ 4,130,889	\$ -	\$ 1,803,086
38								
39 <u>NET CASH FLOW</u>		\$ (950,198)	\$ (158,714)	\$ (944,953)	\$ (3,125)	\$ (1,389,845)	\$ 571,577	\$ (606,645)
40								
41 <u>CUMULATIVE CASH FLOW</u>		\$ (950,198)	\$ (1,108,912)	\$ (2,053,865)	\$ (2,056,990)	\$ (3,446,835)	\$ (2,875,158)	\$ (3,481,803)
42								
43 <u>DISCOUNTED CASH FLOWS @</u>	12%	\$ (848,391)	\$ (126,526)	\$ (672,599)	\$ (1,986)	\$ (788,535)	\$ 289,829	\$ (274,415)
44								
45 <u>NET PRESENT VALUE OF CASH FLOWS</u>		\$ (1,854,372)						
46 <u>YEAR-15 RESIDUAL¹</u>		4,292,552						
47 <u>INDICATED BUSINESS PLAN VALUE</u>		\$ 2,378,180						
48								
49 <u>DISCOUNTED CASH FLOWS @</u>	8%	\$ (579,813)	\$ (136,072)	\$ (750,134)	\$ (2,297)	\$ (946,905)	\$ 390,253	\$ (353,971)
50								
51 <u>NET PRESENT VALUE OF CASH FLOWS</u>		(1,811,879)						
52 <u>YEAR-15 RESIDUAL</u>		7,303,253						
53 <u>INDICATED BUSINESS PLAN VALUE</u>		\$ 5,491,373						

USACERL Technical Notes

¹ According to the EDC application (p. 23), residual value is calculated using the income capitalization approach. A 10% capitalization rate is applied to the Year 15 discounted cash flow (lines 43 and 49) to arrive at residual value. Although the income capitalization approach to property valuation is an industry standard, the application used in the OLRA business plan is inconsistent with calculation methodology. An expanded discussion of this observed methodological error can be found in Chapter 4, Business Plan Review and Market and Financial Feasibility of this report.

Scenario: OLRA Business and Operations Plan

	Year 4 2002	Year 5 2003	Year 6 2004	Year 7 2005	Year 8 2006	Year 9 2007	Year 10 2008	Year 11 2009	Year 12 2010	Year 13 2011	Year 14 2012	Year 15 2013
\$	1,953,327	2,442,826	2,959,522	3,505,235	4,081,027	4,688,212	5,328,155	6,002,276	6,712,048	7,459,004	8,244,738	9,070,901
\$	439,637	452,826	466,411	480,403	494,815	509,660	524,950	540,698	556,919	573,627	590,835	608,580
\$	778,823	802,187	826,253	851,040	876,572	902,869	929,955	957,854	986,589	1,016,187	1,046,672	1,078,073
\$	748,571	771,028	794,159	817,984	842,523	867,799	893,833	920,648	948,267	976,715	1,006,017	1,036,197
\$	100,000	-	-	-	-	-	-	-	-	-	-	-
\$	133,875	750,000	-	-	-	-	-	-	-	-	-	-
\$	156,266.16	195,409.97	236,761.76	280,418.80	326,482.17	375,056.97	426,252.42	480,182.05	536,963.83	596,720.35	659,579.00	725,672.12
\$	3,730,216	3,523,256	4,809,583	5,374,244	5,968,455	6,583,483	7,280,640	7,941,283	8,666,980	9,428,813	10,228,683	11,068,080
\$	262,254	270,122	278,226	286,573	295,170	304,025	313,146	322,540	332,216	342,183	352,448	363,022
\$	65,564	67,531	69,556	71,643	73,792	76,006	78,286	80,635	83,054	85,546	88,112	90,755
\$	64,303	57,873	52,086	46,877	42,189	37,970	34,173	30,756	27,680	24,912	22,421	20,179
\$	2,661,510	2,617,326	2,568,096	2,513,557	2,453,434	2,387,442	2,315,282	2,236,643	2,151,203	2,058,623	1,958,552	1,850,624
\$	-	-	-	-	-	-	-	-	-	-	-	-
\$	47,577	55,465	63,783	72,550	81,786	91,511	101,746	112,512	123,833	135,732	148,234	161,383
\$	3,101,208	3,068,316	3,031,747	2,991,200	2,946,372	2,896,954	2,842,833	2,783,086	2,717,988	2,646,986	2,568,787	2,486,943
\$	829,009	454,940	1,777,836	2,383,044	3,022,083	3,696,529	4,406,008	5,158,207	5,948,873	6,781,817	7,658,916	8,582,117
\$	-	7,804,645	-	6,550,411	-	5,519,672	7,125,830	4,334,071	4,601,470	4,739,514	5,586,999	4,691,637
\$	1,136,921	1,171,028	1,206,159	1,242,344	1,279,614	1,318,003	1,357,543	1,398,269	1,440,217	1,483,424	1,527,926	1,573,784
\$	1,136,921	8,978,573	1,206,159	7,782,755	1,279,614	6,837,575	8,483,372	5,732,340	6,041,687	6,222,938	8,114,926	6,285,401
\$	485,500	3,000,000	-	3,000,000	-	-	-	-	-	-	-	-
\$	(12,412)	(5,520,733)	571,577	(2,409,711)	1,742,469	(3,141,146)	(4,075,365)	(574,133)	(92,914)	658,879	(465,008)	2,316,715
\$	9,287	4,130,889	-	1,803,086	-	2,360,362	3,049,362	429,896	69,448	-	341,208	-
\$	(3,125)	(1,389,845)	571,577	(606,845)	1,742,469	(790,784)	(1,025,973)	(144,538)	(23,366)	658,879	(114,800)	2,316,715
\$	(2,066,990)	(3,446,835)	(2,875,158)	(3,481,803)	(1,739,333)	(2,530,117)	(3,586,080)	(3,700,628)	(3,723,994)	(3,165,115)	(3,279,915)	(963,200)
\$	(1,986)	(786,535)	289,629	(274,415)	703,754	(285,164)	(330,336)	(41,551)	(5,987)	128,081	(23,480)	423,255
\$	(2,297)	(948,905)	390,253	(353,971)	941,402	(395,589)	(475,224)	(51,990)	(9,279)	205,499	(39,085)	730,325

reach. A 10% capitalization rate is applied
 capitalization approach to property valuation
 methodology. An expanded discussion of this
 feasibility of this report.

Year 10 2008	Year 11 2009	Year 12 2010	Year 13 2011	Year 14 2012	Year 15 2013	Cumulative Forecast		
						5 Year Total	10 Year Total	15 year Total
5,328,155	\$ 6,002,276	\$ 6,712,048	\$ 7,459,004	\$ 8,244,738	\$ 9,070,901	7,333,480	27,885,612	65,384,579
524,950	\$ 540,698	\$ 556,919	\$ 573,627	\$ 590,835	\$ 608,560	2,148,085	4,824,334	7,484,973
929,955	\$ 957,854	\$ 986,589	\$ 1,016,187	\$ 1,046,672	\$ 1,078,073	3,806,378	8,182,067	13,277,442
893,833	\$ 920,648	\$ 948,267	\$ 976,715	\$ 1,006,017	\$ 1,036,197	4,687,887	8,903,886	13,781,710
-	\$ -	\$ -	\$ -	\$ -	\$ -	1,000,000	1,000,000	1,000,000
-	\$ -	\$ -	\$ -	\$ -	\$ -	-	-	-
-	\$ -	\$ -	\$ -	\$ -	\$ -	2,348,876	2,348,876	2,348,876
126,252.42	480,182.05	536,963.83	596,720.35	659,579.00	725,672.12	596,577	2,231,649	5,230,786
7,280,840	\$ 7,941,293	\$ 8,688,980	\$ 9,428,813	\$ 10,228,683	\$ 11,068,080	\$ 16,038,948	\$ 46,036,354	\$ 83,389,082
313,146	\$ 322,540	\$ 332,216	\$ 342,183	\$ 352,448	\$ 363,022	1,274,183	2,751,331	4,463,739
78,286	\$ 80,835	\$ 83,054	\$ 85,546	\$ 88,112	\$ 90,755	318,548	687,833	1,115,936
34,173	\$ 30,756	\$ 27,680	\$ 24,912	\$ 22,421	\$ 20,179	336,113	546,408	676,358
2,315,282	\$ 2,236,643	\$ 2,151,203	\$ 2,058,623	\$ 1,958,552	\$ 1,850,824	12,348,916	24,588,727	34,842,371
-	\$ -	\$ -	\$ -	\$ -	\$ -	1,000,000	1,000,000	1,000,000
101,746	\$ 112,512	\$ 123,833	\$ 135,732	\$ 148,234	\$ 161,363	189,304	610,680	1,282,365
2,842,633	\$ 2,783,086	\$ 2,717,986	\$ 2,646,986	\$ 2,569,767	\$ 2,486,943	15,477,076	30,185,980	43,389,768
4,408,008	\$ 5,158,207	\$ 5,948,873	\$ 6,781,817	\$ 7,658,916	\$ 8,582,117	861,874	15,849,374	49,979,304
7,125,830	\$ 4,334,071	\$ 4,601,470	\$ 4,739,514	\$ 4,586,999	\$ 4,691,837	\$ 17,725,017	\$ 36,820,829	\$ 61,874,621
1,357,543	\$ 1,398,269	\$ 1,440,217	\$ 1,483,424	\$ 1,527,926	\$ 1,573,764	\$ 5,823,866	\$ 11,827,518	\$ 19,361,119
8,483,372	\$ 5,732,340	\$ 6,041,687	\$ 6,222,938	\$ 6,114,926	\$ 6,265,401	23,248,873	48,848,448	81,225,740
-	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 8,865,800	\$ 11,865,800	\$ 11,865,800
(4,075,365)	\$ (574,133)	\$ (92,814)	\$ 558,879	\$ (455,009)	\$ 2,316,715	\$ (13,881,499)	\$ (21,003,574)	\$ (19,260,936)
3,049,382	\$ 429,885	\$ 89,448	\$ -	\$ 341,209	\$ -	\$ 10,244,884	\$ 17,447,484	\$ 18,287,737
1,025,873	\$ (144,536)	\$ (23,386)	\$ 558,879	\$ (114,800)	\$ 2,316,715	\$ (3,446,835)	\$ (3,558,080)	\$ (963,200)
3,558,080	\$ (3,700,828)	\$ (3,723,994)	\$ (3,165,115)	\$ (3,279,915)	\$ (963,200)			
(330,336)	\$ (41,551)	\$ (5,997)	\$ 128,081	\$ (23,490)	\$ 423,255			
(475,224)	\$ (61,880)	\$ (9,279)	\$ 205,499	\$ (39,085)	\$ 730,325			

Table 4.7. CERL1 Absorption and Revenue Summary.

15-Year Absorption and Revenue Projection
Defense Depot Ogden

Scenario: CERL1 Developed Scenario

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8
	1999	2000	2001	2002	2003	2004	2005	2006
ABSORPTION								
1 Existing Leasable Space (SF)								
2 Manufacturing	155,287	155,287	155,287	155,287	155,287	155,287	155,287	155,287
3 Distribution	103,515	103,515	103,515	103,515	103,515	103,515	103,515	103,515
4 Office	9,800	9,800	9,800	9,800	9,800	9,800	9,800	9,800
5 Annual Leasing Absorption	268,603	268,603	268,603	258,803	258,803	258,803	258,803	258,803
6 Cumulative Existing Space Leased (SF)								
7 Manufacturing	155,287	310,575	465,862	621,150	776,437	931,725	1,087,012	1,242,300
8 Distribution	103,515	207,031	310,546	414,062	517,577	621,093	724,608	828,124
9 Office	9,800	19,600	29,400	39,200	49,000	58,800	68,600	78,400
10 Total Annual Leased SF	268,603	537,206	805,809	1,064,612	1,323,415	1,582,218	1,841,020	2,099,823
11 Land Sales (AC)								
12 Business Park	17.33	17.33	17.33	17.33	17.33	17.33	17.33	17.33
13 Existing Building Sales (SF)								
14 Manufacturing	29,365	29,365	29,365	29,365	29,365	29,365	29,365	29,365
15 Distribution	19,577	19,577	19,577	19,577	19,577	19,577	19,577	19,577
16 Office	-	-	-	-	-	-	-	-
17 Annual Building Absorption	48,942	48,942	48,942	48,942	48,942	48,942	48,942	48,942
18 Opportunity Revenue								
19 Buildings 15-C & 16-C (Peterson Mfg)	560,000	-	55,102	-	-	-	-	-
20 Building 11	-	-	-	-	-	-	-	-
21 Total Annual Leased SF	560,000	560,000	560,000	560,000	560,000	560,000	560,000	560,000
22 Total Existing Space Absorbed	877,646	317,646	372,647	307,746	307,746	307,746	307,746	307,746
23 Cumulative Space Absorbed	877,646	1,195,092	1,657,739	1,876,481	2,183,226	2,490,971	2,798,716	3,106,462
24 Total Acreage Absorbed	17.3	17.3	17.3	17.3	17.3	17.3	17.3	17.3
25 Cumulative Acreage Absorbed	17.3	34.7	52.0	69.3	86.7	104.0	121.3	138.7
REVENUES								
26 Existing Leasable Space (SF)								
27 Manufacturing	\$ 388,219	\$ 776,437	\$ 1,164,655	\$ 1,647,444	\$ 2,121,085	\$ 2,621,861	\$ 3,150,362	\$ 3,708,427
28 Distribution	\$ 207,031	\$ 414,062	\$ 630,726	\$ 878,557	\$ 1,131,142	\$ 1,398,091	\$ 1,680,039	\$ 1,977,646
29 Office	\$ 88,200	\$ 176,400	\$ 272,538	\$ 280,714	\$ 289,136	\$ 297,810	\$ 306,744	\$ 315,946
30 Annual Lease Revenue	\$ 683,450	\$ 1,366,900	\$ 2,111,859	\$ 2,806,715	\$ 3,541,362	\$ 4,317,561	\$ 5,137,146	\$ 6,002,019
31 Less: Broker Commissions @4%	\$ 136,690	\$ 136,690	\$ 148,992	\$ 138,971	\$ 146,929	\$ 155,240	\$ 163,917	\$ 172,975
32 Land Sales (AC)								
33 Business Park	\$ 693,333	\$ 693,333	\$ 714,133	\$ 735,557	\$ 757,624	\$ 780,353	\$ 803,763	\$ 827,876
34 Less: Broker Commissions @4%	\$ 27,733	\$ 27,733	\$ 28,565	\$ 29,422	\$ 30,305	\$ 31,214	\$ 32,151	\$ 33,115
35 Existing Building Sales (SF)								
36 Manufacturing	\$ 440,475	\$ 440,475	\$ 453,889	\$ 467,300	\$ 481,319	\$ 495,798	\$ 510,631	\$ 525,950
37 Distribution	\$ 293,653	\$ 293,653	\$ 302,483	\$ 311,536	\$ 320,883	\$ 330,509	\$ 340,424	\$ 350,637
38 Office	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
39 Annual Building Sales Revenue	\$ 734,128	\$ 734,128	\$ 756,152	\$ 778,836	\$ 802,201	\$ 826,288	\$ 851,056	\$ 876,587
40 Less: Broker Commissions @4%	\$ 29,365	\$ 29,365	\$ 30,246	\$ 31,153	\$ 32,088	\$ 33,051	\$ 34,042	\$ 35,063
41 Opportunity Revenue								
42 Buildings 15-C & 16-C (Peterson Mfg)	\$ 705,600	\$ 705,600	\$ 726,768	\$ 748,571	\$ 771,028	\$ 794,159	\$ 817,984	\$ 842,523
43 Building 11	\$ -	\$ -	\$ 1,030,000	\$ -	\$ -	\$ -	\$ -	\$ -
44 Total Opportunity Revenue	\$ 705,600	\$ 705,600	\$ 1,756,768	\$ 748,571	\$ 771,028	\$ 794,159	\$ 817,984	\$ 842,523
45 Annual Revenues	\$ 2,816,511	\$ 3,688,980	\$ 5,338,912	\$ 6,089,880	\$ 6,972,216	\$ 7,718,341	\$ 8,549,948	\$ 9,549,006
46 Less: Broker Commissions @4%	\$ 476,028	\$ 183,788	\$ 248,003	\$ 199,547	\$ 208,322	\$ 219,806	\$ 230,110	\$ 241,163
47 Net Revenues	\$ 2,340,483	\$ 3,305,192	\$ 5,090,909	\$ 4,870,133	\$ 6,662,893	\$ 7,498,535	\$ 8,319,838	\$ 9,307,843
48 Cumulative Revenues	\$ 2,340,483	\$ 5,645,655	\$ 10,736,564	\$ 15,806,697	\$ 21,269,590	\$ 27,768,125	\$ 35,148,265	\$ 43,456,118
49	563,302.18							
ABSORPTION ASSUMPTIONS								
50 Existing Leasable Space (SF)		4,116,782						
51 Manufacturing	-	2,451,907	2,329,311.65	1	15	155,287.44	2,329,312	2.50
52 Distribution	-	1,634,455	1,552,732.25	1	15	103,515.48	1,552,732	2.00
53 Office	-	29,400	27,930	1	3	9,800	29,400	9.00
54 Land Sales (AC)	280	-	-	-	-	-	-	-
55 Business Park	260	-	260	1	15	17.33	260	40,000.00
56 Existing Building Sales (SF)		734,133						
57 Manufacturing	-	440,480	440,480	1	15	29,365	440,475	15.00
58 Distribution	-	293,653	293,653	1	15	19,577	293,653	15.00
59 Office	-	-	-	-	-	-	-	-
60 Opportunity Revenue								
61 Buildings 15-C & 16-C (Peterson Mfg)	-	560,000	560,000	1	1	560,000	560,000	1.26
62 Building 11	-	55,102	55,102	3	3	55,102	55,102	1,000,000
		5,484,897				100%	5,280,674	31,311

USACERL Technical Note:

1 Leasable space is based on gross buildings space less a 5% deduction to account for walls, mechanical rooms, and common areas.



Scenario: CERL1 Developed Scenario

Year	Year	Year	Year	Year	Year	Year	Year	Year	Year	Year	Year	Year	Cumulative
2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	5 Year Total
155,287	155,287	155,287	155,287	155,287	155,287	155,287	155,287	155,287	155,287	155,287	155,287	155,287	776,437
103,515	103,515	103,515	103,515	103,515	103,515	103,515	103,515	103,515	103,515	103,515	103,515	103,515	817,877
258,803	258,803	258,803	258,803	258,803	258,803	258,803	258,803	258,803	258,803	258,803	258,803	258,803	1,323,415
776,437	931,725	1,087,012	1,242,300	1,397,587	1,552,874	1,708,162	1,863,449	2,018,737	2,174,024	2,329,312	2,484,600	2,639,887	14,826
517,577	621,083	724,608	828,124	931,639	1,035,155	1,138,670	1,242,186	1,345,701	1,449,217	1,552,732	1,656,248	1,759,763	97,884
29,400	29,400	29,400	29,400	29,400	29,400	29,400	29,400	29,400	29,400	29,400	29,400	29,400	148,826
1,323,415	1,582,218	1,841,020	2,099,823	2,358,626	2,617,429	2,876,232	3,135,035	3,393,838	3,652,641	3,911,444	4,170,247	4,429,050	2,821
17.33	17.33	17.33	17.33	17.33	17.33	17.33	17.33	17.33	17.33	17.33	17.33	17.33	87
29,365	29,365	29,365	29,365	29,365	29,365	29,365	29,365	29,365	29,365	29,365	29,365	29,365	148,826
19,577	19,577	19,577	19,577	19,577	19,577	19,577	19,577	19,577	19,577	19,577	19,577	19,577	97,884
48,942	48,942	48,942	48,942	48,942	48,942	48,942	48,942	48,942	48,942	48,942	48,942	48,942	244,709
560,000	560,000	560,000	560,000	560,000	560,000	560,000	560,000	560,000	560,000	560,000	560,000	560,000	2,821
307,745	307,745	307,745	307,745	307,745	307,745	307,745	307,745	307,745	307,745	307,745	307,745	307,745	1,541
2,183,226	2,480,971	2,778,716	3,106,460	3,414,205	3,721,950	4,029,695	4,337,440	4,645,184	4,952,929	5,260,674	5,568,419	5,876,164	29,400
17.3	17.3	17.3	17.3	17.3	17.3	17.3	17.3	17.3	17.3	17.3	17.3	17.3	87
86.7	184.0	121.3	138.7	168.0	173.3	190.7	208.0	225.3	242.7	260.0	277.3	294.6	1,481

Year	Absorption Rate AC/DF/YR	Total Absorption	Unit Pricing	Baseline Income
15	155,287.44	2,329,312	2.50	5,823,270
15	103,515.48	1,552,732	2.00	3,105,465
3	9,800	29,400	9.00	264,800
15	17.33	260	40,000.00	10,400,000
15	29,365	440,475	15.00	6,607,125
15	19,577	293,853	15.00	4,404,795
1	560,000	560,000	1.26	705,600
3	55,102	55,102	1,000,000	1,000,000
	100%	5,260,674		31,210,984

id common areas.

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Year 11 2009	Year 12 2010	Year 13 2011	Year 14 2012	Year 15 2013	Cumulative Forecast		
					5 Year Total	10 Year Total	15 Year Total
5,287	155,287	155,287	155,287	155,287	774,437	1,662,674	2,328,312
3,515	103,515	103,515	103,515	103,515	617,577	1,035,185	1,662,732
1,803	258,803	258,803	258,803	258,803	29,400	29,400	29,400
					1,223,415	2,617,429	3,911,444
162	1,663,449	2,018,737	2,174,024	2,329,312			2,329,312
670	1,242,186	1,345,701	1,449,217	1,552,732			1,552,732
400	29,400	29,400	29,400	29,400			29,400
232	3,135,035	3,393,838	3,652,641	3,911,444			3,911,444
7.33	17.33	17.33	17.33	17.33	87	173	260
365	29,365	29,365	29,365	29,365	144,935	293,880	440,475
577	19,577	19,577	19,577	19,577	97,884	194,768	293,653
942	48,942	48,942	48,942	48,942	244,708	489,419	734,128
							880,000
							85,102
000	560,000	560,000	560,000	560,000			515,102
746	307,746	307,746	307,746	307,746			
885	4,337,440	4,545,184	4,852,929	5,260,674			5,260,674
7.3	17.3	17.3	17.3	17.3			
10.7	208.0	226.3	242.7	260.0			

910	\$ 6,280,800	\$ 6,988,010	\$ 7,749,097	\$ 8,551,082	\$ 6,132,781	\$ 24,238,307	\$ 89,847,704
413	\$ 3,336,788	\$ 3,725,531	\$ 4,132,473	\$ 4,560,479	\$ 3,370,517	\$ 13,340,488	\$ 31,889,182
243	\$ 355,800	\$ 366,288	\$ 377,256	\$ 388,574	\$ 1,106,988	\$ 2,889,089	\$ 4,821,041
565	\$ 9,065,188	\$ 11,077,808	\$ 12,259,826	\$ 13,500,735	\$ 10,610,385	\$ 40,786,804	\$ 86,437,827
587	\$ 213,325	\$ 224,524	\$ 236,204	\$ 248,382	\$ 708,272	\$ 1,475,126	\$ 2,700,147
943	\$ 931,782	\$ 969,735	\$ 988,526	\$ 1,018,183	\$ 3,893,991	\$ 7,736,980	\$ 12,899,951
186	\$ 37,271	\$ 38,389	\$ 39,541	\$ 40,727	\$ 143,789	\$ 309,479	\$ 601,884
720	\$ 591,982	\$ 609,720	\$ 628,012	\$ 646,852	\$ 2,283,368	\$ 4,915,307	\$ 7,986,874
51	\$ 304,845	\$ 406,484	\$ 418,579	\$ 431,239	\$ 1,822,188	\$ 3,378,905	\$ 5,311,103
	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
171	\$ 986,807	\$ 1,016,205	\$ 1,046,891	\$ 1,078,092	\$ 3,805,446	\$ 6,182,212	\$ 13,277,877
115	\$ 39,464	\$ 40,848	\$ 41,888	\$ 43,124			
48	\$ 948,267	\$ 976,715	\$ 1,006,017	\$ 1,036,197	\$ 3,987,867	\$ 7,873,885	\$ 12,781,710
48	\$ 948,267	\$ 976,715	\$ 1,006,017	\$ 1,036,197	\$ 1,030,000	\$ 1,030,000	\$ 1,030,000
					\$ 4,987,867	\$ 8,803,885	\$ 13,791,710
27	\$ 12,821,844	\$ 14,039,464	\$ 15,300,082	\$ 16,633,208	\$ 22,897,279	\$ 65,889,982	\$ 136,047,186
87	\$ 290,080	\$ 309,882	\$ 317,612	\$ 332,239	\$ 1,327,889	\$ 2,836,734	\$ 4,086,389
39	\$ 12,831,784	\$ 13,736,802	\$ 14,682,449	\$ 15,600,875	\$ 21,289,890	\$ 63,054,128	\$ 131,889,879
57	\$ 85,980,551	\$ 100,707,454	\$ 115,889,933	\$ 131,980,879			

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Table 4.8. CERL1 Projected Tax Increment Finance Revenues.

**Projected Tax Increment Financing (TIF) Revenues
Defense Depot Ogden**

1 2 3 4	DEVELOPMENT YEAR		Year						
			1 1999	2 2000	3 2001	4 2002	5 2003		
3	TAXABLE DDO INVENTORY	FAR	%						
5	Existing Space			317,545	317,545	317,545	307,745	307,74	
6	New Inventory		100%	281,508	281,508	281,508	281,508	281,50	
7	New Industrial	0.37	48%	125,204	125,204	125,204	125,204	125,20	
8	New Distribution	0.35	32%	82,805	82,805	82,805	82,805	82,80	
9	New Office	0.42	23%	73,497	73,497	73,497	73,497	73,49	
10	Opportunity Revenues			580,000	-	55,102	-	-	
11	Total Annual Space			1,199,060	599,060	654,162	599,290	599,25	
12	Cumulative Taxable Inventory			1,199,060	1,758,101	2,412,263	3,001,504	3,590,75	
14	Building Value Appreciation		5%	1	1.05	1.10	1.16	1.2	
16	Growth in Assessed Value @	\$ 10.00	SF	10	10.50	11.03	11.58	12.1	
17		\$ 15.00	SF	15	15.75	16.54	17.36	18.2	
18		\$ 20.00	SF	20	21.00	22.05	23.15	24.3	
20	Assessed Valuation @	\$ 10.00	SF	\$ 11,590,505	\$ 18,460,060	\$ 26,595,094	\$ 34,746,160	\$ 43,645,84	
21		\$ 15.00	SF	\$ 17,385,757	\$ 27,690,090	\$ 39,892,642	\$ 52,119,240	\$ 66,468,76	
22		\$ 20.00	SF	\$ 23,181,010	\$ 36,920,120	\$ 53,190,189	\$ 69,492,320	\$ 87,291,68	
24	Total Property Taxes @	\$ 10.00	SF	1.7869%	\$ 207,111	\$ 329,863	\$ 475,228	\$ 620,879	\$ 779,90
25		\$ 15.00	SF	1.7869%	\$ 310,666	\$ 494,794	\$ 712,842	\$ 931,319	\$ 1,169,861
26		\$ 20.00	SF	1.7869%	\$ 414,221	\$ 659,726	\$ 950,455	\$ 1,241,758	\$ 1,559,815
28	Retained Tax Increment @	\$ 10.00	100%	50%	207,111	122,752	268,117	413,768	572,797
29		\$ 15.00	100%	80%	310,666	184,128	402,176	620,653	859,195
30		\$ 20.00	100%	50%	414,221	245,504	536,234	827,537	1,145,594
34	Cash Flow Deficit/Surplus			(4,065,565)	(733,296)	(3,597,754)	766,246	(4,537,672)	
35	Plus Debt Service Reserve		2.5%	(101,639)	(18,332)	(89,944)	19,156	(113,442)	
37	Principal Borrowed			(4,083,860)	(736,596)	(3,613,944)	-	(4,558,091)	
39	Annual Debt Service			\$ (356,050)	\$ (420,269)	\$ (735,349)	\$ (735,349)	\$ (1,132,745)	
41	Retained Tax Increment @	\$ 10.00		\$ 207,111	\$ 122,752	\$ 268,117	\$ 413,768	\$ 572,797	
42	Annual Debt Service			\$ (356,050)	\$ (420,269)	\$ (735,349)	\$ (735,349)	\$ (1,132,745)	
43	Debt Service Deficit/Surplus			\$ (148,939)	\$ (297,517)	\$ (467,232)	\$ (321,581)	\$ (559,948)	
44	Cumulative 15-Year Deficit/Surplus								
46	Retained Tax Increment @	\$ 15.00		\$ 310,666	\$ 184,128	\$ 402,176	\$ 620,653	\$ 859,195	
47	Annual Debt Service			\$ (356,050)	\$ (420,269)	\$ (735,349)	\$ (735,349)	\$ (1,132,745)	
48	Debt Service Deficit/Surplus			\$ (45,383)	\$ (236,141)	\$ (333,174)	\$ (114,697)	\$ (273,549)	
49	Cumulative 15-Year Deficit/Surplus								
51	Retained Tax Increment @	\$ 20.00		\$ 414,221	\$ 245,504	\$ 536,234	\$ 827,537	\$ 1,145,594	
52	Annual Debt Service			\$ (356,050)	\$ (420,269)	\$ (735,349)	\$ (735,349)	\$ (1,132,745)	
53	Debt Service Deficit/Surplus			\$ 58,172	\$ (174,765)	\$ (199,115)	\$ 92,187	\$ 12,840	
54	Cumulative 15-Year Deficit/Surplus								

USACERL Technical Notes

USACERL's investigation of the DDO EDC application revealed that ERA's baseline estimate of assessed valuation for DDO of \$10 SF was most likely understated. Current building sales in the regional real estate market and the OLRA's proposed renovations to existing buildings likely put baseline assessed value at \$15 SF, or more.

Scenario: CERL1 Developed Scenario

Year 1 1999	Year 2 2000	Year 3 2001	Year 4 2002	Year 5 2003	Year 6 2004	Year 7 2005	Year 8 2006	Year 9 2007	Year 10 2008	Year 11 2009	Year 12 2010	
317,545	317,545	317,545	307,745	307,745	307,745	307,745	307,745	307,745	307,745	307,745	307,745	
281,506	281,506	281,506	281,506	281,506	281,506	281,506	281,506	281,506	281,506	281,506	281,506	
125,204	125,204	125,204	125,204	125,204	125,204	125,204	125,204	125,204	125,204	125,204	125,204	
82,805	82,805	82,805	82,805	82,805	82,805	82,805	82,805	82,805	82,805	82,805	82,805	
73,497	73,497	73,497	73,497	73,497	73,497	73,497	73,497	73,497	73,497	73,497	73,497	
580,000	-	55,102	-	-	-	-	-	-	-	-	-	
1,159,060	599,080	654,182	589,250	589,250	589,250	589,250	589,250	589,250	589,250	589,250	589,250	
1,159,080	1,758,101	2,412,253	3,001,504	3,590,754	4,180,005	4,769,255	5,358,506	5,947,756	6,537,007	7,126,257	7,715,508	
1	1.05	1.10	1.16	1.22	1.28	1.34	1.41	1.48	1.55	1.63	1.71	
10	10.50	11.03	11.58	12.16	12.76	13.40	14.07	14.77	15.51	16.29	17.10	
15	15.75	16.54	17.36	18.23	19.14	20.10	21.11	22.16	23.27	24.43	25.66	
20	21.00	22.05	23.15	24.31	25.53	26.80	28.14	29.55	31.03	32.58	34.21	
1,590,505	\$ 18,460,060	\$ 26,595,094	\$ 34,746,160	\$ 43,845,844	\$ 53,348,832	\$ 63,912,584	\$ 75,399,559	\$ 87,875,450	\$ 101,410,432	\$ 116,079,223	\$ 131,961,367	\$ 149,141
7,366,757	\$ 27,990,090	\$ 39,882,642	\$ 52,119,240	\$ 65,468,767	\$ 80,022,948	\$ 95,868,876	\$ 113,099,338	\$ 131,813,175	\$ 162,115,848	\$ 174,118,634	\$ 197,942,051	\$ 223,712
1,181,010	\$ 36,920,120	\$ 53,190,189	\$ 69,492,320	\$ 87,291,689	\$ 107,825,167	\$ 127,825,167	\$ 150,799,118	\$ 175,750,901	\$ 202,820,864	\$ 232,158,446	\$ 263,022,734	\$ 298,283
207,111	\$ 329,863	\$ 475,228	\$ 620,879	\$ 779,908	\$ 953,287	\$ 1,142,054	\$ 1,347,315	\$ 1,570,246	\$ 1,812,103	\$ 2,074,220	\$ 2,358,018	\$ 2,665
310,866	\$ 484,794	\$ 712,842	\$ 931,319	\$ 1,169,961	\$ 1,429,930	\$ 1,713,061	\$ 2,020,972	\$ 2,365,370	\$ 2,748,185	\$ 3,111,329	\$ 3,537,027	\$ 3,987
414,221	\$ 659,726	\$ 950,455	\$ 1,241,758	\$ 1,559,815	\$ 1,906,573	\$ 2,284,108	\$ 2,694,829	\$ 3,140,493	\$ 3,624,206	\$ 4,148,439	\$ 4,716,035	\$ 5,330
207,111	122,752	268,117	413,768	572,797	746,176	934,943	1,140,204	1,363,136	1,604,992	933,554	1,075,453	1,228
310,866	184,128	402,176	620,653	859,195	1,119,264	1,402,415	1,710,306	2,044,704	2,407,488	1,400,332	1,613,180	1,843
414,221	245,504	536,234	827,537	1,145,594	1,492,352	1,869,886	2,280,408	2,726,271	3,209,985	1,867,109	2,150,907	2,457
.065,565	(733,296)	(3,597,754)	766,246	(4,537,672)	2,163,724	(1,019,058)	3,965,244	258,883	(72,094)	3,385,831	4,307,131	5,400
(101,839)	(18,332)	(89,944)	19,156	(113,442)	54,093	(25,478)	99,131	6,472	(1,802)	84,646	107,878	135
.083,860	(736,596)	(3,613,944)	-	(4,558,091)	-	(1,023,844)	-	-	(72,418)	-	-	-
356,050	(420,269)	(735,349)	(735,349)	(1,132,745)	(1,132,745)	(1,221,991)	(1,221,991)	(1,221,991)	(1,228,304)	(1,228,304)	(1,228,304)	(1,228
207,111	\$ 122,752	\$ 268,117	\$ 413,768	\$ 572,797	\$ 746,176	\$ 934,943	\$ 1,140,204	\$ 1,363,136	\$ 1,604,992	\$ 933,554	\$ 1,075,453	\$ 1,228
356,050	(420,269)	(735,349)	(735,349)	(1,132,745)	(1,132,745)	(1,221,991)	(1,221,991)	(1,221,991)	(1,228,304)	(1,228,304)	(1,228,304)	(1,228
148,939	(297,517)	(467,232)	(321,581)	(589,948)	(386,589)	(287,047)	(81,787)	141,146	376,699	(294,790)	(182,861)	(
310,666	\$ 184,128	\$ 402,176	\$ 620,653	\$ 859,195	\$ 1,119,264	\$ 1,402,415	\$ 1,710,306	\$ 2,044,704	\$ 2,407,488	\$ 1,400,332	\$ 1,613,180	\$ 1,843
356,050	(420,269)	(735,349)	(735,349)	(1,132,745)	(1,132,745)	(1,221,991)	(1,221,991)	(1,221,991)	(1,228,304)	(1,228,304)	(1,228,304)	(1,228
(48,383)	(238,141)	(393,174)	(114,667)	(273,549)	(13,461)	180,424	498,315	822,713	1,176,184	172,027	384,876	615
114,221	\$ 245,504	\$ 536,234	\$ 827,537	\$ 1,145,594	\$ 1,492,352	\$ 1,869,886	\$ 2,280,408	\$ 2,726,271	\$ 3,209,985	\$ 1,867,109	\$ 2,150,907	\$ 2,457
356,050	(420,269)	(735,349)	(735,349)	(1,132,745)	(1,132,745)	(1,221,991)	(1,221,991)	(1,221,991)	(1,228,304)	(1,228,304)	(1,228,304)	(1,228
58,172	(174,765)	(199,115)	92,187	12,849	359,607	647,896	1,058,417	1,504,291	1,991,680	638,805	822,802	1,229

if assessed valuation for DDO of \$10 SF was most likely understated.
to existing buildings likely put baseline assessed value at \$15 SF, or more.

L1 Developed Scenario

Year 7 2005	Year 8 2006	Year 9 2007	Year 10 2008	Year 11 2009	Year 12 2010	Year 13 2011	Year 14 2012	Year 15 2013
307,745	307,745	307,745	307,745	307,745	307,745	307,745	307,745	307,745
281,506	281,506	281,506	281,506	281,506	281,506	281,506	281,506	281,506
125,204	125,204	125,204	125,204	125,204	125,204	125,204	125,204	125,204
82,805	82,805	82,805	82,805	82,805	82,805	82,805	82,805	82,805
73,497	73,497	73,497	73,497	73,497	73,497	73,497	73,497	73,497
589,280	589,280	589,280	589,280	589,280	589,280	589,280	589,280	589,280
589,255	5,358,806	5,947,756	5,537,007	7,126,257	7,716,508	8,304,758	8,894,008	9,483,258
1.34	1.41	1.48	1.55	1.63	1.71	1.80	1.89	1.98
13.40	14.07	14.77	15.51	16.29	17.10	17.96	18.86	19.80
20.10	21.11	22.16	23.27	24.43	25.66	26.94	28.28	29.70
26.80	28.14	29.55	31.03	32.58	34.21	35.92	37.71	39.60
12,584	\$ 75,399,559	\$ 87,875,450	\$ 101,410,432	\$ 116,079,223	\$ 131,961,367	\$ 149,141,528	\$ 167,709,801	\$ 187,782,047
68,876	\$ 113,089,338	\$ 131,813,175	\$ 152,115,648	\$ 174,118,934	\$ 197,942,051	\$ 223,712,291	\$ 251,564,701	\$ 281,643,071
25,167	\$ 150,799,118	\$ 175,750,901	\$ 202,820,864	\$ 232,158,448	\$ 263,922,734	\$ 298,283,056	\$ 335,419,601	\$ 375,824,084
42,054	\$ 1,347,315	\$ 1,570,248	\$ 1,812,103	\$ 2,074,220	\$ 2,358,018	\$ 2,665,010	\$ 2,996,506	\$ 3,355,120
13,081	\$ 2,020,972	\$ 2,365,370	\$ 2,718,155	\$ 3,111,329	\$ 3,537,027	\$ 3,997,518	\$ 4,498,210	\$ 5,032,680
34,108	\$ 2,694,629	\$ 3,140,493	\$ 3,624,206	\$ 4,148,439	\$ 4,716,035	\$ 5,330,020	\$ 5,983,613	\$ 6,710,240
34,943	1,140,204	1,363,136	1,604,992	933,554	1,075,453	1,228,950	1,394,848	1,574,005
32,415	1,710,306	2,044,704	2,407,488	1,400,332	1,613,180	1,843,424	2,092,272	2,361,007
39,886	2,280,408	2,726,271	3,209,985	1,867,109	2,150,907	2,457,899	2,789,696	3,148,009
9,058	3,965,244	258,583	(72,094)	3,385,831	4,307,131	5,400,216	5,107,426	6,068,413
5,478	99,131	6,472	(1,802)	84,646	107,678	135,005	127,686	201,480
3,644	-	-	(72,418)	-	-	-	-	-
1,991	(1,221,991)	(1,221,991)	(1,228,304)	(1,228,304)	(1,228,304)	(1,228,304)	(1,228,304)	(1,228,304)
4,943	\$ 1,140,204	\$ 1,363,136	\$ 1,604,992	\$ 933,554	\$ 1,075,453	\$ 1,228,950	\$ 1,394,848	\$ 1,574,005
1,991	\$ (1,221,991)	\$ (1,221,991)	\$ (1,228,304)	\$ (1,228,304)	\$ (1,228,304)	\$ (1,228,304)	\$ (1,228,304)	\$ (1,228,304)
7,047	\$ (81,787)	\$ 141,145	\$ 378,688	\$ (294,750)	\$ (182,861)	\$ 645	\$ 189,544	\$ 345,700
								(1,867,488)
2,415	\$ 1,710,306	\$ 2,044,704	\$ 2,407,488	\$ 1,400,332	\$ 1,613,180	\$ 1,843,424	\$ 2,092,272	\$ 2,361,007
1,991	\$ (1,221,991)	\$ (1,221,991)	\$ (1,228,304)	\$ (1,228,304)	\$ (1,228,304)	\$ (1,228,304)	\$ (1,228,304)	\$ (1,228,304)
0,424	\$ 488,315	\$ 822,713	\$ 1,179,184	\$ 172,027	\$ 384,876	\$ 615,120	\$ 883,967	\$ 1,132,703
								4,822,905
3,886	\$ 2,280,408	\$ 2,726,271	\$ 3,209,985	\$ 1,867,109	\$ 2,150,907	\$ 2,457,899	\$ 2,789,696	\$ 3,148,009
1,991	\$ (1,221,991)	\$ (1,221,991)	\$ (1,228,304)	\$ (1,228,304)	\$ (1,228,304)	\$ (1,228,304)	\$ (1,228,304)	\$ (1,228,304)
7,896	\$ 1,058,417	\$ 1,804,281	\$ 1,981,680	\$ 638,805	\$ 922,803	\$ 1,229,585	\$ 1,581,391	\$ 1,919,705
								11,813,308

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Table A.9. CERL1 Business Plan Pro Forma Summary.

**15-Year Pro Forma Analysis
Defense Depot Ogden**

Scenario: CERL1 Developed Scenario w/ TIF

	0	Year 1 1999	Year 2 2000	Year 3 2001	Year 4 2002	Year 5 2003	Year 6 2004	Year 7 2005	Year 8 2006
1 DEVELOPMENT YEAR									
2									
3 REVENUES									
	Basis								
4 Potential Lease Revenue	\$	683,450	\$ 1,266,800	\$ 2,111,850	\$ 2,806,715	\$ 3,541,362	\$ 4,317,561	\$ 5,137,146	\$ 6,002,019
5 Land Sales	\$	693,333	\$ 693,333	\$ 714,133	\$ 735,557	\$ 757,624	\$ 780,353	\$ 803,763	\$ 827,876
6 Building Sales	\$	724,128	\$ 734,128	\$ 756,152	\$ 778,836	\$ 802,201	\$ 826,288	\$ 851,056	\$ 876,587
7 Opportunity Revenue	\$	705,800	\$ 705,800	\$ 1,756,768	\$ 748,571	\$ 771,028	\$ 794,150	\$ 817,984	\$ 842,523
8 OEA Grant Funds	\$	400,000	\$ 300,000	\$ 200,000	\$ 100,000	\$ -	\$ -	\$ -	\$ -
9									
10 Less: Brokers Commissions	4%	\$ 478,028	\$ 192,798	\$ 249,003	\$ 199,547	\$ 209,322	\$ 219,505	\$ 230,110	\$ 241,153
11 Less: Local Match Funds	\$	685,000	\$ 30,000	\$ 770,000	\$ 123,875	\$ 750,000	\$ -	\$ -	\$ -
12 Less: Vacancy and Collection Loss	8%	\$ 54,675.97	\$ 109,281.93	\$ 168,948.73	\$ 224,837.22	\$ 283,308.96	\$ 345,404.92	\$ 410,971.66	\$ 480,161.54
13 Effective Gross Revenue	\$	2,020,807	\$ 2,466,820	\$ 4,380,880	\$ 4,611,721	\$ 4,628,884	\$ 6,163,431	\$ 6,888,867	\$ 7,827,891
14									
15 OPERATING EXPENSES									
16 Salaries and Benefits	\$	240,000	\$ 240,000	\$ 247,200	\$ 254,816	\$ 262,254	\$ 270,122	\$ 278,226	\$ 286,573
17 Administrative	\$	80,000	\$ 80,000	\$ 81,800	\$ 83,654	\$ 85,564	\$ 87,531	\$ 89,558	\$ 91,643
18 Marketing	\$	75,000	\$ 75,000	\$ 71,250	\$ 67,888	\$ 64,303	\$ 57,873	\$ 52,086	\$ 46,877
19 Maintenance	\$	0.50	\$ 2,191,585	\$ 2,093,778	\$ 1,968,919	\$ 1,840,546	\$ 1,731,847	\$ 1,605,423	\$ 1,489,854
20 Army Repayment	\$	1,000,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
21 Property Management	1.5%	\$ 31,684	\$ 41,915	\$ 53,732	\$ 64,817	\$ 76,518	\$ 88,863	\$ 101,879	\$ 115,307
22 Total Operating Expenses	\$	2,898,228	\$ 2,815,941	\$ 2,388,808	\$ 2,308,484	\$ 2,303,891	\$ 2,094,183	\$ 1,876,826	\$ 1,861,464
23 Inflation	3%								
24									
25									
26 NET OPERATING INCOME (NOI)	\$	(877,422)	\$ 650,879	\$ 1,992,072	\$ 2,303,237	\$ 2,425,994	\$ 4,069,278	\$ 4,992,042	\$ 5,976,237
27									
28 INFRASTRUCTURE COSTS									
29 Infrastructure Improvements	\$	3,103,022	\$ -	\$ 5,315,406	\$ -	\$ 6,623,022	\$ -	\$ 5,558,679	\$ -
30 Building Renovation	\$	1,838,122	\$ 1,884,175	\$ 1,734,700	\$ 1,786,741	\$ 1,840,344	\$ 1,895,554	\$ 1,952,421	\$ 2,010,993
31 TOTAL INFRASTRUCTURE COSTS	\$	4,738,144	\$ 1,884,175	\$ 7,050,106	\$ 1,786,741	\$ 8,463,366	\$ 1,895,554	\$ 7,511,099	\$ 2,010,993
32									
33 INFRASTRUCTURE FUNDING									
34 EDA Grant Funds	0.5	\$ 1,250,000	\$ -	\$ 1,500,000	\$ 247,750	\$ 1,500,000	\$ -	\$ 1,500,000	\$ -
35									
36 ANNUAL CASH FLOW	\$	(4,088,885)	\$ (733,296)	\$ (3,897,764)	\$ 786,246	\$ (4,637,672)	\$ 2,163,724	\$ (1,019,068)	\$ 3,965,244
37									
38 TIF BOND ISSUES	0	\$ 4,083,880	\$ 736,896	\$ 3,813,944	\$ -	\$ 4,658,091	\$ -	\$ 1,023,644	\$ -
39									
40 NET CASH FLOW	\$	18,295	\$ 3,300	\$ 16,190	\$ 786,246	\$ 20,420	\$ 2,163,724	\$ 4,596	\$ 3,965,244
41 Year -18 Principal Balance	1								
42									
43 CUMULATIVE CASH FLOW	\$	18,295	\$ 21,595	\$ 37,785	\$ 804,031	\$ 824,450	\$ 2,988,174	\$ 2,992,760	\$ 6,958,004
44									
45 DISCOUNTED CASH FLOWS @ 16%	\$	16,772	\$ 2,462	\$ 10,372	\$ 423,191	\$ 6,722	\$ 688,084	\$ 1,823	\$ 1,209,600
46									
47 NET PRESENT VALUE OF CASH FLOWS	\$	6,308,805							
48 YEAR-18 RESIDUAL AT 16% CAP RATE	\$	5,786,137							
49 INDICATED BUSINESS PLAN VALUE	\$	12,107,541							
50									
51 DISCOUNTED CASH FLOWS @ 13%	\$	16,190	\$ 2,884	\$ 11,220	\$ 498,863	\$ 11,083	\$ 1,038,277	\$ 1,949	\$ 1,401,886
52									
53 NET PRESENT VALUE OF CASH FLOWS	\$	8,320,345							
54 YEAR-18 RESIDUAL AT 13% CAP RATE	\$	8,888,772							
55 INDICATED BUSINESS PLAN VALUE	\$	18,516,517							

USACERL Technical Notes

Scenario maintains assumptions consistent with the OLRA business plan including TIF revenue and no retirement of outstanding principal on TIF bonds in Year 18.



Scenario: CERL1 Developed Scenario w/ TIF Contributions

Year 4 2002	Year 5 2003	Year 6 2004	Year 7 2005	Year 8 2006	Year 9 2007	Year 10 2008	Year 11 2009	Year 12 2010	Year 13 2011	Year 14 2012	Year 15 2013	Cumulative 5 Year Total
2,808,715 \$	3,541,382 \$	4,317,561 \$	5,137,146 \$	6,002,010 \$	6,914,162 \$	7,875,631 \$	8,888,565 \$	9,955,188 \$	11,077,808 \$	12,258,826 \$	13,500,735 \$	10,810,385 \$
735,567 \$	757,824 \$	780,353 \$	803,763 \$	827,876 \$	852,713 \$	878,294 \$	904,643 \$	931,782 \$	959,735 \$	988,528 \$	1,018,183 \$	3,893,981 \$
778,836 \$	802,201 \$	826,288 \$	851,056 \$	876,587 \$	902,885 \$	929,971 \$	957,871 \$	986,607 \$	1,016,205 \$	1,046,691 \$	1,078,092 \$	3,808,448 \$
748,571 \$	771,028 \$	794,159 \$	817,984 \$	842,523 \$	867,790 \$	893,833 \$	920,648 \$	948,267 \$	976,715 \$	1,006,017 \$	1,036,197 \$	4,887,887 \$
100,000 \$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	1,000,000 \$
199,547 \$	209,322 \$	219,505 \$	230,110 \$	241,153 \$	252,652 \$	264,624 \$	277,087 \$	290,060 \$	303,562 \$	317,612 \$	332,233 \$	1,327,888 \$
123,875 \$	750,000 \$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	2,348,875 \$
24,537.22 \$	283,308.98 \$	345,404.92 \$	410,971.96 \$	480,161.54 \$	553,132.93 \$	630,050.47 \$	711,088.24 \$	796,415.05 \$	886,224.67 \$	980,708.10 \$	1,080,068.80 \$	840,833 \$
4,811,721 \$	4,828,884 \$	6,183,431 \$	6,888,867 \$	7,827,881 \$	8,731,773 \$	9,683,084 \$	10,683,884 \$	11,736,388 \$	12,840,678 \$	14,001,743 \$	15,220,916 \$	30,407,883 \$
282,254 \$	270,122 \$	278,226 \$	286,573 \$	295,170 \$	304,025 \$	313,146 \$	322,540 \$	332,216 \$	342,183 \$	352,448 \$	362,922 \$	1,274,193 \$
85,564 \$	67,931 \$	69,556 \$	71,643 \$	73,792 \$	76,006 \$	78,286 \$	80,635 \$	83,054 \$	85,548 \$	88,112 \$	90,755 \$	318,648 \$
84,203 \$	57,873 \$	52,086 \$	48,877 \$	42,189 \$	37,970 \$	34,173 \$	30,756 \$	27,680 \$	24,912 \$	22,421 \$	20,179 \$	358,113 \$
1,849,546 \$	1,731,847 \$	1,806,423 \$	1,489,854 \$	1,324,705 \$	1,169,526 \$	1,003,843 \$	827,167 \$	638,986 \$	438,770 \$	225,967 \$	\$	8,838,883 \$
84,817 \$	76,818 \$	88,883 \$	101,879 \$	115,597 \$	130,046 \$	145,258 \$	161,286 \$	178,104 \$	195,806 \$	214,411 \$	233,985 \$	388,846 \$
2,308,484 \$	2,203,891 \$	2,084,183 \$	1,978,826 \$	1,861,454 \$	1,717,673 \$	1,574,707 \$	1,422,384 \$	1,280,040 \$	1,087,217 \$	903,389 \$	707,911 \$	12,023,162 \$
2,308,237 \$	2,426,884 \$	4,088,278 \$	4,992,042 \$	6,976,237 \$	7,014,199 \$	8,108,348 \$	9,281,180 \$	10,475,329 \$	11,783,480 \$	13,088,386 \$	14,513,006 \$	7,088,740 \$
\$	6,823,022 \$	\$	5,558,670 \$	\$	4,683,994 \$	6,048,979 \$	3,677,893 \$	3,904,808 \$	4,021,952 \$	5,589,728 \$	3,981,323 \$	16,041,449 \$
1,788,741 \$	1,840,344 \$	1,896,554 \$	1,952,421 \$	2,010,993 \$	2,071,323 \$	2,133,483 \$	2,197,467 \$	2,263,391 \$	2,331,292 \$	2,401,231 \$	2,473,288 \$	8,881,082 \$
1,788,741 \$	8,483,386 \$	1,886,654 \$	7,611,089 \$	2,010,993 \$	6,788,317 \$	8,180,442 \$	8,878,389 \$	6,168,188 \$	6,383,344 \$	7,880,888 \$	6,484,891 \$	23,723,832 \$
247,750 \$	1,500,000 \$	\$	1,500,000 \$	\$	\$	\$	\$	\$	\$	\$	\$	4,487,780 \$
788,286 \$	(4,637,672) \$	2,183,724 \$	(1,018,068) \$	3,965,244 \$	258,883 \$	(72,094) \$	3,388,831 \$	4,307,131 \$	5,400,216 \$	6,107,426 \$	8,088,413 \$	(12,188,043) \$
\$	4,888,091 \$	\$	1,023,844 \$	\$	\$	72,418 \$	\$	\$	\$	\$	\$	12,882,482 \$
788,286 \$	20,420 \$	2,183,724 \$	4,686 \$	3,965,244 \$	258,883 \$	324 \$	3,388,831 \$	4,307,131 \$	5,400,216 \$	6,107,426 \$	8,088,413 \$	824,480 \$
804,031 \$	824,480 \$	2,888,174 \$	2,982,780 \$	6,968,004 \$	7,216,887 \$	7,217,211 \$	10,803,042 \$	14,810,173 \$	20,210,388 \$	26,417,916 \$	33,478,228 \$	
423,191 \$	6,722 \$	888,084 \$	1,823 \$	1,209,500 \$	88,074 \$	74 \$	661,848 \$	728,891 \$	784,288 \$	858,438 \$	888,720 \$	
888,883 \$	11,083 \$	1,038,277 \$	1,940 \$	1,491,886 \$	88,178 \$	86 \$	882,878 \$	983,980 \$	1,102,832 \$	922,792 \$	1,288,488 \$	

ending principal

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3/18

Year	Year					Cumulative Forecast		
	11 2009	12 2010	13 2011	14 2012	15 2013	5 Year Total	10 Year Total	15 Year Total
10								
208								
31	\$ 8,888,565	\$ 9,955,188	\$ 11,077,808	\$ 12,258,826	\$ 13,500,735	10,810,388	40,788,804	88,437,987
24	\$ 904,843	\$ 951,782	\$ 959,735	\$ 988,528	\$ 1,018,183	3,883,881	7,738,980	12,838,861
71	\$ 957,871	\$ 988,807	\$ 1,016,205	\$ 1,046,891	\$ 1,078,022	3,808,446	8,183,212	13,377,877
33	\$ 920,848	\$ 948,257	\$ 976,715	\$ 1,006,017	\$ 1,036,107	4,887,857	8,903,886	13,791,710
	\$ -	\$ -	\$ -	\$ -	\$ -	1,000,000	1,000,000	1,000,000
24	\$ 277,087	\$ 290,080	\$ 303,562	\$ 317,612	\$ 332,233	1,327,889	2,536,734	4,088,888
	\$ -	\$ -	\$ -	\$ -	\$ -	2,348,878	2,348,878	2,348,878
47	\$ 711,085.24	\$ 798,415.05	\$ 886,224.67	\$ 980,708.10	\$ 1,080,058.80	840,833	3,380,844	7,716,034
54	\$ 10,883,884	\$ 11,736,388	\$ 12,840,878	\$ 14,001,743	\$ 15,320,916	20,407,882	60,880,443	124,883,387
46	\$ 322,540	\$ 332,216	\$ 342,183	\$ 352,448	\$ 363,022	1,374,193	2,781,331	4,483,738
36	\$ 80,635	\$ 83,054	\$ 85,546	\$ 88,112	\$ 90,785	318,848	687,833	1,116,836
73	\$ 30,786	\$ 27,880	\$ 24,912	\$ 22,421	\$ 20,179	336,113	648,408	878,388
43	\$ 827,167	\$ 838,888	\$ 438,770	\$ 225,987	\$ -	8,836,882	18,388,002	18,338,882
	\$ -	\$ -	\$ -	\$ -	\$ -	288,848	880,380	1,833,833
58	\$ 181,286	\$ 178,104	\$ 198,806	\$ 214,411	\$ 233,965	12,023,182	21,597,388	28,818,788
77	\$ 1,422,384	\$ 1,380,040	\$ 1,087,217	\$ 803,388	\$ 707,811	7,088,740	37,308,844	88,308,213
18	\$ 8,281,180	\$ 10,478,338	\$ 11,783,480	\$ 13,088,388	\$ 14,813,008	18,041,448	31,331,101	62,808,804
19	\$ 3,677,893	\$ 3,804,808	\$ 4,021,062	\$ 5,589,728	\$ 3,081,323	8,881,082	18,744,838	30,411,484
13	\$ 2,187,467	\$ 2,283,391	\$ 2,331,292	\$ 2,401,231	\$ 2,473,288	23,722,832	80,078,838	83,818,388
2	\$ 8,878,388	\$ 8,188,188	\$ 6,383,344	\$ 7,980,888	\$ 6,484,881	4,487,780	8,887,780	8,887,780
	\$ -	\$ -	\$ -	\$ -	\$ -	(12,188,042)	(6,871,342)	18,887,878
4)	\$ 3,388,831	\$ 4,307,131	\$ 5,400,218	\$ 5,107,428	\$ 8,088,413	12,882,482	14,088,884	14,088,884
8	\$ -	\$ -	\$ -	\$ -	\$ -	824,480	7,217,211	83,478,238
4	\$ 3,388,831	\$ 4,307,131	\$ 5,400,218	\$ 5,107,428	\$ 8,088,413			
1	\$ 10,803,042	\$ 14,810,173	\$ 20,310,388	\$ 26,417,818	\$ 33,478,238			
4	\$ 881,848	\$ 728,881	\$ 784,288	\$ 638,428	\$ 888,728		\$ 888,728	\$ 8,788,138.88
5	\$ 882,878	\$ 883,880	\$ 1,102,832	\$ 822,792	\$ 1,288,488		\$ 1,288,488	\$ 8,888,771.84

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Table 4.16. CERL1 Business Plan Pro Forma Summary.

15-Year Pro Forma Analysis
Defense Depot Ogden

Scenario: CERL1 Developed Scenario w/out

		Year	Year	Year	Year	Year	Year	Year	Year	Year
	0	1	2	3	4	5	6	7	8	9
1	DEVELOPMENT YEAR	1999	2000	2001	2002	2003	2004	2005	2006	2007
2										
3	REVENUES									
4	Potential Leases Revenue	\$ 693,450	\$ 1,366,800	\$ 2,111,890	\$ 2,808,715	\$ 3,541,362	\$ 4,317,561	\$ 5,137,148	\$ 6,002,019	\$ 6,914,1
5	Land Sales	\$ 693,333	\$ 693,333	\$ 714,133	\$ 735,557	\$ 757,624	\$ 780,353	\$ 803,763	\$ 827,876	\$ 852,7
6	Building Sales	\$ 734,128	\$ 734,128	\$ 756,152	\$ 778,836	\$ 802,201	\$ 826,268	\$ 851,056	\$ 876,587	\$ 902,6
7	Opportunity Revenue	\$ 705,800	\$ 705,800	\$ 1,756,766	\$ 748,571	\$ 771,028	\$ 794,159	\$ 817,984	\$ 842,523	\$ 867,7
8	EDA Grant Funds	\$ 400,000	\$ 300,000	\$ 200,000	\$ 100,000	\$ -	\$ -	\$ -	\$ -	\$ -
9										
10	Less: Brokers Commissions	4%	\$ 478,028	\$ 193,788	\$ 249,003	\$ 199,547	\$ 209,322	\$ 219,505	\$ 230,110	\$ 241,153
11	Less: Local Match Funds		\$ 885,000	\$ 30,000	\$ 770,000	\$ 133,875	\$ 750,000	\$ -	\$ -	\$ -
12	Less: Vacancy and Collection Loss	5%	\$ 54,675.97	\$ 109,351.93	\$ 168,548.73	\$ 224,837.22	\$ 283,308.96	\$ 345,404.92	\$ 410,971.66	\$ 480,161.54
13	Effective Gross Revenue	\$ 2,020,807	\$ 3,468,820	\$ 4,260,860	\$ 4,611,721	\$ 4,628,984	\$ 6,183,431	\$ 6,988,867	\$ 7,827,891	\$ 8,731,7
14										
15	OPERATING EXPENSES									
16	Salaries and Benefits	\$ 240,000	\$ 240,000	\$ 247,200	\$ 254,616	\$ 262,254	\$ 270,122	\$ 278,226	\$ 286,573	\$ 295,170
17	Administrative	\$ 80,000	\$ 80,000	\$ 81,800	\$ 83,654	\$ 85,564	\$ 87,531	\$ 89,556	\$ 91,643	\$ 93,792
18	Marketing	\$ 75,000	\$ 75,000	\$ 71,250	\$ 67,668	\$ 64,303	\$ 61,073	\$ 58,086	\$ 55,347	\$ 52,949
19	Maintenance	\$ 0.50	\$ 2,191,568	\$ 2,093,778	\$ 1,968,919	\$ 1,849,546	\$ 1,731,847	\$ 1,605,423	\$ 1,480,854	\$ 1,324,705
20	Army Repayment	\$ 1,000,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
21	Property Management	1.5%	\$ 31,684	\$ 41,915	\$ 53,732	\$ 64,817	\$ 76,518	\$ 88,863	\$ 101,870	\$ 115,597
22	Total Operating Expenses	\$ 2,896,228	\$ 2,816,841	\$ 2,398,808	\$ 2,208,484	\$ 2,203,891	\$ 2,084,163	\$ 1,978,628	\$ 1,851,454	\$ 1,717,5
23	Inflation	3%								
24										
25										
26	NET OPERATING INCOME (NOI)	\$ (877,422)	\$ 650,979	\$ 1,862,052	\$ 2,395,237	\$ 2,425,094	\$ 4,099,278	\$ 4,992,042	\$ 5,976,237	\$ 7,014,1
27										
28	INFRASTRUCTURE COSTS									
29	Infrastructure Improvements	\$ 3,103,022	\$ -	\$ 5,315,408	\$ -	\$ 6,623,022	\$ -	\$ 5,558,679	\$ -	\$ 4,683,9
30	Building Renovation	\$ 1,835,122	\$ 1,884,175	\$ 1,734,700	\$ 1,786,741	\$ 1,840,344	\$ 1,895,554	\$ 1,952,421	\$ 2,010,993	\$ 2,071,3
31	TOTAL INFRASTRUCTURE COSTS	4,738,144	1,884,175	7,050,108	1,786,741	8,463,366	1,895,554	7,511,099	2,010,993	6,755,3
32										
33	INFRASTRUCTURE FUNDING									
34	EDA Grant Funds	0.5	\$ 1,250,000	\$ -	\$ 1,500,000	\$ 247,750	\$ 1,500,000	\$ -	\$ 1,500,000	\$ -
35										
36	ANNUAL CASH FLOW	\$ (4,085,685)	\$ (733,298)	\$ (3,597,764)	\$ 766,246	\$ (4,637,672)	\$ 2,163,724	\$ (1,019,058)	\$ 3,965,244	\$ 259,8
37										
38	TIF BOND ISSUES	1	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
39										
40	NET CASH FLOW	\$ (4,085,685)	\$ (733,298)	\$ (3,597,764)	\$ 766,246	\$ (4,637,672)	\$ 2,163,724	\$ (1,019,058)	\$ 3,965,244	\$ 259,8
41	Year -15 Principal Balance	1								
42										
43	CUMULATIVE CASH FLOW	\$ (4,085,685)	\$ (4,798,982)	\$ (8,396,616)	\$ (7,630,370)	\$ (12,168,042)	\$ (10,004,317)	\$ (11,023,378)	\$ (7,058,131)	\$ (6,799,2
44										
45	DISCOUNTED CASH FLOWS @	18%	\$ (3,804,798)	\$ (544,886)	\$ (2,304,929)	\$ 422,161	\$ (2,160,445)	\$ 683,084	\$ (380,573)	\$ 1,209,500
46										
47	NET PRESENT VALUE OF CASH FLOWS	\$ (2,622,585)								
48	YEAR-15 RESIDUAL AT 18% CAP RATE	5,788,137								
49	INDICATED BUSINESS PLAN VALUE	\$ 3,178,552								
50										
51	DISCOUNTED CASH FLOWS @	13%	\$ (3,897,845)	\$ (674,279)	\$ (2,493,434)	\$ 486,953	\$ (2,482,898)	\$ 1,038,277	\$ (433,161)	\$ 1,491,596
52										
53	NET PRESENT VALUE OF CASH FLOWS	(1,306,891)								
54	YEAR-15 RESIDUAL AT 13% CAP RATE	6,898,772								
55	INDICATED BUSINESS PLAN VALUE	\$ 7,584,060								

USACERL Technical Notes

Scenario removes TIF contributions to infrastructure financing, and thus, does require the retirement of outstanding debt in Year 15.



Scenario: CERL1 Developed Scenario w/out TIF Contributions

Year 4 2002	Year 5 2003	Year 6 2004	Year 7 2005	Year 8 2006	Year 9 2007	Year 10 2008	Year 11 2009	Year 12 2010	Year 13 2011	Year 14 2012	Year 15 2013	Cum. 5 Year Total
2,806,715	3,541,382	4,317,561	5,137,146	6,002,019	6,914,162	7,875,931	8,888,585	9,955,188	11,077,808	12,258,826	13,500,735	10,610,386
735,557	757,824	780,353	803,783	827,878	852,713	878,294	904,643	931,782	959,735	988,528	1,018,183	3,893,981
778,838	802,201	826,288	851,056	876,587	902,885	929,971	957,871	986,607	1,016,205	1,046,601	1,078,092	3,805,446
748,571	771,028	794,159	817,984	842,523	867,799	893,833	920,648	948,267	976,715	1,006,017	1,036,197	4,887,887
100,000												1,000,000
199,547	209,322	219,505	230,110	241,153	252,632	264,624	277,087	290,080	303,562	317,612	332,233	1,327,888
133,875	750,000											2,348,878
224,937.22	283,308.96	345,404.92	410,971.66	480,161.54	553,132.93	630,050.47	711,085.24	796,415.05	886,224.67	980,706.10	1,080,068.80	840,833
4,811,721	4,628,884	6,163,431	6,888,887	7,827,891	8,731,773	9,693,054	10,693,854	11,736,388	12,840,678	14,001,743	15,229,916	20,407,852
	19,079,892											
282,254	270,122	278,228	286,573	295,170	304,025	313,146	322,540	332,218	342,183	352,448	363,022	1,274,183
86,584	87,531	89,556	91,643	93,792	96,006	98,286	100,635	103,054	105,546	108,112	110,755	318,848
84,303	57,873	52,086	46,877	42,189	37,970	34,173	30,756	27,680	24,912	22,421	20,179	336,113
1,849,548	1,731,847	1,605,423	1,469,854	1,324,705	1,169,526	1,003,843	827,167	638,286	438,770	225,987		8,836,882
84,817	76,518	68,983	61,570	55,597	50,046	44,928	40,206	35,840	31,710	27,800	24,111	233,955
2,308,484	2,203,891	2,084,183	1,978,828	1,861,454	1,717,873	1,574,707	1,422,384	1,280,040	1,087,217	903,389	707,911	12,023,162
2,308,237	2,428,884	4,088,278	4,992,042	5,978,237	7,014,199	8,108,348	9,261,190	10,478,329	11,763,480	13,088,385	14,513,005	7,088,740
	6,623,022		5,558,670		4,683,904	6,048,979	3,677,893	3,904,808	4,021,952	5,689,728	3,081,323	18,041,448
1,786,741	1,840,344	1,895,554	1,952,421	2,010,993	2,071,323	2,133,483	2,197,487	2,263,391	2,331,292	2,401,231	2,473,288	8,881,882
1,786,741	6,483,385	1,895,554	7,511,089	2,010,993	6,765,317	8,180,442	6,878,389	6,188,199	6,383,344	7,889,989	6,484,891	23,722,832
247,750	1,500,000		1,500,000									4,487,780
786,246	(4,637,872)	2,183,724	(1,019,059)	3,965,244	268,883	(72,084)	3,386,831	4,307,131	5,400,216	5,107,438	6,088,413	(12,189,043)
786,246	(4,637,872)	2,183,724	(1,019,059)	3,965,244	268,883	(72,084)	3,386,831	4,307,131	5,400,216	5,107,438	6,088,413	(12,189,043)
(7,830,370)	(12,189,043)	(10,004,317)	(11,023,376)	(7,058,131)	(6,709,249)	(6,871,343)	(3,488,812)	821,819	6,221,836	11,328,391	19,287,878	
423,191	(2,180,446)	888,084	(980,573)	1,209,500	88,074	(18,343)	681,840	728,891	784,385	836,438	888,720	
888,883	(2,482,888)	1,039,277	(433,161)	1,481,888	88,178	(21,238)	882,878	883,880	1,102,832	822,782	1,288,486	

in Year 15.

Contributions

Year 10 2008	Year 11 2009	Year 12 2010	Year 13 2011	Year 14 2012	Year 15 2013	Cumulative Forecast		
						5 Year Total	10 Year Total	15 year Total
7,875,831	\$ 8,888,886	\$ 9,953,188	\$ 11,077,808	\$ 12,258,826	\$ 13,500,733	10,810,386	40,788,804	98,437,827
878,294	\$ 904,843	\$ 931,782	\$ 959,735	\$ 988,528	\$ 1,018,183	3,893,981	7,738,980	12,538,861
929,971	\$ 957,871	\$ 986,807	\$ 1,016,205	\$ 1,046,601	\$ 1,078,092	3,808,446	8,182,212	13,277,677
893,833	\$ 920,848	\$ 948,267	\$ 976,715	\$ 1,006,017	\$ 1,036,197	4,867,887	8,908,885	13,781,710
	\$	\$	\$	\$	\$	1,000,000	1,000,000	1,000,000
264,824	\$ 277,087	\$ 290,080	\$ 303,562	\$ 317,612	\$ 332,233	1,327,889	2,636,734	4,088,386
	\$	\$	\$	\$	\$	3,348,876	3,348,876	3,348,876
630,050.47	711,085.24	796,415.05	884,224.67	980,708.10	1,080,068.80	840,833	3,380,844	7,718,094
8,883,064	\$ 10,883,864	\$ 11,738,989	\$ 12,840,878	\$ 14,001,743	\$ 15,320,916	\$ 20,407,882	\$ 60,960,443	\$ 136,863,387
313,148	\$ 322,840	\$ 332,216	\$ 342,183	\$ 352,448	\$ 363,022	1,274,183	2,781,381	4,488,739
78,286	\$ 80,836	\$ 83,054	\$ 85,846	\$ 88,112	\$ 90,758	318,848	687,833	1,118,838
34,173	\$ 30,756	\$ 27,880	\$ 24,912	\$ 22,421	\$ 20,179	336,113	648,408	876,388
1,003,843	\$ 827,167	\$ 638,986	\$ 438,770	\$ 225,987	\$	8,836,882	16,388,032	18,838,882
	\$	\$	\$	\$	\$			
145,258	\$ 161,288	\$ 178,104	\$ 195,808	\$ 214,411	\$ 233,956	388,848	880,380	1,338,832
1,874,707	\$ 1,422,384	\$ 1,380,040	\$ 1,087,217	\$ 903,989	\$ 707,911	12,023,182	21,337,388	28,818,788
8,108,348	\$ 8,261,180	\$ 10,476,329	\$ 11,763,480	\$ 13,088,385	\$ 14,813,008	7,088,740	37,208,844	66,308,313
8,048,970	\$ 3,677,893	\$ 3,904,808	\$ 4,021,952	\$ 5,589,728	\$ 3,981,323	18,041,448	31,291,101	82,806,804
2,133,483	\$ 2,197,487	\$ 2,283,301	\$ 2,331,282	\$ 2,401,231	\$ 2,473,288	8,881,082	18,744,838	30,411,484
8,180,442	\$ 6,676,389	\$ 6,188,188	\$ 6,383,244	\$ 7,990,989	\$ 6,484,891	23,722,832	89,078,938	83,818,288
	\$	\$	\$	\$	\$	4,487,780	6,887,780	6,887,780
(72,084)	\$ 3,386,831	\$ 4,307,131	\$ 5,400,216	\$ 5,107,428	\$ 8,088,413	(12,188,042)	(6,871,343)	19,387,878
	\$	\$	\$	\$	\$			
(72,084)	\$ 3,386,831	\$ 4,307,131	\$ 5,400,216	\$ 5,107,428	\$ 8,088,413	(12,188,042)	(6,871,343)	19,387,878
	\$	\$	\$	\$	\$			
(6,871,343)	\$ (3,488,812)	\$ 821,819	\$ 6,221,836	\$ 11,328,381	\$ 19,387,878			
(16,343)	\$ 681,448	\$ 728,351	\$ 784,335	\$ 839,428	\$ 895,720		\$ 895,720	\$ 6,788,138.88
(21,238)	\$ 882,878	\$ 883,880	\$ 1,102,832	\$ 922,792	\$ 1,288,486		\$ 1,288,486	\$ 8,880,771.84

3

5 Need and Extent of Proposed Infrastructure Improvements

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Objectives

The objectives of this chapter are to: (1) determine if the OLRA-proposed costs for the identified scope of work fall within the range of reasonableness of an independent estimate, and (2) evaluate the need and extent of the proposed scope of infrastructure improvements as appropriate to encourage investment and job creation at the DDO, as specified in the Base Reuse Implementation Manual (DoD 1995).

Approach

CERL has followed the following four-step methodology in conducting an evaluation of DDO infrastructure requirements identified in the EDC proposal.

Step 1: At the start of the effort, a detailed review was made of the EDC application and the Reuse Plan. This review provided an overview of the condition of the installation (from the applicant's perspective) and goals of the proposed Reuse Plan. The EDC application provided an indication of the infrastructure assessment criteria that had been used and available sources of information. This assessment of the condition of the installation and the desired Reuse Plan was used to develop a general strategy for CERL onsite fieldwork.

Step 2: CERL technical specialists conducted a site visit to DDO on 4 to 7 November 1997 to conduct a visual evaluation of the current condition of the installation's major infrastructure systems and facility inventory. This evaluation included developing a condition assessment, identifying any repair requirements, and determining any existing infrastructure limitations to the carrying capacity of the installation. These findings were used in Step 4 to check the reasonableness of the EDC application's proposed scope and the associated cost estimates. Also during this site visit, DDO engineering staff members were interviewed and real property information was collected.

Step 3: An analysis that included synthesis of the findings from the field surveys and collected information was conducted to create a supportable baseline infrastructure condition assessment, determine any carrying capacity limitations imposed by the current infrastructure relative to envisioned full build-out, and identify the scope of necessary improvements. An independent cost estimate was made of the OLRA-proposed infrastructure improvement plan to validate the submitted cost estimates. The infrastructure baselines were then used to review the scope and necessity of the OLRA improvement program. The purpose of this part of the review was to determine if the infrastructure improvement program specified was necessary and if the scope was correct to provide adequate infrastructure functional requirements and to support the necessary investment in DDO.

Step 4: The findings from Step 2 and Step 3 were used to review the infrastructure cost estimates proposed by the OLRA in the EDC application. The need and extent of the proposed OLRA program were also reviewed. A detailed analysis of any differences that existed was conducted, and the findings are presented later in this chapter.

Background

The OLRA has proposed a multiyear 13-phase redevelopment approach (see Figure 4). The application does not indicate a proposed timeframe or recommend sequence for accomplishment of any of these phases. The application does state, however, that the "development of phases may be interchangeable or concurrent, depending on market demands and the availability of funds." Infrastructure projects for the 1,009-acre EDC parcel include replacement of all underground domestic water and sanitary sewer systems, partial replacement of the storm water collection system, and major rework of the transportation system. Most of the underground utilities were not physically measured for each different-sized parcel; the total was simply divided by 9 and the result uniformly distributed

among 9 of the 13 phases. Electrical and communication systems outside of the building line will also be extensively redone, but commercial service providers will fund these improvements according to the OLRA. Hence, any costs associated with these system upgrades were not included either within the OLRA estimates or the CERL evaluation. Development for previously undeveloped portions of DDO will require the extension of the existing utility systems into unimproved areas.

Table 5.1 summarizes the infrastructure improvement programs (by phase) contained in the EDC application. CERL developed an independent cost estimate for the scope of work identified within this proposal. For this comparison, CERL used the EDC scope estimates for underground utilities. For the quantity of new and existing roads and railroads, measurements were taken from drawings. These quantities were used as a basis for developing a cost breakdown structure, which was then estimated using appropriate R.S. Means cost manuals and local cost adjustment factors. Any differences in scope estimates or significant unit cost differences were noted in the discussion. CERL's approach in conducting a cost comparison was to construct a "reasonable" cost range by using a 10 percent contingency factor to develop a minimum estimate and a 30 percent contingency factor for a maximum estimate. This approach was used both to evaluate the OLRA cost estimate and the CERL1 Scenario proposal for infrastructure presented in Tables 5.2 and 5.3.

Table 5.1. OLRA cost estimates including contingency and fees.

Capital Improvements Proposed by the OLRA							
Phase	Systems						
	Roads	Storm Drain	Water	Sanitary Sewer	Rail*	Heating	Building Demolition
1	\$735,944	\$0	\$1,861,997	\$652,400	\$0	\$0	\$0
2	\$1,034,905	\$1,245,444	\$134,395	\$0	\$1,241,893	\$0	\$0
3	\$568,265	\$399,779	\$1,326,831	\$609,410	\$0	\$768,218	\$2,231,668
4	\$1,482,238	\$645,719	\$1,253,564	\$552,954	\$0	\$768,218	\$2,231,668
5	\$2,506,797	\$399,779	\$1,506,098	\$348,516	\$0	\$768,218	\$0
6	\$2,613,285	\$1,433,462	\$59,998	\$250,536	\$0	\$0	\$0
7	\$2,372,984	\$643,516	\$1,253,564	\$423,073	\$0	\$768,218	\$0
8	\$385,580	\$469,078	\$1,253,564	\$348,516	\$0	\$768,218	\$0
9	\$496,961	\$399,779	\$1,253,564	\$405,679	\$0	\$768,218	\$0
10	\$697,146	\$1,088,967	\$1,308,171	\$622,925	\$0	\$768,218	\$0
11	\$1,288,958	\$504,213	\$1,253,564	\$443,286	\$0	\$768,218	\$0
12	\$0	\$456,992	\$1,253,564	\$622,951	\$0	\$768,218	\$0
13	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Total	\$14,183,062	\$7,686,726	\$13,718,873	\$5,280,245	\$1,241,893	\$6,913,963	\$4,463,337

* The EDC rail proposal is incorrect both in the amount of rail removed and the amount of rail to be placed.

Scope of OLRA Proposal

The OLRA proposal includes the addition of new roads in the southern part of DDO and widening of the existing road network. Parking projects are indicated in the application but are not cost estimated within the project summaries. CERL developed cost estimates for the 10 indicated parking lots. The application expands the sanitary sewer, storm water, and domestic water systems into the to-be-developed industrial park area (see Figure 3) and either partially or totally replaces the existing systems to support reuse. Building Demolition expenses includes the removal of buildings only. The removal of the 250,000-gal water tower, and the at-grade 1,000,000-gal water storage tank were included in the Water System estimates. Railroad removal and upgrade include the removal of the track and main switch at the southern entrance to DDO and the installation of a new main switch to the Union Pacific main line at the northeast corner of DDO. Steam plant and distribution include phased replacement of all distribution lines and scheduled boiler replacements. Specific building fit-up includes: structural, electrical, fire protection, mechanical, plumbing, and cosmetic upgrades. The only off-site improvements proposed in the EDC application and by CERL are the capacity increase for domestic water service to DDO and the widening of the eastern access to DDO along 2nd Avenue.

CERL Evaluation of OLRA Proposal

Noted in Table 5.2 and the narrative following Table 5.3 are CERL's findings as they relate to the EDC application, visual inspection of the DDO infrastructure, conversations with DDO engineering personnel, review of DDO drawings and other real property records, and standard design/costing practices. Table 5.3 presents CERL's findings as to the need and extent of the OLRA's proposed infrastructure improvements based on independently developed condition assessments, estimated full build-out requirements, and the expertise of CERL analysts. In general, CERL finds the OLRA's estimated costs to be reasonable as supported by Table 5.2, which indicates a CERL cost range of **\$84,502,000 to \$98,644,000**. This cost range captures the OLRA's estimate of **\$87,986,027**. However, CERL's need and extent analysis, or the CERL1 Scenario, suggests that the OLRA has, in general, overestimated required infrastructure improvements to spur job creation. Based on CERL's independent analysis of existing DDO infrastructure conditions and capacities, evaluated against the OLRA's projected full build-out requirements, total infrastructure costs are estimated to range between **\$73,429,000 to \$84,906,000** (Table 5.3).

Table 5.2. Cost comparison by infrastructure system.

Systems	OLRA Cost	CERL Cost Estimate	
		Low	High
Roads	\$14,183,062	\$11,650,000	\$13,768,000
Storm Drain	\$7,686,726	\$5,895,000	\$6,962,000
Water	\$13,718,873	\$9,482,000	\$11,205,000
Sanitary Sewer	\$5,280,245	\$4,153,000	\$4,911,000
Rail	\$1,241,893	\$949,000	\$1,120,000
Heating	\$6,913,963	\$8,380,000	\$8,380,000
Building Demolition	\$4,463,337	\$6,694,000	\$6,694,000
FIT-UP	\$34,497,928	\$36,461,000	\$43,090,000
TOTAL	\$87,986,027	\$84,502,000	\$98,644,000

Table 5.3. Infrastructure need and extent cost comparison (CERL1).

Systems	OLRA Cost	CERL Cost Estimate	
		CERL1	
		Low	High
Roads	\$14,183,062	\$8,932,000	\$10,553,000
Parking Lots	...	\$5,044,000	\$5,961,000
Storm Drain	\$7,686,726	\$2,389,000	\$2,818,000
Water	\$13,718,873	\$4,287,000	\$5,073,000
Sanitary Sewer	\$5,280,245	\$2,488,000	\$2,940,000
Rail	\$1,241,893	\$3,534,000	\$4,177,000
Heating	\$6,913,963	\$3,600,000	\$3,600,000
Building Demolition	\$4,463,337	\$6,694,000	\$6,694,000
FIT-UP	\$34,497,928	\$36,461,000	\$43,090,000
TOTAL	\$87,986,026	\$73,429,000	\$84,906,000

Roads

The DDO road network is currently limited, as it was not originally designed to support through-traffic corridors. Increased trip generation and integration into the Ogden City's traffic patterns will require upgrading the main roadways and construction of new roads in the business park area of the installation. Proposed roadway improvements include a widening of main transportation corridors, improving secondary roadways, construction of new roads in the to-be-developed southern part of the installation, and improving the eastern access to DDO by widening of 2nd Street from DDO to Wall Street in Ogden City. Road improvements constitute the largest part of the LRA infrastructure improvement program at **\$14,183,062**, or 27 percent of the total infrastructure improvement program (Table 5.2). CERL's estimate of road costs range between **\$11,650,000** and **\$13,788,000** at 10 and 30 percent project contingency rates with range differences attributable to cost methodology and quantity take-off

measurements. The OLRA's cost estimates and CERL's findings are documented in Appendix B, Tables B1 through B4.

CERL Need and Extent Findings for Roads

CERL concurs with the proposed layout and only differs with some specific choices in intersection designs. Specifically the intersection of the new road north of Commanders' Way is proposed as a Y. CERL recommends a T intersection to minimize paving and lost development space. CERL also proposes the deletion of the new diagonal road from the corner of F Avenue and Eighth Street to H Avenue and Ninth Street. While this would force traffic to make one turn on existing roadways, it would free an entire open block for development. Finally, CERL recommends a four-lane roadway without a median for Main Street; the current building placement will not allow adequate width for the median. Based on these engineering findings, CERL estimates road costs to be between **\$8,932,000** and **\$10,553,000**. Supporting cost estimate tables for roads are provided in Appendix B, Tables B5 through B8.

Storm Water Drainage System

The existing storm drainage system consists of 204,957 LF of concrete piping, 331 concrete manholes, and 526 catch basins. The majority of the system was constructed in 1942 and includes newer sections, which were added when DDO was expanded in 1953 and later. The system is described as "functioning," though some pipes are undersized by today's design standards. The video survey prepared in 1992-1993 found several damaged pipes and manholes, and several pipes blocked by sediment. The visual inspection made by CERL confirmed the sediment problem in pipes and catch basins.

Development of the southern area of DDO will require the phased installation of a storm drainage system (Phases 2 through 4 and 6 through 8). The proposal for the new industrial park includes the addition of three detention ponds. The LRA estimate of **\$4.8 million** is 61 percent of the total **\$7.7 million** effort to upgrade the handling of storm water at DDO. CERL's estimated costs for the OLRA's proposed storm water improvements range from **\$5,895,000** to **\$6,962,000**. The OLRA's and CERL's cost estimate calculations are contained in Appendix B, Tables B9 through B11.

CERL Need and Extent Findings for Storm Water Drainage

The EDC application correctly identifies a partial replacement of the storm water system. The cost calculation presented on the EDC application (pp 4-8

through 4-19) to develop the cost estimate of \$7.7 million is based on replacing 41,004 LF of piping. The application also calls for construction of 18,700 LF of storm sewer with associated catch basins and manholes in the open areas to be developed. CERL has evaluated the data in the video inspection summary report. The following assumptions were used with respect to the video inspection study: (1) if any type of failure were found in a length of pipe, the entire length would be replaced, (2) if the report noted that no video was recorded, one assumed that some obstruction/failure prevented video from being taken, and (3) 10 percent of the system was missed by the survey. The estimated total length of pipe replacements required is about 63,000 ft, which is probably much too high in that shorter lengths of storm sewer may be replaced for a given damage than would be required for a sanitary sewer. Therefore, CERL concurs with the EDC application plan to replace 41,000 LF of piping. Of course, this number will likely be revised when a more accurate estimate is developed by Ogden City personnel.

However, CERL's visual inspection of the storm drainage structures does not support the planned replacement of all catch basins and manholes. Most of these structures appear to be sound, though most manholes were not accessible for inspection. A more reasonable replacement estimate may be 25 percent of the structures, or 83 manholes and 132 catch basins. In addition, CERL did not reach the same conclusions as OLRA as to the need for three on-site detention basins because new 30-in. drain lines leading to the existing 60-in. main would provide adequate drainage for the area without the creation of any retention ponds. Hence, the CERL recommendation is to replace 41,000 LF of storm sewer, 83 manholes, and 132 catch basins, and to remove detention basin improvements. This development program ranges from **\$2,389,000** to **\$2,818,000** at 10 and 30 percent contingency rates, respectively. CERL's independent need and extent cost estimates are shown in Appendix B, Tables B12 through B14.

Domestic Water Distribution System

The majority of the drinking water distribution system at DDO was constructed in 1942. The cast iron piping is rusting, and many valves are inoperable. Depot personnel have stated that the repair work required to keep the system functional has escalated over that past several years. Because of dwindling base operation funding, no preventive maintenance has been done to the system for the past few years. Generally, the system is in poor condition and could be considered a liability to redevelopment if not replaced. The OLRA proposes to replace the entire distribution system and extend additional piping to undeveloped areas for future growth. The actual cost calculations (EDC application, pp 4-8 through 4-19) are based on only replacement of 173,655 LF,

which is considered close to the 180,056 LF that exists at DDO as measured by CERL.

An existing 250,000-gal above-ground storage tank is in fair condition. A 1,000,000-gal ground-level storage reservoir and pumping system are used solely as an emergency supply for fire protection. The system has never been used or tested and is potentially a safety hazard if used as designed. If used, it could contaminate the water distribution system. The reuse plan considered three options for providing adequate water for fire protection: modify the existing system, increase the size of connections to the Ogden system, and tie into the adjacent Bonna Vista water system. Improving the existing system was not economically feasible, nor could Bonna Vista guarantee adequate flow to DDO, so the OLRA chose to construct new connections to the Ogden City water system. This choice will provide adequate volume and pressure for all needs, including fire protection.

The OLRA also proposed in Phase 1 to increase the main input line from 12 inches in diameter to 18 inches. This increase will require an off-post improvement to bring an 18-in. line from an Ogden City main line. The OLRA estimate of \$1.9 million for this off-site improvement constitutes approximately 14 percent of their domestic water upgrade. Table 5.2 presents total improvement costs to the DDO domestic water system of **\$13,718,873**. CERL estimates the OLRA's domestic water improvement program to range between **\$9,482,000** to **\$11,205,000**. Note that the above-ground and ground-level tanks will be unnecessary when new connections to the Ogden water system are made. Appendix B, Tables B15 through B18, provide additional support for OLRA and CERL cost estimates.

CERL Need and Extent Findings for Domestic Water

According to Ogden City personnel, the city is fortunate to have relatively abundant water resources available to support growth and development. While the availability of water might be restrictive to new development at other locations in Utah, available water is an apparent asset to Ogden. The city has recently upgraded to a state-of-the-art facility dedicated to treating water from their surface supply (reservoir). Surface water is primarily a backup to the ground water sources that provide the majority of Ogden's water.

CERL concurs with the OLRA's total replacement proposal. The total proposed cost for increasing the input to DDO, replacement of existing distribution, and new-development distribution is \$13.7 million or 28 percent of the total \$53.5 million infrastructure improvement cost (including demolition). Accordingly,

CERL also concurs with the EDC decision to increase the size of the water lines into DDO and the distribution system within DDO, and its plans to demolish existing water storage structures. About 150 of the 246 fire hydrants have been replaced over the last 4 years. It is planned for these hydrants to be salvaged and reused when the existing system is replaced. Reuse of the fire hydrants, according to the Reuse Plan, will save \$375,000 on the total cost to replace the system. Based on CERL's technical findings related to domestic water, CERL estimates costs to range between **\$4,287,000** and **\$5,073,000**. Appendix B, Tables B19 through B22, provide more detailed support for CERL's need and extent findings.

Sanitary Sewer Systems

Existing wastewater collection at DDO consists of 48,820 LF of piping (mostly vitrified clay), 230 manholes, and 3 lift stations. It has been proposed for complete replacement by the OLRA at an estimated cost of **\$5,280,245**. All wastewater is discharged to an existing 60-in. sewer main that bisects the Depot property and is owned by the Central Weber Sewer District. Except for service to newer buildings, most of the system was constructed between 1942 and 1952. A video survey of the system was performed in 1992-1993 by Roto-Rooter, and copies of the videotapes were provided to the Army. The Corps of Engineers Huntsville Division then contracted Montgomery Watson to prepare the summary report "DDOU Storm-Water and Sanitary Sewer Video Survey Review," which was written in June 1995. The videotapes from that survey have been transferred to Ogden City. The summary report of the video survey is somewhat ambiguous as to the severity of each observation, and City personnel are currently in the process of evaluating those tapes to assess system distresses as they relate to cost of corrections. CERL finds that costs to implement the OLRA's proposed sanitary sewer improvement program range from **\$4,153,000** to **\$4,911,000**. Appendix B, Tables B23 through B25, provide additional support for OLRA and CERL cost findings.

CERL Need and Extent Findings for Sanitary Sewers

CERL has evaluated the data in the Montgomery Watson video inspection summary report. The evaluation included the following assumptions: (1) if any type of failure was found in a length of pipe, the entire length would be replaced, (2) if the report noted that no video was recorded, it was assumed that some obstruction/failure prevented video from being taken; and (3) 10 percent of the system was missed by the survey. Using the above assumptions, CERL's

analysis concluded that the length of pipe requiring replacement due to structural damage was as follows:

- 248 ft of 6-in. diameter
- 7,315 ft of 8-in. diameter
- 5,967 ft of 10-in. diameter
- 2,393 ft of 12-in. diameter.

CERL also made a cursory visual inspection of sewer manholes at the Depot. All manholes observed were in fair to excellent condition, with little evident surcharging. Some manhole cover structures needed repairs, and some damage to the flow structures was observed. CERL concludes that up to 76 manholes would need major repair or replacement.

Redevelopment of the warehouse areas into higher occupant densities will require increasing the size of lateral lines. Because a large part of the system is in good condition, CERL disagrees with the EDC proposal of total replacement and recommends only a one-third replacement (15,923 LF) over the 9-yr program period. Based on CERL's technical findings related to OLRA need and extent, CERL concludes that costs for sanitary sewer improvements should range between **\$2,488,000** and **\$2,940,000**. Appendix B, Tables B26 through B28, provide expanded support for CERL's need and extent cost findings.

Rail System

The OLRA has proposed **\$1,241,893** in rail improvement costs. The rail improvement consists of the removal of the two railyards on the south side of DDO and all warehouse access tracks. This removal will make room for the to-be-developed industrial park. Included in this project is the movement of the south side access switch to the Union Pacific line to the north side of the installation to ensure unencumbered development of the business park area. CERL estimates this relocation program to cost between **\$949,000** and **\$1,120,000** at 10 and 30 percent contingency rates, respectively. Appendix B, Tables B29 through B34, provide additional cost-estimating support for rail system improvements.

CERL Need and Extent Findings for the Rail System

Effective movement of the rail system to the north side of DDO will require north to south rail access to the warehouse area. The CERL proposal includes access to warehouses along 16th and 6th Streets. Access to buildings along 16th Street will require the addition of a rail crossing at Main Street, which will be four lanes wide after improvements. This requirement is not recognized within

the EDC application. CERL views this as a road improvement, so the cost is included within CERL road improvement costs discussed previously. Note that, for consistency, the CERL estimate for the replacement of the rail crossing at the 2nd Street gate was included in the rail estimate just as it was in the OLRA proposal.

The EDC proposal makes no mention of what is to happen to the rail maintenance shop (Building S-17). Since Building S-17 is within the area to be redeveloped, CERL included the cost of demolition of this building within the demolition totals and the construction of a replacement building on the north side of DDO within the cost of the rail relocation.

In terms of rail quantity relocated, the EDC proposal incorrectly identifies only 29,000 LF of rail to be removed on the south side. The correct amount is approximately 61,000 LF. However, because the EDC removal cost estimate was more than twice the CERL-estimated amount (\$18.00/LF versus \$8.55/LF), the total cost estimates for removal were still near in total cost. Another error with the EDC estimate was a plan to install only 1,300 LF of new track on the north side. CERL's evaluation of the track on the north side indicated that it was largely in a failing condition and could not support any rail traffic in its present condition. Hence, the EDC rail proposal would eliminate the only good DDO track with warehouse access and only install a new northside access to track in a failed condition. Accordingly, CERL estimates that nearly 80 percent of the necessary replacement of the north rail yard, 16th Street track, and 6th Street track could be satisfied by using rail, ties, and switches removed in good condition from the southern end of the installation. A new rail maintenance roundhouse will also have to be constructed on the north side of the installation.

The EDC estimate is, at best, closer to only a rail removal estimate since it does not provide a workable rail system. Based on these factors, CERL concludes that the OLRA has substantially underestimated rail improvement costs. CERL estimates that costs will range between **\$3,534,000** and **\$4,177,000**. Appendix B, Tables B35 through B41, contain CERL's supporting cost estimation worksheets for rail need and extent findings.

Heating Systems

The boiler plant at DDO consists of four boilers capable of producing 179,770 lb/hr of 100 psig saturated steam. Boilers 1 through 4 are of the following capacities respectively, 30,000 lb/hr, 51,220 lb/hr, 34,550 lb/hr, and 64,000 lb/hr. All are capable of burning natural gas and #2 oil, though natural gas is the primary fuel source. Approximately 200,000 MBtu of natural gas are used

annually. The distribution system consists of approximately 39,500 LF of steam and condensate return piping and 2,000 steam traps.

The EDC application recommends the long-term reuse of the heating plant to provide heating service to eventual DDO end users. Accordingly, the OLRA has proposed the replacement of 61,965 LF of steam and condensate line, 1,332 steam traps, and full replacement of large and small boilers at a total estimated cost of **\$6,913,963**. CERL estimates the proposed improvement program to cost **\$8,380,000**. CERL's analysis considers labor and maintenance costs for the whole system, and the OLRA does not specify plant labor and maintenance, which accounts for a higher estimate, in part. Additionally, CERL has a higher estimate for the system capital investment, but that figure assumes a complete rebuild.

CERL Need and Extent Findings for Heating

Of all the steam distribution system types, aboveground systems have proven to be the most reliable and sustainable. The boiler plant log data indicate the system has relatively low losses and is performing much better than many of the systems CERL has studied. The CERL-developed HEATMAP analysis shows that the O&M costs shown in the EDC application package are reasonable. To effect good performance for only the next 5 years, a complete rebuild would not be desirable. Given that the system is above ground and is performing well, it is reasonable that alert and skilled operators and maintainers would prevent catastrophic failure with good maintenance practices. Aboveground systems have been known to last over 50 years with correct water treatment. If the buildings on the steam system can be occupied with tenants, the steam system should be able to provide cost-effective heat and hot water and relieve the occupants of the burden of investing in decentralized boilers and furnaces in the early stages of reuse.

CERL was unable to corroborate the OLRA's proposed replacement of nearly 62,000 LF of steam and condensate line given that the distribution system is in good condition, and that only 39,500 LF of line was actually measured by CERL. The OLRA may have included steam and condensate lines within existing buildings in their total, but CERL knows of no explicit assumption made in this regard. In fact, OLRA is considering outsourcing the heating plant operations and maintenance to Questar to minimize costs and provide improved service to DDO end users. Accordingly, CERL reduced the scope of proposed steam and condensate line replacement by 75 percent to account for these need and extent factors. Therefore, CERL's estimated cost for heating plant improvements is

\$3.6 million. Appendix C contains CERL's supporting documentation and cost estimates for the central heating plant.

Building Demolition

The OLRA proposes **\$4,463,337** in building demolition at DDO. Cost assumptions and a comprehensive building demolition list were not provided, but CERL was able to gather appropriate cost estimation information to develop independent cost estimates.

The CERL-developed cost estimate excludes salvage value and includes disposal fees. Because the EDC application cost estimate was only a lump sum, and the specific buildings to be demolished were not identified, the CERL technical team had to independently identify the candidate buildings before developing a cost estimate. CERL made use of Map 4.1 (DDO Reuse Plan, December 4, 1996, see Figure 3) and Building Location Map 2.7 (dated September 13, 1996) to identify excess buildings. Real property listings were used to determine facility category type, size, and construction material types used. CERL estimates that 868,481 sq ft of space are to be demolished at DDO, excluding the family housing. Since uncertainty appears to exist as to whether the family housing at DDO will be moved or demolished, CERL included family housing in the demolition total (raising it to 894,161 sq ft) estimate of **\$6,694,000**. Differences in quantities to be removed could be the reason that the EDC application cost is considerably lower than the value developed by CERL. Another reason for the difference could be that the EDC estimate includes salvage value, whereas the CERL estimate did not but did include disposal fees. Tables B42 and B43 in Appendix B contain CERL's demolition cost estimates for DDO.

Building Renovation

Comparison renovation costs were calculated by using standard R.S. Means subsystems categories of: foundations, substructure, superstructure, exterior closure, roofing, interior construction, conveying, mechanical systems, electrical, general conditions, special construction, sitework, and other. Unfortunately, direct subsystem comparisons with the OLRA evaluations were not possible because the composition of their chosen categories (structural repairs, cosmetic repairs, electrical service, heating/mechanical, plumbing, fire protection, and other) varied from generally accepted R.S. Means cost estimating standards.

Nevertheless, CERL calculated renovation costs for the same 13 categories of sample buildings used by the OLRA to develop site-wide cost estimates. Either the same building was inspected by CERL, or a reasonable equivalent was

identified. As shown in Table 5.4, total fit-up costs for the OLRA and CERL evaluations were based on the three general scenarios of administration, manufacturing, and distribution. The total area evaluated by both studies was approximately 2,200,000 sq ft. General fit-up costs were developed and applied to like-use facilities at DDO to obtain the installation-wide estimates.

Table 5.4. CERL's estimated renovation cost/SF.

Building Type	OLRA Fit-Up \$/SF	CERL \$/SF Minimum	CERL \$/SF Maximum
Office	\$22.64	\$9.92	\$11.73
Manufacturing	\$4.79	\$5.97	\$7.06
Distribution	\$3.69	\$3.93	\$4.64

Table 5.5 shows that the CERL technical team calculated fit-up costs as slightly higher for distribution type facilities (range of \$3.93 to \$4.64/SF versus OLRA's \$3.69/SF), to 25 to 47 percent higher for manufacturing (\$5.97 to 7.06/SF versus the OLRA's \$4.79/SF), to considerably lower (44 to 48 percent) for office space (\$9.92 to \$11.73/SF versus OLRA's \$22.64/SF). Tables B44 and B45 show the DDO building fit-up summary. Because the bulk of the DDO facilities are for distribution and manufacturing, the lower OLRA costs for these types offset the OLRA's higher rate for office space. The net result was that the OLRA estimate of \$34 million was slightly below CERL's range of **\$36 million to \$43 million** (see Appendix C).

Table 5.5. Evaluation of fit-up costs.

	CERL Minimum	EDC Cost	CERL Maximum
Fit-up Total	\$36,461,000	\$34,497,928	\$43,090,000

Parking

The redevelopment plan identifies the creation of 10 parking lots. However, the EDC estimate does not specifically identify the cost associated with the creation of these parking lots. Because adequate parking is generally a prerequisite to a successful development, CERL estimated the costs of these lots as a separate line item to be included in the CERL1 estimate. The costs per unit differ because some of the lots were already hardstand areas that could be improved, whereas others were unimproved land and required complete construction. Total cost for 10 parking lots was estimated to be in a range between **\$5,044,000** and **\$5,961,000**. Tables B46 and B47 contain CERL's cost estimates for parking lot improvements at DDO.

Conclusions

Under the CERL1 Scenario (Table 5.3), estimated DDO infrastructure improvement costs range from **\$73,429,000** to **\$84,906,000** compared with the OLRA's estimate of **\$87,986,026**. This finding suggests that the OLRA's infrastructure improvement costs are above CERL's estimated range of reasonable costs. CERL further develops this finding in Chapter 4, **Business Plan Review and Market and Financial Feasibility Analysis** through the CERL1 Scenario, which assumes reduced central heating plant improvement cost. The use of the heating plant for the CERL1 Scenario merely serves as a surrogate for CERL's infrastructure findings, which suggest the OLRA has overestimated project costs.

6 Extent of State and Local Investment and Risk

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Background

Local investment in the redevelopment of DDO will involve significant development costs, including high capital expenditures, the majority of which arise from utility improvements. The EDC application estimates total infrastructure costs of \$88 million programmed in 13 phases projected to be met partially (\$92.4 million) through supportable real estate revenues. The balance is proposed to be met with 20-yr tax increment finance bonds. In addition to real estate revenues and debt financing, the OLRA has identified potential financial commitments totaling \$13 million from the EDA and OEA.

Given the capacity of the DDO redevelopment effort to generate revenue and proposed fiscal packaging, it is the opinion of CERL that the OLRA EDC Business Plan stands a moderate chance of achieving financial feasibility, but a stronger probability of accomplishing job creation goals.

Approach

CERL will discuss the extent of state and local investment risk associated with the redevelopment of DDO, as well as the ability of the OLRA to implement the January 1997 Reuse Plan as proposed in the EDC application.

Operational Investment and Risk

Investment

According to the OLRA, the business plan pro forma effectively projects adequate revenues of \$93.4 million from real estate and OEA sources to offset operational expenditures of \$43.2 million throughout the 15-yr redevelopment period. This projection results in a 15-yr cumulative positive net operating cash flow of \$50.2 million, which is dedicated to TIF district debt service and capital improvements. The proposed level of operational investment is indeed substantial but, in most cases, is a prerequisite for the successful redevelopment of DDO because of the need to attract quality end users and maintain a competitive industrial park.

Risk

The OLRA's operational investments attempt to ensure that adequate resources will be available to meet the short- and long-term challenges of marketing the property to developers and to instill the necessary level of confidence for investors to locate at DDO. Operational risk is ostensibly associated with the capacity of the site to generate revenue, otherwise known as market risk. As long as DDO generates sufficient revenues to offset required operational expenses, risk is somewhat reduced. However, as CERL noted in Chapter 4, **Business Plan Review and Market and Financial Feasibility Analysis**, the average operating expense ratio for the first 5 years of development is 96 percent, and begins at over 100 percent in Year 1. Despite these forecasts, operating expense ratios decline over time as a result of increased revenues and declining operating expenses. Thus, like any other large-scale development project, the greatest degree of operational risk exists within the early phases of development when revenues are nominal and operating expenses are high as attempts are made to effectively market and manage the property.

Some factors that keep operational risk within reasonable ranges include the early presence of DDO tenants such as Peterson Fabrication and the *Standard Examiner*, who seek to locate and expand operations at the site because of locational and price advantages. In addition, CERL demonstrated in Chapter 4 that DDO property absorption could likely be accelerated because of robust employment forecasts for Weber County and the dwindling supply of industrial space to accommodate attendant real estate demands.

Capital Improvements

Investment

Chapter 5, **Need and Extent of Proposed Infrastructure Improvements**, provides an in-depth discussion of the OLRA infrastructure improvement program provided in the EDC application and reflected in the Business Plan pro forma. To summarize, the OLRA proposes the following major improvements:

- \$14.2 million in road upgrades and new road construction
- \$7.7 million in storm water improvements
- \$13.7 million in domestic water upgrades and new system construction
- \$5.3 million in sanitary sewer upgrades and new construction
- \$1.2 million in rail relocation costs
- \$6.9 million in central heating plant upgrades and replacements
- \$4.4 million in building demolition
- \$34.5 million in building renovation costs.

In total, the OLRA proposes nearly \$88 million in total infrastructure improvements (in 1999 dollars). However, the OLRA only programs \$64.8 million within the 15-yr Business Plan pro forma, leaving the balance to be performed beyond 2013 (Year 15).

Although CERL was able to independently verify total project infrastructure costs, some individual improvements were not found to fall within CERL's estimated range of reasonable costs. Nevertheless, CERL relied upon a similar range of capital improvements and did not develop a separate CERL1 capital improvement scenario.

CERL finds the timing of these improvements to be prudent and reasonable given the need to test the real estate market before full-scale Reuse Plan implementation begins. Phased improvements in the early years of redevelopment will primarily improve site transportation access, domestic water capacity, and sewer capacity. Also, existing buildings are renovated by the OLRA as they are

absorbed, rather than programming building improvements before willing buyers or lessees are identified.

The OLRA has proposed to finance these capital improvements using a combination of bonds, grants, and net operating proceeds. As mentioned elsewhere, the OLRA has the authority to issue tax-free development bonds in support of the proposed DDO tax increment finance district. In fact, the OLRA proposes to fund \$18 million of the projected \$81.2 million (inflated dollars) in capital improvement costs with bond instruments. This proposal results in a total 33-yr debt service cost of over \$31.8 million. The remainder of capital improvements will be funded through a mixture of grant funding (\$12 million) and net operating proceeds (\$50 million). Through the CERL1 scenario it was demonstrated that the OLRA can rely more strongly on NOI to finance capital improvements and less on TIF and EDA grants.

Risk

The amount of investment and risk is indeed substantial, as shown by the OLRA's proposed commitment to underwrite a substantial amount of project risk, absorbing nearly \$70 million of the \$81.2 million in estimated infrastructure costs. The ability of the OLRA to develop a quality industrial and business park that attracts end users over the long term, rests with required infrastructure investment that brings DDO to marketable, code-compliant, and functional standards. Accordingly, infrastructure risk rests with the fiscal capacity of the OLRA and the revenue generating capability of the DDO reuse effort in general. Market analysis has demonstrated solid demand for DDO facilities, so risk associated with completed infrastructure improvements and insufficient DDO end-user demand is somewhat reduced because of the strength of the market.

To mitigate these risks, the ORLA has judiciously phased infrastructure improvements in the early years of redevelopment, programming only \$23 million of the total \$64.8 million (35 percent) in the first 5 years. This strategy prevents the OLRA from over-committing infrastructure investments before the market for DDO property is well defined. Also, the OLRA proposes the creation of a TIF district to fund infrastructure improvements through the incremental increase in the taxable assessed value of DDO. Tax revenues represent an alternative revenue source for infrastructure funding and, as such, diversify infrastructure investment risk, but at the cost of other municipal services. Therefore, CERL concludes that the probability is relatively high that programmed infrastructure improvements will be completed in a timely manner and in concert with market demands given the ORLA's phasing strategy,

anticipated revenue stream to directly fund improvements, and the DDO taxable basis against which the OLRA can issue bonds.

Conclusions

The level of investment and scope of redevelopment observed at DDO is indeed substantial, when viewed in absolute terms or relative to other EDC redevelopment efforts. The OLRA has outlined an investment strategy that soundly accommodates job creation goals while simultaneously reducing operating and infrastructure investment risks. However, the Business Plan pro forma is marked by a 15-yr cumulative negative cash flow, which suggests financial subsidization from external sources, increased revenues, or reduced expenditures to ensure financial feasibility. The CERL1 Scenario improves the prospects for financial feasibility through independently supportable assumptions, resulting in positive cash flows. Thus this level of investment for such a large BRAC facility should be looked upon favorably by the Army in negotiating the final terms and conditions of the transfer agreement.

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 DDO EDC application and Reuse Plan. Real estate market data were collected from a variety of sources, including real estate research firms, Urban Land Institute "Market Profiles," government studies conducted in conjunction with 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 relating 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 Weber County market, CERL examined the area surrounding the EDC parcel, the locations and characteristics of the regional submarket relevant to DDO, and recent regional economic and demographic trends.

Site Configuration

The DDO facility covers a total of about 1,118 acres of land and lies within the City of Odgen, Utah, within Weber County. Currently, the facility features about 6.1 million sq ft of covered warehouse and distribution space, and about 350,000 sq ft of administration space distributed over 165 buildings. However, much of

the facility is currently undeveloped, and will likely be developed into several business park areas or special-use zones.

Because of its general location, the DDO site enjoys particularly good transportation access. The facility has about 41 miles of railway, offers direct access to Interstate 15 (I-15), and has a direct link to the Union Pacific mainline running parallel to the eastern boundary of the property. Besides the direct access to Interstate 15 near the western entrance, the site also has a southern entrance at the former main gate on 12th Street (which runs east-west), and an eastern entrance on 2nd Street (which runs north-south). Both the western and southern entrances feed only four-lane local arterials that connect directly to I-15. Also, the configuration of the site is such that three additional western entrances could be created, along with one additional southern entrance. Finally, the interstate system also links the facility to downtown Salt Lake City and the International Airport.

The immediate area surrounding the DDO site to the west and south is best characterized as "mixed" with a general emphasis on small-scale commercial and some supportive retail use. Some low-density residential uses are nearby. However, the areas to the north and east of the facility are relatively undeveloped, reflecting DDO's location near the outskirts of the city.

Regional Submarkets

DDO participates in what is arguably the smallest of the three larger regional markets in Utah. In general, these markets may be said to include the three-county region including and surrounding the city of Ogden, the Salt Lake City market (about 45 minutes directly south of Ogden), and the smaller South Salt Lake market, which is adjacent to the larger Salt Lake market. Cumulatively, these three areas are responsible for roughly 85 percent of the economic activity within the state of Utah. Figure 1 shows the geographical relationship between DDO and the other area within southern Utah (including the three-county submarket). As the figure indicates, the submarket that includes DDO is located directly within Weber County. For purposes of compatibility with the FEA, the appraisal developed by the Corps of Engineers, and other portions of this report, this market analysis focuses primarily on the three-county area surrounding the Ogden metropolitan area (which includes Davis, Weber, and Salt Lake counties), although the economic significance of the Salt Lake market will be discussed.

Regional Economic and Demographic Trends

In general, CERL was able to corroborate the cogent conclusions presented in the EDC application relating to the strength of economic and demographic trends. As the "Economic Report to the Governor" puts it, "Utah begins 1997 with an economy as strong as it has ever been." A summary of these corroborated conclusions is presented here.

Despite the smaller economic significance of the Weber County market in relation to the markets to the south, Weber County has generally participated in the recent economic boom that Utah has been experiencing. Although trailing third by recent Utah standards, total employment in Weber County has increased by some 60 percent from 1980 to 1995, while growth in manufacturing and wholesale distribution activities have increased by some 80 percent and 50 percent, respectively. Note that this increase has occurred against a backdrop of consistent annual employment growth of over 3 percent; the unemployment rate in Utah is now just below 3 percent.

Much of this growth can be explained by qualitative economic changes occurring within this broad area during the recent 15- to 20-month period. In particular, low-tech manufacturing and distribution firms, which are especially sensitive to wage and real estate costs, have gradually migrated away from more expensive urban areas (like Salt Lake City) and into less expensive areas north or south of Salt Lake City. This area includes Weber County, where land and labor costs are lower. This migration is reflected in the 33 percent increase in Weber County's share of total manufacturing for the three major Utah markets (from about 9 percent to 12 percent of the total) from 1980 to 1995. The trend is also reflected by the fact that, while these three markets experienced an aggregate increase of about 35 percent in manufacturing employment during this period, Weber County (along with other more rural areas) experienced an increase of over 80 percent. Similar trends can be observed in the distribution sector.

Demographic trends also generally suggest that Weber County and the surrounding areas will continue to experience sustained growth. Of particular note is that, while the total cost of living in Weber County is at 96.5 percent of the national average, rankings of median household income in Utah (as a whole) rank it 13th in the nation, or about \$2,500 higher than the median household

income of about \$34,000 per year.* For the sake of comparison, Salt Lake City has a cost of living rank of almost 97 percent, while areas south of Salt Lake City, including the Provo-Orem area, rank at over 102 percent.

Not surprisingly, these economic facts have made Weber County attractive for immigration (especially when compared to the recent condition of the California economy, from which many people moved). For example, in 1996 alone, Utah experienced an absolute population increase of 54,000 people, but only about 40,000 births, for a net in-migration ratio of over 1/4. Since 1991, over 108,000 more people have moved into the state than have moved away.

Available projections also suggest that both employment growth and population growth in Weber County will generally mirror past trends, experiencing stable rates of at least 2 percent annually. Although CERL was unable to obtain specific data for Weber County and the surrounding counties, the 1997 Utah Economic Report to the Governor suggests that much of the growth Utah should experience will occur over the coming decade, with rates in the range of 2.3 to 2.4 percent. Later decades are projected to diminish somewhat to about 1.9 to 2.0 percent. Given that the Wasatch Front region, which includes Weber County and the chosen ROI, is responsible for roughly two-thirds of the economic activity occurring within the state, it appears reasonable to map these general forecasts onto the Weber County region.

Market Analysis

After a general analysis of the Weber County regional submarket, CERL examined the state of the commercial real estate market in the area. Because reuse of the DDO facility will center on commercial uses, particular emphasis was placed on these market segments. Finally, although this market analysis focused only on the three-county area around DDO, it is important to realize that many relevant market factors and conditions exist far outside this area. In particular, the economic significance of the Salt Lake market, and the fact that

* Note that household income figures were used because general income figures were somewhat skewed because families in Utah typically have more children than in other states. For example, per capita personal income in Utah is only about 80 percent of the national average (which would rank Utah 46th among the 50 states), although adult per capita income is 88 percent of the national average, and total personal income per household is about 92 percent of the national average. (All these figures are based on 1996 surveys.)

DDO will be marketed to attract businesses with a state-wide or multi-state scope, suggest that a broad view be taken.

General State of the Market

In general, the real estate (particularly construction) markets in Utah have experienced strong growth in recent years. According to the 1997 Annual Economic Report to the Governor, the value of construction in Utah rose 13.5 percent to \$3.5 billion in 1996, compared with 1995 levels of \$3.1 billion. In fact, both residential and nonresidential construction reached record levels during 1996. New dwelling unit permits also reached record levels of 23,500 as immigration, employment growth, and low mortgage interest rates fueled both residential and nonresidential construction.

Weber County, specifically, appears to have a fairly tight commercial market, with vacancy rates on retail, office, and industrial properties all trending toward recent lows of around 3 to 5 percent. This trend has been mirrored in both the Salt Lake City and the more southern Provo-Orem markets.

Office Lease Rates

Within the Weber County market, office conditions appear ready for additional development. Since February 1997, vacancy rates for Class A office space have dropped below 4 percent for many buildings. Only about 17,000 of the 464,000-sq-ft inventory are available for lease. Typical rents (triple net—NNN) are averaging about \$12 per square foot, with additional service costs typically at about \$4 per square foot.

Retail Lease Rates

Retail conditions are also ripe for additional development. Current vacancy rates on Class A retail space are running at about 3 percent, with only about 15,000 sq ft available over an inventory of about 1.4 million sq ft. Most of the 40,000+ sq ft of space currently under construction already has been spoken for, forcing some companies to consider less desirable Class B space. Current rental ranges for larger key tenants within Ogden City are ranging from \$9 to \$14 per square foot, while rates for smaller tenants are ranging from \$12 to \$18 per square foot.

Industrial Leasing and Sales Rates

Current industrial market conditions also suggest increasing vigor, as all three major industrial parks within or near Ogden City are experiencing positive trends. The first park, the Freeport Center, is at 98 percent occupancy of its inventory of 7.5 million sq ft, and the owners of the center are planning an expansion of 130 acres, but no firm timelines have been advanced. The older facilities at Freeport, which were originally built in 1963 as part of a naval supply depot, currently lease for about \$0.15 per square foot on a modified gross basis (the landlord pays for both property taxes and exterior maintenance), while rates on newer concrete tilt-up facilities range from \$0.22 to \$0.32 per square foot on the more typical triple-net basis. The second park is experiencing similar conditions, with quoted lease rates at the Ogden Industrial Park currently ranging from \$0.22 to \$0.33 per square foot (NNN), and an available inventory of only 40,000 sq ft on a total inventory of over 2.1 million sq ft. Both the Freeport Center and the Ogden Industrial Park have new space under construction, and will add future inventories of about 60,000 sq ft and 13,400 sq ft, respectively. The third park, the Weber Industrial Park, has been marketed to be more attractive to major employers who are willing to purchase land and develop their own space. Accordingly, lease rate information for this facility should be deemed somewhat more speculative, although available information suggests rates within the range of \$0.20 to \$0.35 per square foot, and an available inventory of 116,000 sq ft on a total inventory of over 2.8 million sq ft. More importantly, only about 110 acres of the 500-acre park remain available for sale or development, including a 70-acre parcel that will be subdivided. Current quoted land sales rates range from \$17,000 to \$20,000 per acre for unimproved land to about \$44,500 per acre on improved land. By comparison, the improved land still vacant at the Ogden Industrial Park is available for between \$25,000 and \$40,000 per acre.

Qualitative Analysis

Analysis of lease rates from market comparables supports the contention that continued high demand for commercial space, combined with a lack of available space, will continue to strengthen the local market. However, generation of relevant lease-rate data for DDO is complicated both by DDO's unique land-use attributes and by some qualitative differences between it and available market comparables. While CERL ultimately concluded that basing value calculations on these comparables would be appropriate, it is also important to highlight the qualitative differences that exist between DDO facilities and other local facilities.

The first major distinction that must be made relates to the degree of heterogeneity that will exist at DDO when the redevelopment is complete. As is frequently the case with former military facilities, many of the older buildings at DDO will exhibit a degree of functional obsolescence, compared to newer facilities available in the Ogden market, or those programmed for development at DDO.

In particular, CERL's site visit confirmed that many of the industrial buildings at DDO likely will suffer from parking and loading space constraints that newer buildings will not experience. From a market perspective, the DDO facilities will probably be very similar to the older facilities available at the Freeport Center and will likely command similarly low rents. Additionally, this functional obsolescence will likely dissuade some potential tenants (particularly those interested in high-volume distribution operations) from considering such space at all. For these reasons, CERL recommends a conservative estimate of the potential rental value of the older facilities at DDO.

Another distinction that must be made relates to the ultimate likely availability of parking facilities among the older buildings. More specifically, CERL's independent engineering analysis suggests that parking availability at DDO (among the older facilities) will likely be around half of what would normally be available to the users of Class A space in other areas. While tenant sensitivity to lack of parking varies widely, it remains a potential limitation that may slow absorption of existing buildings, particularly for office uses.

It should also be noted that the existing wood-frame storage and distribution facilities will be of significantly lower usefulness to potential tenants for reasons that include their construction, their shape, and the previously mentioned loading problems.

Finally, it is important to emphasize that none of these limitations are likely to prevent the successful redevelopment of DDO. Rather, they are simply limitations that CERL has concluded may somewhat hinder the rate of absorption that may ultimately be realized for the existing facilities.

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, CERL has been asked to defer comment on these issues to the Real Estate Directorate at HQUSACE and the Corps of Engineers District, Sacramento. 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 CERL'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 CERL'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 DDO, the OLRA has requested the EDC parcel for \$1 million. In addition, the applicant argues that, by rapidly divesting its responsibility for the DDO property, the Army may realize substantial operations and maintenance cost savings. In an attempt to independently evaluate these claims, CERL calculated the one-time layaway costs and annual maintenance and repair (M&R) costs associated with "mothballing" the facilities in the absence of an EDC. Also discussed here is the potential consideration for the property that could be defended in a negotiated arrangement.

Conclusions

Layaway and Annual M&R Cost Savings

Without a timely conveyance of the 1,009-acre EDC parcel after all Army uses for the property cease, CERL assumed that the Army would be compelled to mothball or "layaway" the facilities and infrastructure at DDO except for those uses being retained by the Federal Government (i.e., Army Caretaker Force, Army Reserve, DEPMEDS, IRS). In addition, CERL assumed that M&R costs

would be incurred to operate the existing utilities that support those Federal tenants. CERL estimated the cost of this layaway program using guidance spelled out in U.S. Army Center for Public Works Technical Note 420-10-08 and CERL 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 CERL gained from conversations with several DDO facilities engineers and the experience of CERL researchers.

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

Table 9.1. One-time layaway cost estimates for DDO.

Layaway Level 3		Layaway Level 2		Layaway Level 1	
Total minimum	Total high	Total minimum	Total high	Total minimum	Total high
\$346,729	\$693,458	\$910,163	\$1,592,785	\$684,129	\$1,368,375

Table 9.2. Annual M&R cost estimates for DDO.

M&R Level 3		M&R Level 2		M&R Level 1	
Total minimum	Total high	Total minimum	Total high	Total minimum	Total high
\$138,814	\$277,627	\$458,085	\$801,649	\$860,043	\$1,548,078

Layaway Level 1. 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 2. In this level of layaway, buildings are laid away, secured, frequently inspected, repaired, and have most utilities shut off. The intent of this level of layaway is to simply have the facility available for future use. Utilities will be maintained on an "as needed" basis by the security force, inspectors, and caretaker force.

Annual 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 3. This level of layaway is called the "do nothing" level as outlined in CERL TR M-91/23, *Layaway Procedures for US Army Facilities, Volume 1: Decision Criteria and Economics*. Simply stated, 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 3 annual maintenance and repair 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 DDO, it is likely that the Army would be required to maintain the property to allow for parcelization and redevelopment of the base in accordance with the DDO Reuse Plan. 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 1 to ensure rapid property transfer through willing buyers. Table 9.3 shows a range of costs for this scenario.

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

	LAYAWAY LEVEL ONE	
	Total minimum	Total high
EDC Parcel	\$684,129	\$1,368,375
	M&R LEVEL ONE	
	Total minimum	Total high
EDC Parcel	\$860,043	\$1,548,078
Total	\$1,544,172	\$2,916,453

Based on the projected costs given in Table 9.3, the Army could expect to incur at least \$860,000 in annual carrying costs for DDO in the absence of an EDC. Since Ogden City is prepared to assume responsibility for the property as soon as possible, the Army should consider an O&M cost avoidance to the extent that a successful conveyance cannot be achieved in a timely manner.

Anticipated Consideration From the Conveyance

Summary of OLRA Proposal

The OLRA application proposes an amount of \$1 million as consideration to the Army for the 1,009-acre EDC parcel and supporting water, sewer, drainage, gas, electric, communications, and internal roadway systems. The applicant argues that this is an appropriate amount of consideration to the Army for the following reasons:

1. Under a private sector approach to redevelopment, which does not benefit from tax-free TIF bonds or grant funding, likely valuation estimates would be negative.
2. Substantial levels of investment are required to achieve economic development goals.
3. A projected negative \$1.2 million deficit over 15 years limits the OLRA's ability to pay more than \$1 million.
4. The Army will receive indirect monetary benefits as a result of the expedited transfer of the OLRA through cost avoidance.

CERL Findings

CERL provided extensive discussion in Chapter 4, **Business Plan Review and Market and Financial Feasibility Analysis**, regarding the analysis of the applicant's Business Plan and the NPV of the Business Plan. In summary, CERL concluded that the applicant did not adequately demonstrate Business Plan financial feasibility because of methodological errors made in the Business Plan, and reliance on anticipated proceeds from the sale of DDO in Year 15 to a private investor to create positive projected NPVs. CERL's independent investigation led to the development of a scenario that corrects observed methodological shortcomings and yields positive NPVs without a Year 15 reversion. CERL

calculated the recommended range of Business Plan value to be *positive* \$3.1 million to \$12.1 million.

Level of Investment

The OLRA has proposed to underwrite a majority of the costs associated with the redevelopment of DDO, including \$43.9 million in operating expenditures and \$81.2 million in infrastructure improvements. These costs are to be offset with real estate revenues, grants, and TIF bonds. The OLRA's anticipated return from investment is the creation of over 8,800 on-site industrial and office jobs facilitated through a quality industrial and business park. CERL's analysis concluded that the OLRA has a high probability of achieving investment levels and job creation goals, but the Business Plan is marked by periods of negative cash flows, especially in the early lean years of redevelopment.

Recommendation

Based on the eligibility factors/criteria reviewed for this report, it is the opinion of CERL that the applicant is eligible for an EDC. CERL recommends that the Army consider up to \$2.9 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 CERL that the Army look favorably upon the OLRA's substantial level of investment, which will likely create over 8,000 jobs, when deciding if a discount from FMV is warranted. Finally, the CERL estimated range of Business Plan value is *positive* \$3.1 million to \$12.1 million, which contrasts with the OLRA's offer of \$1 million. However, the Army's final determination of value and possible consideration must rest largely on the results of a negotiation process between the Army and the OLRA and the results of the Army's FMV appraisal process.

10 Review of Application for Completeness

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

1. *Copy of the adopted Reuse Plan.* A copy of the plan is included.
2. *Project narrative, including:*
 - a. *General description of the property requested.* A description is provided in the application, but was found to be generally shallow. However, the Reuse Plan provides an indepth inventory of those facilities and parcels requested under the EDC.
 - b. *Description of intended uses.* A description is provided.
 - c. *Description of the economic impact of the closure on local communities.* A minimally acceptable description is provided. Although closure impacts were quantified to an extent, underlying assumptions were not available for review.
 - d. *Description of the financial condition of the community.* The current financial condition of Ogden City was not explicitly described in any referenced documentation, but a discussion centering on the ability of the City to implement the Reuse Plan was included.
 - e. *Statement of how the EDC is consistent with the overall Reuse Plan.* The application provides a short discussion of consistency with the adopted Reuse Plan.
3. *Description of how the EDC will contribute to short- and long-term job creation and economic redevelopment.* A detailed 15-yr employment projection for DDO was 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 and property absorption were difficult to reconstruct. To overcome these limitations, CERL requested additional information from the ERA. However, the additional information provided was deemed to have limited applicability. Despite these limitations, CERL was able to reconstruct the applicant's cash flow analysis through the creation of independent and supportable assumptions. Element 4(b) was included. Element (c) was included and found to be reasonable. However, explicit assumptions concerning the phasing of infrastructure improvements in the cash flow analysis were absent. Finally, review element 4(d) was included in the EDC request. The applicant satisfactorily demonstrates how negative operational shortfalls will be offset through a mixture of grant funding and tax increment financing resulting in overall project feasibility.

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

6. *If a transfer is requested for less than fair market value...then a statement should be provided justifying a discount.* The applicant argues that the fair market value of the EDC parcel is \$1 million, and accordingly requests the EDC parcel for that amount.

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

Appendix A: CERL Questions and ERA Responses for the DDO EDC Application

CERL Questions

Revenues

1. How was "Potential Lease Revenue" (Line 1, Table 6) calculated over the 15-year pro forma? Assuming Line 1, Table 6 revenues, CERL calculated total 15-year absorption of 2,686,419 SF (1,605,676 SF of "Mfg" and 1,080,743 SF of "Distribution"). CERL assumed the following in its recast calculations (calculations are attached).
 - 3 percent revenue growth factor to begin in 2001
 - 60 percent of leasing SF is "Mfg" – calculated by assuming 65 percent of leasing *revenues* are "Mfg"
 - 40 percent of leasing SF is "Distribution" – calculated by assuming 35 percent of leasing *revenues* are "Distribution"
 - all "Potential Lease Revenue" is derived from "Existing DDO space"
 - no "Office" leasing is assumed over 15 years
 - assumed that 3,670,695 SF of "Existing DDO space" (Table 5) would be absorbed over 15 years
2. Was "Potential Lease Revenue" calculated on a gross building square footage basis, or on net leasable basis? If net leasable, what assumptions were used to calculate leasable building areas?
3. How was "Land Sale" (Line 2, Table 6) calculated. To correctly recast 15-year revenues CERL assumed annual straight-line absorption of 10.36 acres versus the estimated 7.28 acres presented in Table 4. Under CERL's assumptions, 15-year land absorption is projected at 155.4 acres versus 109 acres in Table 5.

Operating Expenses

1. In terms of LRA organizational structure over the long-term, is it assumed that the LRA will, in effect, become a permanent industrial park operator? In other words, the City of Ogden's Office of Business Development will not eventually take G&A control of DDO at some point in the future when redevelopment activities are waning?
2. How are "Maintenance" costs calculated over the 15-year pro forma (Line 12, Table 6)? Page 17 of the EDC application suggests that the baseline inventory for "Maintenance" is 5,567,240 SF at \$0.50 a SF. This would calculate to a 1999 cost of \$2,783,620, not \$1,959,413. How is the 1999 baseline calculated? How would "Maintenance" be calculated over time?

Infrastructure Costs

1. How are "Building Renovation" (Line 19, Table 6) costs calculated? CERL is assuming that these calculations will be made clear when Question 1 under Revenues is explained.
2. According to Page 18 of the EDC application, "Infrastructure Improvements" total \$49.4 million over 15 years. However, Table 4.1 on Page 4-7 suggests that 15-year infrastructure costs total \$53.5 million. Moreover, there is no clear relationship between Bingham's Infrastructure Phasing Plan and programmed improvements on Line 20, Table 6.

Supplemental Data Call

1. Supporting spreadsheets/workbooks for the following lines on Table 6: 1, 2, 12, 19, 20, and 22.
2. The supporting TIF analysis which forecasts property tax increment over 15 years (Line 22)
3. A bond amortization schedule

Attachment 1. Potential Lease Revenue

Potential Lease Revenue Recast (Line 1, Table 6)

Year	1	2	3	4	5	6	7	8	9
Revenue Inflation Year	1	2	1	2	3	4	5	6	7
Potential Lease Revenue	\$ 521,387	\$ 983,510	\$ 1,489,253	\$ 1,952,084	\$ 2,441,345	\$ 2,958,204	\$ 3,503,878	\$ 4,079,630	\$ 4,686,773
Discounted Revenue @ 3%	\$ 521,387	\$ 983,510	\$ 1,445,877	\$ 1,840,026	\$ 2,234,177	\$ 2,628,326	\$ 3,022,476	\$ 3,416,626	\$ 3,810,775
MFG Revenue @ 65%	\$ 338,902	\$ 639,282	\$ 939,820	\$ 1,196,017	\$ 1,452,215	\$ 1,708,412	\$ 1,964,609	\$ 2,220,807	\$ 2,477,004
Distribution Revenue @ 35%	\$ 182,485	\$ 344,229	\$ 506,057	\$ 644,009	\$ 781,962	\$ 919,914	\$ 1,057,867	\$ 1,195,819	\$ 1,333,771
Convert MFG Revenue to SF @ \$2.50	135,561	255,713	375,928	478,407	580,886	683,365	785,844	888,323	990,802
Convert Distribution Revenue to SF @ \$2.00	91,243	172,114	253,028	322,005	390,981	459,957	528,933	597,910	666,886
Cumulative SF Absorbed	226,803	427,827	628,956	800,411	971,867	1,143,322	1,314,777	1,486,232	1,657,687
Annual Absorption	226,803	201,024	201,130	171,455	171,455	171,455	171,455	171,455	171,455
MFG Absorption	135,561	120,152	120,215	102,479	102,479	102,479	102,479	102,479	102,479
Distribution Absorption	91,243	80,872	80,914	68,976	68,976	68,976	68,976	68,976	68,976
		Total Leasing Absorption		2,686,419					
		plus Total Land Sales (Line 2)		734,130					
		equals Total Property Absorption		3,420,549					
		Total DDO space Captured (Table 5)		3,670,695					
		Absorption Differential		250,146					

ERA Responses

Revenues

1) Potential lease revenues were forecast based on the share of forecast employment growth that DDO could expect to capture over the forecast period. Employment estimates for F.I.R.E, manufacturing, and warehousing industries were collected for Weber County, and for the larger Wasatch Front Range area; different capture rates were used for each area. When the annualized number of DDO captured employees were applied to assumed employee-per-square foot ratios developed by ERA, based on past military base work, the result was a series of annual increments of net square footage of demand for warehouse, manufacturing, and office space, as well as new land development. Lease rates, based on local market research, were then applied to the annual square foot demand estimates, to arrive at potential lease revenue. There are three key factors that went into this analysis:

- First, rental rate inflation is held constant until 2001, after which it inflates at 3 percent per year.
- Second, existing DDO space captured, as shown in table 4, is divided between space leased and space bought. The capture rates for buildings sold and buildings leased are different in the pro forma.
- Third, ERA failed to note in the document that a small increment of Weber County office demand is forecast to be captured by existing space at DDO. This increment, totaling 29,270 net square feet, is assumed to be absorbed between 1999 and 2001, and then held constant over the forecast period. This increment of space is separate from any potential opportunity revenue.

2) Effectively, the potential lease revenue line is based on net rentable square footage, since the underlying employment forecasts are based on ratios of net rentable square feet per employee.

3) In reviewing the acreage development forecasts, ERA determined that a revision to the estimates used in the pro forma analysis were mistakenly not incorporated in the draft document. The total correction amounts to a total of 9.95 acres over the 15-year period. The correct tables are shown below:

**Table 2: Annual Weber County Demand
Captured by DDO, in Square Feet and Acres**

Category	Mfg	Distribution	Office	Total
Total Demand Captured	135,000	51,040	33,625	219,665
Existing DDO space	97,200	36,748	0	133,948
New Construction	37,800	14,290	33,625	52,030
Acres; new construction	2.17	0.89	1.82	4.88

**Table 3: Annual Wasatch Front Demand Captured by DDO,
in Square Feet and Acres**

Category	Mfg	Distribution	Office	Total
Total Demand Captured	69,580	84,257	0	153,837
Existing DDO space	50,100	60,665	0	110,765
New Construction	19,500	23,600	0	43,100
Acres; new construction	1.42	1.63	0	3.05

**Table 4: Total Annual Weber Co. & Wasatch Front Demand
Captured by DDO, in Square Feet and Acres**

Category	Mfg	Distribution	Office	Total
Total Demand Captured	204,580	135,297	33,625	373,500
Existing DDO space	147,300	97,413	0	244,713
New Construction	57,300	37,890	33,625	128,815
Acres; new construction	3.59	2.52	1.82	7.93

**Table 5: Estimated 15-Year Total Capture, Weber County and the
Wasatch Front, in Square Feet and Acres**

Category	Mfg	Distribution	Office	Total
Total Demand Captured	3,068,700	2,029,455	504,375	5,602,530
Existing DDO space	2,209,500	1,461,195	0	3,670,695
New Construction	859,500	568,350	504,375	1,932,225
Acres; new construction	53.05	37.8	27.30	118.95

Operating Expenses

1) Answer to first part: yes

Answer to second part: The current Office of Business Development is not staffed to fulfill LRA functions; additional staff would be needed.

2) Maintenance costs in the pro forma are driven by the estimated annual total inventory of space under the control of the LRA, which is expected to vary from year to year due to building sales, ongoing DoD and National Guard operations, and building sales. The baseline inventory in 1999 is correct; however, in 1999, there is 1,648,413 square feet of space which is not under LRA control, and would therefore not be maintained by the LRA. The infrastructure cost estimate was developed by Bingham Engineering.

Infrastructure costs

1) The building renovation line assumes that the annual increments of manufacturing and distribution space shown above in Table 4 are renovated at the cost levels shown in the report. The cost estimates were developed by Bingham Engineering.

2) Bingham Engineering developed a phasing plan for DDO renovations which was spread over the 15 year period. However, ERA determined that the proposed TIF district planned for DDO would not generate sufficient tax increment to pay off all of the costs over 15 years. As such, ERA was forced to move an increment of the infrastructure costs out beyond Year 15.

Table 6: Option 1 ERA Estimate of Debt Service Capacity Based on Property Tax Revenue Generated in Proposed DDO TIF District

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Inventory Which is Taxable															
Existing space	244,711	244,711	244,711	244,711	244,711	244,711	244,711	244,711	244,711	244,711	244,711	244,711	244,711	244,711	244,711
New Industrial	57,282	57,282	57,282	57,282	57,282	57,282	57,282	57,282	57,282	57,282	57,282	57,282	57,282	57,282	57,282
New Distribution	37,883	37,883	37,883	37,883	37,883	37,883	37,883	37,883	37,883	37,883	37,883	37,883	37,883	37,883	37,883
New Office	33,625	33,625	33,625	33,625	33,625	33,625	33,625	33,625	33,625	33,625	33,625	33,625	33,625	33,625	33,625
Opportunity	560,000	0	55,000	0	55,000	0	55,000	0	55,000	0	55,000	0	55,000	0	55,000
Total Annual Space	933,502	373,502	428,502	373,502	373,502	373,502	373,502	373,502	373,502	373,502	373,502	373,502	373,502	373,502	373,502
Cumulative Taxable Space	933,502	1,307,003	1,735,505	2,109,007	2,482,508	2,856,010	3,229,512	3,603,013	3,976,515	4,350,017	4,723,518	5,097,020	5,470,522	5,844,023	6,217,525
Building Value Inflation		1.050	1.103	1.158	1.216	1.276	1.340	1.407	1.477	1.551	1.629	1.710	1.796	1.886	1.980
Assessed Valuation at 10%sf	\$9,335,017	\$13,723,535	\$19,133,943	\$24,414,388	\$30,175,044	\$36,450,729	\$43,278,545	\$50,698,016	\$58,751,237	\$67,483,036	\$76,941,136	\$87,176,339	\$98,242,709	\$110,197,776	\$123,102,742
Assessed Valuation at 15%sf	\$14,002,225	\$20,585,303	\$28,700,914	\$38,621,583	\$49,262,566	\$60,676,094	\$73,917,818	\$88,047,024	\$103,126,856	\$119,228,554	\$136,411,704	\$154,744,509	\$174,286,064	\$195,117,664	\$218,356,664
Assessed Valuation at 20%sf	\$18,670,033	\$27,447,070	\$38,267,885	\$50,828,777	\$65,030,088	\$80,857,090	\$98,657,090	\$118,936,032	\$141,502,475	\$166,566,072	\$194,222,273	\$224,685,419	\$248,045,552	\$284,355,552	\$324,620,548
Growth in Assessed Value/sf	\$ 10.00	\$ 10.50	\$ 11.03	\$ 11.58	\$ 12.16	\$ 12.76	\$ 13.40	\$ 14.07	\$ 14.77	\$ 15.51	\$ 16.29	\$ 17.10	\$ 17.96	\$ 18.86	\$ 19.80
Growth in Assessed Value/sf	\$ 15.00	\$ 15.75	\$ 16.54	\$ 17.36	\$ 18.23	\$ 19.14	\$ 20.10	\$ 21.11	\$ 22.16	\$ 23.27	\$ 24.43	\$ 25.66	\$ 26.94	\$ 28.28	\$ 29.70
Growth in Assessed Value/sf	\$ 20.00	\$ 21.00	\$ 22.05	\$ 23.15	\$ 24.31	\$ 25.53	\$ 26.80	\$ 28.14	\$ 29.55	\$ 31.03	\$ 32.58	\$ 34.21	\$ 35.92	\$ 37.71	\$ 39.60
Total Property Taxes-\$10%sf	\$166,807	\$245,226	\$341,904	\$456,261	\$599,198	\$773,344	\$995,923	\$1,049,826	\$1,205,854	\$1,374,861	\$1,557,754	\$1,755,499	\$1,969,124	\$2,199,723	
Total Property Taxes-\$15%sf	\$250,211	\$367,839	\$512,857	\$684,391	\$898,797	\$1,160,016	\$1,358,884	\$1,574,739	\$1,808,782	\$2,062,292	\$2,336,631	\$2,633,248	\$2,953,686	\$3,299,584	
Total Property Taxes-\$20%sf	\$333,615	\$490,452	\$683,809	\$922,521	\$1,207,396	\$1,546,689	\$1,811,846	\$2,099,652	\$2,411,709	\$2,749,722	\$3,115,508	\$3,510,998	\$3,938,248	\$4,399,446	
Increment Allocated to DDO: 10 years at 100% and 10 years at 50%															
Property Taxes Generated at 10%sf	\$166,807	\$245,226	\$341,904	\$456,261	\$599,198	\$773,344	\$995,923	\$1,049,826	\$1,205,854	\$1,374,861	\$1,557,754	\$1,755,499	\$1,969,124	\$2,199,723	
Property Taxes Generated at 15%sf	\$250,211	\$367,839	\$512,857	\$684,391	\$898,797	\$1,160,016	\$1,358,884	\$1,574,739	\$1,808,782	\$2,062,292	\$2,336,631	\$2,633,248	\$2,953,686	\$3,299,584	
Property Taxes Generated at 20%sf	\$333,615	\$490,452	\$683,809	\$922,521	\$1,207,396	\$1,546,689	\$1,811,846	\$2,099,652	\$2,411,709	\$2,749,722	\$3,115,508	\$3,510,998	\$3,938,248	\$4,399,446	
Potential Bond Issuer	\$2,341,312	\$476,536	\$2,256,410	\$0	\$4,225,000	\$0	\$2,504,661	\$0	\$3,313,907	\$3,435,897	\$0	\$0	\$0	\$0	\$0
Actual Bond Increment after Costs	\$2,282,779	\$464,623	\$2,200,000	\$0	\$4,119,375	\$0	\$2,442,044	\$0	\$3,231,059	\$3,350,000	\$0	\$0	\$0	\$0	\$0
Bond #1 Annual Payoff	\$156,087	\$156,087	\$156,087	\$156,087	\$156,087	\$156,087	\$156,087	\$156,087	\$156,087	\$156,087	\$156,087	\$156,087	\$156,087	\$156,087	\$156,087
Bond #2 Annual Payoff	\$31,769	\$31,769	\$31,769	\$31,769	\$31,769	\$31,769	\$31,769	\$31,769	\$31,769	\$31,769	\$31,769	\$31,769	\$31,769	\$31,769	\$31,769
Bond #3 Annual Payoff	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Bond #4 Annual Payoff	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Bond #5 Annual Payoff	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Bond #6 Annual Payoff	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Bond #7 Annual Payoff	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Bond #8 Annual Payoff	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Bond #9 Annual Payoff	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Bond #10 Annual Payoff	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Total Annual Debt Service	\$156,087	\$187,857	\$338,284	\$338,284	\$619,931	\$619,931	\$786,928	\$786,928	\$1,007,855	\$1,236,915	\$1,236,915	\$1,236,915	\$1,236,915	\$1,236,915	\$1,236,915
Competition of Debt Service Requirements with Annual TIF Revenue Flows															
Over/(Under) at 10%sf	\$10,720	\$57,369	\$3,621	\$97,977	\$80,753	\$31,387	\$13,584	\$118,995	\$41,971	\$31,061	\$274,512	\$146,487	\$8,066	\$141,472	\$302,891
Over/(Under) at 15%sf	\$94,124	\$179,982	\$174,572	\$316,107	\$188,846	\$357,057	\$373,089	\$566,884	\$566,884	\$571,867	\$206,689	\$398,727	\$606,339	\$830,665	\$1,072,794
Over/(Under) at 20%sf	\$177,527	\$302,595	\$345,525	\$534,238	\$458,445	\$682,726	\$759,761	\$1,024,918	\$1,091,797	\$1,174,794	\$687,891	\$943,941	\$1,220,784	\$1,519,859	\$1,942,697

Appendix B: Technical Support for Infrastructure Improvement Cost Estimates

Table B.1. Summary of cost estimates for road improvements (OLRA scenario)

Cost comparisons for Road Improvements - LRA Scenario		USACERL Low		USACERL High	
Project Description	DDO Cost	DDO Cost plus Cont.	USACERL Low	USACERL High	
T-1 Widen 2nd Street in Phase 1	\$566,111	\$735,944.30	\$817,000	\$966,000	
T-2.1 Install part of "A" Street with landscaping and new entrance in Phase 2	\$796,081	\$1,034,905.30	\$655,000	\$774,000	
T-2.2 Widen Commanders Way in Phase 2	\$0	\$0.00	\$146,000	\$172,000	
T-2.3 Build "W" Road in Phase 2	\$0	\$0.00	\$116,000	\$138,000	
T-3.1 Install part of "A" Street with landscaping in Phase 3	\$437,127	\$568,265.10	\$442,000	\$523,000	
T-3.2 Build part of "Y" Road in Phase 3	\$0	\$0.00	\$124,000	\$146,000	
T-3.3 Repair existing roads in Phase 3	\$0	\$0.00	\$175,000	\$207,000	
T-4.1 Improve Main Street in Phase 4	\$1,140,183	\$1,482,237.90	\$994,000	\$1,175,000	
T-4.2 Build part of "W" Road in Phase 4	\$0	\$0.00	\$99,000	\$117,000	
T-4.3 Build part of "Y" Road in Phase 4	\$0	\$0.00	\$109,000	\$128,000	
T-4.4 Widen Mill Creek Road in Phase 4	\$0	\$0.00	\$72,000	\$86,000	
T-4.5 Build part of "X" Road in Phase 4	\$0	\$0.00	\$146,000	\$173,000	
T-5.1 Widen 2nd Street in Phase 5	\$1,928,305	\$2,506,796.50	\$2,477,000	\$2,928,000	
T-5.2 Install part of "C" Street with landscaping in Phase 5	\$0	\$0.00	\$264,000	\$311,000	
T-6.1 Install part of "A" Street with landscaping in Phase 6	\$2,010,219	\$2,613,284.70	\$1,066,000	\$1,259,000	
T-6.2 Install part of "B" Street with landscaping in Phase 6	\$0	\$0.00	\$294,000	\$347,000	
T-6.3 Install part of "C" Street with landscaping in Phase 6	\$0	\$0.00	\$387,000	\$457,000	
T-6.4 Build part of "Z" Road in Phase 6	\$0	\$0.00	\$241,000	\$285,000	
T-6.5 Build part of "X" Road in Phase 6	\$0	\$0.00	\$264,000	\$312,000	
T-7.1 Install part of "C" Street with landscaping in Phase 7	\$1,825,372	\$2,372,983.60	\$609,000	\$720,000	
T-7.2 Install part of "C" Street with landscaping in Phase 7	\$0	\$0.00	\$488,000	\$577,000	
T-8.1 Build part of "Z" Road in Phase 8	\$296,600	\$385,580.00	\$216,000	\$256,000	
T-9.1 Install part of "B" Street with landscaping in Phase 9	\$382,278	\$496,961.40	\$497,000	\$587,000	
T-10.1 Widen part of "H" Street in Phase 10	\$536,266	\$697,145.80	\$228,000	\$269,000	
T-10.2 Build part of "H" Road in Phase 10	\$0	\$0.00	\$54,000	\$63,000	
T-11.1 Widen part of "H" Street in Phase 11	\$991,506	\$1,288,957.80	\$321,000	\$379,000	
T-11.2 Widen part of "8th" Street in Phase 11	\$0	\$0.00	\$349,000	\$413,000	
TOTAL	\$10,910,048	\$14,183,062	\$11,650,000	\$13,768,000	

Table B.2. Sample of road improvement cost estimate (OLRA scenario)

T-1 Widen 2nd Street in Phase 1					
SOW: Upgrade existing road to 4 lanes with curb and gutters, sidewalks, landscaping, and street lights in Phase 1					
Action	Quantity	UOM	Cost/unit	Total Cost	Means Ref. No. Book
Install road, curb and gutter, and sidewalk					
<i>Road</i>					
Grade soil sides to expand	18,667	SY	\$0.72	\$13,440	0225-122-1020 97 Site p. 63
Install and compact 8" crushed stone base m	18,667	SY	\$10.20	\$190,400	022-308-0200 97 Site p. 48
Install 3" binder course	18,667	SY	\$5.30	\$98,933	025-104-0160 97 Site p. 62
Install 3" wearing course	18,667	SY	\$6.15	\$114,800	025-104-0460 97 Site p. 62
Compaction of 6" asphalt surface	3,111	CY	\$0.47	\$1,462	025-226-5020
Curb and gutter					
Excavate for curb and gutter	508	CY	\$4.53	\$2,302	022-254-0090 97 Site
Install curb and gutter	7,000	LF	\$6.50	\$45,500	025-025-0445 97 Site p. 65
Install catch basins	70	EA	\$1,535.00	\$107,450	A12.3-710-5820 97 Site p. 365
Install pipe to connect basins	7,700	LF	\$5.30	\$40,810	027-108-3020 97 Site p. 87
Sidewalk					
Install sidewalk	7,000	LF	\$13.20	\$92,400	A12.7-140-1600 97 Site p. 378
Total				\$707,498	
Install median					
Hauling of fill	1,556	CY	\$23.00	\$35,778	022-266-0560 97 Site p. 46
Spread fill material	1,556	CY	\$1.40	\$2,178	022-262-0010 97 Site p. 46
Excavate for curb and gutter	508	CY	\$4.53	\$2,302	022-254-0090 97 Site
Install curb and gutter	7,000	LF	\$6.50	\$45,500	025-025-0445 97 Site p. 65
Install sod	42	MSF	\$505.00	\$21,210	029-316-0300 97 Site p. 116
Total				\$106,968	
Pavement markings					
Layout of pavement marking	7,000	LF	\$0.04	\$280	025-804-0790 97 Site p. 70
Install pavement marking (Thermoplastic paint)	7,000	LF	\$0.85	\$5,950	025-804-0710 97 Site
Layout of directional arrows	60	SF	\$4.61	\$277	025-804-0760 97 Site
Install directional arrows	60	SF	\$4.61	\$277	025-804-0760 97 Site
Total				\$6,783	
Paint markings					
Layout of crosswalk	800	LF	\$0.04	\$32	025-804-0790 97 Site
Paint crosswalk (Thermoplastic paint)	800	LF	\$1.17	\$936	025-804-0730 97 Site
Layout of directional arrows	120	SF	\$4.61	\$553	025-804-0760 97 Site
Paint directional arrows	120	SF	\$4.61	\$553	025-804-0760 97 Site
Total				\$2,074	
Install traffic control directional signs					
Install new signs	4	EA	\$77.50	\$310	028-412-0600 & 028-412-0600 97 Site
Excavate for new posts	1	CY	\$4.48	\$6	022-254-0060 97 Site
Concrete for new posts	1	CY	\$520.00	\$726	033-130-1520 97 Site
Total				\$1,042	



Total									
Install sod									
Pavement markings									
Layout of pavement marking									
Install pavement marking (Thermoplastic paint)									
Layout of directional arrows									
Install directional arrows									
Paint markings									
Layout of crosswalk									
Paint crosswalk (Thermoplastic paint)									
Layout of directional arrows									
Paint directional arrows									
Total									
Install traffic control directional signs									
Install new signs									
Excavate for new posts									
Concrete for new posts									
Total									
Install reflective street signs									
Install new signs									
Excavate for new posts									
Concrete for new posts									
Total									
Install street lights									
Install street lights 400 watt									
TOTAL									
SUBTOTAL									
City cost index									
TOTAL									
TOTAL with contingency of:									
TOTAL with contingency of:									
ROUNDED TO									
ROUNDED TO									

Table B.3. Sample of road improvement cost estimate (OLRA scenario)

I-2.1 Install part of "A" Street with landscaping and new entrance in Phase 2						
SOW: Install road to 4 lanes divided with curb and gutters, sidewalks, landscaping, and street lights in Phase 2						
Action	Quantity	UOM	Cost/Unit	Total Cost	Means Ref. No.	Book
Install road						
Remove soil/excavate	5,307	CY	\$1.67	\$8,862	022-242-2000	97 Site p. 41
Remove top soil	5,307	CY	\$0.89	\$4,723	029-204-1400	97 Site p. 113
Grade soil	10,613	SY	\$0.72	\$7,642	025-122-0100	97 Site p. 63
Compaction of soil with riding vibrator	10,613	CY	\$0.64	\$6,793	022-226-5040	97 Site p. 39
Install and compact 8" crushed stone	10,613	SY	\$10.20	\$108,256	022-308-0200	97 Site p. 48
Install 3" binder course	10,613	SY	\$5.30	\$56,251	025-104-0160	97 Site p. 62
Install 3" wearing course	10,613	SY	\$6.15	\$65,272	025-104-0460	97 Site p. 62
Compaction of asphalt surface	1,769	CY	\$0.47	\$831	025-226-5020	
Total				\$258,629		
Install median and landscaping						
Hauling of fill	590	CY	\$23.00	\$13,561	022-266-0560	97 Site p. 46
Spread fill material	590	CY	\$1.40	\$825	022-262-0010	97 Site p. 46
Install sod	16	MSF	\$505.00	\$8,080	029-316-0300	97 Site p. 116
Install trees and pit irrigation system	16	EA	\$100.07	\$1,601	A12.7-421-0000/R02	97 Site
Excavate for curb and gutter for median	15,920	SF	\$0.61	\$9,711	027-104-0900	97 Site p. 108
Install curb and gutter for median	210	CY	\$4.97	\$1,044	022-254-0500	97 Site
Install curb and gutter for median	3,184	LF	\$8.90	\$28,338	025-025-0448	97 Site
Install street lights 400 watt	8	EA	\$2,085.00	\$16,680	A12.7-500-2330	
Total				\$79,841		
Finish						
Layout of pavement marking	9,552	LF	\$0.04	\$382	025-804-0790	97 Site p. 70
Install pavement marking (Thermoplastic)	9,552	LF	\$0.85	\$8,119	025-804-0710	97 Site
Layout of directional arrows	60	SF	\$4.61	\$277	025-804-0760	97 Site
Install directional arrows	60	SF	\$4.61	\$277	025-804-0760	97 Site
Total				\$9,054		
Install new curb and gutter						
Excavate for curb and gutter	231	CY	\$4.97	\$1,149	022-254-0500	97 Site
Install curb and gutter	3,184	LF	\$8.90	\$28,338	025-025-0448	97 Site
Install catch basins	32	EA	\$1,535.00	\$49,120	A12.3-710-5820	97 Site p. 365
Install pipe to connect basins	3,502	LF	\$5.30	\$18,563	027-108-3020	97 Site p. 87
Total				\$97,169		
Install sidewalks						
Remove existing soil	1,415	SY	\$6.70	\$9,481	020-554-1750	97 Site p. 28
Grade soil	1,415	SY	\$0.72	\$1,019	0225-122-1020	97 Site p. 63
Install sidewalk	3,184	LF	\$13.20	\$42,029	A12.7-140-1580	97 Assemblies p. 421
Total				\$52,529		
Install foundations						
Excavate foundation for traffic pole	5	CY	\$4.53	\$24	022-254-0060	97 Site p. 44
Install concrete foundation for traffic pole	5	CY	\$295.00	\$1,545	033-130-1520	97 Site p. 139

Item Description	Quantity	Unit	Unit Price	Total Price	Material Code	Notes
Install pavement marking (Thermoplastic)						
Layout of directional arrows	9,552	LF	\$0.85	\$8,119	025-804-0710	97 Site
Install directional arrows	60	SF	\$4.61	\$277	025-804-0760	97 Site
Total				\$9,054		
Install new curb and gutter						
Excavate for curb and gutter	231	CY	\$4.97	\$1,149	022-254-0500	97 Site
Install curb and gutter	3,184	LF	\$8.90	\$28,338	025-025-0448	97 Site
Install catch basins	32	EA	\$1,535.00	\$49,120	A12.3-710-5820	97 Site p. 365
Install pipe to connect basins	3,502	LF	\$5.30	\$18,563	027-108-3020	97 Site p. 87
Total				\$97,169		
Install sidewalks						
Remove existing soil	1,415	SY	\$6.70	\$9,481	020-554-1750	97 Site p. 28
Grade soil	1,415	SY	\$0.72	\$1,019	0225-122-1020	97 Site p. 63
Install sidewalk	3,184	LF	\$13.20	\$42,029	A12.7-140-1580	97 Assemblies p. 421
Total				\$52,529		
Install foundations						
Excavate foundation for traffic pole	5	CY	\$4.53	\$24	022-254-0060	97 Site p. 44
Install concrete foundation for traffic pole	5	CY	\$295.00	\$1,545	033-130-1520	97 Site p. 139
Total				\$1,568		
Install lights						
Install signals programmed	1	EA	\$43,200.00	\$43,200	028-424-0100	97 Site p. 109
Install traffic turn signals	8	EA	\$2,725.00	\$21,800	028-424-0120	97 Site p. 109
Install fully actuated, detectors in all stre	1	EA	\$7,700.00	\$7,700	028-424-0300	97 Site p. 109
Install pedestrian push button	4	EA	\$5,825.00	\$23,300	028-424-0400	97 Site p. 109
Install optical programming	1	EA	\$3,500.00	\$3,500	028-424-0500	97 Site p. 109
Total				\$99,500		
Paint markings						
Layout of crosswalk	800	LF	\$0.04	\$32	025-804-0790	97 Site
Paint crosswalk (Thermoplastic paint)	800	LF	\$1.17	\$936	025-804-0730	97 Site
Layout of directional arrows	120	SF	\$4.61	\$553	025-804-0760	97 Site
Paint directional arrows	120	SF	\$4.61	\$553	025-804-0760	97 Site
Total				\$2,074		
Install new entrance						
Hauling of fill	370	CY	\$23.00	\$8,519	022-266-0560	97 Site p. 46
Spread fill material	370	CY	\$1.40	\$519	022-262-0010	97 Site p. 46
Install sod	20	MSF	\$505.00	\$10,100	029-316-0300	97 Site p. 116
Install trees and pit	40	EA	\$100.07	\$4,003	A12.7-421-0000/R07	97 Site
Irrigation system	20,000	SF	\$0.61	\$12,200	027-104-0900	97 Site p. 108
Install shrubs	40	Each	\$69.85	\$2,794	S	
Install flowers	100	Each	\$10.00	\$1,000	S	
Install new signs	2	Each	\$2,250.00	\$4,500	104-104-0900	97 Site p. 219
Excavate for new posts	7	CY	\$4.53	\$33	022-254-0060	97 Site p. 254
Concrete for new posts	7	CY	\$636.76	\$4,668	R033-100	97 Site p. 468
Install street lights 400 watt	20	EA	\$2,085.00	\$41,700	A12.7-500-2330	
Total				\$90,035		
SUBTOTAL				\$690,401		= \$0
City cost Index				\$0		check
TOTAL				\$595,125		
TOTAL with contingency of:				\$654,638		

Install pedestrian push button	4 EA	\$5,825.00	\$23,300	028-424-0400	97 Site p. 109
Install optical programming	1 EA	\$3,500.00	\$3,500	028-424-0500	97 Site p. 109
Paint markings					
Layout of crosswalk	800 LF	\$0.04	\$32	025-804-0790	97 Site
Paint crosswalk (Thermoplastic paint)	800 LF	\$1.17	\$936	025-804-0730	97 Site
Layout of directional arrows	120 SF	\$4.61	\$553	025-804-0760	97 Site
Paint directional arrows	120 SF	\$4.61	\$553	025-804-0760	97 Site
Total			\$2,074		
Install new entrance					
Hauling of fill	370 CY	\$23.00	\$8,519	022-266-0560	97 Site p. 46
Spread fill material	370 CY	\$1.40	\$519	022-262-0010	97 Site p. 46
Install sod	20 MSF	\$505.00	\$10,100	029-316-0300	97 Site p. 116
Install trees and pit	40 EA	\$100.07	\$4,003	A12.7-421-0000/R02	97 Site
Irrigation system	20,000 SF	\$0.61	\$12,200	027-104-0900	97 Site p. 108
Install shrubs	40 Each	\$69.85	\$2,794	S	
Install flowers	100 Each	\$10.00	\$1,000	S	
Install new signs	2 Each	\$2,250.00	\$4,500	104-104-0900	97 Site p. 219
Excavate for new posts	7 CY	\$4.53	\$33	022-254-0060	97 Site p. 254
Concrete for new posts	7 CY	\$636.76	\$4,668	R033-100	97 Site p. 468
Install street lights 400 watt	20 EA	\$2,085.00	\$41,700	A12.7-500-2330	
Total			\$90,035		
SUBTOTAL			\$690,401	\$690,401	= \$0
City cost index			\$0		check
TOTAL			\$595,125		
TOTAL with contingency of:			\$654,638		
TOTAL with contingency of:			\$773,663		
ROUNDED TO			\$655,000		
ROUNDED TO			\$774,000		

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Table B.4. Sample of road improvement cost estimate (OLRA scenario)

I-2.2 Widen Commanders Way in Phase 2						
SOW: Overlay and Widen Commander's Way in Phase 2						
Action	Quantity	UOM	Cost/Unit	Total Cost	Means Ref. No.	Book
Repair existing with an overlay						
Sweep and remove debris	33	MSF	\$2.13	\$70	029-710-6420	96 Site&Work
Repair potholes & damages (EST 15% of existing)	545	SY	\$8.45	\$4,601	029-710-5910	96 Site&Work
Install 1-1/2" binder course	3,630	SY	\$2.82	\$10,237	025-104-0160	97 Site&Work
Install 1-1/2" overlay	3,630	SY	\$3.27	\$11,870	025-104-0460	97 Site&Work
Compaction of 3" asphalt surface	605	CY	\$1.41	\$853	022-226-5020	96 Site&Work
Layout of pavement marking	4,455	LF	\$0.04	\$178	025-804-0790	96 Site&Work
Install pavement marking (Thermoplastic)	4,455	LF	\$0.47	\$2,094	025-804-0710	96 Site&Work
Total				\$29,902		
To bring up to safety standards add 4' width						
Remove 12" soil	220	CY	\$1.64	\$361	022-242-2000	96 Site&Work
Grade remaining soil	660	SY	\$0.58	\$383	025-122-0100	96 Site&Work
Install and compact 6" crushed stone base material	660	SY	\$10.20	\$6,732	022-308-0200	97 Site p. 48
Install 3" binder course	660	SY	\$5.30	\$3,498	025-104-0160	97 Site&Work
Install 3" wearing course	660	SY	\$6.15	\$4,059	025-104-0460	97 Site&Work
Compaction of 6" asphalt surface	110	CY	\$0.47	\$52	022-226-5020	96 Site&Work
Total				\$15,084		
Install new curb & gutter plus catch basin						
Excavate for curb and gutter	216	CY	\$4.97	\$1,072	022-254-0500	97 Site
Install curb and gutter	2,970	LF	\$8.90	\$26,433	025-025-0448	97 Site
Install catch basins	30	EA	\$1,535.00	\$46,050	A12-3-710-5820	97 Site p. 365
Install pipe to connect basins	3,267	LF	\$5.30	\$17,315	027-108-3020	97 Site p. 87
Total				\$90,870		
Install traffic control directional signs						
Install new signs	4	EA	\$77.50	\$310	028-412-0600 & 028-412-0600	97 Site
Excavate for new posts	1	CY	\$4.48	\$6	022-254-0060	97 Site
Concrete for new posts	1	CY	\$520.00	\$726	033-130-1520	97 Site
Total				\$1,042		
Install reflective street signs						
Install new signs	4	EA	\$97.00	\$388	104-304-4900	97 Site
Excavate for new posts	1	CY	\$4.48	\$6	022-254-0060	97 Site
Concrete for new posts	1	CY	\$520.00	\$726	033-130-1520	97 Site
Total				\$1,120		
Install street lights						
Install street lights 400 watt	7	EA	\$2,085.00	\$15,481	A12.7-500-2330	
Total				\$15,481		
SUBTOTAL				\$153,499		

Table B.5. Summary of cost estimates for road improvements (CERL scenario)

Cost comparisons for Road Improvements - CERL Scenario		USACERL Low	USACERL High
Project Description			
T-1	Widen 2nd Street in Phase 1	\$518,000	\$612,000
T-2.1	Install part of "A" Street with landscaping and new entrance in Phase 2	\$530,000	\$626,000
T-2.2	Widen Commanders Way in Phase 2	\$148,000	\$175,000
T-2.3	Build "W" Road in Phase 2	\$116,000	\$138,000
T-3.1	Install part of "A" Street with landscaping in Phase 3	\$330,000	\$390,000
T-3.2	Build part of "Y" Road in Phase 3	\$124,000	\$146,000
T-3.3	Repair existing roads in Phase 3	\$175,000	\$207,000
T-4.1	Improve Main Street in Phase 4	\$815,000	\$963,000
T-4.2	Build part of "W" Road in Phase 4	\$99,000	\$117,000
T-4.3	Build part of "Y" Road in Phase 4	\$109,000	\$128,000
T-4.4	Widen Mill Creek Road in Phase 4	\$74,000	\$88,000
T-4.5	Build part of "X" Road in Phase 4	\$146,000	\$173,000
T-5.1	Widen 2nd Street in Phase 5	\$1,825,000	\$2,156,000
T-5.2	Install part of "C" Street with landscaping in Phase 5	\$198,000	\$234,000
T-6.1	Install part of "A" Street with landscaping in Phase 6	\$794,000	\$938,000
T-6.2	Install part of "B" Street with landscaping in Phase 6	\$218,000	\$258,000
T-6.3	Install part of "C" Street with landscaping in Phase 6	\$266,000	\$314,000
T-6.4	Build part of "Z" Road in Phase 6	\$241,000	\$285,000
T-6.5	Build part of "X" Road in Phase 6	\$264,000	\$312,000
T-7.1	Install part of "C" Street with landscaping in Phase 7	\$458,000	\$542,000
T-7.2	Install part of "C" Street with landscaping in Phase 7	\$366,000	\$432,000
T-8.1	Build part of "Z" Road in Phase 8	\$227,000	\$268,000
T-9.1	Install part of "B" Street with landscaping in Phase 9	\$393,000	\$464,000
T-10.1	Widen part of "H" Street in Phase 10	\$228,000	\$269,000
T-10.2	Build part of "H" Road in Phase 10	\$56,000	\$66,000
T-11.1	Widen part of "H" Street in Phase 11	\$321,000	\$380,000
T-11.2	Widen part of "8th" Street in Phase 11	\$350,000	\$413,000
TOTAL		\$9,389,000	\$11,094,000

Table B.6. Sample of road improvement cost estimate (CERL scenario)

T-1 Widen 2nd Street in Phase 1						
SOW: Upgrade existing road to 4 land with curb and gutters, sidewalks, landscaping, and street lights in Phase 1						
Action	Quantity	UOM	Cost/unit	Total Cost	Means Ref. No.	Book
Install road, curb and gutter, and sidewalk						
<i>Road</i>						
Grade soil sides to expand	9,333	SY	\$0.72	\$6,720	0225-122-1020	97 Site p. 63
Install and compact 8" crushed stone base material	9,333	SY	\$10.20	\$95,200	022-308-0200	97 Site p. 48
Install 3" binder course	9,333	SY	\$5.30	\$49,467	025-104-0160	97 Site p. 62
Install 3" wearing course	9,333	SY	\$6.15	\$57,400	025-104-0340	97 Site p. 62
Compaction of asphalt surface	3,111	CY	\$0.47	\$1,462	025-226-5020	
<i>Curb and gutter</i>						
Excavate for curb and gutter	508	CY	\$4.53	\$2,302	022-254-0090	97 Site
Install curb and gutter	7,000	LF	\$6.50	\$45,500	025-025-0445	97 Site p. 65
Install catch basins	70	EA	\$1,535.00	\$107,450	A12.3-710-5820	97 Site p. 365
Install pipe to connect basins	7,700	LF	\$5.30	\$40,810	027-108-3020	97 Site p. 87
<i>Sidewalk</i>						
Install sidewalk	7,000	LF	\$13.20	\$92,400	A12.7-140-1600	97 Site p. 378
Total					\$498,711	
Pavement markings						
Layout of pavement marking	7,000	LF	\$0.04	\$280	025-804-0790	97 Site p. 70
Install pavement marking (Thermoplastic paint)	7,000	LF	\$0.85	\$5,950	025-804-0710	97 Site
Layout of directional arrows	60	SF	\$4.61	\$277	025-804-0760	97 Site
Install directional arrows	60	SF	\$4.61	\$277	025-804-0760	97 Site
Total					\$6,783	
Paint markings						
Layout of crosswalk	800	LF	\$0.04	\$32	025-804-0790	97 Site
Paint crosswalk (Thermoplastic paint)	800	LF	\$1.17	\$936	025-804-0730	97 Site
Layout of directional arrows	120	SF	\$4.61	\$553	025-804-0760	97 Site
Paint directional arrows	120	SF	\$4.61	\$553	025-804-0760	97 Site
Total					\$2,074	
Install traffic control directional signs						
Install new signs	4	EA	\$77.50	\$310	028-412-0600 & 028-41	97 Site
Excavate for new posts	1	CY	\$4.48	\$6	022-254-0060	97 Site
Concrete for new posts	1	CY	\$520.00	\$726	033-130-1520	97 Site
Total					\$1,042	
Install reflective street signs						
Install new signs	4	EA	\$97.00	\$388	104-304-4900	97 Site
Excavate for new posts	1	CY	\$4.48	\$6	022-254-0060	97 Site
Concrete for new posts	1	CY	\$520.00	\$726	033-130-1520	97 Site
Total					\$1,120	
Install street lights						
Install street lights 400 watt	18	EA	\$2,085.00	\$36,488	A12.7-500-2330	
Total					\$36,488	
SUBTOTAL				\$546,218		
City cost index	86.2%					
TOTAL				\$470,840		
TOTAL with contingency of:	10%		\$47,084	\$517,924		
TOTAL with contingency of:	30%		\$141,252	\$612,092		
<u>ROUNDED TO</u>				<u>\$518,000</u>		
<u>ROUNDED TO</u>				<u>\$612,000</u>		

Table B.7. Sample of road improvement cost estimate (CERL scenario)

I-2.1 Install part of "A" Street with landscaping and new entrance in Phase 2						
SOW: Install road to 4 lanes with curb and gutters, sidewalks, landscaping, and street lights in Phase 2						
Action	Quantity	UOM	Cost/Unit	Total Cost	Means Ref. No.	Book
Install road						
Remove soil/excavate	4,245	CY	\$1.67	\$7,090	022-242-2000	97 Site p. 41
Remove top soil	4,245	CY	\$0.89	\$3,778	029-204-1400	97 Site p. 113
Grade soil	8,491	SY	\$0.72	\$6,113	025-122-0100	97 Site p. 63
Compaction of soil with riding vibrator	8,491	CY	\$0.64	\$5,434	022-226-5040	97 Site p. 39
Install and compact 8" crushed stone base	8,491	SY	\$10.20	\$86,605	022-308-0200	97 Site p. 48
Install 3" binder course	8,491	SY	\$5.30	\$45,001	025-104-0160	97 Site p. 62
Install 3" wearing course	8,491	SY	\$6.15	\$52,218	025-104-0460	97 Site p. 62
Compaction of asphalt surface	1,415	CY	\$0.47	\$665	025-226-5020	97 Site p. 62
Finish				\$206,903		
Layout of pavement marking	9,552	LF	\$0.04	\$382	025-804-0790	97 Site p. 70
Install pavement marking (Thermoplastic paint)	9,552	LF	\$0.85	\$8,119	025-804-0710	97 Site
Layout of directional arrows	60	SF	\$4.61	\$277	025-804-0760	97 Site
Install directional arrows	60	SF	\$4.61	\$277	025-804-0760	97 Site
Total				\$9,054		
Install new curb and gutter						
Excavate for curb and gutter	231	CY	\$4.97	\$1,149	022-254-0500	97 Site
Install curb and gutter	3,184	LF	\$8.90	\$28,338	025-025-0448	97 Site
Install catch basins	32	EA	\$1,535.00	\$49,120	A12.3-710-5820	97 Site p. 365
Install pipe to connect basins	3,502	LF	\$5.30	\$18,563	027-108-3020	97 Site p. 87
Total				\$97,169		
Install sidewalks						
Remove existing soil	1,415	SY	\$6.70	\$9,481	020-554-1750	97 Site p. 28
Grade soil	1,415	SY	\$0.72	\$1,019	0225-122-1020	97 Site p. 63
Install sidewalk	3,184	LF	\$13.20	\$42,029	A12.7-140-1580	97 Assemblies p. 421
Total				\$52,529		
Install foundations						
Excavate foundation for traffic pole	5	CY	\$4.53	\$24	022-254-0060	97 Site p. 44
Install concrete foundation for traffic pole	5	CY	\$295.00	\$1,545	033-130-1520	97 Site p. 139
Total				\$1,568		
Install lights						
Install signals programmed	1	EA	\$43,200.00	\$43,200	028-424-0100	97 Site p. 109
Install traffic turn signals	8	EA	\$2,725.00	\$21,800	028-424-0120	97 Site p. 109
Install fully actuated, detectors in all streets/intersections	1	EA	\$7,700.00	\$7,700	028-424-0300	97 Site p. 109
Install pedestrian push button	4	EA	\$5,825.00	\$23,300	028-424-0400	97 Site p. 109
Install optical programming	1	EA	\$3,500.00	\$3,500	028-424-0500	97 Site p. 109
Total				\$99,500		
Paint markings						
Layout of crosswalk	800	LF	\$0.04	\$32	025-804-0790	97 Site

	3,184 LF	\$13.20	\$42,029	A12.7-140-1580	97 Assemblies p. 421
Total					
Install Sidewalk					
Install foundations					
Excavate foundation for traffic pole	5 CY	\$4.53	\$24	022-254-0060	97 Site p. 44
Install concrete foundation for traffic pole	5 CY	\$295.00	\$1,545	033-130-1520	97 Site p. 139
Total					
Install lights					
Install signals programmed	1 EA	\$43,200.00	\$43,200	028-424-0100	97 Site p. 109
Install traffic turn signals	8 EA	\$2,725.00	\$21,800	028-424-0120	97 Site p. 109
Install fully actuated, detectors in all streets/inte	1 EA	\$7,700.00	\$7,700	028-424-0300	97 Site p. 109
Install pedestrian push button	4 EA	\$5,825.00	\$23,300	028-424-0400	97 Site p. 109
Install optical programming	1 EA	\$3,500.00	\$3,500	028-424-0500	97 Site p. 109
Total					
Paint markings					
Layout of crosswalk	800 LF	\$0.04	\$32	025-804-0790	97 Site
Paint crosswalk (Thermoplastic paint)	800 LF	\$1.17	\$936	025-804-0730	97 Site
Layout of directional arrows	120 SF	\$4.61	\$553	025-804-0760	97 Site
Paint directional arrows	120 SF	\$4.61	\$553	025-804-0760	97 Site
Total					
Install new entrance					
Hauling of fill	370 CY	\$23.00	\$8,519	022-266-0560	97 Site p. 46
Spread fill material	370 CY	\$1.40	\$519	022-262-0010	97 Site p. 46
Install sod	20 MSF	\$505.00	\$10,100	029-316-0300	97 Site p. 116
Install trees and pit	40 EA	\$100.07	\$4,003	A12.7-421-0000/R029-5	97 Site
Irrigation system	20,000 SF	\$0.61	\$12,200	027-104-0900	97 Site p. 108
Install shrubs	40 Each	\$69.85	\$2,794	S	
Install flowers	100 Each	\$10.00	\$1,000	S	
Install new signs	2 Each	\$2,250.00	\$4,500	104-104-0900	97 Site p. 219
Excavate for new posts	7 CY	\$4.53	\$33	022-254-0060	97 Site p. 254
Concrete for new posts	7 CY	\$636.76	\$4,668	R033-100	97 Site p. 468
Install street lights 400 watt	20 EA	\$2,085.00	\$41,700	A12.7-500-2330	
Total					
				\$90,035	
SUBTOTAL			\$558,833		
City cost Index			\$481,714		
TOTAL	86.2%		\$529,886		
TOTAL with contingency of:	10%		\$626,229		
TOTAL with contingency of:	30%		\$530,000		
			\$626,000		

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Table B.8. Sample of road improvement cost estimate (CERL scenario)

Action	Quantity	UOM	Cost/Unit	Total Cost	Means Ref. No.	Book
Repair existing with an overlay						
Sweep and remove debris	33	MSF	\$2.13	\$70	029-710-6420	96 Site&Work
Repair potholes & damages (EST 15% of existing)	545	SY	\$8.45	\$4,601	029-710-5910	96 Site&Work
Install 1-1/2" binder course	3,630	SY	\$2.87	\$10,418	025-104-0080	96 Site&Work
Install 2" overlay	3,630	SY	\$4.13	\$14,992	025-104-0380	96 Site&Work
Compaction of 4" asphalt surface	403	CY	\$1.41	\$569	022-226-5020	96 Site&Work
Layout of pavement marking	4,455	LF	\$0.04	\$178	025-804-0790	96 Site&Work
Install pavement marking (Thermoplastic)	4,455	LF	\$0.47	\$2,094	025-804-0710	96 Site&Work
Total				\$32,921		
To bring up to safety standards add 4' width						
Remove 12" soil	220	CY	\$1.64	\$361	022-242-2000	96 Site&Work
Grade remaining soil	660	SY	\$0.58	\$383	025-122-0100	96 Site&Work
Install and compact 6" crushed stone base material	660	SY	\$10.20	\$6,732	022-308-0200	97 Site p. 48
Install 3" binder course	660	SY	\$5.40	\$3,564	025-104-0160	96 Site&Work
Install 3" wearing course	660	SY	\$5.95	\$3,927	025-104-0460	96 Site&Work
Compaction of 6" asphalt surface	110	CY	\$0.47	\$52	022-226-5020	96 Site&Work
Total				\$15,018		
Install new curb & gutter plus catch basin						
Excavate for curb and gutter	216	CY	\$4.97	\$1,072	022-254-0500	97 Site
Install curb and gutter	2,970	LF	\$8.90	\$26,433	025-025-0448	97 Site
Install catch basins	30	EA	\$1,535.00	\$46,050	A12.3-710-5820	97 Site p. 365
Install pipe to connect basins	3,267	LF	\$5.30	\$17,315	027-108-3020	97 Site p. 87
Total				\$90,870		
Install traffic control directional signs						
Install new signs	4	EA	\$77.50	\$310	028-412-0600 & 028-	97 Site
Excavate for new posts	1	CY	\$4.48	\$6	022-254-0060	97 Site
Concrete for new posts	1	CY	\$520.00	\$726	033-130-1520	97 Site
Total				\$1,042		
Install reflective street signs						
Install new signs	4	EA	\$97.00	\$388	104-304-4900	97 Site
Excavate for new posts	1	CY	\$4.48	\$6	022-254-0060	97 Site
Concrete for new posts	1	CY	\$520.00	\$726	033-130-1520	97 Site
Total				\$1,120		
Install street lights						
Install street lights 400 watt	7	EA	\$2,085.00	\$15,481	A12.7-500-2330	
Total				\$15,481		
SUBTOTAL				\$156,452		
City cost Index						
TOTAL	86.2%			\$134,862		



Table B.9. Summary of cost estimates for Storm Drain Improvements (OLRA scenario)

Cost comparisons for Storm Drain Improvements - LRA Scenario		DDO Cost	USACERL Low	USACERL High
Project Description				
SW-1	Install new storm sewer lines in Phase 2	\$1,245,444	\$1,023,000	\$1,209,000
SW-2	Install new storm sewer lines in Phase 4	\$245,941	\$112,000	\$132,000
SW-3	Install new storm sewer lines in Phase 6	\$900,462	\$422,000	\$499,000
SW-3.1	Install new storm sewer lines for Perry Ditch in Phase 6	\$533,000	\$342,000	\$404,000
SW-4	Install new storm sewer lines in Phase 7	\$243,737	\$108,000	\$127,000
SW-5	Install new storm sewer lines in Phase 8	\$69,299	\$37,000	\$44,000
SW-6	Install new storm sewer lines in Phase 10	\$689,189	\$396,000	\$468,000
SW-7	Install new storm sewer lines in Phase 11	\$104,434	\$46,000	\$54,000
SW-8	Install new storm sewer lines in Phase 12	\$57,213	\$25,000	\$29,000
SW-10	Remove and replace lines in Phase 3	\$399,779	\$376,000	\$444,000
SW-11	Remove and replace lines in Phase 4	\$399,779	\$376,000	\$444,000
SW-12	Remove and replace lines in Phase 5	\$399,779	\$376,000	\$444,000
SW-13	Remove and replace lines in Phase 7	\$399,779	\$376,000	\$444,000
SW-14	Remove and replace lines in Phase 8	\$399,779	\$376,000	\$444,000
SW-15	Remove and replace lines in Phase 9	\$399,779	\$376,000	\$444,000
SW-16	Remove and replace lines in Phase 10	\$399,779	\$376,000	\$444,000
SW-17	Remove and replace lines in Phase 11	\$399,779	\$376,000	\$444,000
SW-18	Remove and replace lines in Phase 12	\$399,779	\$376,000	\$444,000
TOTAL		\$7,686,726	\$5,895,000	\$6,962,000

Table B.10. Sample of storm drain improvement cost estimate (OLRA scenario)

SW-1 Install new storm lines in Phase 2						
SOW: Install 2,980 lf of new storm lines and a detention pond in Phase 2						
Action	Quantity	UOM	Cost/unit	Total Cost	Means Ref. No.	Book
Install pipe						
Excavate/backfill trench	3,278	LF	\$13.35	\$43,761	A12.3-110-1440	97 Site p. 360
Install pipe bedding	3,278	LF	\$1.52	\$4,983	A12.3-310-1460	97 Site p. 363
Install 12" concrete pipe	850	LF	\$15.70	\$13,345	027-162-2010	97 Site p. 92
Install 15" concrete pipe	500	LF	\$16.70	\$8,350	027-162-2020	97 Site p. 92
Install 18" concrete pipe	500	LF	\$19.80	\$9,900	027-162-2030	97 Site p. 92
Install 21" concrete pipe	200	LF	\$23.50	\$4,700	027-162-2035	97 Site p. 92
Install 24" concrete pipe	650	LF	\$29.00	\$18,850	027-162-2040	97 Site p. 92
Install 30" concrete pipe	280	LF	\$55.50	\$15,540	027-162-2050	97 Site p. 92
Total						\$119,429
Install catch basins						
Install catch basins	7	EA	\$1,535.00	\$10,745	A12.3-710-5820	97 Site p. 365
Total						\$10,745
Install curb and gutter along 12th St.						
Excavate for curb and gutter	145	CY	\$4.53	\$658	022-254-0090	97 Site
Install curb and gutter	2,000	LF	\$8.90	\$17,800	025-025-0448	97 Site
Total						\$18,458
Install infall/outfall/headwalls						
Install infall headwall	3	EA	\$2,600.00	\$7,800	A12.3-750-4520	97 Site p. 368
Total						\$7,800
Install emergency overflow						
Install overflow headwall	1	EA	\$2,600.00	\$2,600	A12.3-750-4520	97 Site p. 368
Total						\$2,600
Install retention pond						
Clear and grub/strip land	3,704	CY	\$0.61	\$2,259	021-144-0200	97 Site p. 34
Excavate soil	37,037	CY	\$9.69	\$358,889	A12.1-414-2200	97 Site p. 346
Grade soil/shape basin	12,667	SY	\$0.72	\$9,120	025-122-1020	97 Site p. 63
Haul in base material/drainage rock	14,000	CY	\$12.65	\$177,100	A12.1-618-1200	97 Site p. 353
Install base material/drainage rock	14,000	CY	\$1.40	\$19,600	022-262-0010	97 Site p. 46
Install grass bottom	100	MSF	\$321.56	\$32,156	A12.7-411-1000	97 Site p. 393 & note
Total						\$599,124
Install ground cover						
Install cover	354	MSF	\$321.56	\$113,840	A12.7-411-1000	97 Site p. 393 & note
Install irrigation system	354,025	SF	\$0.58	\$205,335	028-104-0800	97 Site p. 102
Total						\$319,175
SUBTOTAL				\$1,077,331		
City cost index	86.3%					
TOTAL				\$929,736		
TOTAL with contingency of:	10%			\$1,022,710		
TOTAL with contingency of:	30%			\$1,208,657		
ROUNDED TO				\$1,023,000		
ROUNDED TO				\$1,209,000		

Table B.11. Sample of storm drain improvement cost estimate (OLRA scenario)

SW-14 Remove and replace lines in Phase 8						
SOW: Remove and replace 4,556 lf of storm sewer lines in Phase 8						
Action	Quantity	UOM	Cost/unit	Total Cost	Means Ref. No.	Book
Replace Pipe						
Excavate/backfill trench	5,012	LF	\$13.35	\$66,905	A12.3-110-1440	97 Site p. 360
Install pipe bedding	5,012	LF	\$1.52	\$7,618	A12.3-310-1460	97 Site p. 363
Remove old pipe	4,556	LF	\$6.10	\$27,792	020-554-2900	97 Site p. 28
Install 12" concrete pipe	4,556	LF	\$15.70	\$71,529	027-162-2010	97 Site p. 92
Total					\$173,843	
Replace catch basins						
Remove manholes	58	EA	\$355.00	\$20,590	027-152-1210	97 Site p. 89 labor
Install catch basins	58	EA	\$1,535.00	\$89,030	A12.3-710-5820	97 Site p. 365
Total					\$109,620	
Replace manholes						
Remove manholes	37	EA	\$355.00	\$13,135	027-152-1210	97 Site p. 89 labor
Install new manholes	37	EA	\$2,675.00	\$98,975	A12.3-710-5860	97 Site p. 365
Total					\$112,110	
SUBTOTAL				\$395,573		
City cost index	86.3%					
TOTAL				\$341,380		
TOTAL with contingency of: 10%				\$375,518		
TOTAL with contingency of: 30%				\$443,794		
ROUNDED TO				\$376,000		
ROUNDED TO				\$444,000		

Table B.12. Summary of cost estimates for Storm Drain Improvements (CERL scenario)

Cost comparisons for Storm Drain Improvements - CERL Scenario		
Project Description	USACERL Low	USACERL High
SW-1 Install new storm sewer lines in Phase 2	\$124,000	\$146,000
SW-2 Install new storm sewer lines in Phase 4	\$112,000	\$132,000
SW-3 Install new storm sewer lines in Phase 6	\$226,000	\$267,000
SW-3.1 Install new storm sewer lines for Perry Ditch for Phase 6	\$342,000	\$404,000
SW-4 Install new storm sewer lines in Phase 7	\$108,000	\$127,000
SW-5 Install new storm sewer lines in Phase 8	\$37,000	\$44,000
SW-6 Install new storm sewer lines in Phase 10	\$118,000	\$139,000
SW-7 Install new storm sewer lines in Phase 11	\$46,000	\$54,000
SW-8 Install new storm sewer lines in Phase 12	\$25,000	\$29,000
SW-10 Remove and replace lines in Phase 3	\$202,000	\$239,000
SW-11 Remove and replace lines in Phase 4	\$202,000	\$239,000
SW-12 Remove and replace lines in Phase 5	\$202,000	\$239,000
SW-13 Remove and replace lines in Phase 7	\$202,000	\$239,000
SW-14 Remove and replace lines in Phase 8	\$202,000	\$239,000
SW-15 Remove and replace lines in Phase 9	\$202,000	\$239,000
SW-16 Remove and replace lines in Phase 10	\$202,000	\$239,000
SW-17 Remove and replace lines in Phase 11	\$202,000	\$239,000
SW-18 Remove and replace lines in Phase 12	\$202,000	\$239,000
TOTAL	\$2,956,000	\$3,493,000

Table B.13. Sample of storm drain improvement cost estimate (CERL scenario)

SW-1 Install new storm lines in Phase 2						
SOW: Install 2,980 lf of new storm lines and a detention pond in Phase 2						
Action	Quantity	UOM	Cost/unit	Total Cost	Means Ref. No.	Book
<i>Install pipe</i>						
Excavate/backfill trench	3,278	LF	\$13.35	\$43,761	A12.3-110-1440	97 Site p. 360
Install pipe bedding	3,278	LF	\$1.52	\$4,983	A12.3-310-1460	97 Site p. 363
Install 12" concrete pipe	850	LF	\$15.70	\$13,345	027-162-2010	97 Site p. 92
Install 15" concrete pipe	500	LF	\$16.70	\$8,350	027-162-2020	97 Site p. 92
Install 18" concrete pipe	500	LF	\$19.80	\$9,900	027-162-2030	97 Site p. 92
Install 21" concrete pipe	200	LF	\$23.50	\$4,700	027-162-2035	97 Site p. 92
Install 24" concrete pipe	650	LF	\$29.00	\$18,850	027-162-2040	97 Site p. 92
Install 30" concrete pipe	280	LF	\$55.50	\$15,540	027-162-2050	97 Site p. 92
Total					\$119,429	
<i>Install catch basins</i>						
Install catch basins	7	EA	\$1,535.00	\$10,745	A12.3-710-5820	97 Site p. 365
Total					\$10,745	
SUBTOTAL				\$130,174		
City cost index	86.3%			\$112,340		
TOTAL				\$123,574		
TOTAL with contingency of:	10%			\$146,042		
TOTAL with contingency of:	30%			\$124,000		
<u>ROUNDED TO</u>				<u>\$146,000</u>		

Table B.14. Sample of storm drain improvement cost estimate (CERL scenario)

SW-14 Remove and replace lines in Phase 8						
SOW: Remove and replace 4,100 lf of storm lines in Phase 8						
Action	Quantity	UOM	Cost/unit	Total Cost	Means Ref. No.	Book
Replace Pipe						
Excavate/backfill trench	4,509	LF	\$13.35	\$60,196	A12.3-110-1440	97 Site p. 360
Install pipe bedding	4,509	LF	\$1.52	\$6,854	A12.3-310-1460	97 Site p. 363
Remove old pipe	4,099	LF	\$6.10	\$25,005	020-554-2900	97 Site p. 28
Install 12" concrete pipe	4,099	LF	\$15.70	\$64,356	027-162-2010	97 Site p. 92
Total				\$156,411		
Replace catch basins						
Remove catchbasins	14	EA	\$355.00	\$4,970	027-152-1210	97 Site p. 89 labor
Install catch basins	14	EA	\$1,535.00	\$21,490	A12.3-710-5820	97 Site p. 365
Total				\$26,460		
Replace manholes						
Remove manholes	10	EA	\$355.00	\$3,550	027-152-1210	97 Site p. 89 labor
Install new manholes	10	EA	\$2,675.00	\$26,750	A12.3-710-5860	97 Site p. 365
Total				\$30,300		
SUBTOTAL				\$213,171		
City cost index	86.3%			\$183,966		
TOTAL				\$202,363		
TOTAL with contingency of:	10%			\$239,156		
TOTAL with contingency of:	30%			\$202,000		
ROUNDED TO				\$239,000		
ROUNDED TO				\$239,000		

Table B.15. Summary of cost estimates for Domestic Water Improvements (OLRA scenario)

Cost comparisons for Domestic Water Improvements - LRA Scenario		DDO Cost	USACERL Low	USACERL High
Project Description				
DW-1	Install new domestic water lines from Monore Street to Washington in Phase 1	\$1,861,997	\$1,162,000	\$1,373,000
DW-2	Install new domestic water lines in newly developed areas in Phase 2	\$134,395	\$137,000	\$162,000
DW-3	Install new domestic water lines in newly developed areas in Phase 3	\$73,267	\$78,000	\$92,000
DW-4	Remove tanks in Phase 5	\$252,534	\$166,000	\$196,000
DW-5	Install new domestic water lines in newly developed areas in Phase 6	\$59,998	\$61,000	\$72,000
DW-6	Install new domestic water lines in Phase 10	\$54,607	\$57,000	\$67,000
DW-10	Remove and replace old lines in Phase 3	\$1,253,564	\$869,000	\$1,027,000
DW-11	Remove and replace old lines in Phase 4	\$1,253,564	\$869,000	\$1,027,000
DW-12	Remove and replace old lines in Phase 5	\$1,253,564	\$869,000	\$1,027,000
DW-13	Remove and replace old lines in Phase 7	\$1,253,564	\$869,000	\$1,027,000
DW-14	Remove and replace old lines in Phase 8	\$1,253,564	\$869,000	\$1,027,000
DW-15	Remove and replace old lines in Phase 9	\$1,253,564	\$869,000	\$1,027,000
DW-16	Remove and replace old lines in Phase 10	\$1,253,564	\$869,000	\$1,027,000
DW-17	Remove and replace old lines in Phase 11	\$1,253,564	\$869,000	\$1,027,000
DW-18	Remove and replace old lines in Phase 12	\$1,253,564	\$869,000	\$1,027,000
TOTAL		\$13,718,873	\$9,482,000	\$11,205,000

Table B.16. Sample of domestic water improvement cost estimate (OLRA scenario)

DW-2 Install new domestic water lines in newly developed areas in Phase 2						
SOW: Install 3,700 lf of new domestic water lines in Phase 2						
Action	Quantity	UOM	Cost/unit	Total Cost	Means Ref. No.	Book
Install Pipe						
Excavate/backfill trench	4,477	LF	\$6.63	\$29,683	A12.3-110-1420	97 Site p. 360
Install pipe bedding	4,477	LF	\$1.52	\$6,805	A12.3-310-1460	97 Site p. 363
Install 8" diameter PVC pipe	4,070	LF	\$13.30	\$54,131	026-678-2210	97 Site p. 80
Total					\$90,619	
Install new fire hydrants						
Install new hydrants	14	EA	\$3,825.00	\$53,550	A12.3-922-1300	97 Site p. 370
Total					\$53,550	
SUBTOTAL				\$144,169	\$144,169	
City cost index	86.3%					
TOTAL				\$124,417		
TOTAL with contingency of:	10%		\$12,442	\$136,859		
TOTAL with contingency of:	30%		\$37,325	\$161,743		
ROUNDED TO				\$137,000		
ROUNDED TO				\$162,000		

Table B.17. Sample of domestic water improvement cost estimate (OLRA scenario)

DW-4 Remove tanks in Phase 5						
SOW: Remove elevated water storage tank and fill underground tank in Phase 5						
Action	Quantity	UOM	Cost/unit	Total Cost	Means Ref. No.	Book
Remove elevated storage tank						
Remove 250,000 tank	1	EA	\$105,000	\$105,000	132-051-1000	97 Site p. 241
Total					\$105,000	
Fill underground tank						
Haul in base material/drainage rod	4,971	CY	\$12.65	\$62,888	A12.1-618-120	97 Site p. 353
Install base material/drainage rod	4,971	CY	\$1.40	\$6,960	022-262-0010	97 Site p. 46
Total					\$69,848	
SUBTOTAL				\$174,848	\$174,848	
City cost index	86.3%					
TOTAL				\$150,894		
TOTAL with contingency of:	10%		\$15,089	\$165,984		
TOTAL with contingency of:	30%		\$45,268	\$196,162		
ROUNDED TO				\$166,000		
ROUNDED TO				\$196,000		

Table B.18. Sample of domestic water improvement cost estimate (OLRA scenario)

DW-10 Remove and replace old lines in Phase 3						
SOW: Remove and replace 19,295 lf of old lines in Phase 3						
Action	Quantity	UOM	Cost/unit	Total Cost	Means Ref. No.	Book
Replace pipe						
Excavate/backfill trench	23,347	LF	\$7	\$154,790	A12.3-110-1420	97 Site p. 360
Install pipe bedding	23,347	LF	\$1.52	\$35,487	A12.3-310-1460	97 Site p. 363
Remove old pipe	21,225	LF	\$6.10	\$129,469	020-554-2900	97 Site p. 28
Install 12" diameter PVC pipe	21,225	LF	\$20.50	\$435,102	026-678-1050	97 Site p. 80
Total				\$754,849		
Replace valves						
Remove old valves	69	EA	\$159.00	\$10,971	020-554-0900	97 Site p. 27 Closest
Install new valves	69	EA	\$1,350.00	\$93,150	026-404-3340	97 Site p. 73
Total				\$104,121		
Remove fire hydrants						
Remove hydrants	11	EA	\$159.00	\$1,749	020-554-0900	97 Site p. 99
Install new hydrants	11	EA	\$5,000	\$55,000	A12.3-922-3300	97 Site p. 370
Total				\$56,749		
SUBTOTAL				\$915,719		
<u>City cost index</u>	86.3%			\$790,266		
TOTAL				\$869,292		
TOTAL with contingency of:	10%			\$1,027,346		
TOTAL with contingency of:	30%			\$869,000		
ROUNDED TO				\$1,027,000		

Table B.19. Summary of cost estimates for Domestic Water Improvements (CERL scenario)

Cost comparisons for Domestic Water Improvements - CERL Scenario		
Project Description	USACERL Low	USACERL High
DW-1 Install new domestic water lines from Monore Street to Washington in Phase 1	\$611,000	\$722,000
DW-2 Install new domestic water lines in newly developed areas in Phase 2	\$137,000	\$162,000
DW-3 Install new domestic water lines in newly developed areas in Phase 3	\$78,000	\$92,000
DW-4 Remove tanks in Phase 5	\$166,000	\$196,000
DW-5 Install new domestic water lines in newly developed areas in Phase 6	\$61,000	\$72,000
DW-6 Install new domestic water lines in Phase 10	\$57,000	\$67,000
DW-10 Remove and replace old lines in Phase 3	\$821,000	\$971,000
DW-11 Remove and replace old lines in Phase 4	\$821,000	\$971,000
DW-12 Remove and replace old lines in Phase 5	\$821,000	\$971,000
DW-13 Remove and replace old lines in Phase 7	\$821,000	\$971,000
DW-14 Remove and replace old lines in Phase 8	\$821,000	\$971,000
DW-15 Remove and replace old lines in Phase 9	\$821,000	\$971,000
DW-16 Remove and replace old lines in Phase 10	\$821,000	\$971,000
DW-17 Remove and replace old lines in Phase 11	\$821,000	\$971,000
DW-18 Remove and replace old lines in Phase 12	\$821,000	\$971,000
TOTAL	\$8,499,000	\$10,050,000

Table B.20. Sample of domestic water improvement cost estimate (CERL scenario)

DW-2 Install new domestic water lines in newly developed areas in Phase 2						
SOW: install 3,700 lf of new domestic water lines in Phase 2						
Action	Quantity	UOM	Cost/unit	Total Cost	Means Ref. No.	Book
Install Pipe						
Excavate/backfill trench	4,477	LF	\$6.63	\$29,683	A12.3-110-1420	97 Site p. 360
Install pipe bedding	4,477	LF	\$1.52	\$6,805	A12.3-310-1460	97 Site p. 363
Install 8" diameter PVC pipe	4,070	LF	\$13.30	\$54,131	026-678-2210	97 Site p. 80
Total					\$90,619	
Install new fire hydrants						
Install new hydrants	14	EA	\$3,825.00	\$53,550	A12.3-922-1300	97 Site p. 370
Total					\$53,550	
SUBTOTAL				\$144,169	\$144,169	
City cost index	86.3%					
TOTAL				\$124,417		
TOTAL with contingency of:	10%		\$12,442	\$136,859		
TOTAL with contingency of:	30%		\$37,325	\$161,743		
ROUNDED TO				\$137,000		
ROUNDED TO				\$162,000		

Table B.21. Sample of domestic water improvement cost estimate (CERL scenario)

DW-4 Remove tanks in Phase 5						
SOW: Remove elevated water storage tank and fill underground tank in Phase 5						
Action	Quantity	UOM	Cost/unit	Total Cost	Means Ref. No.	Book
Remove elevated storage tank						
Remove 250,000 tank	1	EA	\$105,000.00	\$105,000	132-051-1000	97 Site p. 241
Total					\$105,000	
Fill underground tank						
Haul in base material/drainage rock	4,971	CY	\$12.65	\$62,888	A12.1-618-1200	97 Site p. 353
Install base material/drainage rock	4,971	CY	\$1.40	\$6,960	022-262-0010	97 Site p. 46
Total					\$69,848	
SUBTOTAL				\$174,848		
City cost index	86.3%				\$174,848	
TOTAL				\$150,894		
TOTAL with contingency of:	10%		\$15,089	\$165,984		
TOTAL with contingency of:	30%		\$45,268	\$196,162		
ROUNDED TO				\$166,000		
ROUNDED TO				\$196,000		

Table B.22. Sample of domestic water improvement cost estimate (CERL scenario)

DW-10 Remove and replace old lines in Phase 3						
SOW: Remove and replace 18,000 lf of old lines in Phase 3						
Action	Quantity	UOM	Cost/unit	Total Cost	Means Ref. No.	Book
Replace pipe						
Excavate/backfill trench	21,787	LF	\$6.63	\$144,446	A12.3-110-1420	97 Site p. 360
Install pipe bedding	21,787	LF	\$1.52	\$33,116	A12.3-310-1460	97 Site p. 363
Remove old pipe	19,806	LF	\$6.10	\$120,818	020-554-2900	97 Site p. 28
Install 12" diameter PVC pipe	19,806	LF	\$20.50	\$406,026	026-678-1050	97 Site p. 80
Total					\$704,406	
Replace valves						
Remove old valves	69	EA	\$159.00	\$10,971	020-554-0900	97 Site p. 27 Closest
Install new valves	69	EA	\$1,350.00	\$93,150	026-404-3340	97 Site p. 73
Total					\$104,121	
Remove fire hydrants						
Remove hydrants	11	EA	\$159.00	\$1,749	020-554-0900	97 Site p. 99
Install new hydrants	11	EA	\$5,000.00	\$55,000	A12.3-922-3300	97 Site p. 370
Total					\$56,749	
SUBTOTAL				\$865,276		
City cost index	86.3%				\$865,276	
TOTAL				\$746,733		
TOTAL with contingency of:	10%		\$821,407	\$821,407		
TOTAL with contingency of:	30%		\$970,753	\$970,753		
ROUNDED TO				\$821,000		
ROUNDED TO				\$971,000		

Table B.23. Summary of cost estimates for Sanitary Sewer (OLRA scenario)

Cost comparisons for Sanitary Sewer Improvements - LRA Scenario			
Project Description	DDO Cost	USACERL Low	USACERL High
SS-1 Install new sanitary sewer lines in Phase 1	\$652,400	\$434,000	\$513,000
SS-2 Install new sanitary sewer lines in Phase 3	\$260,894	\$166,000	\$196,000
SS-3 Install new sanitary sewer lines in Phase 4	\$204,438	\$128,000	\$152,000
SS-4 Install new sanitary sewer lines I Phase 6	\$250,536	\$154,000	\$182,000
SS-5 Install new sanitary sewer lines in Phase 7	\$74,558	\$47,000	\$55,000
SS-6 Install new sanitary sewer lines in Phase 9	\$57,164	\$36,000	\$42,000
SS-7 Install new sanitary sewer lines in Phase 10	\$274,409	\$212,000	\$251,000
SS-8 Install new sanitary sewer lines in Phase 11	\$94,770	\$61,000	\$72,000
SS-9 Install new sanitary sewer lines in Phase 12	\$274,435	\$206,000	\$244,000
SS-10 Remove and replace old lines in Phase 3	\$348,516	\$301,000	\$356,000
SS-11 Remove and replace old lines in Phase 4	\$348,516	\$301,000	\$356,000
SS-12 Remove and replace old lines in Phase 5	\$348,516	\$301,000	\$356,000
SS-13 Remove and replace old lines in Phase 7	\$348,516	\$301,000	\$356,000
SS-14 Remove and replace old lines in Phase 8	\$348,516	\$301,000	\$356,000
SS-15 Remove and replace old lines in Phase 9	\$348,516	\$301,000	\$356,000
SS-16 Remove and replace old lines in Phase 10	\$348,516	\$301,000	\$356,000
SS-17 Remove and replace old lines in Phase 11	\$348,516	\$301,000	\$356,000
SS-18 Remove and replace old lines in Phase 12	\$348,516	\$301,000	\$356,000
TOTAL	\$5,280,245	\$4,153,000	\$4,911,000

Table B.24. Sample of sanitary sewer improvement cost estimate (OLRA scenario)

SS-1 Install new sanitary sewer lines in Phase 1						
SOW: Install 7,660 lf of new sanitary sewer lines and new manholes in Phase 1						
Action	Quantity	UOM	Cost/unit	Total Cost	Means Ref. No.	Book
Install pipe						
Excavate/backfill trench	8,426	LF	\$13.35	\$112,487	A12.3-110-1440	97 Site p. 360
Install pipe bedding	8,426	LF	\$1.52	\$12,808	A12.3-310-1460	97 Site p. 363
Install 12" diameter PVC pipe	2,149	LF	\$21.50	\$46,204	027-168-3030	97 Site p. 80
Install 18" diameter PVC pipe	2,403	LF	\$32.50	\$78,098	027-168-3050	97 Site p. 80
Install 24" diameter PVC pipe	3,108	LF	\$54.00	\$167,832	026-678-3070	97 Site p. 80
Total					\$417,428	
Install new manholes						
Install new manholes	15	EA	\$2,675.00	\$40,125	A12.3-710-5860	97 Site p. 365
Total					\$40,125	
SUBTOTAL				\$457,553	\$457,553	
City cost index	86.3%					
TOTAL				\$394,868		
TOTAL with contingency of:	10%		\$39,487	\$434,355		
TOTAL with contingency of:	30%		\$118,460	\$513,328		
ROUNDED TO				\$434,000		
ROUNDED TO				\$513,000		

Table B.25. Sample of sanitary sewer improvement cost estimate (OLRA scenario)

SS-10 Remove and replace old lines in Phase 3						
SOW: Remove and replace 5,424 lf of old lines in Phase 3						
Action	Quantity	UOM	Cost/unit	Total Cost	Means Ref. No.	Book
Replace pipe						
Excavate/backfill trench	5,966	LF	\$13.35	\$79,651	A12.3-110-1440	97 Site p. 360
Install pipe bedding	5,966	LF	\$1.52	\$9,069	A12.3-310-1460	97 Site p. 363
Remove old pipe	5,424	LF	\$6.10	\$33,086	020-554-2900	97 Site p. 28
Install 12" diameter PVC pipe	5,424	LF	\$21.50	\$116,616	027-168-3030	97 Site p. 80
Total					\$238,423	
Replace manholes						
Remove manholes	26	EA	\$355.00	\$9,230	027-152-1210	97 Site p. 89 labor
Install new manholes	26	EA	\$2,675.00	\$69,550	A12.3-710-5860	97 Site p. 365
Total					\$78,780	
SUBTOTAL				\$317,203	\$317,203	
City cost index	86.3%					
TOTAL				\$273,746		
TOTAL with contingency of:	10%		\$27,375	\$301,121		
TOTAL with contingency of:	30%		\$82,124	\$355,870		
ROUNDED TO				\$301,000		

Table B.26. Summary of cost estimates for Sanitary Sewer Improvements (CERL scenario)

Cost comparisons for Sanitary Sewer Improvements - CERL Scenario		
Project Description	USACERL Low	USACERL High
SS-1 Install new sanitary sewer lines in Phase 1	\$434,000	\$513,000
SS-2 Install new sanitary sewer lines in Phase 3	\$166,000	\$196,000
SS-3 Install new sanitary sewer lines in Phase 4	\$128,000	\$152,000
SS-4 Install new sanitary sewer lines in Phase 6	\$154,000	\$182,000
SS-5 Install new sanitary sewer lines in Phase 7	\$47,000	\$55,000
SS-6 Install new sanitary sewer lines in Phase 9	\$36,000	\$42,000
SS-7 Install new sanitary sewer lines in Phase 10	\$212,000	\$251,000
SS-8 Install new sanitary sewer lines in Phase 11	\$61,000	\$72,000
SS-9 Install new sanitary sewer lines in Phase 12	\$206,000	\$244,000
SS-10 Remove and replace old lines in Phase 3	\$94,000	\$111,000
SS-11 Remove and replace old lines in Phase 4	\$94,000	\$111,000
SS-12 Remove and replace old lines in Phase 5	\$94,000	\$111,000
SS-13 Remove and replace old lines in Phase 7	\$94,000	\$111,000
SS-14 Remove and replace old lines in phase 8	\$94,000	\$111,000
SS-15 Remove and replace old lines in Phase 9	\$94,000	\$111,000
SS-16 Remove and replace old lines in Phase 10	\$94,000	\$111,000
SS-17 Remove and replace old lines in Phase 11	\$94,000	\$111,000
SS-18 Remove and replace old lines in Phase 12	\$94,000	\$111,000
TOTAL	\$2,290,000	\$2,706,000

Table B.27. Sample of sanitary sewer improvement cost estimate (CERL scenario)

SS-1 Install new sanitary sewer lines in Phase 1						
SOW: Install 7,660 lf of new sanitary sewer lines and new manholes in Phase 1						
Action	Quantity	UOM	Cost/unit	Total Cost	Means Ref. No.	Book
Install pipe						
Excavate/backfill trench	8,426	LF	\$13.35	\$112,487	A12.3-110-1440	97 Site p. 360
Install pipe bedding	8,426	LF	\$1.52	\$12,808	A12.3-310-1460	97 Site p. 363
Install 12" diameter PVC pipe	2,149	LF	\$21.50	\$46,204	027-168-3030	97 Site p. 80
Install 18" diameter PVC pipe	2,403	LF	\$32.50	\$78,098	027-168-3050	97 Site p. 80
Install 24" diameter PVC pipe	3,108	LF	\$54.00	\$167,832	026-678-3070	97 Site p. 80
Total					\$417,428	
Install new manholes						
Install new manholes	15	EA	\$2,675.00	\$40,125	A12.3-710-5860	97 Site p. 365
Total					\$40,125	
SUBTOTAL				\$457,553		
City cost index	86.3%					
TOTAL				\$394,868		
TOTAL with contingency of:	10%		\$39,487	\$434,355		
TOTAL with contingency of:	30%		\$118,460	\$513,328		
ROUNDED TO				\$434,000		
ROUNDED TO				\$513,000		

Table B.28. Sample of sanitary sewer improvement cost estimate (CERL scenario)

SS-10 Remove and replace old lines in Phase 3						
SOW: Remove and replace 1,709 lf of old lines in Phase 3						
Action	Quantity	UOM	Cost/unit	Total Cost	Means Ref. No.	Book
Replace pipe						
Excavate/backfill trench	1,880	LF	\$13.35	\$25,092	A12.3-110-1440	97 Site p. 360
Install pipe bedding	1,880	LF	\$1.52	\$2,857	A12.3-310-1460	97 Site p. 363
Remove old pipe	1,709	LF	\$6.10	\$10,423	020-554-2900	97 Site p. 28
Install 12" diameter PVC pipe	1,709	LF	\$21.50	\$36,737	026-168-3030	97 Site p. 80
Total					\$75,109	
Replace manholes						
Remove manholes	8	EA	\$355.00	\$2,840	027-152-1210	97 Site p. 89 labor
Install new manholes	8	EA	\$2,675.00	\$21,400	A12.3-710-5860	97 Site p. 365
Total					\$24,240	
SUBTOTAL				\$99,349	\$99,349	
City cost index	86.3%					
TOTAL				\$85,738		
TOTAL with contingency of:	10%		\$8,574	\$94,312		
TOTAL with contingency of:	30%		\$25,722	\$111,460		
ROUNDED TO				\$94,000		
ROUNDED TO				\$111,000		

Table B.29. Summary of cost estimates for Rail Improvements (OLRA scenario)

Cost comparisons for Rail Improvements - LRA Scenario			
Project Description	DDO Cost plus contingency	USACERL Low	USACERL High
RR-1 Install new lines in Phase 2	\$228,150	\$151,000	\$178,000
RR-2 Installing signal at 2nd Street in Phase 2	\$195,000	\$101,000	\$119,000
RR-3 Install a new main line switch in Phase 2	\$123,500	\$25,000	\$29,000
RR-4 Install new turnouts in Phase 2	\$5,200	\$49,000	\$58,000
RR-5 Remove lines in Phase 2	\$690,043	\$623,000	\$736,000
Total of Railroad improvements	\$1,241,893	\$949,000	\$1,120,000

Table B.30. Sample of rail improvement cost estimate (OLRA scenario)

RR-4 Install new turnouts in Phase 2						
SOW: Install two new turnouts in Phase 2						
Action	Quantity	UOM	Cost/unit	Total Cost	Means Ref.	Nd Book
Install switch						
Clear and grub/strip land	59	CY	\$0.61	\$36	021-144-0200	97 Site p. 34
Remove top soil	59	CY	\$0.89	\$53	029-204-1400	97 Site p. 113
Grade soil	178	SY	\$0.72	\$128	0225-122-1020	97 Site p. 63
Install and compact 8" crushed stone base material	178	SY	\$8.95	\$1,591	022-308-0303	97 Site p. 48
Install switch	2	EA	\$25,000.00	\$50,000	020-554-1750	97 Site p. 28
Total						
						\$51,808
SUBTOTAL				\$51,808		
City cost index	86.2%					
TOTAL				\$44,658		
TOTAL with contingency of:	10%			\$49,124		
TOTAL with contingency of:	30%			\$58,056		
ROUNDED TO				\$49,000		
ROUNDED TO				\$58,000		

Table B.31. Sample of rail improvement cost estimate (OLRA scenario)

RR-5 Remove lines in Phase 2						
SOW: Remove old rail lines in Phase 2						
Action	Quantity	UOM	Cost/unit	Total Cost	Means Ref. No.	Book
<i>Remove old line</i>						
Remove base material-crushed stone for base	53,973	SY	\$0.00	\$0	020-554-3600	97 Site p. 28
Remove rail	60,720	LF	\$8.55	\$519,156	020-554-3500	97 Site p. 28
Remove switches	73	EA	\$1,875.00	\$136,875	020-554-3700	97 Site p. 28
Total					\$656,031	
SUBTOTAL				\$656,031		
City cost index	86.3%			\$566,155		
TOTAL				\$622,770		
TOTAL with contingency of:	10%			\$736,001		
TOTAL with contingency of:	30%			\$623,000		
<u>ROUNDED TO</u>				<u>\$736,000</u>		
<u>ROUNDED TO</u>						

Table B.32. Sample of rail improvement cost estimate (OLRA scenario)

RR-3 Install a new main line switch in Phase 2						
SOW: Install new main line switch in Phase 2						
Action	Quantity	UOM	Cost/unit	Total Cost	Means Ref. No.	Book
<i>Install switch</i>						
Clear and grub/strip land	30	CY	\$0.61	\$18	021-144-0200	97 Site p. 34
Remove top soil	30	CY	\$0.89	\$26	029-204-1400	97 Site p. 113
Grade soil	89	SY	\$0.72	\$64	0225-122-1020	97 Site p. 63
Install and compact 8" crushed stone base material	89	SY	\$8.95	\$796	022-308-0303	97 Site p. 48
Install switch	1	EA	\$25,000.00	\$25,000	020-554-1750	97 Site p. 28
Total				\$25,904	\$25,904	
SUBTOTAL				\$22,355		
City cost index	86.3%			\$24,591		
TOTAL				\$29,062		
TOTAL with contingency of:	10%			\$25,000		
TOTAL with contingency of:	30%			\$29,000		
<u>ROUNDED TO</u>				<u>\$25,000</u>		
<u>ROUNDED TO</u>				<u>\$29,000</u>		

Table B.33. Sample of rail improvement cost estimate (OLRA scenario)

RR-2. Installing signal at 2nd Street in Phase 2						
SOW: Install new railroad crossing and traffic signal at 2nd Street in Phase 2						
Action	Quantity	UOM	Cost/unit	Total Cost	Means Ref. No.	Book
<i>Remove old crossing</i>						
Remove asphalt	43	SY	\$6.70	\$286	020-554-1750	97 Site p. 28
Remove crossing	48	LF	\$8.55	\$410	020-554-3500	97 Site p. 28
Remove old crossing arms	1	EA	\$10,000.00	\$10,000	028-424-0100	97 Site p. 109 labor only
Total				\$10,696		
<i>Install new crossing</i>						
New crossing	1	EA	\$8,500.00	\$8,500	Crane contract	
Excavate foundation for crossing pole	3	CY	\$4.53	\$12	022-254-0060	97 Site p. 44
Install concrete foundation for crossing pole	3	CY	\$295.00	\$772	033-130-1520	97 Site p. 139
Install signals programmed	2	EA	\$43,200.00	\$86,400	028-424-0100	97 Site p. 109
Total				\$95,684		
SUBTOTAL				\$106,380	\$106,380	
City cost index						
TOTAL				\$91,806		
TOTAL with contingency of:						
TOTAL with contingency of:	86.3%					
	10%					
	30%					
ROUNDED TO				\$101,000		
ROUNDED TO				\$119,000		

Table B.34. Sample of rail improvement cost estimate (OLRA scenario)

RR-1 Install new lines in Phase 2						
SOW: Install new railroad lines in Phase 2						
Action	Quantity	UOM	Cost/unit	Total Cost	Means Ref. No.	Book
<i>Install new line</i>						
Clear and grub/strip land	193	CY	\$1.21	\$233	021-144-0020	97 Site
Remove soil	193	CY	\$1.66	\$320	022-242-2000	97 Site
Grade soil	1,156	SY	\$0.58	\$670	025-122-0100	97 Site
Install base material-crushed stone for base	1,156	SY	\$10.75	\$12,422	022-308-0303	97 Site
Compaction of surface	770	CY	\$0.47	\$362	025-226-5020	97 Site
Install new ties	650	Ea	\$46.50	\$30,225	024-524-1600	97 Site
Install rail	1,300	LF	\$88.00	\$114,400	024-524-0810	97 Site
Total				\$158,632	\$158,632	
SUBTOTAL				\$136,900		
City cost index	86.3%					
TOTAL				\$150,590		
TOTAL with contingency of:	10%					
TOTAL with contingency of:	30%					
ROUNDED TO				\$151,000		
ROUNDED TO				\$177,970		
				\$151,000		
				\$178,000		

Table B.35. Summary of cost estimates for Rail Improvements (CERL scenario)

Project Description	Cost comparisons for Railroad Improvements - CERL Scenario	
	USACERL Low	USACERL High
RR-1 Install new lines in Phase 2	\$151,000	\$178,000
RR-2 Installing signal at 2nd Street in Phase 2	\$101,000	\$119,000
RR-3 Install a new main line switch in Phase 2	\$25,000	\$29,000
RR-4 Install new turnouts in Phase 2	\$2,420,000	\$2,861,000
RR-5 Remove lines in Phase 2	\$623,000	\$736,000
RR-6 Install new roundhouse	\$581,000	\$686,000
Total of Railroad Improvements	\$3,901,000	\$4,609,000

Table B.36. Sample of rail improvement cost estimate (CERL scenario)

RR-6 Install new roundhouse in Phase 2						
SOW: Install new roundhouse						
Action	Quantity	UOM	Cost/unit	Total Cost	Means Ref. No.	Book
<i>Install new roundhouse</i>						
Construct roundhouse	6,200	SF	\$78.70	\$487,940	M.290 garage repair 1995 page 130	
Total				\$487,940		
<i>Install new equipment</i>						
5 Hp air compressors	3	EA	\$4,909.00	\$14,727	M.290 garage repair 1995 page 130	
12 ton hoists	2	EA	\$12,285.00	\$24,570	M.290 garage repair 1995 page 131	
Lockers	15	EA	\$219.00	\$3,285	M.290 garage repair 1995 page 132	
Bench Tops	2	Ea	\$202.00	\$404	M.290 garage repair 1995 page 133	
Locker pedestals	4	EA	\$40.00	\$160	M.290 garage repair 1995 page 134	
Lube Equipment	2	EA	\$7,875.00	\$15,750	M.290 garage repair 1995 page 135	
Spray Booth	1	EA	\$12,915.00	\$12,915	M.290 garage repair 1995 page 136	
Misc Equipment	1	EA	\$52,500.00	\$52,500	M.290 garage repair 1995 page 134	
Total				\$124,311		
SUBTOTAL				\$612,251	\$612,251	
City cost index	86.2%					
TOTAL				\$527,760		
TOTAL with contingency of:	10%					
TOTAL with contingency of:	30%					
ROUNDED TO				\$581,000		
ROUNDED TO				\$686,000		

Table B.37. Sample of rail improvement cost estimate (CERL scenario)

RR-1 Install new lines in Phase 2						
SOW: Install new railroad lines						
Action	Quantity	UOM	Cost/unit	Total Cost	Means Ref. No.	Book
<i>Install new line</i>						
Clear and grub/strip land	193	CY	\$1.21	\$233	021-144-0020	97 Site
Remove soil	193	CY	\$1.66	\$320	022-242-2000	97 Site
Grade soil	1,156	SY	\$0.58	\$670	025-122-0100	97 Site
Install base material-crushed stone for base	1,156	SY	\$10.75	\$12,422	022-308-0303	97 Site
Compaction of surface	770	CY	\$0.47	\$362	025-226-5020	97 Site
Install new ties	650	Ea	\$46.50	\$30,225	024-524-1600	97 Site
Install rail	1,300	LF	\$88.00	\$114,400	024-524-0810	97 Site
Total					\$158,632	
SUBTOTAL					\$158,632	
City cost index	86.3%					
TOTAL					\$136,900	
TOTAL with contingency of:	10%					
TOTAL with contingency of:	30%					
					\$150,590	
					\$177,970	
					\$151,000	
					\$178,000	

ROUNDED TO
ROUNDED TO

Table B.38. Sample of rail improvement cost estimate (CERL scenario)

RR-2. Installing signal at 2nd Street in Phase 2						
SOW: Install new railroad crossing and traffic signal at 2nd Street in Phase 2						
Action	Quantity	UOM	Cost/unit	Total Cost	Means Ref. No.	Book
<i>Remove old crossing</i>						
Remove asphalt	43	SY	\$6.70	\$286	020-554-1750	97 Site p. 28
Remove crossing	48	LF	\$8.55	\$410	020-554-3500	97 Site p. 28
Remove old crossing arms	1	EA	\$10,000.00	\$10,000	028-424-0100	97 Site p. 109 labor only
Total				\$10,696		
<i>Install new crossing</i>						
New crossing	1	EA	\$8,500.00	\$8,500	Crane contract	
Excavate foundation for crossing pole	3	CY	\$4.53	\$12	022-254-0060	97 Site p. 44
Install concrete foundation for crossing pole	3	CY	\$295.00	\$772	033-130-1520	97 Site p. 139
Install signals programmed	2	EA	\$43,200.00	\$86,400	028-424-0100	97 Site p. 109
Total				\$95,684		
SUBTOTAL				\$106,380	\$106,380	
City cost index	86.3%			\$91,806		
TOTAL				\$100,987		
TOTAL with contingency of:	10%			\$119,348		
TOTAL with contingency of:	30%			\$101,000		
ROUNDED TO				\$119,000		

Table B.39. Sample of rail improvement cost estimate (CERL scenario)

RR-3 Install a new main line switch in Phase 2						
SOW: Install new main line switch in Phase 2						
Action	Quantity	UOM	Cost/unit	Total Cost	Means Ref. No.	Book
<i>Install switch</i>						
Clear and grub/strip land	30	CY	\$0.61	\$18	021-144-0200	97 Site p. 34
Remove top soil	30	CY	\$0.89	\$26	029-204-1400	97 Site p. 113
Grade soil	89	SY	\$0.72	\$64	0225-122-1020	97 Site p. 63
Install and compact 8" crushed stone base material	89	SY	\$8.95	\$796	022-308-0303	97 Site p. 48
Install switch	1	EA	\$25,000.00	\$25,000	020-554-1750	97 Site p. 28
Total					\$25,904	
SUBTOTAL					\$25,904	
City cost index	86.2%					
TOTAL					\$22,329	
TOTAL with contingency of:					\$24,562	
TOTAL with contingency of:					\$29,028	
ROUNDED TO					\$25,000	
ROUNDED TO					\$29,000	

Table B.40. Sample of rail improvement cost estimate (CERL scenario)

RR-4 Install new turnouts in Phase 2						
SOW: Install two new turnouts in Phase 2 and replace lines						
Action	Quantity	UOM	Cost/unit	Total Cost	Means Ref. No.	Book
Install new switches						
Clear and grub/strip land	178	CY	\$0.61	\$108	021-144-0200	97 Site p. 34
Remove top soil	178	CY	\$0.89	\$158	029-204-1400	97 Site p. 113
Grade soil	533	SY	\$0.72	\$384	0225-122-1020	97 Site p. 63
Install and compact 8" crushed stone base material	533	SY	\$8.95	\$4,773	022-308-0303	97 Site p. 48
Install switch	6	EA	\$25,000.00	\$150,000	020-554-1750	97 Site p. 28
Total				\$155,424		
Replace switches						
Replace switches	22	EA	\$1,875.00	\$41,250	020-554-3800	97 Site p. 28
Total				\$41,250		
Replace line						
Replace line	31,254	LF	\$37.50	\$1,172,025	020-554-3700	97 Site p. 28
Additional ballast required	31,254	LF	\$15.00	\$468,810	024-524-0600	98 Site p. 64
Total				\$1,640,835		
Install new line						
Clear and grub/strip land	2,315	CY	\$0.61	\$1,412	021-144-0200	97 Site p. 34
Remove top soil	2,315	CY	\$0.89	\$2,060	029-204-1400	97 Site p. 113
Grade soil	6,945	SY	\$0.72	\$5,000	0225-122-1020	97 Site p. 63
Install and compact 8" crushed stone base material	6,945	SY	\$8.95	\$62,157	022-308-0303	97 Site p. 48
Install line	7,813	LF	\$82.50	\$644,573	024-524-0830	97 Site p. 64
Total				\$715,202		
SUBTOTAL				\$2,552,711		
City cost Index	86.2%				\$2,552,711	
TOTAL				\$2,200,437		
TOTAL with contingency of:				\$2,420,481		
TOTAL with contingency of:				\$2,860,568		
ROUNDED TO				\$2,420,000		
ROUNDED TO				\$2,861,000		

Table B.41. Sample of rail improvement cost estimate (CERL scenario)

RR-5 Remove lines in Phase 2						
SOW: Remove old rail lines in Phase 2						
Action	Quantity	UOM	Cost/unit	Total Cost	Means Ref. No.	Book
<i>Remove old line</i>						
Remove base material-crushed stone for base	53,973	SY	\$0.00	\$0	020-554-3600	97 Site p. 28
Remove rail	60,720	LF	\$8.55	\$519,156	020-554-3500	97 Site p. 28
Remove switches	73	EA	\$1,875.00	\$136,875	020-554-3700	97 Site p. 28
Total					\$656,031	
SUBTOTAL				\$656,031	\$656,031	
City cost index				\$566,155		
TOTAL	86.3%			\$622,770		
TOTAL with contingency of:	10%			\$736,001		
TOTAL with contingency of:	30%			\$623,000		
<u>ROUNDED TO</u>				\$736,000		
<u>ROUNDED TO</u>						

Table B42. Demolition cost by category code.

Bldg #	Cat Code	Total SF	Wall Material	Cos/SF	Demo cost WITHOUT Asbestos
321	12310	164	wood	\$5.88	\$964.32
29	61028	2,685	brick	\$7.05	\$18,929.25
101	13160	2,050	brick	\$7.05	\$14,452.50
294	13110	170	brick	\$7.05	\$1,198.50
114	44285	712	wood	\$8.33	\$5,930.96
118	44275	712	wood	\$8.33	\$5,930.96
203	44220	56,560	wood	\$8.33	\$471,144.80
281	44180	173,746	wood	\$8.33	\$1,447,304.18
302	44180	21,600	wood	\$8.33	\$179,928.00
304	44180	224,505	wood	\$8.33	\$1,870,126.65
306	44275	920	wood	\$8.33	\$7,663.60
315	44180	159,280	wood	\$8.33	\$1,326,802.40
325	44180	101,414	wood	\$8.33	\$844,778.62
9	44262	4,800	metal	\$8.52	\$40,896.00
202	44275	2,509	metal	\$8.52	\$21,376.68
219	44260	11,200	metal	\$8.52	\$95,424.00
247	44240	800	metal	\$8.52	\$6,816.00
17	21840	6,186	wood	\$9.42	\$58,272.12
117	14000	10,000	wood	\$9.42	\$94,200.00
313	21430	21,801	wood	\$9.42	\$205,365.42
333	84141	860	wood	\$9.42	\$8,101.20
49	44270	800	brick	\$9.90	\$7,920.00
51	44275	1,200	brick	\$9.90	\$11,880.00
258	44240	151	brick	\$9.90	\$1,494.90
267	44150	151	brick	\$9.90	\$1,494.90
283	44150	18,050	brick	\$9.90	\$178,695.00
293	44180	6,175	brick	\$9.90	\$61,132.50
331	44240	105	brick	\$9.90	\$1,039.50
150	71000	1,375	brick	\$10.25	\$14,093.75
151	71000	1,375	brick	\$10.25	\$14,093.75
152	71000	1,375	brick	\$10.25	\$14,093.75
153	71000	1,375	brick	\$10.25	\$14,093.75
154	71000	1,640	brick	\$10.25	\$16,810.00
155	71000	1,640	brick	\$10.25	\$16,810.00
156	71000	1,375	brick	\$10.25	\$14,093.75
157	71000	1,375	brick	\$10.25	\$14,093.75
158	71000	1,375	brick	\$10.25	\$14,093.75
159	71000	1,375	brick	\$10.25	\$14,093.75

258	44240	151	brick	\$9.90	\$1,494.90
267	44150	151	brick	\$9.90	\$1,494.90
283	44150	18,050	brick	\$9.90	\$178,695.00
293	44180	6,175	brick	\$9.90	\$61,132.50
331	44240	105	brick	\$9.90	\$1,039.50
150	71000	1,375	brick	\$10.25	\$14,093.75
151	71000	1,375	brick	\$10.25	\$14,093.75
152	71000	1,375	brick	\$10.25	\$14,093.75
153	71000	1,375	brick	\$10.25	\$14,093.75
154	71000	1,640	brick	\$10.25	\$16,810.00
155	71000	1,640	brick	\$10.25	\$16,810.00
156	71000	1,375	brick	\$10.25	\$14,093.75
157	71000	1,375	brick	\$10.25	\$14,093.75
158	71000	1,375	brick	\$10.25	\$14,093.75
159	71000	1,375	brick	\$10.25	\$14,093.75
160	71000	1,375	brick	\$10.25	\$14,093.75
161	71000	1,375	brick	\$10.25	\$14,093.75
162	71000	1,375	brick	\$10.25	\$14,093.75
163	71000	1,375	brick	\$10.25	\$14,093.75
164	71000	2,450	brick	\$10.25	\$25,112.50
165	71000	2,450	brick	\$10.25	\$25,112.50
30	87230	170	brick	\$10.59	\$1,800.30
34	87230	111	brick	\$10.59	\$1,175.49
308	82115	3,483	brick	\$10.59	\$36,884.97
318	14180	98	brick	\$10.59	\$1,037.82
320	21470	192	brick	\$10.59	\$2,033.28
390	87290	2,019	brick	\$10.59	\$21,381.21
391	87230	120	brick	\$10.59	\$1,270.80
1205	87230	654	brick	\$10.59	\$6,925.86
1206	87230	62	brick	\$10.59	\$656.58
18	21910	4,200	metal	\$10.68	\$44,856.00
239	14160	3,856	metal	\$10.68	\$41,182.08
322	83312	4,320	metal	\$10.68	\$46,137.60
344	17121	2,036	wood	\$10.84	\$22,070.24
102	42180	1,808	concrete	\$12.25	\$22,148.00
103	42180	1,808	concrete	\$12.25	\$22,148.00
104	42180	1,808	concrete	\$12.25	\$22,148.00
105	42180	1,808	concrete	\$12.25	\$22,148.00
106	42180	1,808	concrete	\$12.25	\$22,148.00
107	42180	1,808	concrete	\$12.25	\$22,148.00
108	42180	1,808	concrete	\$12.25	\$22,148.00
109	42180	1,808	concrete	\$12.25	\$22,148.00
110	42180	1,808	concrete	\$12.25	\$22,148.00
111	42180	1,808	concrete	\$12.25	\$22,148.00
199	83311	210	concrete	\$12.58	\$2,641.80
TOTAL		893,597			\$7,693,766.99
City Index = 87%					
Total demolition Cost					\$6,693,577.28

Table B43. Sample of demolition cost estimates.

System/Component		COMPONENT LIST			DEMOLITION (Means Costs)			MEANS REF. #
		Amount	Units	Est. CY	Unit Demo	Unit Cost	Total Demo	
Roof								
Built-up Roofing	47,000.0	Sq. Ft.	580.2		Sq. Ft.	\$1.51	\$70,970.00	020-726-3001
Metal Decking	47,000.0	Sq. Ft.	580.2		Sq. Ft.	\$72	\$33,840.00	020-726-1150
Open Web Joists	2,400.0	Linear Ft.			Linear Ft.	\$5.35	\$12,840.00	052-108-0260
Structure (Building Framework)								
Steel Columns	300.0	Linear Ft.	2.8		Linear Ft.	\$7.85	\$2,355.00	020-714-2280
Steel Girders	400.0	Linear Ft.	24.7		Linear Ft.	\$20.00	\$8,000.00	020-714-2520
Exterior Finish								
Concrete Block	7,770.0	Sq. Ft.	191.9		Sq. Ft.	\$6.85	\$53,224.50	020-732-0100
Exterior Closure								
Steel w/safety glass, painted ext. door	8.0	Each	0.9		Each	\$57.50	\$460.00	020-706-3300
Aluminum Frame Full Glazed Ext. Door	4.0	Each	0.5		Each	\$16.45	\$65.80	020-706-0200
Aluminum Fixed Window (12sf) 2nd Floor	220.0	Each	24.4		Each	\$18.80	\$4,136.00	020-734-0200
Walls & Doors								
Solid Core (Painted) Interior Door	16.0	Each	1.8		Each	\$54.65	\$874.40	500 & 020-706-2000
Solid Core (W/Safety Glass)(Pntd) Int. Door	52.0	Each	5.9		Each	\$21.50	\$1,118.00	020-706-2200
Concrete Block (Painted) Wall Finish	2,350.0	Sq. Ft.	0.5		Sq. Ft.	\$1.87	\$4,394.50	020-732-0280
Plaster Wall Finish	50,650.0	Sq. Ft.	9.8		Sq. Ft.	\$6.66	\$33,429.00	020-732-3000
Floors								
Vinyl Tile Flooring	28,200.0	Sq. Ft.	10.9		Sq. Ft.	\$38	\$10,716.00	020-712-0800
Concrete, Finished Flooring	2,350.0	Sq. Ft.	43.5		Sq. Ft.	\$4.44	\$10,434.00	020-754-0420
Quarry Tile Flooring	11,750.0	Sq. Ft.	4.5		Sq. Ft.	\$94	\$11,045.00	020-712-2220
Carpet, Nylon 20 oz., low traffic	4,700.0	Sq. Ft.	3.6		Sq. Ft.	\$26	\$1,222.00	020-712-0400
Ceilings								
Plaster Ceiling	47,000.0	Sq. Ft.	145.1		Sq. Ft.	\$75	\$35,250.00	020-702-1000
Plumbing								
Service Sink, Iron Enamel	4.0	Each	0.8		Each	\$53.00	\$212.00	020-724-1320
Drinking Fountain, vitreous china	18.0	Each	2.6		Each	\$61.50	\$1,107.00	020-724-1620
Tankless Water Closet	22.0	Each	2.4		Each	\$46.50	\$1,023.00	020-724-1400
Urinal	12.0	Each	2.4		Each	\$53.00	\$636.00	020-724-1520
Lavatory, Vitreous China	18.0	Each	3.6		Each	\$37.00	\$666.00	020-724-1200
Pipe and Fittings, waste/vent, c.i. 6"	1.5	Linear Kft.	10.9		Linear Ft.	\$7.40	\$11.10	020-724-2100
Pipe and Fittings, waste/vent, c.i. 10"	0.5	Linear Kft.	10.0		Linear Ft.	\$12.35	\$6.18	020-724-2150



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Item Description	QTY	Unit	1.8	Each	\$54.65	\$874.40	500 & 020-706-2000
Solid Core (W/Safety Glass)(Pntd) Int. Door	52.0	Each	5.9	Each	\$21.50	\$1,118.00	020-706-2200
Concrete Block (Painted) Wall Finish	2,350.0	Sq. Ft.	0.5	Sq. Ft.	\$1.87	\$4,394.50	020-732-0280
Plaster Wall Finish	50,650.0	Sq. Ft.	9.8	Sq. Ft.	\$66	\$33,429.00	020-732-3000
Floors							
Vinyl Tile Flooring	28,200.0	Sq. Ft.	10.9	Sq. Ft.	\$38	\$10,716.00	020-712-0800
Concrete, Finished Flooring	2,350.0	Sq. Ft.	43.5	Sq. Ft.	\$4.44	\$10,434.00	020-754-0420
Quarry Tile Flooring	11,750.0	Sq. Ft.	4.5	Sq. Ft.	\$94	\$11,045.00	020-712-2220
Carpet, Nylon 20 oz., low traffic	4,700.0	Sq. Ft.	3.6	Sq. Ft.	\$26	\$1,222.00	020-712-0400
Ceilings							
Plaster Ceiling	47,000.0	Sq. Ft.	145.1	Sq. Ft.	\$75	\$35,250.00	020-702-1000
Plumbing							
Service Sink, Iron Enamel	4.0	Each	0.8	Each	\$53.00	\$212.00	020-724-1320
Drinking Fountain, vitreous china	18.0	Each	2.6	Each	\$61.50	\$1,107.00	020-724-1620
Tankless Water Closet	22.0	Each	2.4	Each	\$46.50	\$1,023.00	020-724-1400
Urinal	12.0	Each	2.4	Each	\$53.00	\$636.00	020-724-1520
Lavatory, Vitreous China	18.0	Each	3.6	Each	\$37.00	\$666.00	020-724-1200
Pipe and Fittings, waste/vent, c.i. 6"	1.5	Linear Kft.	10.9	Linear Ft.	\$7.40	\$11.10	020-724-2100
Pipe and Fittings, waste/vent, c.i. 10"	0.5	Linear Kft.	10.0	Linear Ft.	\$12.35	\$6.18	020-724-2150
Pipe & Fittings, cold water Copper 2"	3.0	Linear Kft.	2.4	Linear Ft.	\$1.85	\$5.55	020-724-2000
Pipe & Fittings, cold water Copper 3/4"	2.5	Linear Kft.	0.3	Linear Ft.	\$1.85	\$4.63	020-724-2000
Insulation, pipe	4.4	Linear Kft.	8.0	Linear Ft.	\$3.37	\$14.83	155-651-6840
Water htr, gas/oil 130 Gph	1.0	Each	2.3	Each	\$234.00	\$234.00	153-110-8080
Pipe and Fittings, Hot Water Copper 3/4"	0.7	Linear Kft.	0.1	Linear Ft.	\$1.85	\$1.30	020-724-2000
Circulator Pump, 1/12 Hp	1.0	Each	1.0	Each	\$70.50	\$70.50	152-410-1040
4" drain, roof scupper, area	14.0	Each	0.1	Each	\$50.00	\$700.00	Estimated
Pipe & fit drainage PVC 4"	0.4	Linear Kft.	1.3	Linear Ft.	\$2.47	\$99	020-724-2050
Fire protect, sprinkler head	235.0	Each	0.5	Each	\$10.00	\$2,350.00	Estimated
HVAC							
Air Handler, Multizone, 50000 cfm	1.0	Each		Each	\$3,450.00	\$3,450.00	157-125-1900
Air Handler, Multizone, 15000 cfm	1.0	Each		Each	\$3,450.00	\$3,450.00	157-125-1900
Pipe fittings, steel, 4"	1.8	Linear Kft.	5.8	Linear Ft.	\$2.47	\$4.45	020-724-2050
Expansion Tank, 60 gal	2.0	Each		Each	\$605.00	\$1,210.00	020-718-3600
Gas Boiler, 2500 Mbh	1.0	Each		Each	\$515.00	\$515.00	020-718-0380
Chemical Feed System	1.0	Each		Each	\$740.00	\$740.00	020-718-3000
Circulation Pump 5 Hp	4.0	Each		Each	\$740.00	\$2,960.00	020-718-3000
Cooling Tower, 200 Ton	1.0	Each		Each	\$92.50	\$92.50	157-240-1900
Chiller Water Cool Recp 165t	1.0	Each		Each	\$3,725.00	\$3,725.00	157-190-0520
Electrical							
Main switch, <=1200 amp	1.0	Each		Each	\$325.00	\$325.00	020-708-1250
Distribution switch, fused, 0-600 V	5.0	Each		Each	\$40.50	\$202.50	020-708-1120
Secondary Transformer, Dry <15,000 V	3.0	Each		Each	\$169.00	\$507.00	020-708-1480
Motor Starter, 5-20 hp <600V	4.0	Each		Each	\$740.00	\$2,960.00	020-718-3000
Motor Starter, 21-50 hp <600V	5.0	Each		Each	\$740.00	\$3,700.00	020-718-3000
Motor Starter, >50 hp <600V	1.0	Each		Each	\$740.00	\$740.00	020-718-3000
Wiring Device, Switch	70.0	Each	0.0	Each	\$2.63	\$184.10	020-708-1790
Receptacle and Plug	270.0	Each	0.2	Each	\$2.63	\$710.10	020-708-1790
Fluorescent Lighting Fixture	881.0	Each	176.2	Each	\$26.50	\$23,346.50	020-708-2440
Safety							
Smoke Detector	94.0	Each	0.2	Each		\$0.00	
Fire Alarm Bell	6.0	Each	0.0	Each			

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Table B44. DDO building fit-up summary.

Bldg. #	Area per CERL	CERL\$/SF	CERL Cost
1	55,478	\$11.43	\$634,341
2	66,722	\$6.92	\$461,669
3	7,729	\$9.02	\$69,723
4	192	\$5.43	\$1,043
5	5,840	\$5.43	\$31,732
6	6,720	\$5.43	\$36,513
8	3,040	\$5.43	\$16,518
11	52,800	\$0.00	\$0
21	1,600	\$5.43	\$8,694
22	3,360	\$5.43	\$18,256
23	7,535	\$5.43	\$40,941
24	6,962	\$5.43	\$37,828
38	10,211	\$9.02	\$92,113
39	0	\$9.02	\$0
40	6,828	\$9.02	\$61,595
46	2,500	\$9.02	\$22,552
47	1,223	\$5.43	\$6,645
49	0	\$5.43	\$0
205	104,968	\$8.91	\$934,938
207	12,800	\$5.43	\$69,549
208	513	\$9.02	\$4,628
216	104,967	\$9.23	\$968,659
217	104,968	\$8.91	\$934,938
218	104,968	\$8.91	\$934,938
229	104,968	\$8.91	\$934,938
231	104,968	\$8.91	\$934,938
240	20,836	\$5.43	\$113,212
242	104,968	\$10.08	\$1,057,573
243	104,968	\$10.08	\$1,057,573
244	104,968	\$10.08	\$1,057,573
252	21,381	\$5.43	\$116,173
253	12,298	\$5.43	\$66,821
254	110,483	\$0.41	\$45,249
262	13,669	\$5.43	\$74,270
264	20,836	\$5.43	\$113,212
265	104,968	\$10.08	\$1,057,573
266	263,269	\$1.20	\$316,658
268	50,765	\$3.08	\$156,460
273	48,384	\$3.57	\$172,806
274	20,836	\$5.43	\$113,212
275	8,550	\$5.43	\$46,456
276	6,175	\$5.43	\$33,552
278	1,553	\$5.43	\$8,438
279	20,836	\$5.43	\$113,212
280	12,298	\$5.43	\$66,821
291	6,175	\$5.43	\$33,552
292	12,298	\$5.43	\$66,821
295	260,891	\$2.95	\$768,847
301	218,303	\$2.85	\$621,602
309	38,400	\$5.43	\$208,646
310	34,800	\$5.43	\$189,085
319	260,891	\$4.81	\$1,254,670
330	275,291	\$4.81	\$1,323,922
339	260,891	\$4.81	\$1,254,670
349	260,891	\$4.81	\$1,254,670
357	260,891	\$4.81	\$1,254,670
358	249,037	\$9.33	\$2,323,250
359	291,070	\$9.33	\$2,715,373
365	260,891	\$4.81	\$1,254,670
366	295,321	\$9.33	\$2,755,030
367	291,407	\$9.33	\$2,718,517
5,211,349	\$6.36	\$33,042,523	

FINAL RANGE ESTIMATE

CERL MIN	EDC COST	CERL MAX
\$36,346,775	\$34,497,928	\$42,955,280
10% Contingency CERL MIN	20% Contingency CERL (E) COST	30% Contingency CERL MAX
\$697,775	\$761,209	\$824,643
\$507,836	\$554,003	\$600,169
\$76,695	\$83,667	\$90,640
\$1,148	\$1,252	\$1,356
\$34,905	\$38,078	\$41,251
\$40,164	\$43,816	\$47,467
\$18,170	\$19,821	\$21,473
\$0	\$0	\$0
\$9,563	\$10,432	\$11,302
\$20,082	\$21,908	\$23,733
\$45,035	\$49,129	\$53,224
\$41,611	\$45,393	\$49,176
\$101,324	\$110,535	\$119,746
\$0	\$0	\$0
\$67,754	\$73,914	\$80,073
\$24,808	\$27,063	\$29,318
\$7,310	\$7,974	\$8,639
\$0	\$0	\$0
\$1,028,432	\$1,121,925	\$1,215,419
\$76,503	\$83,458	\$90,413
\$5,091	\$5,553	\$6,016
\$1,065,525	\$1,162,391	\$1,259,257
\$1,028,432	\$1,121,925	\$1,215,419
\$1,028,432	\$1,121,925	\$1,215,419
\$1,028,432	\$1,121,925	\$1,215,419
\$1,028,432	\$1,121,925	\$1,215,419
\$124,533	\$135,854	\$147,175
\$1,163,330	\$1,269,087	\$1,374,845
\$1,163,330	\$1,269,087	\$1,374,845
\$1,163,330	\$1,269,087	\$1,374,845
\$127,790	\$139,408	\$151,025
\$73,503	\$80,185	\$86,867
\$49,773	\$54,298	\$58,823
\$81,697	\$89,124	\$96,551
\$124,533	\$135,854	\$147,175
\$1,163,330	\$1,269,087	\$1,374,845
\$348,323	\$379,989	\$411,655
\$172,106	\$187,752	\$203,398
\$190,087	\$207,367	\$224,648
\$124,533	\$135,854	\$147,175
\$51,102	\$55,747	\$60,393
\$36,907	\$40,262	\$43,617
\$9,282	\$10,126	\$10,970
\$124,533	\$135,854	\$147,175
\$73,503	\$80,185	\$86,867
\$36,907	\$40,262	\$43,617
\$73,503	\$80,185	\$86,867
\$845,732	\$922,617	\$999,502
\$683,763	\$745,923	\$808,083
\$229,510	\$250,375	\$271,239
\$207,993	\$226,902	\$245,810
\$1,380,137	\$1,505,604	\$1,631,071
\$1,456,314	\$1,588,706	\$1,721,099
\$1,380,137	\$1,505,604	\$1,631,071
\$1,380,137	\$1,505,604	\$1,631,071
\$1,380,137	\$1,505,604	\$1,631,071
\$2,555,575	\$2,787,900	\$3,020,225
\$2,986,910	\$3,258,447	\$3,529,985
\$1,380,137	\$1,505,604	\$1,631,071
\$3,030,533	\$3,306,036	\$3,581,539
\$2,990,368	\$3,262,220	\$3,534,072
\$36,346,775	\$39,651,027	\$42,955,280

Table B45. Sample building renovation cost estimate.

BUILDING NUMBER(S)	Proposed		Current		EDC AREA
	Dist.	WH	Dist.	WH	
301					218,303
Support office					21,830
Admin.					
Mr.					
Dist.					196,473
Total gross area					218,303
Mechanical area			7%		15,281
Structural area			5%		11,044
Efficiency					194,375
Support office			77%		14,792
Admin.			95%		134,702
Dist.			95%		149,669
Total Net Developable Area					147,922
Support office					50
Admin.					49
Mr.					
Dist.					444
SYSTEMS COST SUMMARY					
1.0 Foundations					EDC Cost
2.0 Substructure					EDC Cost/SF
3.0 Superstructure					
4.0 Exterior closure					
5.0 Roofing					
6.0 Interior construction					
7.0 Conveying					
8.0 Mechanical system					
1.0 HVAC					
2.0 Plumbing					
3.0 Fire Protection					
9.0 Electrical					
10.0 General conditions (breakdown)					
11.0 Special construction					
12.0 Slewwork					
13.0 Other					
BUILDING SUBTOTAL					\$2.54
13.0 Sales tax			8.25%		\$0.08
14.0 General conditions (10% of TC)			10.0%		\$0.28
15.0 Overhead			9.0%		\$0.26
16.0 Profit			6.0%		\$0.19
17.0 Location factor			0.852		\$2.84
Adjusted building cost					\$0.00
18.0 Architect's fee			0.0%		\$0.00
19.0 Contingency			0.0%		\$0.00
TOTAL COST					\$2.54

SYSTEMS OUTLINE									
Lookup	Qty.	Unit	Cost/Unit	Area Mod.	Cost/Unit	Total Cost			
1.0 Foundations									
2.0 Substructure									
3.0 Superstructure									
4.0 Exterior closure	15%	Rolling overhead doors-ext.	\$3,199.83		\$3,199.83	\$9,599			
5.0 Roofing									
5-1.1	1,448	LF	\$9.99		\$9.99	\$14,464			
5-1.3	6,626	SF	\$2.25		\$2.25	\$14,906			
6.0 Interior construction									
6-1.1	8	EA	\$1,213.30		\$1,213.30	\$9,706			
6-1.2	4	EA	\$2,452.80		\$2,452.80	\$9,811			
6-1.4	8	EA	\$3,868.55		\$3,868.55	\$31,108			
7.0 Conveying									
8.0 Mechanical system									
HVAC	1	LS	\$0.00		\$0.00	\$0			
Plumbing	1	LS	\$16,154		\$16,154	\$16,154			
Fire Protection	1	LS	\$39,295		\$39,295	\$39,295			
9.0 Electrical									
Electrical	1	LS	\$377,664		\$377,664	\$377,664			
11.0 Special construction									
11-1.1	8	EA	\$0.00		\$0.00	\$0			
11-1.2	4	EA	\$7,040.00		\$7,040.00	\$28,160			
12.0 Slewwork	20%								
REUSE CONCEPT DESCRIPTION									

Table B46. Summary of cost estimates for parking lot improvements (CERL scenario).

<i>Cost comparisons for Parking Lot Improvements - CERL Scenario</i>		
Project Description	USACERL Low	USACERL High
P-1 Install a parking lot	\$827,000	\$977,000
P-2 Install a parking lot	\$890,000	\$1,052,000
P-3 Install a parking lot	\$236,000	\$279,000
P-4 Install a parking lot	\$413,000	\$488,000
P-5 Install a parking lot	\$273,000	\$323,000
P-6 Install a parking lot	\$273,000	\$323,000
P-7 Install a parking lot	\$132,000	\$156,000
P-8 Install a parking lot	\$208,000	\$245,000
P-9 Install a parking lot	\$752,000	\$889,000
P-10 Install a parking lot	\$1,040,000	\$1,229,000
<i>Parking lot Total</i>	\$5,044,000	\$5,961,000

Table B.47. Sample of parking lot improvement cost estimate (CERL scenario)

P-1 Install a parking lot		955		Stalls: Head on parking		
Action	Quantity	UOM	Cost/unit	Total Cost	Means Ref. No.	Book
Install parking lot						
Remove top soil	7,072	CY	\$1.64	\$11,598	022-242-2000	96 Site&Work
Grade remaining soil	42,431	SY	\$0.58	\$24,610	025-122-0100	96 Site&Work
Install and compact 9" of crushed stone base	42,431	SY	\$5.55	\$235,490	022-300-0100	96 Site&Work
Install overlay of 1-1/2" binder course	42,431	SY	\$2.82	\$119,654	025-104-0080	97 Site p. 62
Install overlay of 1-1/2" wearing course	42,431	SY	\$3.27	\$138,748	025-104-0340	97 Site p. 68
Compaction of surface	3,536	CY	\$0.48	\$1,697	022-226-5020	
Total				\$531,796		
Finish and landscaping						
Layout of parking stalls	38,188	LF	\$0.04	\$1,528	025-804-0790	97 Site p.70
Paint parking stalls (Thermoplastic paint)	955	EA	\$4.39	\$4,191	025-804-0800	97 Site p. 70
Paint parking stalls-handicap stalls	19	EA	\$80.50	\$1,537	025-804-1200	97 Site p. 70
Install wheel stops	955	EA	\$31.50	\$30,073	028-408-1000	97 Site p. 108
Layout of directional arrows	90	SF	\$4.61	\$415	025-804-0760	97 Site
Install directional arrows	90	SF	\$4.61	\$415	025-804-0760	97 Site
Install sod	38	MSF	\$505.00	\$19,285	029-316-0300	97 Site p. 116
Install trees and pit	191	EA	\$100.07	\$19,107	A12.7-421-0000/R02	97 Site
Install site lighting	76	EA	\$2,255.00	\$172,226	A12.7-500-3120	97 Site p. 397
Total				\$248,776		
Install new curb and gutter						
Excavate for curb and gutter	198	CY	\$4.97	\$984	022-254-0500	97 Site
Install curb and gutter	3000	LF	\$8.90	\$26,700	025-025-0448	97 Site
Install catch basins	30	EA	\$1,535.00	\$46,050	A12.3-710-5820	97 Site p. 365
Install pipe to connect basins	3,300	LF	\$5.30	\$17,490	027-108-3020	97 Site p. 87
				\$91,224		
SUBTOTAL				\$871,796	\$871,796	
City cost index	86%			\$751,488		
TOTAL				\$826,637		
TOTAL with contingency of:	10%			\$976,934		
TOTAL with contingency of:	30%			\$827,000		
				\$977,000		
				\$827,000		
				\$977,000		

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Appendix C: Building Renovation

This section of the appendix presents all components of fit-up, and observations of major cost elements are discussed. The second major portion of the appendix (p 195) provides economic development conveyance support data.

Foundations

Substructure

Superstructure

Exterior Closure – Includes overhead doors.

Roofing

Interior Construction – Within this category is door replacement, restroom fixture upgrades (plumbing under EDC application) and office construction/upgrade. ADA-compliant items are also included within this category.

Conveying – The primary item within this category is elevators.

Mechanical System – Primary items in this category are HVAC, fire protection, and plumbing.

The EDC application's total heating/mechanical estimate was \$316,000. This cost covers replacement of portions of the heating and cooling components in various facilities. The facilities that had heating/mechanical costs listed had these costs listed as a lump sum. Because these costs are not itemized, CERL assumed a certain percentage for those buildings listed with heating/mechanical costs. For Buildings 1 and 2, CERL assumed 10 percent of the heating/mechanical system needed to be replaced. For the remaining buildings with heating/mechanical costs, CERL assumed a 2 percent replacement cost, which, for most of these buildings, provided a significantly higher total than the EDC estimate. CERL's total heating/mechanical cost estimate came to \$651,000. As with the electrical estimate, if Buildings 203, 359, and 367 are not included, the

revised total for heating/mechanical is reduced to \$304,000 for the EDC application and \$502,000 for CERL's estimate.

Almost \$2.6 million in the EDC application was for fire protection. The majority of this amount was to replace various portions of the fire protection system in the buildings. Most of these costs were listed as lump sum amounts, so it was difficult to provide comparable CERL estimates. However, of the EDC's \$2.6 million, 69 percent was allocated to Buildings 203, 256, and 266. Building 203 alone was estimated to cost \$625,000 to have its sprinkler system replaced. Note that this building has now been slated to be demolished under the Reuse Plan. Replacement of some piping and valves in Building 256, occupied by DEPMEDS, was estimated to cost \$580,000. This high cost is, in large part, a result of the specialized requirements of the materials being stored in the facility. Building 256's proposed reuse is in manufacturing, and the R.S. Means complete replacement cost of the fire protection system provides an estimate of \$529,000. Using the contingency factors of 10 and 30 percent to develop an acceptable range produces a range of \$582,000 to \$688,000. One other building (268) in the EDC application also had an estimate for replacement of its entire sprinkler system. The building is currently used for hazardous materials handling, and a proposed reuse for manufacturing would presumably require less stringent fire protection. CERL's revised estimate for Building 268 is almost \$80,000 less than the EDC application proposes. For the remaining buildings requiring some work on their fire protection system, CERL assumed 10 percent of the existing systems had to be replaced. CERL's estimate of the total cost required for fire protection came to \$2.2 million. As with electrical, heating/mechanical, and plumbing, not including Buildings 203, 359, and 367 in the total estimate reduces the EDC application's fire protection costs to \$1.9 million. CERL's estimate for fire protection further considers the reduced replacement costs for Buildings 256, 266, and 268, and also came to \$1.9 million.

The EDC application's total plumbing estimate was \$219,000. This cost covers replacement of toilets, sinks, and some piping for various warehouses. Facilities that were listed with plumbing costs had these costs listed as a lump sum. For these facilities, CERL's assumption was that 5 percent of the existing fixtures and piping needed replacement. On this basis, CERL's estimate of plumbing costs came to \$399,000. If Buildings 203, 359, and 367 are not included, the total EDC application's estimate is reduced to only \$218,000, while CERL's estimate is lowered to \$320,000.

Electrical System – This item included service distribution, fire alarms, lighting, and special manufacturing requirements.

The bulk of the EDC-proposed building fit-up is for electrical upgrades. The costs presented in the application were calculated by applying a \$/SF rehabilitation factor to the total square footage of each building type. Specific system total fit-up estimates were not provided within either the EDC application or the Reuse Plan. Follow-up conversation with Bingham Engineering indicated the electrical evaluation was subcontracted, and the performing engineer is no longer in the area nor locatable. The EDC application cost also incorrectly includes the fit-up costs for one building (203) identified for demolition and two buildings (359 and 367) already transferred to Peterson Engineering. Excluding these buildings will lower the EDC cost to \$16,912,000 and the CERL estimated range to (\$21,433,000 to \$25,330,000). The CERL technical team used the same worksheet calculation schema as the Reuse Plan (Table 2.4A). Of the \$31.2 million estimate, \$18.8 million (or 60 percent) was devoted to electrical. Several of the buildings were described as being in very good condition and require only the installation of electric meters. The remaining ones required replacement of the lighting system or the entire electrical system.

Because the costs listed in the EDC application were not itemized, item by item cost comparisons are not possible. CERL's cost estimates were based on cost data from the 1996 *Means Square Foot Costs*, and were made with the following assumptions:

1. Estimates for each building are made based on its proposed reuse.
2. When an electrical system is to be replaced, unless stated otherwise, the replacement cost includes service and distribution, lighting and power, and special electrical (alarm systems and emergency lighting).
3. For buildings requiring only the installation of electric meters, no corresponding CERL estimate was made.

CERL's estimate of the electrical cost was almost \$5 million greater than that listed in the EDC application. Individually, the estimates for some buildings were lower than the EDC application's and higher for others. Most of the cases where CERL's estimates were higher were because CERL estimated for proposed manufacturing reuse rather than for the facilities' existing warehouse use. In these cases, the cost to replace electrical systems in manufacturing facilities is higher than that for distribution facilities. Both CERL's and the EDC application's amounts, however, include Building 203 that is to be demolished and Buildings 359 and 367 that have already been transferred to Peterson Engineering. If the electrical costs for these three buildings are not considered,

then CERL's total electrical cost estimate is reduced to \$19.5 million, and the EDC estimate would be reduced to \$16.9 million.

Special Construction – This category relates primarily to dock items such as bumpers and levelers.

Sitework – Interior demolition is included within this category.

Economic Development and Conveyance Support Data

This section of the appendix is an excerpt from *Ogden Depot HEATMAP Evaluation*, a CERL Data Summary, 21 January 1998. For further supporting data (i.e., the HEATMAP program output files and RS Means Pipe Cost Estimates), see the original data summary document.

Introduction

Objectives

Defense Depot Ogden is being closed as part of the BRAC.

CERL was tasked to conduct a preliminary HEATMAP analysis of the steam distribution system at Ogden to calculate accurate operation and fuel consumption estimates. Only the status quo scenario was modeled. Other options can be modeled if required. These possible scenarios include:

- A new steam system
- A new low temperature or high temperature hot water system.
- Decentralized gas furnaces.

It was assumed that natural gas was the only fuel used for the new scenarios. Backup fuel capabilities, either #2 oil or propane/air mix, should be considered to support an interruptible gas rate and to provide greater system reliability. A five year estimate of operating costs was calculated as well as replacement costs for the boilers and the distribution system.

Approach

A HEATMAP analysis was conducted on the existing system. A paper version of the distribution was provided. An electronic map of the distribution system was developed by CERL researchers. Ogden provided additional data such as building loads, boiler logs, and operation and maintenance costs. Additionally, CERL developed load estimates from previous studies at industrial complexes.

All of this data was be used to validate the HEATMAP model for the existing system. This information was then used to estimate distribution system costs and annual fuel consumption for the existing steam system using above ground piping systems

Background

System History

The boiler plant at Ogden consists of four boilers capable of producing 179,770 lbs/hr of 100 psig saturated steam. Boilers 1 through 4 are of the following capacities respectively, 30,000 lbs/hr, 51,220 lbs/hr, 34,550 lbs/hr, and 64,000 lbs/hr. All are capable of burning natural gas and #2 oil, though natural gas is the primary fuel source. Approximately 200,000 MBtu of natural gas are used annually. The distribution system consists of approximately 39,500 linear feet of steam and condensate return piping and 2000 steam traps.

Ogden Depot Heat and Steam Requirements

Steam is used primarily for heating and domestic hot water (DHW) production. Most of the buildings are storage facilities. It is assumed that the heating season, which is when the boiler plant is running, is between October 1 and May 1, or 212 days. From the monthly boiler plant operating log sheets, the total minimum load varied between 9,000 and 22,000 lbs/hr and averaged just above 15,000 lbs/hr when the average daily temperatures ranged between 58 and 63 degrees F. The average steam load will consist of the thermal losses of the distribution system and any process load including domestic hot water requirements. The maximum daily average steam load was 71,000 lbs/hr at an average daily temperature of 15 degrees. The design heating temperature for the region is 6 degrees F. A one hour maximum plant output of just over 80,000 lbs/hr would be expected at the design temperature. Annual heating degree days (HDD) for the region average 6,081, of which 90 percent, or 5473 occur during the heating season. Makeup water rates varied between 1150 and 1600 lbs/hr for the month of January during the period 1995-1997. The average make-up water rate for January 1997 was 1,385 lbs/hr with the average steam flow for the same period being 56,320 lbs/h. A total of 986 HDD were recorded in January 1997. The total leakage loss of the system at peak load is only 2.5 percent, which indicates a distribution system with very few leaks. Average make-up water rates for April of 1995 and 1996 varied between 956 and 737 lbs/hr, respectively, with the corresponding average steam flows of 32,224 and 19,558 lbs/hr. Total thermal distribution system losses are estimated at 12 MBtu/hr (10,000 lbs/hr),

10.3 MBtu/hr due to heat loss from the pipe and 1.6 MBtu/hr due to leakage. This results in an annual loss of 61,000 MBtu of steam or 81,400 MBtu of natural gas at 75 percent efficiency. The fixed cost of heating the distribution system is approximately \$185,000 a year, using natural gas @ \$2.27/MBtu.

Fuel and Maintenance Costs

The status quo scenario used only natural gas as a fuel at \$2.27/MBtu as found in the 1995 Redbook. Annual heating plant operation cost on a per unit fuel basis was quoted in the Redbook at \$1.65/MBtu fuel consumed which would result in \$330,000 using an annual fuel consumption of 200,000 MBtu. It is not known whether the \$1.65/MBtu figure in 1995 included the controls contract with Honeywell. Boiler plant labor was estimated using 6 FTE boiler operators and 1 FTE foreman. Loaded labor costs for the operators were estimated at \$45,000 and \$60,000 for the foreman, for an annual labor cost of \$330,000. Total maintenance for the steam distribution systems was estimated at 1 percent of replacement value, or \$62,000 annually. Miscellaneous boiler plant repair costs were estimated at 4 percent of replacement value, or \$41,000. An annual contract to Honeywell for the controls work currently was estimated at \$200,000. The cost to replace 2000 traps at \$400/trap was estimated to be \$800,000. Therefore, the current annual cost of operation, not including fuel costs, are estimated at \$633,000. This compares favorably the total J and K account expenditure of \$614,000 in 1995 at the boiler plant.

HEATMAP Analysis

Existing Steam System (Scenario 101)

Building category codes and building loads areas were estimated from the paper map and previous studies at other sites. CERL used the climate data for Salt Lake City, UT. Costs for this option are summarized in Table 1.

Table 1. Existing Steam System HEATMAP Data.

Peak Building Load (MBTU/hr)	74.6
Annual Building Load (MBTU/yr)	88,128
Peak Plant Steam Load (MBTU/hr)	84
Annual Plant Fuel (MBTU/yr)	200,000
Annual Fuel Cost @ \$2.27/MBTU (\$)	\$454,000
Annual Operating Cost - Labor(\$)	\$330,000
Piping Repair Cost (\$/year)	\$62,000
Other Repair Cost (\$/year)	\$41,000
Dist. System Replacement (\$)	\$6,205,000
Boiler Replacement Boilers (\$)	\$1,035,000
Boiler Replacment Labor (\$)	\$800,000
Boiler Demolition/Removal (\$)	\$240,000
Steam Trap Replacement (\$)	\$800,000

The system loss for the distribution system is assumed to be around 12 MBtu/hr for the entire study period, since the system is only being replaced as it fails. The effect of the system loss is felt throughout the heating season. At part load conditions the system loss will be nearly the same as during peak load conditions.

The available detailed estimates for the existing distribution system costs, the system flow analysis, the consumer load summary, and the pipe inventory report from HEATMAP are provided in the attachments.

Summary

Of all the steam distribution system types, above ground system have proven to be the most reliable and sustainable. The boiler plant log data indicates the system has relatively low losses and is performing much better than many of the systems CERL has studied. The HEATMAP analysis shows that the O&M costs shown in the EDC application package are reasonable. Although the HEATMAP analysis considers labor and maintenance costs for the whole system and the LRA does not call out plant labor and maintenance, the HEATMAP estimate minus fuel costs is only \$124,000 more than the LRA figures. CERL has a higher estimate for the system capital investment but that figure assumes a complete rebuild. To effect good performance for only the next 5 years a complete rebuild would not be desirable. Give the fact that the system is above ground and is performing well, it is reasonable that alert and skilled operators and maintainers would prevent catastrophic failure with good maintenance practices. Above ground systems have been known to last over 50 years with correct water treatment. If the buildings on the steam system can be occupied with tenants, the steam system should be able to provide cost effective heat and hot water and

relieve the occupants of the burden of investing in decentralized boilers and furnaces.

Table 2. Cost comparisons between Ogden LRA and CERL.

	Ogden LRA	CERL
Capital Costs		
Dist. System Replacement (\$)	\$3,408,020	\$6,205,000
Boiler Replacement Boilers (\$)	\$372,190	\$1,035,000
Boiler Replacment Labor (\$)		\$100,000
Boiler Demolition/Removal (\$)		\$240,000
Steam Trap Replacement (\$)	\$1,500,000	\$800,000
Steam Trap Survey	\$15,000	
Total	\$5,295,210	\$8,380,000
O&M Costs		
Honeywell control O&M	\$200,000	\$200,000
Annual Fuel Cost @ \$2.27/MBTU (\$)		\$454,000
Piping system O&M	\$309,820	
Annual Operating Cost - Labor(\$)		\$330,000
Piping Repair Cost (\$/year)		\$62,000
Other Repair Cost (\$/year)		\$41,000
Total	\$509,820	\$1,087,000

Distribution

Chief of Engineers 20314-1000

ATTN: CEHEC-IM-LH (2)

ATTN: CEHEC-IM-LP (2)

ATTN: CERD-L

ATTN: CERE-C (3)

U.S. Army Engineer District,
Sacramento

ATTN: CESP-K-RE-MC (5)

ACSIM

ATTN: DAIM-BO (3)

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