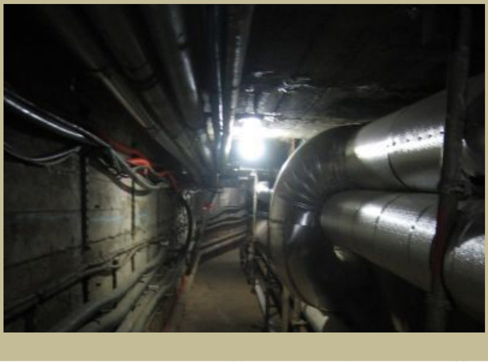
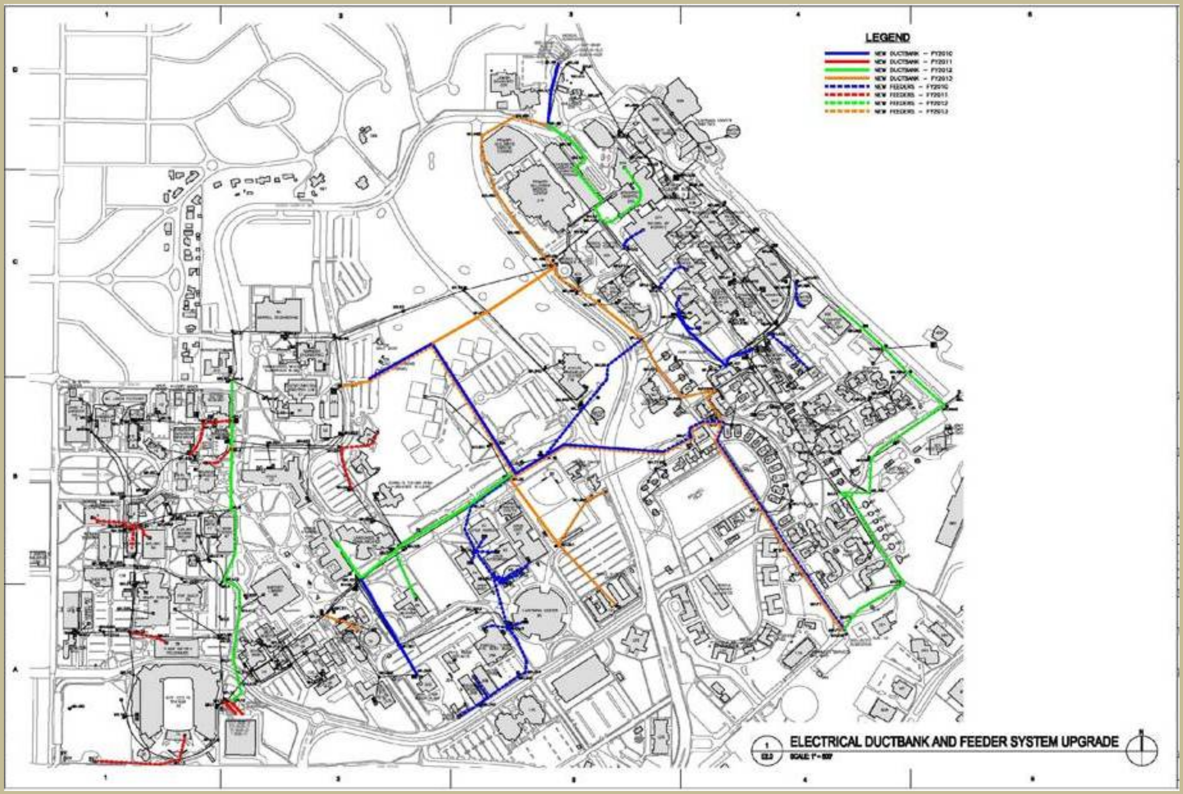
UTAH SYSTEM OF HIGHER EDUCATION

UTILITIES INFRASTRUCTURE STUDY





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Foreword

The State of Utah has made a substantial investment in the campuses that comprise the Utah System of Higher Education (USHE) and the capital facilities on those campuses serve to embody those investments. Well-maintained and programmatically current physical facilities are critical for attracting talented students, faculty, and staff to the USHE campuses, and for providing a quality learning and research environment once they arrive on campus sites. Attractive and technologically up-to-date buildings are a necessary condition for the USHE institutions to lead out in helping the State achieve its educational and economic goals. Another critical component of facilities investment, often unnoticed historically, is the utilities infrastructure which consists of production assets and distribution networks that service the buildings on each campus site.

Approximately one year ago, the USHE System brought together a group of individuals from across the State, tasked with more fully researching and documenting the condition of the utilities infrastructure piece of USHE capital facilities. Those individuals involved spent a great deal of time and effort in preparing this report that could well inform future decisions in the State of Utah on the utilities infrastructure front for years to come.

This report brings together in one place for the first time, important historical documentation regarding the production and distribution assets that comprise the utilities infrastructure systems present at the USHE campuses and the projected future funding needs of such systems. Significantly, the report takes the additional step of surveying national funding models for infrastructure, to see what the State of Utah might glean from other States. And perhaps most importantly, for those with limited time, it provides an Executive Summary which succinctly outlines the Key Issues surrounding USHE utilities infrastructure systems, and provides Recommendations for assuring that the existing infrastructure can successfully support higher education's facilities needs going forward. For the reader that can afford a deeper dive into the materials, the narrative of the report is further embellished with various appendices that cover the materials presented in substantially more detail.

A special thanks is due to W. Ralph Hardy, the Assistant Commissioner for Facilities Planning for the USHE System, as he not only served as the facilitator of the many group meetings for this project, but also as the primary author of the materials that comprise this report. Members of the Project Steering Committee and the Inventory and Assessment Task Force also contributed significantly to the narrative and appendices that are attached. We thank you for your interest in the results of this project.

Dr. Gregory L. Stauffer
Associate Commissioner for Planning, Finance, & Facilities

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Executive Summary of Utilities Infrastructure Report

In order to provide a system of higher education that meets the needs of our state, Utah's public colleges and universities must have campuses and facilities that are up to date, reliable, and safe. Campus facilities are among the state's most valuable assets and represent significant taxpayer investment and expense. The challenges of keeping campus buildings, utilities infrastructure, landscape, hardscape and roads are many, and are exacerbated by age.

This report outlines the issues faced by the Utah System of Higher Education's institutionally owned utilities systems, including the lack of a dedicated funding mechanism to update utilities infrastructure needs in a timely manner. This report also puts the funding and oversight issues in the context of the broader need to adequately fund routine repair and preventive maintenance and deferred maintenance.

The findings of this report are consistent with those of numerous national studies, which have found that "*underfunding of maintenance and repair is a widespread and persistent problem*" across higher education facilities and infrastructure for many decades. (See Appendix B for the relevant references)

Key Issues Highlighted in the Report

- The recommended minimum budget allocation for capital renewal of buildings is 2.0% of the Current Replacement Value (CRV) of the facilities (1.5% for capital renewal and 0.5% for remodeling). While Utah was once a leader in addressing this important need by establishing Capital Improvement Funding in 1994, the statutory target of 1.1% is below the 2.0% recommended by professional industry studies. Furthermore, funding at the 1.1% level has only occurred three times since the statute's inception. Also significantly, while the CRV base used to calculate the amount of improvement funds available does not include the full replacement cost for utility distribution systems and generating plants, 28% of the Capital Improvement funds allocated over the past 15 years have been needed for utilities infrastructure projects. Some funds have also been needed for renewal and replacement of other non-building infrastructure including landscape, hardscape (surface parking, plazas, and sidewalks), safety and security (e.g., exterior campus lighting) and roads.

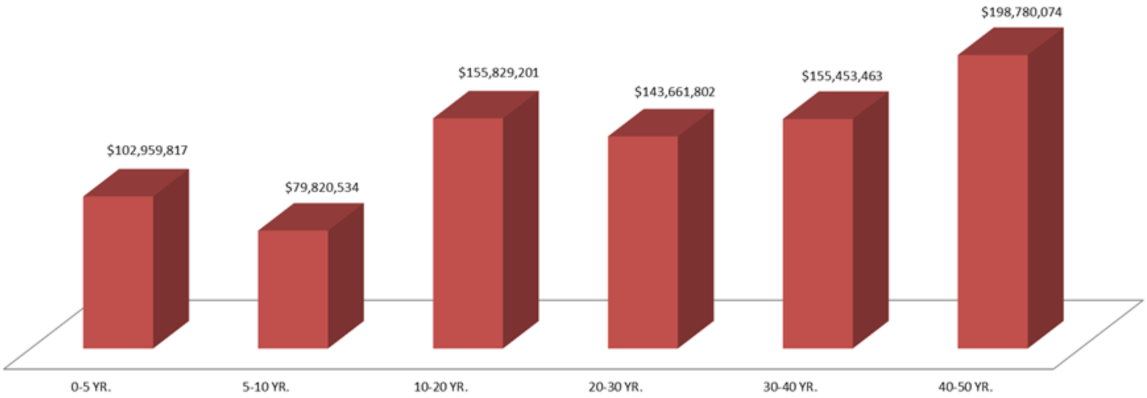
- Five USHE institutions have their own high-voltage substations, and a sixth is in the process of being installed. All institutions own and operate electrical distribution systems. The advantages of these institutionally-owned electrical power production and distribution systems include:
    1. Power Rate-Based Cost Reduction
    2. Reliability of Power
    3. Quality of Power
    4. Service Responsiveness

    5. Accessibility for Maintenance

- There are two ongoing funding mechanisms (1. & 2. below) and several periodic mechanisms (3. through 5. below) used to fund maintenance, repair and replacement of facilities on USHE campuses.
    1. Annual Operation & Maintenance (O&M) Budgets: address routine maintenance and repairs
    2. Capital Improvement Funding: addresses capital renewal and replacement needs
    3. Energy Service Companies (ESCo) and Other Energy Savings Related Funding
    4. Capital Development Funding
    5. Other Institutional Funds

- As the Legislature considers potential funding mechanisms, it is important to bear in mind the condition, capacity and sustainability of the assets being maintained.

- ***A key desired outcome of this report is to focus attention on the need for dedicated, permanent revenue streams for the rehabilitation and replacement of USHE utilities production and distribution infrastructure.*** An evaluation of those needs that was commissioned as a part of this study shows an estimated need of $836.2 million (in current dollars) of replacement costs for these assets over the next 50 years which are shown graphically below:



50 Year Replacement Cost- All Utilities
Total - $836,504,891

Recommendations:

1. **Institutional Ownership of Utilities Infrastructure –** Institutional ownership and operation of these assets was found to be viable and in the financial and operational best interests of the state and should be continued.

2. **Routine Maintenance and Repair –** The adequacy of existing annual O&M budgets is marginal and should be carefully evaluated for funding increases to avert further deterioration of physical plant assets. Additionally, it is recommended that the State Legislature return to the pre-recession practice of providing state-appropriated O&M support for authorized non-state funded projects based on the “use” of the facilities rather than the “source” of capital funding.
3. **Capital Renewal Funding for Buildings and Non-utilities Infrastructure –** It is recommended that the statutory minimum of 1.1% of CRV be funded for these needs and that serious consideration be given to increasing the statutory minimum to the recommended minimum level of 2.0%, phased in over time as resources permit, in order to prevent continuing increases to the backlog of deferred maintenance needs.
4. **Utilities Production and Distribution Infrastructure –**
    a. Condition needs – Serious consideration should be given to establishment of a separate funding mechanism for these needs, with consideration given to the establishment of perpetual “break-even” utilities as quasi-auxiliary enterprises for the ongoing operation and maintenance and provision of capital renewal of these assets.
    b. Capacity - The utility infrastructure costs resulting from addition of all new buildings, whether capital funding comes from state-funded or non-state funded sources, should be considered to be a component of new building construction budgets, not part of the funding mechanism for renewal and replacement of existing infrastructure. This would be accomplished by requiring that applicable costs are part of the capital budgets of all new capital development projects.
5. **Deferred Maintenance –** Consideration should be given to the provision of one-time funding, from sources that might include general obligation bonding, one-time appropriations, or other one-time sources to address the growing backlog of these needs.

INTRODUCTION

USHE institutions have the mission of providing higher education excellence in instruction, research, community outreach, and life-long learning opportunities which are focused on economic development and long-term benefit to the State of Utah. To accomplish this mission our public educational institutions must have campuses and facilities that are modern, adequate, reliable, and safe. Campus facilities are among the state's most valuable assets and, as such, represent a significant taxpayer investment and expense. And the challenges of keeping campus buildings, utilities production and distribution infrastructure, landscape, hardscape (surface parking, plazas, and sidewalks), and roads in acceptable condition are exacerbated by age.

One of the major challenges facing USHE institutionally owned utility systems is the lack of a dedicated capital funding mechanism to replace long-lived and expensive utilities infrastructure in a timely manner. In addition, this utilities production and distribution infrastructure is composed of unseen capital assets that, nevertheless, directly support the mission and objectives of higher education institutions and requires periodic major investment. This reality is evidenced by the problems encountered by Snow College 16 years ago (failure of direct-buried steam and condensate lines), by Utah State University 10 years ago (new heat plant and utilities distribution system), and faced currently by the University of Utah (electrical distribution and high temperature water distribution systems failures). A desire to understand and avoid the possibility of similar problems being encountered at other institutions in the future is what drives this study. It is also the intent of this study to specifically address the funding and oversight issues and put them in the context of the broader need of funding for routine repair and preventative maintenance needs as well as major maintenance, repair and replacement including deferred maintenance.

DEFINITIONS

Please refer to *APPENDIX A* for definitions of terms that will be used throughout this report. Because of the complexity of the issues, a familiarity with the terms will help to avoid confusion and to enhance understanding of the issues involved.

BACKGROUND

Buildings and utilities production and distribution systems inevitably deteriorate, become obsolete, and need replacement. Underfunding of routine repair and preventative maintenance and capital renewal and replacement leads to a backlog of deferred maintenance which results in code deficient and unsafe buildings as well as unreliable infrastructure. The resulting outcome is unattractive and poorly functioning buildings; unsightly grounds; and failing utility production and distribution systems that jeopardize the programmatic usability of space necessary for academic (instruction and academically based research), student, administrative, and community service activities. Additionally, energy and natural resources are wasted as these systems become less efficient over time.

A major study published in 2009 by APPA: The Association of Higher Education Facilities Officers states:

> *"The burdensome problems of major maintenance and capital renewal/replacement have troubled higher education since the 1970s. The term deferred maintenance emerged in the early 1970s as college and university administrators began to realize the serious nature of plant problems on their campuses. The deteriorated plant conditions produced by ignoring older facilities during higher education's post-World War II expansion were compounded by the following:*
>
> - *Poor designs for institutional durability*
> - *Cost cutting that rapidly produced space with inferior construction techniques, and innovative materials that showed early failures*
> - *Soaring utility costs*
> - *Inflation-reduced operations and maintenance budgets*
> - *Inadequate funding for capital renewal and major maintenance*
> - *Increased government regulations resulting in reallocation of resources and further deferral of maintenance*
> - *The 1980s saw initiatives by legislators, governing boards, campus presidents, business officers, and facilities directors aimed at corrective action. Despite those efforts, a subsequent APPA study, the results of which were published in the 2012 March/April issue of Facilities Manager, found that "The deferred maintenance problem for public higher education facilities clearly worsened from 1997 to 2008…with some variability observed among governing and coordinating board states."*

There have been numerous other major studies done over the years in an effort to focus attention on these ongoing and, for the most part, increasing problems. Descriptions of several of the most noteworthy ones are included as *APPENDIX B*. The reader of this report is encouraged to take the time to read this additional material in order to more fully appreciate the substance and magnitude of the problem. These studies all deal, to varying degrees, with the funding levels needed to assure that the long-term capital renewal and adaption needs of the institutions are met. In summary, they conclude that the following levels of funding are needed:

- Plant Renewal (excluding consideration for non-building infrastructure needs) – 1.5% to 2.0% of plant replacement costs (CRV) is needed to keep the plant in good condition for its present use based on facility life cycles.
- Plant Adaptation (building code and standards compliance as well as changing programmatic requirements) – 0.5% to 1.5% of plant replacement costs (CRV) is needed to alter institutional facilities to comply with changing regulations, to meet new
- expectations, and to serve changing programmatic needs.
- Sufficient catchup maintenance to address deferred maintenance backlog needs and bring the plant into reliable operating condition.

Thus, the ongoing need for plant renewal (buildings only) and plant adaptation is a minimum of 2.0% of CRV. And this does not include the funding required for non-building infrastructure needs and reduction of the accumulated backlog of deferred maintenance. The reality is, therefore, that despite significant efforts by the Utah State Legislature to address these issues, the only ongoing funding source available to meet all of these needs is the existing statutory funding level of 1.1%, which is significantly below the minimum need for plant building renewal and adaption alone and has been fully funded only 3 times since its inception. As a result, over time, the preventative maintenance and plant renewal funding, both for buildings and major utility infrastructure systems has been inadequate as institutions make the difficult choices of using the funds for the most pressing and critical needs of both, the result being inadequate attention to both, thereby resulting in increasing deferred maintenance backlogs.

Please note that a large amount of data has been collected, evaluated' and analyzed in this study. In order to allow the readers to focus on the substantive issues of the study, much of the detailed information has been placed in the "Appendices" of the report. Readers are encouraged to refer to these "Appendices" for a more thorough understanding of the issues.

HIGH VOLTAGE ELECTRICAL SUBSTATION AND DISTRIBUTION SYSTEM OWNERSHIP

During discussions about the major utilities production and infrastructure funding issues over the past year or so, the question has been raised as to the advisability of USHE being in the business of production and distribution of utilities as well as maintenance, repair, and replacement of the infrastructure: viz., might entities, whose sole business is to provide those systems and services be able to do so more efficiently and more cost effectively? This question has been taken seriously and has been carefully studied by the task force of this study and professional consultants. The question has primarily been raised in the context of electrical services since it is generally understood that provision of heating and cooling systems services are routinely part of the institutions' domain.

It should be noted that the issues being addressed pertaining to electrical power only apply to institutions and campuses that have a concentration of buildings in one place, which include main campus locations for all institutions and full-fledged branch campuses for some. There are many delivery sites where electrical service is directly connected to the buildings without the use of substations and distribution grids (USU Innovation Campus in Logan, USU Blanding Campus, USU Uintah Basin Campus, WSU Davis Campus, Snow College West Campus (Ephraim) and Richfield Campus, DSC Hurricane Campus, UVU Wasatch Campus, SLCC Jordan and Miller Campuses, etc.). It is not economically feasible for the institutions to use substations and grids for distribution of electrical power to these facilities.

It also is true that the issues pertaining to maintenance of substations and electrical-power distribution grids are system maintenance issues.

Also noteworthy is that these arrangements are not unique to Utah's higher education institutions. For reasons that will be addressed, the direct involvement of higher education institutions in distribution of electrical power to their campus buildings is a common practice, and some (e.g. , University of Missouri at Columbia) have cogeneration plants with the capability to provide for all of the heating and electrical needs of a campus. Higher education institutions have operated their own utility production and distribution systems for many years, which may include: electrical; heating and cooling; culinary water; irrigation; and compressed air systems. As a result they have core competencies in these areas with trained and licensed professional employees. Most institutions maintain storm and sanitary sewer assets as well. With a long and varied history of providing reliable utility services to their campuses, college and university operated utilities have core competencies in these areas consisting of trained and licensed professional employees.

A more detailed description of the advantages of institutional owned electrical power distribution systems is provided in *APPENDIX C* of the report.

The relevant advantages of owning and operating their own electrical distribution systems are compelling for institutions that have concentrations of buildings in one place. It is less compelling for campuses with loads of less than 4 Megawatts to own and operate high-voltage substations. As described in Appendix C of this report, for these campuses the benefit, typically, would be marginal. In 2010 Southern Utah University contracted with Chevron Energy Solutions to perform an Investment Grade Audit to explore installation of a high-voltage electrical substation and other energy conservation measures. While many of the energy conservation measures identified have been or are being implemented, the conclusion of the study was that installation of the substation would not result in sufficient savings beyond ten years to provide an adequate reserve for system replacement.

Institutional concerns about the highly specialized safety precautions and hiring of qualified personnel at a competitive wage to perform required maintenance also played into the decision. In addition, the limited land available and resulting impact on campus aesthetics, as well as the potential for straining community relations as a result of installation and routing of transmission lines through residential and high density commercial zones and a high-voltage substation in proximity to residential neighborhoods were contributing factors to the decision.

Careful examination of these issues shows that the nature of higher education needs is such that institutional ownership of the on-campus electrical distribution grid is essential for meeting the unique needs. And institutional ownership of high-voltage substations is highly desirable in large and complex research universities as well as other institutions of sufficient size and complexity. The conclusion drawn from this analysis is that it is in the best interest of and the best value for the State for larger institutions to own, operate, maintain, and replace as needed the high voltage production facilities and medium voltage distribution systems that provide electrical service to their campuses.

It is also noted that Rocky Mountain Power and other electrical companies continue to be great partners in meeting the needs of USHE institutions with a high level of reliability.

HISTORY OF FUNDING FOR MAINTENANCE, CAPITAL RENEWAL OF BUILDINGS, AND RENOVATION AND REPLACEMENT OF UTILITIES INFRASTRUCTRUE

In Utah there are currently two ongoing funding mechanisms and several periodic funding mechanisms that have been used to address the issues of maintenance, repair, and replacement of plant facilities on campuses of the Utah System of Higher Education:

1. Annual Operation and Maintenance (O&M) Budgets – These are the funds normally used to address normal and routine “Maintenance and Minor Repairs” and are provided through the annual operating budget cycle. The issues addressed are normally cyclical, planned activities performed to maintain the originally anticipated life of a fixed asset, or an established suitable level of performance, and are much like oil and filter changes, checking fluid levels, replacing belts, and maintaining proper air pressure in the tires of an automobile. Normal and routine maintenance excludes activities that expand the capacity or life of an asset or otherwise upgrade the asset to serve needs greater than or different from those being served at the time the work begins (things analogous to replacing the alternator or transmission of an automobile).

   Current operation and maintenance budgets in USHE institutions are austere for a variety of reasons:

a. While personal services (salaries and benefits) and periodic increases for utilities rate increases have been funded by the legislature over time, the “non-personal services” items in the O&M budgets (which represents about 35 cents of each O&M dollar spent, and include expenses such as operational and office supplies, non-capital equipment, printing and photocopying, purchased services, vehicle fuel, travel, etc.) have not received funding increases from the Legislature for more than two decades. While an estimated dollar amount of this lost purchasing power has not been calculated, it unquestionably has resulted in some level of decreased care of USHE facilities.
b. The timing and amounts of intermittent increases for utilities budgets have not always covered actual cost increases and have left some institutions with unfunded deficits.
c. Over the years, and likewise common to institutions throughout the country, budget cuts have been imposed that not only have further reduced the non-personal services O&M budgets, but also have significantly reduced funding available for personnel and contractor services, lessening the ability to perform appropriate corrective and preventative maintenance. These budget cuts are rarely, if ever, restored
d. The recent economic downturn resulted in the Legislature not being able to fund O&M increases for facilities that were previously authorized to seek state O&M support and/or were otherwise qualified to receive consideration for such support under State Board of Regents policy. A total of 23 facilities representing $4.3 million of unfunded O&M support fall into this category. If state revenues had been sufficient, consistent with historical practice, state-funded O&M support most likely would have been provided for these facilities. Consideration should be given to a reexamination of the practice of state-appropriated O&M funding for buildings whose capital funding comes entirely from non-state sources. Many such facilities serve identical purposes in support of the institutions’ assigned roles and missions as do buildings whose capital funding comes in full or in part from state sources. Though there are other possible models, one that has been suggested would be to base decisions about whether or not to provide state-funded O&M for a project on the *use of the facility rather than on* the *source of capital funding*.

   A white paper detailing the evolution of Board of Regents policies on the issue of qualification for state-funded O&M support is attached as *APPENDIX E* and provides insight into this issue.

An analysis that was concluded last year shows the status of USHE state-funded O&M budgets for the period of 1987-88 through 2011-12. A copy of this analysis is attached as *APPENDIX F*. Starting with the base year of 1987-88, the analysis shows the amounts specifically funded by the Legislature in the ensuing years to the budgeted amounts, including utilities increases, increases for new space added, and proportional amounts funded for compensation increases. The impact of budget cuts imposed is also reflected. ***The analysis shows that system wide, the institutions have increased the O&M operating budgets by $22.7 million more than the calculated base budget provided by the legislature.*** The increases in O&M amounts budgeted above the funded levels were achieved through reallocations from other budgets and periodic use of part of the student tuition increases over time.

These depleted levels of O&M funding make provision of the normal and routine maintenance for all facilities an even bigger challenge and result in increased levels of deferred maintenance which exacerbates the future major repair and replacement problems and related costs.

2. Capital Improvement (CI) Funding – In its 1994 session the Utah State Legislature created an ongoing funding mechanism to address the capital renewal and replacement needs by specifying in statute [UCA 63A-5-104(5)] that *"the Legislature may not fund the design or construction of any new capital development projects, except to complete the funding of projects for which partial funding has been previously provided, until the following funding requirement for capital improvement has been met: for 1995, .5% of the replacement cost of existing state buildings; for fiscal year 1996, .75% of the replacement cost of existing state buildings; and for fiscal year 1997 and thereafter, .9% of the replacement cost of existing state facilities to capital improvements."* In 2001 the statute was amended to increase the statutory requirement from .9% to 1.1% with the additional provision that *"if the Legislature determines that an Education Fund budget deficit or a General Fund budget deficit exists, the Legislature may, in eliminating the deficit, reduce the amount appropriated to capital improvements to 0.9% of the replacement cost of state buildings."*

For fiscal years 2001 through 2005 funding was provided at the .9 percent level to help accommodate budget balancing measures. For FY 2006 through 2008 the full statutory amount provided slightly exceeded the statutory amount of 1.1 percent (FY 2006 actually received about 1.14 percent). During the ensuing recessionary years state revenues have not been sufficient to fully fund the statutory requirements, and the statute has been amended on a year-by-year basis to enable provision of amounts less than the statutory requirement (.9% for FY 2009, .7% for FY02010, .6% for 2011 and 2012, and .8% for 2013).

The foresight of the State of Utah to implement this funding mechanism – Utah was a leader in the adoption of this method of funding - has been instrumental in providing an ongoing revenue stream to defray the costs of the most serious problems. A significant issue, however, is the previously mentioned fact that these annual allocations have also been needed to fund major utility production and distribution infrastructure needs at the institutions. As was noted in the "Background" section of this report, the low end of the range of funding recommended for the on-going "Capital Renewal" of buildings alone is 1.5 percent of current replacement value and ***excludes major utilities infrastructure and accumulated deferred maintenance backlogs***. So the annual capital improvement funding provided by the legislature, even if fully funded at the statutory requirement of 1.1 percent, still would be significantly less than the recommended minimum amount of 1.5 percent, even if none of the amount provided was used for major utilities infrastructure. Since a considerable amount is used on an ongoing basis for the utilities infrastructure, the amount available for the capital renewal of buildings is diminished to be even further below the recommended range minimum, leading to increases of the deferred maintenance backlog.

This fact is clearly seen from the results of a 15 year history that was compiled of the uses of Capital Improvement funding allocations (see *APPENDIX G* for a summary of this information). ***These data show that over the 15 year period analyzed, $116.3 million, representing 28% of the total Capital Improvement allocations to USHE institutions, was spent for utility infrastructure projects.*** While these CI funding allocations are, for the most part, based on building needs, more than one fourth of the funds have been needed to address the utility production and distribution infrastructure needs of the institutions.

The key point is that even though only a very small portion of the value of the utility production and distribution infrastructure is included in the CI funding formula, higher education institutions, most of which have campuses with major utility infrastructures, are disadvantaged vis-a-vis most other state institutions because they are required to use significant portions of their annual CI allocations for that purpose.

Particularly noteworthy is the fact that a very large portion of the CI allocations made to Snow College from 1998 to 2004 were needed for construction of utility tunnels that were required by the failure of direct-buried steam and condensate lines. A total of $3,245,500 ($900,000 in FY 1998, $200,000 in FY 2000, $1,148,000 in FY 2002, $832,000 in FY 2003, and $265,000 in FY 2004) was used for this purpose.

Had an alternative funding mechanism for the utility infrastructure needs been in place during that time, a reduction in the backlog of deferred maintenance needs for buildings and other non-utility infrastructure could have been accomplished.

3. Capital Development Funding – Over the past 15 years there have been a number of times when Capital Development funding was provided by the legislature for projects that included replacement and/or provision of new major utility infrastructure needs. Over that period $86.1 million has been used for that purpose. A summary of these projects by institution is included in *APPENDIX H*.

4. ESCo and Other Energy Savings Related Funding – During the past fifteen years a significant number of utilities infrastructure projects have been funded through Energy Service Companies (ESCo) which are commercial businesses that provide a broad range of comprehensive energy solutions including designs and implementation of energy conservation projects that are financed through the energy savings achieved. In addition, a number of utilities infrastructure projects have been undertaken by USHE institutions “in house” that have also been financed with the energy savings realized. Over the 15 year period evaluated, a total of $76.3 million was spent from this source for utility infrastructure projects (see *APPENDIX H* for a summary of this information by institution).

5. Projects Funded Using Other Institutional Funds – Over this same time period there has been a total amount of $37.8 million of other institutional funds spent on numerous utility infrastructure projects. (*APPENDIX H* also includes a summary of this information by institution.)

CURRENT AND FUTURE FUNDING MECHANISMS

Condition, Capacity, and Sustainability - The context for the assessment of the adequacy of current funding mechanisms and for consideration of potential funding mechanisms for the issues addressed in this study is:

Condition – The “condition” category pertains to the functionality of the assets and includes “Routine Repair and Preventative Maintenance” as well as the “Capital Renewal and Replacement” of facilities and is the broad category that is the primary focus of this study. Decisions regarding when it is time to replace a building, a major piece of equipment, or a utility infrastructure distribution network involve distinguishing between ***physical life*** and ***economic life.*** An asset is often physically able to continue operating after its economic life, but typically does so at a cost or rate that renders it economically obsolete. The economic life almost always is less than absolute physical life for reasons of technological obsolescence, physical deterioration, or product life cycle. The shortage of funding to replace assets that still have physical life but are past their economic life results in expenditure of ongoing time and money on inefficient and obsolete assets until they ultimately fail. Inadequacy of funding on a timely basis almost always results in greater long-term costs when assets are used to the end of their physical life, instead of the end of their economic life. This typically results in higher ongoing maintenance costs, lost efficiency, greater replacement costs, costs of unscheduled downtime, and unscheduled loss of use of the facilities. Funding to address the "condition" is broken down into two categories:

- Routine Maintenance and Repair – Ongoing funding for these needs is provided from allocations made in the annual operating budget cycle. The funding mechanism for the annual operating budget consists of the deliberations and recommendations made by the Higher Education Joint-appropriations Subcommittee of the Legislature. Inadequacy in these budgets inevitably leads to less efficient operation of facilities and related equipment, shortened life cycles, and increased capital renewal needs. In this context, the adequacy of these budgets needs to be carefully evaluated and funding increases provided as appropriate.

- Capital Renewal and Replacement – This category has been divided into three components:

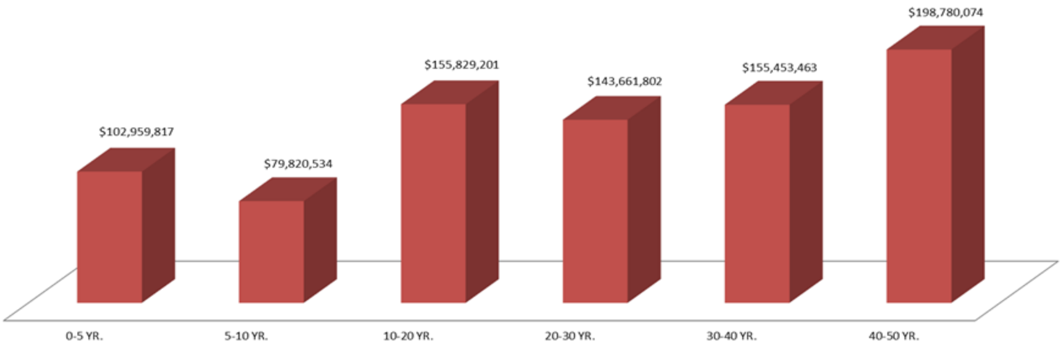
    1. Buildings –
        a. Capital Renewal - The funding ranges described in the "Background" section above apply to these facilities. Thus, the 1.5 percent of replacement value recommended is the minimum amount deemed to be needed to provide for the capital renewal needs to avoid further increases in deferred maintenance projects and the inherent problems of increasing deterioration, life safety, code compliance, provisions for accessibility, and ultimately lost use of the facility. This minimum typically would apply to campuses with newer and/or less complex facilities. And since the problems of maintenance and capital replacement needs are magnified by the age of campus facilities and infrastructure, campuses with older and more complex facilities would typically need to be funded above the minimum to ensure long-term viability.
        b. Adaptation – A minimum of .5 percent of replacement value is recommended for funding of these expenditures that are required to

adapt the physical plant to the evolving needs of the institution and to changing codes, standards, and regulations that are generally externally imposed.

The funding mechanism currently in place for these needs is viable. However, because the funding generated is significantly below the industry-recommended minimum, it is important that the Legislature make every effort possible to sustain the current statutory level of 1.1 percent of replacement value and look for ways to increase it to at least the guideline minimum level of 2.0 percent.

2. Major Utilities Production and Distribution Infrastructure – A description of these assets is provided in the *APPENDIX I* of this report. A viable funding mechanism should be established to assure that these critical assets are properly maintained and renovated or replaced on a timely basis. In order to address this issue, an important component of this study has been to compile a comprehensive inventory of these assets at each of the campuses of the USHE institutions where this is applicable. This inventory was compiled by facilities professionals at each of the USHE institutions and includes the relevant information about the types of assets, sizes, and installation dates. (Please note that the inventory compiled does not include what can be defined in the Information Technology (IT) arena as a type of utility infrastructure. A brief discussion of this issue is found in *APPENDIX J.*)

   These detailed inventories have been evaluated as to expected life and priced by Construction Control Corporation, an independent construction management and cost consulting firm. The following graph shows the estimated costs of replacement that will have to be addressed by the State over the next 50 years projected by ten year time periods and provides a broad look at the amounts and timing of funding that will be required to repair and/or replace these utility infrastructure assets:



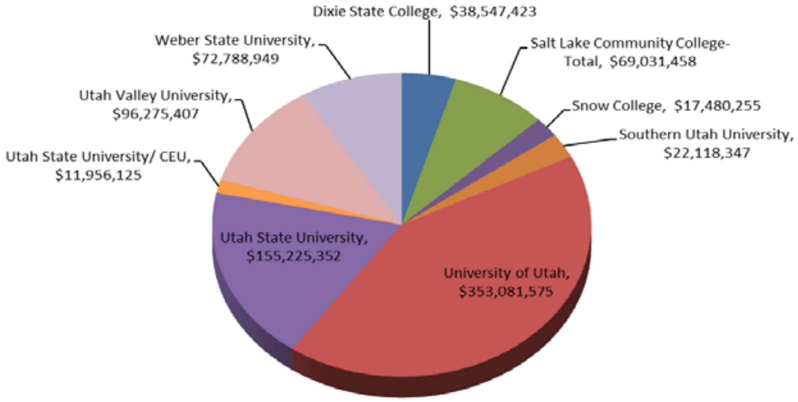
50 Year Replacement Cost- All Utilities
Total - $836,504,891

The projected total replacement cost is $836.2 million with amounts shown by time period over the 50 year time frame. These projections are based on "economic life" which, simply put, is the time after which money is saved by replacing the asset. Please note that this amount is not the total value of the inventory for two reasons:

1. The replacement costs of assets whose life cycle is less than 50 years require replacement more that once during the 50 year time frame may be included more than once in the total cost amount.
2. The value ($56.4 million) of existing assets whose first scheduled replacement exceeds the 50 year time frame are not included in the $836.2 million.

Please also note that this analysis deals only with existing assets and their replacement and is based on ***current pricing factors with no inclusion of future inflation***. Assets resulting from future capacity expansion will also add to this total as time goes by.

The following "pie-chart" shows the distribution of the total by institution:



Total 50 Year Replacement Cost- By School

The full Construction Control Corporation report, that includes a detailed list of these needs by institution, is included as *APPENDIX K*.

Up until now a clearly defined process for funding these utility infrastructure needs on an ongoing basis has not been utilized. Funding, when the needs have arisen, has come from the following sources:

- Capital Improvement Funding Allocations
- Capital Development Funding
- ESCo and Other Energy Saving Project Funding
- Other USHE Institutional Funding

3. Other Non-building infrastructure – This category includes landscape, hardscape (surface parking, plazas, and sidewalks), safety and security (e.g., exterior campus lighting), and roads

Capacity – This category pertains to the need for increases in capacity of major utility infrastructure as a result of growth related projects. The utility infrastructure costs pertaining to growth should be considered to be a component of new building construction budgets, not part of the funding mechanism for renewal and replacement of existing infrastructure. To accomplish this, it is recommended that each new construction project pay a “utility infrastructure fee” based on the demands it will place on the utility infrastructure system. Capacity is not free, and these charges should be included as part of the capital budgeting process. The fees should be set to reflect the value of utility connection costs (boilers, chillers, electric, water, drainage, etc.) that a project would have to fund were it a stand-alone facility.

The “utility infrastructure fee” would, thereby, trigger the necessary funds for utility systems to keep pace with growth.

It is noted that, in general, such costs are currently being charged by the institutions for non-state funded capital projects. And as was noted in the “Capital Development” portion of the History of Funding for Maintenance, Repair, and Replacement of Plant Facilities section of this report, some state-funded capital development projects have included funds to cover the costs of additional utility infrastructure components at the institutions. They are not, however, always included in state-funded capital development project budgets.

Sustainability – The notion of sustainability is embodied in the concept of “stewardship,” which in the framework of facilities is, simply, the continued care and management of capital resources for the benefit of future generations. A 2010 APPA publication titled Strategic Capital Development: The New Model for Campus Investment states: *“Facilities stewardship…means a high-level and pervasive commitment to responsibility for optimizing capital assets, to achieve a high-functioning and attractive campus. It includes a major commitment to capital asset preservation and quality. Stewardship is about the long view of an institutions’ past and future. It forms the backdrop for hundreds of discrete facilities investment and management decisions. Ultimately, facilities stewardship is one of the most compelling responsibilities of institutional leadership. And facilities stewardship expresses core values of the institutional culture.”*

There are four categories of facilities needs as defined in the previously mentioned 1989 SCUP publication titled _Financial Planning Guidelines for Facility Renewal and Adaption._ The four categories identified are:

1. ***Ongoing Maintenance*** – *Routine upkeep such as lubrication of moving parts, checking electrical systems, patching roofs, and so forth. Provision for these expenditures must be adequate: neglect of routine maintenance accelerates the deterioration of the plant. Normally on-going maintenance is funded by an institution’s operating budget.*
2. ***Facilities Renewal*** – *A systematic approach to repairing or replacing major building subsystems such as roofs, HVAC, electrical, and plumbing systems, which have predictable life-cycles, to maintain and extend the life of the facility. This category is sometimes referred to as Planned Maintenance or Capital Repair. It is normally funded by an institution’s capital budget.*
3. ***Deferred Maintenance*** – *The accumulation of a backlog of pending physical plant improvements to correct the influence of age, use and normal wear and tear. Continued underfunding of on-going maintenance and facilities renewal increases the total backlog of deferred maintenance.*
4. ***Adaption*** – *Alterations in physical plant to address changes in use, codes, or standards. Such changes include those required under the American Disabilities Act and those made to keep up with technology as well as facilities that become functionally and/or programmatically obsolete.*

While these categories of facilities stewardship are closely related in higher education institutions, they are often financed through different funding mechanisms. Because decisions about timing and scope of projects in each of the categories may have significant budget implications for the others, they should be looked at holistically. For example, inadequate funding for ongoing maintenance will result in higher levels of deferred maintenance and, ultimately, in an earlier and greater need for capital renewal and replacement.

The term "sustainability," as it applies to this report, also pertains to the use of "best practices" in materials and methods in the ongoing maintenance and repair as well as capital renewal of and reinvestment in utility infrastructure components. Ultimate success in this area is dependent on several factors:

- Availability of adequate funding for proper on-going maintenance and repair of the assets
- The existence and use of appropriate preventative maintenance and monitoring programs to optimize the investment in these assets
- Availability of adequate funding for timely capital renewal of the assets when they reach the end of their economic life
- Use of "best practices" materials and procedures in the installation of these assets.

High levels of sustainability have been challenging to achieve because of inadequate resources. As a result, institutions often have found it necessary to pursue a "band-aid" approach by using inadequate funding primarily to address only their most critical needs. In addition, accurate records of the exact locations of utilities distribution infrastructure components have not been available always, particularly at those institutions with large numbers of old buildings and utilities infrastructure components. Ongoing efforts by the institutions over the years have led to much more accurate and reliable inventory records of these important assets, and the completeness and accuracy of these records have been further enhanced by the inventory conducted as a part of this study.

DEFERRED MAINTENANCE

The backlog of deferred maintenance, sometimes referred to as "catch-up maintenance," is the ultimate indicator of the adequacy of ongoing funding for normal (or routine) maintenance, plant renewal, and adaption funding. If the level of deferred maintenance is trending upward, it is an indication that existing funding levels are inadequate. If it is trending downward, it is reason to be encouraged that the existing funding levels are making physical plant condition more serviceable.

A 2012 “Issue Brief” published by the Office of the Legislative Fiscal Analyst titled *Capital Improvement Funding and Allocation* provides reason for significant concern. The Issue Brief cites a DFCM Facility Condition Assessment report that identified approximately $450 million in statewide “immediate” repair needs and an additional $1,550 million (or $1.55 billion) of needs in the next five to ten years, a total of $2.0 billion.

Facilities Condition Assessment History

	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013 Est.
Immediate Need	$ 249,596,000	$ 284,482,000	$ 259,600,000	$ 439,434,000	$ 448,960,000
5-year Need	759,350,000	1,089,384,000	1,061,000,000	1,116,148,000	1,148,300,000
10-year Need	359,865	427,643,000	316,000,000	332,857,000	402,870,000
Total	$ 1,368,841,000	$ 1,801,509,000	$ 1,636,600,000	$ 1,888,439,000	$ 2,000,130,000
Building Repairs	$ 1,058,479,000	$ 1,463,666,000	$ 1,383,100,000	$ 1,751,522,000	$ 1,823,240,000
Infrastructure	310,362,000	337,843,000	253,500,000	136,917,000	176,890,000
Total	$ 1,368,841,000	$ 1,801,509,000	$ 1,636,600,000	$ 1,888,439,000	$ 2,000,130,000

Source: Legislative Fiscal Analyst Capital Improvement Funding and Allocation Issue Brief (June 7, 2012)

As was noted in the “issue Brief,” existing funding levels clearly will not be able to meet those needs.

CAPITAL RENEWAL FUNDING MECHANISMS FOR UTILITY PRODUCTION AND DISTRIBUTION INFRASTRUCTURE

One of the desired outcomes of this study is to focus attention on the need for establishment of dedicated, permanent revenue streams to fund the renovation and rehabilitation of USHE physical plant assets, with a primary focus on utility production and distribution infrastructure. There is no commonly used method of ongoing funding for funding these critically needed assets. And as been noted throughout this report, existing funding mechanisms are only marginally successful. The percentage of CRV is the most widely used methodology, with utility infrastructure lumped together with buildings and other infrastructure in ways similar to what is done in Utah even though the CRV used in making the calculations does not include the value of the non-building infrastructure components of the asset inventory. And most (almost all) states are facing the same issues that are serious problems in Utah. An effort has been made to learn some of the specific things that are being done in other places.

Practices in Other States – Several other institutions were contacted in other states to determine their practices in dealing with the costs of capital renewal funding, particularly as it pertains to utility infrastructure needs. There is no consistent pattern, but there are some interesting options for consideration as follow:

- **Facilities Maintenance Reserve ("Sinking") Funds** – There is a variety of funding mechanisms that fall in this general category of funding, of which summaries of several are provided below:

  <u>Missouri</u> – State statute requires the transfer of one percent of "net general collections" to the "Facilities Maintenance Reserve Fund" and specifies that the general assembly may also appropriate other money to the fund. The fund is invested by the state treasurer with interest earnings credited to the fund. The general assembly then appropriates moneys from the fund for maintenance, repair or renovation of state facilities. This is similar to the Utah Capital Improvement Funding practice with the primary difference being the existence of an interest earning reserve fund from which allocations are made each year. As much as 1.5 percent of replacement value has been allocated in a given year (2001) with the current rate being 1 percent. Only one institution in the University of Missouri System has the value of its utility infrastructure included in the CRV inventory base on which allocations are based.

  <u>Colorado</u> – Colorado has a Controlled Maintenance Trust Fund that is funded by an annual transfer of "fifty percent of the general fund revenues for the prior fiscal year in excess of general fund appropriations, statutory rebates, and statutory transfers, not to exceed fifty million dollars." The actual formula is rather complicated and the amount actually transferred is determined by a recommendation made by a capital development committee to the general assembly for funding. The state goal is to fund 1 percent of current replacement value each year, but that level has rarely been reached, and the balance of the fund has been cleared out from time to time in order to balance the state budget as allowed by statute.

- **Dedicated Revenue** – In 1993 Pennsylvania dedicated a stream of income from a 2 percent realty transfer tax to be used for higher education deferred maintenance and other state needs. Funding has ebbed and flowed over the years depending on other state needs. It was eliminated in the FY 2010 budget and its future is now considered to be uncertain.
- **"Break-even" Utility** – This is, essentially, a perpetual financial model. There are a number of institutions that operate their utilities production and distribution services as break-even "quasi-auxiliary enterprises" that include funding of R&R accounts for provision of maintenance and capital replacement needs. Included in this group are the universities of Arkansas, Michigan, Missouri-Columbia, New Mexico, New Mexico State, Texas A&M, Virginia, et al.

This model requires a financial separation of the utilities operations from the general facilities budgets of the institutions. Utilities dollars are maintained separate from the general physical plant operating funds which results in clear financial and managerial accountability. The result is a perpetual utilities infrastructure renewal plan. Entities using campus provided utilities are billed a "surcharge" above the actual cost of the utilities. The surcharge revenue is deposited in an R&R account and is used to defease revenue bonds issued to fund capital renewal of utilities infrastructure as well as to fund less costly projects directly. ***This option has a clear long-term advantage over most others in that it represents a "permanent" solution because it essentially ensures that maintenance and renewal of these critical assets is not jeopardized during periods of decreasing resources.***

Implementation of this option requires an infusion of funding to cover the state-funded portion of the surcharge – the surcharge pertaining to auxiliaries and other self-supporting entities (e.g. university hospitals) would be covered from those entities' budgets. The increases for state-appropriated budgets would typically be funded with increases to the annual operating budgets or student tuition and/or fee increases.

- Capital Improvement Bonding – State bonding authority has been used and/or is currently used by a number of states to provide funds specifically for the purpose of capital renewal. Such states include South Carolina, Florida, North Carolina, Texas, et al. And though not a higher education issue, in 2008, Santa Ana City, California voted two to one for a $200 million bond issue to restore their unacceptable second rate school facilities.

CONCLUSIONS AND RECOMMENDATIONS

The following statement is made at the conclusion of the report of the aforementioned study titled *Capital Budgeting Practices in Public Higher Education* that was published in the APPA January/February 2012 issue of Facilities Manager:

> *It is clear that an overwhelming majority of states do not set aside operating funds for renewal and replacement of public higher education facilities, as suggested by facilities experts. It is undeniable that the current economic situation in the states, and the limited recovery to date, will only add additional billions to the growing backlog in public higher education infrastructure investment, to say nothing of the additional investment needed to meet the facilities needs of "Tidal Wave II."*
>
> *The vast majority of the states do not deploy practices recommended by facilities management experts, including the allocation of a small percentage of operating funds*

> *for deferred maintenance. Similarly, a majority of states do not set aside the* ***minimum of 3 percent (bolding added)*** *of their operating budgets for renewal and replacement of facilities in public higher education. States could make use of successful models in other states and at other public institutions. It should be noted that some states have been quite creative in addressing these needs through dedicated funds, special line items, or other programs.*

While it is true that Utah has been one of the states that has made an effort to address these needs through the annual Capital Improvement allocation made by the State Legislature, the authorization and implementation of ESCo projects, and occasional provision of special line item capital development funding, it is clear from the increasing deferred maintenance backlogs and failures of critical infrastructure systems that the current levels of funding provided are inadequate.

Because the Utah Capital Improvement funding formula for colleges and universities is based primarily on building values, it is not, for the most part, designed to address utility infrastructure renewal. Yet, with increasing persistence, higher priority utility infrastructure system renewal needs act as a drain on funding designated for capital improvement of buildings. Accordingly, this practice has lead to increases in campus building related deferred maintenance instead of an intended reduction of it. Likewise, the small relative scale of CI funding is insufficient to effect timely replacement of the longest lived and most costly utility infrastructure assets. Such is the case noted earlier in this report with regard to the infrastructure needs of the U of U, USU, and Snow College. The effectiveness of the current CI funding mechanism can only be considered marginally successful in that it has provided a much needed source of funds for some of the most critical building and utility infrastructure issues found on USHE campuses.

Facilities have always been the backbone of American higher education and without adequate facilities, teaching, research, and community service will almost certainly be impaired. These capital needs of public higher education need to be consistently and formally addressed if Utah is to effectively utilize its human resources to meet the educational and societal needs that are being encountered and will continue to be faced in the future. Legislative leadership, together with leaders and professional organizations within higher education, can work together to determine the best way to find and/or create permanent and recession-proof revenue streams to fund the ongoing renovation and rehabilitation needs of the physical infrastructure of Utah’s higher education institutions.

Recommendations

1. Institutional Ownership of Utility Infrastructure - The conclusion drawn from this study is that it continues to be in the best interest of and the best value for the State for all institutions to own, operate, maintain, and replace as needed medium voltage distribution systems that provide electrical service to their campuses. It is likewise desirable for most of the institutions, especially those with large campuses and high levels of electrical power usage, to own, operate, and maintain the high voltage production facilities.
2. Routine Maintenance and Repair – The adequacy of existing annual O&M funding should be carefully analyzed and adjusted where deemed appropriate. In addition, it is recommended that the legislature consider a return to the pre-recession practice of providing state-appropriated O&M support for authorized non-state funded projects based on the "use" of facilities rather than on the "source" of capital funding.
3. Capital Renewal and Replacement Funding for Buildings and Non-utility Infrastructure Needs – USHE institutions support the Legislature's efforts to return to full funding of the statutory minimum of 1.1% of CRV for plant renewal and adaption of buildings and non-utility infrastructure needs. Further consideration should be given to increase the statutory minimum to 2% to enable adequate capital renewal and adaption, and to prevent further increases to the backlog of deferred maintenance needs.
4. Utility Production and Distribution Infrastructure – This category is separated into two categories:
   A. Condition Needs – The analysis of the costing consultant shows the need for this funding over the next 50 years to be more than $836 million dollars. Because of the critical nature of these assets in assuring the ongoing operation of USHE campuses, it is recommended that consideration be given to establish an ongoing separate funding mechanism for their renovation and replacement. Several options were summarized earlier in this report should the State Legislature choose to pursue this recommendation. The preferred option of the Steering Committee of this study, especially for the research universities and other larger and more complex institutions, is the establishment of "break-even" utilities as quasi-auxiliary enterprises to fund the ongoing operation and maintenance needs as well as R&R accounts for provision of capital replacement needs in order to assure a perpetual utilities infrastructure plan.

      As was noted earlier in the report, implementation of this option would require an infusion of funding to cover the state-funded-budget portion of the surcharge which, typically, would be funded with increased state appropriation for the annual operating budgets or student tuition and/or fee increases.

    B. Capacity – The Steering Committee also recommends that the utility infrastructure costs resulting from addition of new buildings should be a component of new building construction budgets, not part of the funding mechanism for renewal and replacement of existing infrastructure. To accomplish this, it is recommended that each new construction project pay a "utility infrastructure fee" based on the demands it will place on the utility infrastructure system. As noted earlier in the report, in general, such costs are currently being included by the institutions for non-state funded capital projects, but are not included routinely in the capital budgets of state-funded projects.

5. Deferred Maintenance – ***As has been noted earlier in the report, the increasing deferred maintenance backlogs are primarily the result of inadequate funding for plant and utility infrastructure renewal needs.*** Funding to address this deferred maintenance backlog was not a primary focus of this study, but provision of periodic one-time funding from sources that might include general obligation bonding, one-time appropriations, or other one-time sources should be explored to deal with this growing problem.

APPENDIX A
Definitions

- **Major Utility Production and Distribution Infrastructure** – This category includes the physical plant assets that are used to produce, where applicable, and distribute the utilities needed to utilize the physical facilities of the institutions for their intended purposes. There are two subcategories:
    - Production Assets – Heat production assets included are central high temperature hot water and steam plants and production devices and underground backup fuel system storage. Chilled water production assets include chillers and cooling towers of all types that service multiple buildings. Electrical production assets include high-voltage substations, transformers, photovoltaic panels, and cogeneration equipment. Water production assets, both potable and irrigation where they exist, primarily wells; water storage assets where they exist, including elevated, ground level and underground water storage tanks as well as reservoirs; and pump houses and related equipment.
    - Distribution Assets – These assets include the networks of distribution systems for delivery of heat, cooling, electrical, water, and natural gas. These assets typically exist underground (in distribution tunnels or directly buried), at ground level, or overhead and include utility distribution feeders (wires and piping), duct banks and vaults, major switchgear, valves, pumps, controls, gauges, meters, etc.). Also included are sanitary waste and storm water disposal systems.

- **Other Campus Infrastructure** – Primarily non-building and non-utility (production and distribution) items including parking and transportation infrastructure (vehicular and pedestrian), landscape, safety and security (e.g., campus lighting), etc.

- **Routine Repair and Preventative Maintenance** – This category is defined as work or projects funded by normal maintenance resources received in the annual operating budget. These funds are critical in mitigating the deterioration process of the assets to optimize their economic life.

- **Capital Renewal and Replacement** – This category includes major repair and replacement (R&R) project expenditures that are required to keep the physical plant in reliable operating condition for its present use. These expenditures are over and above normal maintenance and are necessary for the repair and replacement of assets that have deteriorated beyond their economic and physical life and are typically funded by Capital Improvement fund allocations.

- **Plant Adaption** – These are expenditures that are required to adapt the physical plant as required to the evolving needs of the institution (resulting from programmatic changes, changes in the nature of disciplines, new technology, etc.) and to changing codes, standards, and regulations that are generally externally imposed (e.g., Americans with Disabilities (ADA) accessibility guidelines, asbestos removal, new fume hoods to meet new air quality and safety requirements, etc.). These needs are also over and above normal maintenance and typically are **not** funded by maintenance resources received in the annual operating budget.

- **Current Replacement Value (CRV)** – Current replacement value is defined as the total amount of expenditure in current dollars required to replace an institution's facilities to their optimal condition. It should include the full replacement cost for all buildings, grounds, utility systems, and generating plants.

- **Annual Physical Plant Operation and Maintenance Budget** – These funds are provided through the annual operating budget process for systematic day-to-day maintenance in order to control the deterioration of the college or university plant facilities, e.g., structures, systems, equipment, pavement, grounds.

- **Capital Improvement Funding** – For purposes of this study this term refers to the annual allocations of funds made by the State Legislature for capital renewal and replacement of physical plant assets.

- **Capital Development Funding** – This category includes legislative funding for major physical plant projects including projects in excess of $2.5 million, new buildings, and major remodeling and renovation projects.

- **Deferred Maintenance** – This category consists of the backlog of maintenance projects for which work has been deferred on a planned or unplanned basis to a future period until funds are available. For the most part, these are capital renewal and replacement projects that have been deferred due to a lack of funding and that typically result in progressive deterioration of the facility for the current function.

- **Physical Life** – Physical life is the potential service life of an asset before physically becoming unable to produce a good or service and is almost always is greater than the economic life.

- **Economic Life** – Economic life is the period of time during which a fixed asset cost-effectively produces a good or service. It is the time after which we save money by replacing the asset.

APPENDIX B
Significant Plant Renewal Studies

Financial Planning Guidelines for Facility Renewal and Adaption **–** This 1989 study was a joint effort of the Society for College and University Planning (SCUP), the National Association of College and University Business Officers (NACUBO), the Association of Physical Plant Administrators of Universities and Colleges (APPA), and Coopers and Lybrand. The study referred to several then recent studies that dramatically demonstrated the serious deterioration of American college and university facilities, cited "**serious underfunding as the primary cause of this condition,** and recommended the following approach to correct the problem as summarized in the Executive Summary of the report:

> *In order to preserve the value of its physical plant to the changing mission of the institution, each college or university should allocate:*
>
> - *Sufficient "plant renewal funds on an ongoing basis to keep the plant in good condition for its present use, based on facility life-cycles (1.5%-2.5% of plant replacement cost for most institutions);*
> - *AND sufficient "plant adaption" funds on an ongoing basis to alter the physical plant for changes in use and codes and standards, based on recent experience and judgment (0.5%-1.5% of plant replacement cost at most institutions);*
> - *AND sufficient "catchup maintenance" funds over a short-term period to bring the plant into reliable operating condition, based on a facilities audit.*
> -

Committing to the Total Cost of Ownership: Maintenance and Repair of Public Buildings – This 1990 study was conducted by the Building Research Board of the National Research Council. The conclusions and recommendations were based on the finding that "*underfunding of maintenance and repair is a widespread and persistent problem."* The study concluded that an appropriate total budget allocation for routine maintenance and capital renewal is in the range of 2 to 4 percent of the aggregate current replacement value (CRV) of the facilities (**excluding major infrastructure**). It should also be noted that this range deals only with the ongoing annual needs and **does not include the "one-time" funding needs required to reduce deferred maintenance backlogs.** The study noted that while this 2 to 4 percent range is most valid as a budget guide for a large inventory of buildings and over periods of several years, it is also deemed to be valid as a rule of thumb with small inventories when applied over a longer period, such as five to ten years.

***<u>Analyzing SUNY Facility Renewal and Backlog Needs</u>* –** In 2007, the Rockefeller Institute of Government oversaw this study on facilities at the State University of New York (SUNY). The study was conducted by Pacific Partners Consulting Group, Inc. (PPCG) headquartered in Stanford, California. PPCG specializes in analytic and policy studies and has over twenty-five years of experience with public and private higher education facilities management. The study provided "benchmark" data from PPCG system clients consisting of the 36 SUNY campuses with nearly 55 million gross square feet of space and the following five higher education systems with 108 campuses and over 150 million gross square feet of space:

- California State University System (24 campuses)
- Minnesota State Colleges and Universities (53 campuses)

Universities with Medical and/or Research Facilities

- University of Texas (15 campuses)
- Oregon University System (7 campuses)
- University of California (9 campuses)
- SUNY Institutions
    - 36 State-operated campuses
    - 2 Contract colleges (Cornel and Alfred Ceramics)

Those benchmark data pertaining to the average annual renewal funding as a percentage of CRV are as follows:

System	Low	Average	High
California State University	1.2%	1.4%	1.5%
Minnesota State Colleges & Universities	1.1 %	1.4%	1.9%
SUNY	1.4%	1.6%	1.7%
University of Texas	1.5%	1.7%	1.8%
Oregon University System	1.6%	1.7%	1.8%
University of California	1.6%	1.7%	1.8%

The averages for these study institutions are above or very nearly at the recommended 1.5% minimum, while the Utah statutory target is .4% below the recommended minimum, and has been funded at the 1.1% statutory level only three times.

<u>Capital Budgeting Practices in Public Higher Education –</u> This study was conducted by APPA – Leadership in Educational facilities (formerly known as the Association of Physical Plant Administrators) and was published in the APPA January/February 2012 issue of Facilities Manager. In that study, 40 of the 50 states responded to requests for information about then current practices in funding for renewal and replacement of existing facilities. In response to the question “What percent of operating funds are set aside for renewal and replacement in your state?” 25 of the 40 states responded. Of these 25, 20 states set aside between 0 and 1.5% at the state level for facilities, and 17 of these 20 set aside less than 1%, below what the literature suggests as a minimum. Five states set aside 2.0% or more for renewal and replacement of facilities, and one state indicated that they set aside more than 5.1% for this purpose.

APPENDIX C
Advantages of Institution Owned Electrical Power Distribution Systems

While ownership of electrical power distribution facilities by utility companies is a possible alternative, many institutions, including most large universities, have found that direct ownership and operation has several advantages. Institution owned and operated utility systems more effectively facilitate the campus mission by being capable of directing greater focus on the institution's unique set of priorities and constituencies:

- Power Rate-Based Cost Reductions – ***Institutions that meet appropriate economies of scale and subsequently choose to own and operate their own high voltage electrical infrastructure will realize electric rate-based cost reductions from the power supplier of about 30% relative to a lower voltage supply. However, the lower rates are a result of the institution providing O&M and capital renewal on the infrastructure as opposed to the electric power provider. The lower rates also enable the institutions to invest more heavily in reliability and redundancy on their systems than a utility company would typically provide.*** Those estimated rate-based cost reductions for USHE institutions having such facilities are as follows:

University of Utah	$4.8 to $5.5 million
Utah State University	$500,000
Utah State University – CEU Campus	$110,000
Weber State University	$460,000
Utah Valley University	$500,000

The projected annual rate-based cost reduction for Salt Lake Community College once their sub-station is operational is $360,000.

This cost reduction, which is applicable to the institutional ownership of the high-voltage substation, is partially offset by the on-going routine annual maintenance costs, which are typically minimal, and the ultimate major repair and/or replacement of the sub-stations, which, depending on equipment, is typically is required every 20-25 years or so.

It should be noted, however, that while this cost avoidance can be a significant motivation for institutional ownership of high-voltage substations, the advantages are only apparent when the loads are sufficiently large. For loads less than 5 Megawatts the efficiency of the transformers and switchgear is compromised and the cost benefit from the reduced rate applicable to high voltage electrical power does not sufficiently address the maintenance, repair and replacement costs of owning and maintaining the substation. As the loads increase, the cost effectiveness of the institution owned substation increases with the pricing structure becoming more advantageous with the resulting greater cost reductions.

- Reliability of Power – Institutional ownership of the high-voltage sub-station and delivery system assures a higher level of reliability in delivery of the electrical power. High voltage substation circuit delivery of power is less susceptible to shorts, distribution damage, and overloading. Higher Education high-voltage substations are interconnected with utility owned high-voltage substations to form a transmission system that is used to move power throughout the utility's service territory. This transmission system typically is equipped with protection schemes that include automatic three times re-closure mechanisms to clear faults to keep the system energized. There are fewer customers connected to such a transmission system.

  Customers not having high-voltage substations, that include higher education institutions as well as commercial and residential customers, receive their power supplies from utility-owned transmission systems stepped down from high-voltage substations to distribution level voltage (12.47 Kv or 480 V) There are more outages at the distribution level than at the transmission level due to the higher number of customers and lines connected. High-voltage substations are designed to keep problems from transferring to the transmission system. Distribution lines, on the other hand, are protected by fuses or breakers. Most utility outages are caused by customer problems and vehicle accidents that bring down the utility distribution system by blowing the fuses or tripping the breakers that must be manually replaced/reset at the utility-owned substation. High-voltage substation circuit delivery of power is less susceptible to shorts, distribution damage, and overloading.

  Institutional ownership of the substation also facilitates provision of redundancy in the systems. With redundant systems, almost every building can be supplied power from two directions through a "loop-system" employed in the distribution system. This greatly reduces the chances that instructional, as well as critical research and health-care programs and services are not disrupted by power outages (resulting from repairs or campus changes) regardless of a single component failure anywhere in the system. While utility companies could provide equivalent redundancy, it would result in measurable rate increases.

- Quality of Power – Not being on a utility company circuit populated with many other residential and commercial customers increases the quality of the power in two ways. Firstly, it eliminates “dirty” power, which is described as spikes, surges, sags, harmonics gaps, and electrostatic and electromagnetic interference. This “dirty” power is the cause of significant damage to machinery and technology installations and triggers many hours of expensive downtime. It is one of the electric industry’s most common problems. Secondly, it provides a more consistent primary voltage delivery. It is not uncommon for low voltage substations to deliver power with voltage variations that are greater or less than 5% of nominal.
- Service Responsiveness – As the owner of the electrical distribution system, an institution can generate an immediate response by in-house maintenance staff to troubleshoot and isolate the cause of many problems. Power also can often be restored by appropriate switching and “back feeding” power once a fault has been isolated. In those cases where the repairs are more complex, the in-house work force can do initial troubleshooting and assessment immediately and operate most of the switchgear. They, for the most part, can identify and find failed components quickly. In those cases where the in-house facilities maintenance work force does not have the required training or needed special tools or equipment are not available, the institution can expeditiously make contract with high voltage service companies to effect the repairs necessary.
- Accessibility for Maintenance – Institutional ownership of distribution systems enables them to define, manage, and schedule their own maintenance programs and costs to align with mission assignments (academic, research, community, and medical where applicable). In some cases, electrical distribution components are collocated in underground tunnel systems with natural gas lines, steam and hot water lines, chilled water lines, culinary water lines, etc. These complex and higher cost feeder systems have electrical duct banks that isolate the electrical lines and include spare conduits that facilitate campus expansion and rapid feeder replacement. This congestion of underground utility systems creates risks during repair and capacity expansion projects and clearly favors Institutional ownership of the electrical distribution lines by allowing the in-house maintenance crews that have first-hand knowledge of the systems to have unrestricted access, whereas if those lines were owned by an electrical utility company there would be significant issues on access, security, and responsibility for possible collateral damage.

In other cases, outsourcing the utility infrastructure to a third party would entail establishment of easements and rights of way for each piece of equipment, each substation, each manhole or vault, and each medium and low voltage circuit to provide the needed access. In addition, institutional need for access to work on other utilities within the easements would require third party authorization and or consultation.

- Lead-time for Required Changes – The dynamics and unique requirements of higher education institutions – especially, though not limited to, major research universities – results in a greater complexity in implementation of current and future non-standard features in the distribution system and requires that changes be accommodated expeditiously. Direct ownership and operation of utilities systems better positions institutions to respond to their evolving utility needs, including new technology needs for instructional programs, repurposing a facility for a new academic mission, research opportunities that require a highly reliable electrical supply, etc.
- Third party ownership of the substations and delivery systems would significantly reduce the flexibility and cost benefits available from current and future centralized and combined heat and power facilities (e.g., natural-gas fired cogeneration) and other alternative and renewable energy sources.

The Executive Summary of a substantive report prepared in 2009 by Energy Strategies, Inc. for the University of Utah is attached as *APPENDIX D*. This study included an analysis of the cost impact of transferring the University's electric power distribution facilities to Rocky Mountain Power compared with the current mode of operation. The analysis concludes that over the estimated economic life (2010 through 2045) of the distribution facility replacements for which the University has requested funding the University will achieve net savings equivalent to $174 million in today's dollars (estimated to be about $450 million in then current dollars) by maintaining ownership and operation of the distribution facilities. The resulting recommendation is for the University to continue to own and operate its high-voltage substations and distribution facilities.

APPENDIX D
Energy Strategies, Inc.
University of Utah
2009Utility Infrastructure Study

DATE: DECEMBER 16, 2009

WRITTEN TO: MIKE PEREZ, CORY HIGGINS

COPY TO: RICK ANDERSON, SCOTT GUTTING

CLIENT: UNIVERSITY OF UTAH

WRITTEN BY: NICK TRAVIS, JUSTIN FARR

REV: 2

REGARDING: HIGH VOLTAGE ELECTRICAL SERVICE STUDY

Executive Summary

It is recommended that the University continue to own and operate its Distribution Facilities rather than transferring them to Rocky Mountain Power. Even though this requires a $112 million near-term investment in electrical infrastructure, it will result in dependable and growing cost savings having an estimated present value of $174 million ($450 million in then current dollars through 2045). In addition, this approach better positions the University operationally to respond to its evolving utility needs.

The University of Utah (“University”) experienced a peak demand for electricity of about 66 megawatts (MW) and used about 270,000 megawatt hours (MWh) of electrical energy in the fiscal year ending June 30, 2009. Virtually all electricity was supplied by the local electric utility, Rocky Mountain Power (“Utility”). The University paid the Utility about $13 million. Because the University receives delivery of power from the Utility at transmission level voltage, it is eligible for service at the lowest cost tariff available to large customers. As a result, the University saved about $6 million in the cost of purchased electricity. It is projected that University’s electric demand will about double over the next 25 years; savings available from the lower cost tariff will grow proportionately.

Utility delivery of power at transmission level voltage also enables the University to directly offset purchased electricity with less expensive power it produces on campus. Otherwise, utility regulations would require that power produced by the University be sold to the utility at a price that is expected to be well below the cost of purchased electricity. The University has installed a highly efficient 6.5 MW cogeneration plant that will co-produce high temperature water and about 50,000 MWh of electricity annually.

In combination, the lower cost tariff and ability to offset purchases with self-generation offer the University an expected present value savings of about $226 million through FYE 2045. During this period, associated annual savings grow steadily from about $ 6 million to about $25 million.

In return for the lower cost tariff and right to directly displace purchases with self-generation, the University assumes responsibility for the facilities needed to transform and distribute the transmission voltage power received from the Utility for the various consumers on campus. Collectively, these facilities are referred to as the Distribution Facilities.

The University has determined that a capital investment of about $112 million (in then current dollars) must be made in non-discretionary replacements and upgrades of the Distribution Facilities over four fiscal years starting in FYE 2010 to maintain a safe and reliable electric supply. The annual savings from the lower cost tariff and offset of purchases with self-generation would more than cover the annual bond payments associated with the $112 million investment. However, in light of this substantial capital requirement, the question has been posed as to whether the University would be better served if the Utility were to assume ownership and ongoing operational responsibility for the Distribution Facilities.

Discussions with the Utility confirmed that it is not precluded by regulation from accepting a transfer of ownership of the Distribution Facilities from the University. If such a transfer were to be attractive to the University, then it must afford the University financial incentives to forego the $226 million in savings available from a lower cost tariff and the offset of purchases by self generation, and it must be operationally viable. Potential financial incentives are that the Utility: 1) pay a purchase price for existing Distribution Facilities, 2) invest in non-discretionary Distribution Facilities replacements and upgrades rather than the University, 3) provide capital in the future for distribution facilities needed to serve new loads, and 4) assume responsibility for operation and maintenance of Distribution Facilities. Let's consider these in reverse order.

Once the Utility owns the Distribution Facilities, it will assume responsibility for their operation and maintenance. The present value of savings to the University is expected to be about $30 million. This represents an initial annual savings of less than $2 million growing to over $3 million by 2045.

Once the University takes delivery at less than transmission voltage, the Utility will be allowed to make contributions it is currently precluded from making toward distribution facilities needed to serve growth in load. The amount of the contribution ("Extension Allowance") is capped as a function of the estimated incremental revenue to the Utility. The present value of future Extension Allowances is estimated to be about $22 million.

Therefore, the present value of the purchase price paid for existing Distribution Facilities and of contribution toward the $112 million in required upgrades and replacements must exceed $174 million ($226 million less $30 million less $22 million). It is believed Rocky Mountain Power would resist paying a purchase price for the existing assets as there is not a clear mechanism for cost recovery and that would undermine how the Utility does business with large commercial and residential projects. Therefore, even if the Utility paid for all near-term, non-discretionary improvements to the Distribution Facilities, the cost of electric service would increase materially. However, it is unlikely that the Utility will provide any significant capital for the required improvements in Distribution Facilities. Rocky Mountain Power would require that the University reimburse it or pay directly for improvements to bring the distribution system up to Rocky Mountain Power standards before conveying the facilities to the Utility. To the extent the University requires improvements above and beyond those required by Rocky Mountain Power, those also would be funded up front by the University.

Moreover, while Utility ownership of the Distribution Facilities is operationally viable, most large Universities have found that direct ownership and operation better positions the institution to respond to its evolving utility needs including those of research opportunities that require highly reliable electricity supply.

APPENDIX E
History of Policy Decisions Pertaining to State Appropriated O&M Funding for Non-state Funded Capital Development Projects

The Higher Education Act of 1969 created the State Board of Regents and charged them with the responsibility for "conducting continuing studies and evaluations of the facilities, grounds, buildings, and equipment at the institutions under its jurisdiction;" establishing and maintaining "an up-to-date master plan;" "establishing criteria for and determination of the needs and requirements for…institutions;" and for "providing for the initiation and finance of such projects as are deemed necessary to meet and satisfy the projected patterns of growth and maintenance."

In July of 1970 the State Board of Higher Education (the name was later changed to the State Board of Regents) began deliberation on a policy to deal with the capital facilities needs of higher education in Utah. In October of 1971 they adopted an interim policy "in the interest of clarifying the role of the State Board of Higher Education and that of the Institutional Councils" (later renamed Boards of Trustees). This interim policy dealt with the approval processes for proposed capital development projects but did not address the issue of on-going operating support for O&M.

On July 22, 1975 an additional policy document entitled "Capital Facilities Policies and Procedures" was adopted by the Board. This policy established the requirement of Board approval for institutional campus facilities master plans and the role of the Regents in reviewing all institutional requests for funds for capital facilities from state appropriations. It also established Board review of requests for planning and construction of <u>some</u> non- state funded facilities. However, the policies are silent on the issue of O&M funding except for mention of "operating budget constraints" as part of the justification data for consideration of new projects.

The policy required that each project presented for consideration be accompanied by the information contained in the "Planning and Budget Guide" that was included with the policy. The relevant section of this planning guide was the requirement for submission of an estimate of the increase or decrease in annual operating costs that would result by completion of the project. Both the policy and the planning guide were silent on how funding of these costs would be addressed, but it is reasonable to assume that they intended to give them consideration in the deliberations on the annual operating budget request.

This policy continued in force without changes until 1981 when it had become apparent that the existing policy, as it pertained to capital facility projects funded in whole or in part from sources other than state appropriated dollars (e.g. private gifts, student fees, endowment income, etc.), needed to be reexamined. The extant policy required Regents review and approval of such facilities only if (1) “the proposed construction or remodeling is inconsistent with the role assignment of the institution involved,” (2)” the project appears not to be in accord with institutional goals and objectives previously approved by the State Board of Regents,” or (3) the project “will require a substantial change in the approved academic or facilities master plan.” Otherwise, such projects were the purview of Institutional Councils (forerunners to the Boards of Trustees).

In August of 1981 the advisability of a policy that exempted large projects that may have significant impact on state-appropriated operating budgets from Board review and approval was questioned by several Regents. After subsequent review the policy was amended in February of 1982, effectively bringing these projects under Board jurisdiction for review and approval if the estimated total project costs exceeded $1,000,000 for the research universities (UU and USU), $500,000 for four year institutions (WSC and SUSC), and $250,000 for all other institutions. Even though the discussion that prompted the policy change was based, in part, on the potentially significant impact on state-appropriated operating budgets, no specific addition to policy was adopted to address this issue.

The first amendment to policy pertaining specifically to O&M costs for new facilities was adopted in June of 1988. This amendment adopted language requiring submission of “major” projects to the Regents for approval. It also required that since donated or non-state appropriated facilities require ongoing funds for operations and maintenance, proposals must include arrangements as to how the O&M costs would be covered. It further noted that possible arrangements may include: “(1) separate non-state funding assured through private contracts or an O&M endowment established by a private donor; (2) O&M costs absorbed within existing institutional budgets; or (3) necessary additional funding of O&M costs requested through legislative appropriations.” It also stated that “approval of such proposals, when legally required by the State Building Board and the Legislature, will follow their respective established procedures.”

While formally recognizing the need to deal with the O&M issue, language explaining the conditions these projects needed to meet in order to qualify for state funded O&M support was not adopted. The policy was not addressed again until October of 1990 when a request was made to explore the feasibility and/or practice of establishing separate endowments to fund the O&M of privately funded buildings. A study was undertaken and the results were reported in the December of 1990 Board meeting. In summary, the study found that there were limited instances of such endowments and that where they did exist, it was usually at private colleges and universities, and that where they did exist they rarely covered more than 50 percent of the total O&M costs. The conclusion of the study was that while institutions should continue to seek O&M funds from potential donors, it was not realistic to make such funding an absolute requirement. The existing policy was reaffirmed without change.

As a result of concern expressed by some Regents that the policy relating to O&M for non-state funded buildings was "imprecise," in December of 1998 the Regents again amended the policy to add a specific section dealing with these costs. Sections of the general policy were deleted, most notably those "possible arrangements" of private contracts or O&M endowments, as well as absorbing costs within existing budgets. In their place, specific conditions required for state funding of O&M costs were implemented, primarily for those facilities to be used for "approved academic and training purposes and associated support." Other non-state funded projects could be eligible for state appropriated O&M funding on a case by case basis to the extent that they "*relate* to important institutional activities such as instruction, research generating student credits, and service within the institution's role statement" (e.g., museums, theaters, community outreach, and certain research facilities administered by academic units that generate academic student credits or the equivalent thereto, etc.).

The amended policy also described projects that generally would not qualify for state appropriated O&M funding, including space dedicated to athletics events and self-support auxiliary space (i.e., college bookstores, food service, student housing, etc.). In those cases where the requested projects do not qualify for state-appropriated O&M support, the amended policy requires institutions to disclose arrangements as to how O&M costs will be covered, whether by private contracts, O&M endowments, or other generated revenue (e.g., clinical revenue, sales income, etc.).

The policy, as it pertains to state-appropriated support for facilities built in whole or in part from private gifts and other non-state sources, has remained in effect and unchanged since that time.

It is noteworthy that Representative Gerry Adair, Co-chair of the Legislative Capital Facilities Subcommittee, was present at the meeting when these last amendments were approved. The minutes show that he indicated that the Legislature did not want to do anything to chase donors away. He is quoted as saying, "I believe strongly in what you are doing and I want to help you."

APPENDIX F
O&M Funding History Spreadsheet

The attached spreadsheet was developed to compare, on a year-by-year basis, existing USHE institutional Operation and Maintenance (O&M) state-appropriated fund budgets with the funding provided by the State Legislature for that purpose.

Starting with the base year of 1987-88, the analysis shows the amounts specifically funded by the Legislature as budget increases in the ensuing years, including utilities increases, increases for new space added, and proportional amounts funded for compensation increases. The impact on O&M budgets of budget reductions made by the Legislature is also reflected. Actual O&M costs for each of the years are also shown. Please note that the Fuel and Power amounts shown as base budget increases in 2004-05 were appropriated as supplemental appropriations for that year by the 2005 legislature and continued as base budget increases in 2005-06. To avoid duplicating the amounts in the ongoing base budget they are shown in 2004-05 as if they had been base budget increases and, therefore, they are ***not*** shown as increases in 2005-06.

The analysis shows that system wide, for FY 2012 the institutions had budgeted $22.7 million more than the calculated base budget provided by the legislature and that actual expenditures exceeded the calculated base by $21.9 million.

USHE Annual Budgets and Expenditures for Operation and Maintenance
FY 1988 through FY 2012

	87-88	88-89	88-89	88-89	88-89	88-89	89-90	89-90	89-90	89-90	89-90	90-91	90-91	90-91	90-91	90-91	91-92	91-92	91-92	91-92	91-92
	O&M Base	Comp (0%)	New Space	Fuel & Pwr	Other	O&M Base	Comp (3%)	New Space	Fuel & Pwr	Utilities	O&M Base	Comp 4.5%	New Space	Fuel & Pwr	Utilities	O&M Base	Comp 3.15%	New Space	Fuel & Pwr	Utilities	O&M Base
UofU																					
Calculated Base Budget	$18,375,100		$386,400	($887,000)		$17,874,500	$235,500	$222,500	($494,600)	($225,600)	$17,612,300	$381,900	$774,500	$0	$0	$18,768,700	$289,900	$932,400	$0	$136,000	$20,127,000
A-1 Base Budget	$18,375,100					$17,324,200					$17,394,700					$18,257,700					$19,321,500
Actual Expenditures	$17,765,401					$17,606,891					$17,695,932					$19,165,030					$19,436,022
Base Budget Above/(Below) Calculated Base	$0					($550,300)					($217,600)					($511,000)					($805,500)
Actual Exp. Above/(Below) Calculated Base	($609,699)					($267,609)					$83,632					$396,330					($690,978)
USU																					
Calculated Base Budget	$9,894,727		$4,800			$9,899,527	$146,200	$218,000	($177,400)	$0	$10,086,327	$234,200	$0	$0	$0	$10,320,527	$174,600	$271,600	$0	$0	$10,766,727
A-1 Base Budget	$9,894,727					$9,828,856					$9,998,273					$10,431,091					$10,770,031
Actual Expenditures	$9,362,329					$9,754,407					$9,853,707					$10,275,630					$10,962,029
Base Budget Above/(Below) Calculated Base	$0					($70,671)					($88,054)					$110,564					$3,304
Actual Exp. Above/(Below) Calculated Base	($532,398)					($145,120)					($232,620)					($44,897)					$195,302
WSU					Bud Cut (Leg)																
Calculated Base Budget	$6,524,502			($250,000)	($848,000)	$5,426,502	$90,000		($212,200)	$0	$5,304,302	$141,900	$362,200	$0	$0	$5,808,402	$110,100	$0	$0	$1,200	$5,919,702
A-1 Base Budget	$6,524,502					$6,347,495					$5,678,837					$6,179,325					$6,473,311
Actual Expenditures	$6,322,591					$5,107,035					$5,322,653					$7,765,514					$6,134,594
Base Budget Above/(Below) Calculated Base	$0					$920,993					$374,535					$370,923					$553,609
Actual Exp. Above/(Below) Calculated Base	($201,911)					($319,467)					$18,351					$1,957,112					$214,892
SUU																					
Calculated Base Budget	$2,078,887					$2,078,887	$33,000	$6,200	$8,200	$0	$2,126,287	$55,800	$39,000	$0	$15,000	$2,236,087	$42,600	$97,700	$0	$8,000	$2,384,387
A-1 Base Budget	$2,078,887					$2,047,497					$2,241,973					$2,406,992					$2,666,162
Actual Expenditures	$1,952,315					$1,911,125					$2,246,711					$2,397,248					$2,644,298
Base Budget Above/(Below) Calculated Base	$0					($31,390)					$115,686					$170,905					$281,775
Actual Exp. Above/(Below) Calculated Base	($126,572)					($167,762)					$120,424					$161,161					$259,911
SNOW																					
Calculated Base Budget	$1,246,400		$15,900			$1,262,300	$17,200	$0	$0	$0	$1,279,500	$25,900	$13,100	$0	$0	$1,318,500	$20,700	$29,000	$0	$0	$1,368,200
A-1 Base Budget	$1,246,400					$1,235,700					$1,324,200					$1,397,400					$1,536,700
Actual Expenditures	$1,312,068					$1,159,367					$1,332,413					$1,469,675					$1,452,291
Base Budget Above/(Below) Calculated Base	$0					($26,600)					$44,700					$78,900					$168,500
Actual Exp. Above/(Below) Calculated Base	$65,668					($102,933)					$52,913					$151,175					$84,091
DIXIE																					
Calculated Base Budget	$1,037,857		$11,600			$1,049,457	$19,200	$182,400	$0	$0	$1,251,057	$30,900	$18,800	$0	$21,900	$1,322,657	$17,100	$0	$0	$0	$1,339,757
A-1 Base Budget	$1,037,857					$1,079,327					$1,187,056					$1,311,610					$1,599,337
Actual Expenditures	$1,006,426					$1,054,301					$1,426,133					$1,699,642					$1,647,343
Base Budget Above/(Below) Calculated Base	$0					$29,870					($64,001)					($11,047)					$259,580
Actual Exp. Above/(Below) Calculated Base	($31,431)					$4,844					$175,076					$376,985					$307,586
CEU																					
Calculated Base Budget	$993,839					$993,839	$13,200	$0	($3,800)	$0	$1,003,239	$21,900	$0	$0	$0	$1,025,139	$13,900	$25,600	$0	$14,000	$1,078,639
A-1 Base Budget	$993,839					$990,744					$985,175					$1,034,177					$1,165,965
Actual Expenditures	$1,028,555					$994,596					$981,576					$1,046,361					$1,219,859
Base Budget Above/(Below) Calculated Base	$0					($3,095)					($18,064)					$9,038					$87,326
Actual Exp. Above/(Below) Calculated Base	$34,716					$757					($21,663)					$21,222					$141,220
UVSC																					
Calculated Base Budget	$2,153,427					$2,153,427	$34,500	$257,100	$26,500	$0	$2,471,527	$63,000	$85,800	$0	$28,800	$2,649,127	$51,700	$0	$0	$0	$2,700,827
A-1 Base Budget	$2,153,427					$2,276,260					$2,665,449					$3,014,383					$3,178,342
Actual Expenditures	$2,300,391					$2,366,380					$3,055,938					$3,220,668					$3,493,131
Base Budget Above/(Below) Calculated Base	$0					$122,833					$193,922					$365,256					$477,515
Actual Exp. Above/(Below) Calculated Base	$146,964					$212,953					$584,411					$571,541					$792,304
SLCC*																					
Calculated Base Budget	$2,472,800		$59,300			$2,532,100	$37,500	$938,600	$10,900	$0	$3,519,100	$78,300	$309,500	$0	$0	$3,906,900	$64,500	$698,300	$0	$0	$4,669,700
A-1 Base Budget	$2,472,800					$2,402,800					$3,315,300					$3,604,900					$4,958,000
Actual Expenditures	$2,399,654					$3,152,527					$3,797,804					$3,943,592					$4,915,691
Base Budget Above/(Below) Calculated Base	$0					($129,300)					($203,800)					($302,000)					$288,300
Actual Exp. Above/(Below) Calculated Base	($73,146)					$620,427					$278,704					$36,692					$245,991
Total																					
Calculated Base Budget	$44,777,539	$0	$478,000	($1,137,000)	($848,000)	$43,270,539	$626,300	$1,824,800	($842,400)	($225,600)	$44,653,639	$1,033,800	$1,602,900	$0	$65,700	$47,356,039	$785,100	$2,054,600	$0	$159,200	$50,354,939
A-1 Base Budget	$44,777,539	$0	$0	$0	$0	$43,532,879	$0	$0	$0	$0	$44,790,963	$0	$0	$0	$0	$47,637,578	$0	$0	$0	$0	$51,669,348
Actual Expenditures	$43,449,730	$0	$0	$0	$0	$43,106,629	$0	$0	$0	$0	$45,712,867	$0	$0	$0	$0	$50,983,360	$0	$0	$0	$0	$51,905,258
Base Budget Above/(Below) Calculated Base	$0	$0	$0	$0	$0	$262,340	$0	$0	$0	$0	$137,324	$0	$0	$0	$0	$281,539	$0	$0	$0	$0	$1,314,409
Actual Exp. Above/(Below) Calculated Base	($1,327,809)	$0	$0	$0	$0	($163,910)	$0	$0	$0	$0	$1,059,228	$0	$0	$0	$0	$3,627,321	$0	$0	$0	$0	$1,550,319

USHE Annual Budgets and Expenditures for Operation and Maintenance
FY 1988 through FY 2012

UofU	92-93 Comp 3.7%	92-93 New Space	92-93 Fuel & Pwr	92-93 Utilities	92-93 O&M Base	93-94 Comp 3%	93-94 New Space	93-94 Fuel & Pwr	93-94 Utilities	93-94 Other	93-94 O&M Base	94-95 Comp 4.5%	94-95 New Space	94-95 Haz. Waste	94-95 Fuel & Pwr	94-95 Utilities	94-95 Other	94-95 O&M Base
Calculated Base Budget	$362,000	$449,900	($360,000)	$150,000	$20,728,900	$305,400	$425,500	$0	$0		$21,459,800	$494,900	$1,311,800	$261,000	$0	$100,000		$23,627,500
A-1 Base Budget					$19,656,900						$20,630,000							$22,133,800
Actual Expenditures					$21,115,084						$21,667,037							$22,354,402
Base Budget Above/(Below) Calculated Base					($1,072,000)						($829,800)							($1,493,700)
Actual Exp. Above/(Below) Calculated Base					$386,184						$207,237							($1,273,098)
USU																		
Calculated Base Budget	$216,100	$124,500	($500,000)	$60,000	$10,667,327	$182,000	$298,200	$0	$0		$11,147,527	$297,900	$909,500	$0	$0	$255,300		$12,610,227
A-1 Base Budget					$11,136,977						$11,775,968							$13,318,400
Actual Expenditures					$11,119,424						$12,181,826							$13,454,645
Base Budget Above/(Below) Calculated Base					$469,650						$628,441							$708,173
Actual Exp. Above/(Below) Calculated Base					$452,097						$1,034,299							$844,418
WSU										Bud Cut (Leg)							Bud Cut (Leg)	
Calculated Base Budget	$137,600		($245,000)		$5,812,302	$117,000	$76,600	$0	$0	($164,371)	$5,841,531	$186,100	$90,800	$68,000	$0	$4,200	($153,416)	$6,037,215
A-1 Base Budget					$6,326,508						$6,648,862							$6,966,715
Actual Expenditures					$6,758,542						$7,033,711							$6,958,255
Base Budget Above/(Below) Calculated Base					$514,206						$807,331							$929,500
Actual Exp. Above/(Below) Calculated Base					$946,240						$1,192,180							$921,040
SUU																		
Calculated Base Budget	$54,900	$413,000	($120,700)		$2,731,587	$54,100	$144,900	$0	$39,000		$2,969,587	$80,600	$185,500	$49,000	$0	$6,400		$3,291,087
A-1 Base Budget					$2,929,865						$3,003,025							$3,211,636
Actual Expenditures					$2,805,981						$3,121,747							$3,262,311
Base Budget Above/(Below) Calculated Base					$198,278						$33,438							($79,451)
Actual Exp. Above/(Below) Calculated Base					$74,394						$152,160							($28,776)
SNOW																		
Calculated Base Budget	$27,300	$71,500	$0	$0	$1,467,000	$25,100	$9,500	$0	$16,200		$1,517,800	$39,400	$21,300	$12,400	$0	$16,300		$1,607,200
A-1 Base Budget					$1,682,600						$1,790,700							$1,984,200
Actual Expenditures					$1,646,327						$1,846,519							$1,843,116
Base Budget Above/(Below) Calculated Base					$215,600						$272,900							$377,000
Actual Exp. Above/(Below) Calculated Base					$179,327						$328,719							$235,916
DIXIE																		
Calculated Base Budget	$30,700	$0	$99,100	$19,800	$1,489,357	$24,800	$134,800	$0	$0		$1,648,957	$40,100	$120,600	$17,700	$0	$0		$1,827,357
A-1 Base Budget					$1,728,558						$1,882,807							$2,065,200
Actual Expenditures					$1,610,366						$1,729,647							$1,995,637
Base Budget Above/(Below) Calculated Base					$239,201						$233,850							$237,843
Actual Exp. Above/(Below) Calculated Base					$121,009						$80,690							$168,280
CEU																		
Calculated Base Budget	$20,100	$51,300	($70,000)		$1,080,039	$18,000	$0	$0	$0		$1,098,039	$29,000	$47,300	$11,200	$0	$3,900		$1,189,439
A-1 Base Budget					$1,180,356						$1,180,356							$1,315,046
Actual Expenditures					$1,200,882						$1,135,529							$1,298,452
Base Budget Above/(Below) Calculated Base					$100,317						$82,317							$125,607
Actual Exp. Above/(Below) Calculated Base					$120,843						$37,490							$109,013
UVSC																		
Calculated Base Budget	$68,000	$195,800	($117,200)	$4,000	$2,851,427	$56,200	$0	$0	$0		$2,907,627	$90,200	$35,300	$38,700	$0	$3,500		$3,075,327
A-1 Base Budget					$3,284,630						$3,457,341							$3,627,862
Actual Expenditures					$3,837,686						$3,501,830							$3,763,536
Base Budget Above/(Below) Calculated Base					$433,203						$549,714							$552,535
Actual Exp. Above/(Below) Calculated Base					$986,259						$594,203							$688,209
SLCC*																		
Calculated Base Budget	$96,600	$64,400	($120,000)		$4,710,700	$82,500	$263,800	$0	$18,600		$5,075,600	$136,900	$338,100	$50,700	$0	$21,700		$5,623,000
A-1 Base Budget					$4,671,200						$5,368,800							$5,786,100
Actual Expenditures					$5,435,903						$5,225,445							$5,627,067
Base Budget Above/(Below) Calculated Base					($39,500)						$293,200							$163,100
Actual Exp. Above/(Below) Calculated Base					$725,203						$149,845							$4,067
Total																		
Calculated Base Budget	$1,013,300	$1,370,400	($1,433,800)	$233,800	$51,538,639	$865,100	$1,353,300	$0	$73,800	($164,371)	$53,666,468	$1,395,100	$3,060,200	$508,700	$0	$411,300	($153,416)	$58,888,352
A-1 Base Budget	$0	$0	$0	$0	$52,597,594	$0	$0	$0	$0	$0	$55,737,859	$0	$0	$0	$0	$0	$0	$60,408,959
Actual Expenditures	$0	$0	$0	$0	$55,530,195	$0	$0	$0	$0	$0	$57,443,291	$0	$0	$0	$0	$0	$0	$60,557,421
Base Budget Above/(Below) Calculated Base	$0	$0	$0	$0	$1,058,955	$0	$0	$0	$0	$0	$2,071,391	$0	$0	$0	$0	$0	$0	$1,520,607
Actual Exp. Above/(Below) Calculated Base	$0	$0	$0	$0	$3,991,556	$0	$0	$0	$0	$0	$3,776,823	$0	$0	$0	$0	$0	$0	$1,669,069

USHE Annual Budgets and Expenditures for Operation and Maintenance
FY 1988 through FY 2012

	95-96	95-96	95-96	95-96	95-96	95-96	95-96	96-97	96-97	96-97	96-97	96-97	96-97	96-97	97-98	97-98	97-98	97-98	97-98	97-98	97-98
	Comp 3.7%	New Space	Haz. Waste	Fuel & Pwr	Utilities	Other	O&M Base	Comp 4%	New Space	Haz. Waste	Fuel & Pwr	Utilities	Other	O&M Base	Comp 3.5%	New Space	Haz. Wast	Fuel & Pwr	Utilities	Other	O&M Base
UofU																					
Calculated Base Budget	$444,500	$170,200	$87,200	$385,300	$0		$24,714,700	$491,900	$1,179,800		$0	$53,400		$26,439,800	$566,800	$431,900		$0	$0		$27,438,500
A-1 Base Budget							$22,884,600							$30,352,500							$30,122,289
Actual Expenditures							$27,146,943							$30,632,248							$30,476,777
Base Budget Above/(Below) Calculated Base							($1,830,100)							$3,912,700							$2,683,789
Actual Exp. Above/(Below) Calculated Base							$2,432,243							$4,192,448							$3,038,277
USU													Funct. Chng.							Lse. Funct. Chng.	
Calculated Base Budget	$277,400	$370,100	$0	$281,100	$25,000		$13,563,827	$314,300	$285,400		$0	$0	($466,702)	$13,696,825	$288,900	$221,600		$36,000	$0	($219,232)	$14,024,093
A-1 Base Budget							$14,000,900							$14,372,700							$14,810,800
Actual Expenditures							$14,296,454							$14,251,138							$13,980,661
Base Budget Above/(Below) Calculated Base							$437,073							$675,875							$786,707
Actual Exp. Above/(Below) Calculated Base							$732,627							$554,313							($43,432)
WSU						Bud Cut (Leg)							Bud Cut (Leg)							Bud Cut (Leg)	
Calculated Base Budget	$164,400	$339,200	$7,500	$0	$0	($171,868)	$6,376,447	$188,200	$40,200		$0	$22,000	($204,709)	$6,422,138	$166,200	$0		$0	$0	($68,486)	$6,519,852
A-1 Base Budget							$7,219,849							$7,311,491							$7,204,634
Actual Expenditures							$7,791,321							$7,593,276							$6,908,281
Base Budget Above/(Below) Calculated Base							$843,402							$889,353							$684,782
Actual Exp. Above/(Below) Calculated Base							$1,414,874							$1,171,138							$388,429
SUU																					
Calculated Base Budget	$70,400	$339,900	$7,000	$0	$42,000		$3,750,387	$86,400	$260,700		$0	$0		$4,097,487	$78,600	$117,100		$0	$0		$4,293,187
A-1 Base Budget							$3,660,182							$3,846,081							$4,328,074
Actual Expenditures							$3,474,842							$3,900,440							$4,260,935
Base Budget Above/(Below) Calculated Base							($90,205)							($251,406)							$34,887
Actual Exp. Above/(Below) Calculated Base							($275,545)							($197,047)							($32,252)
SNOW																					
Calculated Base Budget	$37,100	$25,900	$5,000	$0	$0		$1,675,200	$41,600	$115,500		$0	$0		$1,832,300	$39,000	$118,300		$0	$0		$1,989,600
A-1 Base Budget							$2,031,300							$2,173,500							$2,215,900
Actual Expenditures							$1,961,977							$2,324,881							$2,403,450
Base Budget Above/(Below) Calculated Base							$356,100							$341,200							$226,300
Actual Exp. Above/(Below) Calculated Base							$286,777							$492,581							$413,850
DIXIE																					
Calculated Base Budget	$37,000	$120,200	$5,000	$0	$0		$1,989,557	$43,900	$78,700		$0	$0		$2,112,157	$40,600	$45,200		$0	$34,400		$2,232,357
A-1 Base Budget							$2,222,349							$2,449,956							$2,686,802
Actual Expenditures							$2,500,526							$3,233,274							$2,626,519
Base Budget Above/(Below) Calculated Base							$232,792							$337,799							$454,445
Actual Exp. Above/(Below) Calculated Base							$510,969							$1,121,117							$394,162
CEU																					
Calculated Base Budget	$27,100	$98,100	$13,000	$46,600	$0		$1,374,239	$31,300	$0		$0	$26,200		$1,431,739	$31,700	$124,700		$0	$12,200		$1,600,339
A-1 Base Budget							$1,436,395							$1,664,674							$1,828,636
Actual Expenditures							$1,850,939							$1,706,155							$1,770,481
Base Budget Above/(Below) Calculated Base							$62,156							$232,935							$228,297
Actual Exp. Above/(Below) Calculated Base							$476,700							$274,416							$170,142
UVSC																					
Calculated Base Budget	$79,200	$530,800	$5,000	$100,500	$0		$3,790,827	$101,400	$194,300		$56,300	$0		$4,142,827	$96,600	$0		$59,100	$18,800		$4,317,327
A-1 Base Budget							$4,449,536							$4,810,577							$4,764,723
Actual Expenditures							$4,366,441							$4,798,142							$5,201,400
Base Budget Above/(Below) Calculated Base							$658,709							$667,750							$447,396
Actual Exp. Above/(Below) Calculated Base							$575,614							$655,315							$884,073
SLCC*																					
Calculated Base Budget	$124,900	$923,200	$13,100	$0	$0		$6,684,200	$159,100	$117,800		$0	$0		$6,961,100	$153,600	$41,200		$0	$0		$7,155,900
A-1 Base Budget							$7,047,800							$8,402,500							$8,790,700
Actual Expenditures							$8,041,334							$8,035,578							$8,404,933
Base Budget Above/(Below) Calculated Base							$363,600							$1,441,400							$1,634,800
Actual Exp. Above/(Below) Calculated Base							$1,357,134							$1,074,478							$1,249,033
Total																					
Calculated Base Budget	$1,262,000	$2,917,600	$142,800	$813,500	$67,000	($171,868)	$63,919,384	$1,458,100	$2,272,400	$0	$56,300	$101,600	($671,411)	$67,136,373	$1,462,000	$1,100,000	$0	$95,100	$65,400	($287,718)	$69,571,155
A-1 Base Budget	$0	$0	$0	$0	$0	$0	$64,952,911	$0	$0	$0	$0	$0	$0	$75,383,979	$0	$0	$0	$0	$0	$0	$76,752,558
Actual Expenditures	$0	$0	$0	$0	$0	$0	$71,430,777	$0	$0	$0	$0	$0	$0	$76,475,132	$0	$0	$0	$0	$0	$0	$76,033,437
Base Budget Above/(Below) Calculated Base	$0	$0	$0	$0	$0	$0	$1,033,527	$0	$0	$0	$0	$0	$0	$8,247,606	$0	$0	$0	$0	$0	$0	$7,181,403
Actual Exp. Above/(Below) Calculated Base	$0	$0	$0	$0	$0	$0	$7,511,393	$0	$0	$0	$0	$0	$0	$9,338,759	$0	$0	$0	$0	$0	$0	$6,462,282

USHE Annual Budgets and Expenditures for Operation and Maintenance
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	98-99 Comp 3%	98-99 New Space	98-99 Haz. Waste	98-99 Fuel & Pwr	98-99 Utilities	98-99 O&M Base	99-00 Comp 2.5%	99-00 New Space	99-00 az. Wast	99-00 Fuel & Pwr	99-00 Utilities	99-00 O&M Base	00-01 Comp Varies including sal. eq.	00-01 New Space	00-01 Haz. Waste	00-01 Fuel & Pwr	00-01 Utilities	00-01 O&M Base	01-02 Comp 5.0%	01-02 New Space	01-02 Haz. Waste	01-02 Fuel & Pwr	01-02 Utilities	01-02 O&M Base
UofU																								
Calculated Base Budget	$495,600	$872,800	$0	$0	$145,300	$28,952,200	$430,900	$1,507,400	$0	$0	$0	$30,890,500	$822,500	$140,900				$31,853,900	$940,300	$105,100	$40,700		$129,300	$33,069,300
A-1 Base Budget						$32,066,618						$33,580,934						$34,785,490						$37,018,346
Actual Expenditures						$30,808,651						$34,973,142						$36,209,646						$38,323,927
Base Budget Above/(Below) Calculated Base						$3,114,418						$2,690,434						$2,931,590						$3,949,046
Actual Exp. Above/(Below) Calculated Base						$1,856,451						$4,082,642						$4,355,746						$5,254,627
USU																								
Calculated Base Budget	$255,700	$0	$0	$0	$0	$14,279,793	$212,900	$0	$0	$0	$0	$14,492,693	$373,000	$619,400				$15,485,093	$449,600	$413,300	$29,200			$16,377,193
A-1 Base Budget						$14,839,200						$14,425,200						$15,742,600						$16,466,500
Actual Expenditures						$15,842,336						$15,176,462						$17,377,534						$19,107,609
Base Budget Above/(Below) Calculated Base						$559,407						($67,493)						$257,507						$89,307
Actual Exp. Above/(Below) Calculated Base						$1,562,543						$683,769						$1,892,441						$2,730,416
WSU																								
Calculated Base Budget	$139,000	$0	$0	$0	$0	$6,658,852	$116,500	$188,000	$0	$0	$0	$6,963,352	$228,100					$7,191,452	$254,900	$265,800	$5,700			$7,717,852
A-1 Base Budget						$7,599,118						$7,877,999						$8,299,601						$8,581,594
Actual Expenditures						$6,991,557						$7,188,726						$8,835,410						$9,228,458
Base Budget Above/(Below) Calculated Base						$940,266						$914,647						$1,108,149						$863,742
Actual Exp. Above/(Below) Calculated Base						$332,705						$225,374						$1,643,958						$1,510,606
SUU																								
Calculated Base Budget	$76,700	$22,400	$0	$0	$4,900	$4,397,187	$62,000	$18,400	$0	$0	$0	$4,477,587	$139,100	$347,300				$4,963,987	$151,400	$436,900				$5,552,287
A-1 Base Budget						$4,167,011						$4,544,851						$5,033,360						$4,648,993
Actual Expenditures						$4,122,691						$4,264,700						$4,909,767						$5,236,548
Base Budget Above/(Below) Calculated Base						($230,176)						$67,264						$69,373						($903,294)
Actual Exp. Above/(Below) Calculated Base						($274,496)						($212,887)						($54,220)						($315,739)
SNOW								Add SVATC O&M budget																
Calculated Base Budget	$32,400	$19,500	$0	$0	$0	$2,041,500	$27,700	$803,950	$0	$0	$0	$2,873,150	$73,800					$2,946,950	$82,900	$64,600				$3,094,450
A-1 Base Budget						$2,231,428						$2,982,658						$3,173,906						$3,307,010
Actual Expenditures						$2,116,383						$2,945,692						$3,051,757						$3,106,911
Base Budget Above/(Below) Calculated Base						$189,928						$109,508						$226,956						$212,560
Actual Exp. Above/(Below) Calculated Base						$74,883						$72,542						$104,807						$12,461
DIXIE																								
Calculated Base Budget	$34,600	$411,000	$0	$80,100	$7,800	$2,765,857	$30,200	$295,900	$0	$0	$15,400	$3,107,357	$82,300	$245,000				$3,434,657	$86,900	$196,600	$1,600		$16,100	$3,735,857
A-1 Base Budget						$3,220,658						$3,732,616						$4,113,610						$4,405,465
Actual Expenditures						$2,849,757						$3,086,440						$3,575,207						$3,878,347
Base Budget Above/(Below) Calculated Base						$454,801						$625,259						$678,953						$669,608
Actual Exp. Above/(Below) Calculated Base						$83,900						($20,917)						$140,550						$142,490
CEU																								
Calculated Base Budget	$29,900	$150,700	$0	$0	$0	$1,780,939	$25,100	$0	$0	$0	$0	$1,806,039	$51,800	$97,900				$1,955,739	$46,100	$43,300	$1,300			$2,046,439
A-1 Base Budget						$1,897,639						$1,716,958						$1,826,560						$1,922,838
Actual Expenditures						$1,704,805						$1,689,059						$1,808,331						$2,085,233
Base Budget Above/(Below) Calculated Base						$116,700						($89,081)						($129,179)						($123,601)
Actual Exp. Above/(Below) Calculated Base						($76,134)						($116,980)						($147,408)						$38,794
UVSC																								
Calculated Base Budget	$77,200	$0	$0	$12,700	$18,600	$4,425,827	$70,600	$0	$0	$9,400	$12,100	$4,517,927	$143,600	$262,500				$4,924,027	$177,000	$917,900	$1,500			$6,020,427
A-1 Base Budget						$5,237,448						$5,736,744						$6,318,060						$7,521,755
Actual Expenditures						$5,980,830						$6,176,630						$6,817,684						$7,853,645
Base Budget Above/(Below) Calculated Base						$811,621						$1,218,817						$1,394,033						$1,501,328
Actual Exp. Above/(Below) Calculated Base						$1,555,003						$1,658,703						$1,893,657						$1,833,218
SLCC*																								
Calculated Base Budget	$134,600	$0	$0	$0	$0	$7,290,500	$117,600	$17,900	$0	$0	$0	$7,426,000	$216,400	$787,000				$8,429,400	$274,300	$971,900				$9,675,600
A-1 Base Budget						$8,971,000						$9,023,500						$10,023,200						$11,120,200
Actual Expenditures						$8,457,301						$9,145,609						$10,028,254						$11,050,822
Base Budget Above/(Below) Calculated Base						$1,680,500						$1,597,500						$1,593,800						$1,444,600
Actual Exp. Above/(Below) Calculated Base						$1,166,801						$1,719,609						$1,598,854						$1,375,222
Total																								
Calculated Base Budget	$1,275,700	$1,476,400	$0	$92,800	$176,600	$72,592,655	$1,093,500	$2,831,550	$0	$9,400	$27,500	$76,554,605	$2,130,600	$2,500,000	$0	$0	$0	$81,185,205	$2,463,400	$3,415,400	$80,000	$0	$145,400	$87,289,405
A-1 Base Budget	$0	$0	$0	$0	$0	$80,230,120	$0	$0	$0	$0	$0	$83,621,460	$0	$0	$0	$0	$0	$89,316,387	$0	$0	$0	$0	$0	$94,992,701
Actual Expenditures	$0	$0	$0	$0	$0	$78,874,311	$0	$0	$0	$0	$0	$84,646,460	$0	$0	$0	$0	$0	$92,613,590	$0	$0	$0	$0	$0	$99,871,500
Base Budget Above/(Below) Calculated Base	$0	$0	$0	$0	$0	$7,637,465	$0	$0	$0	$0	$0	$7,066,855	$0	$0	$0	$0	$0	$8,131,182	$0	$0	$0	$0	$0	$7,703,296
Actual Exp. Above/(Below) Calculated Base	$0	$0	$0	$0	$0	$6,281,656	$0	$0	$0	$0	$0	$8,091,855	$0	$0	$0	$0	$0	$11,428,385	$0	$0	$0	$0	$0	$12,582,095

USHE Annual Budgets and Expenditures for Operation and Maintenance
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	02-03	02-03	02-03	02-03	02-03	02-03	02-03	03-04	03-04	03-04	03-04	03-04	03-04	03-04	04-05	04-05	04-05	04-05	04-05	04-05	04-05
	Comp 1.1%	New Space	Haz. Waste	Fuel & Pwr	Utilities	Budget Cuts	O&M Base	Comp 1.2%	New Space	Haz. Waste	Fuel & Pwr	Utilities	Budget Cuts	O&M Base	Comp 1.92%	New Space	Haz. Waste	Fuel & Pwr**	Utilities	Budget Cuts	O&M Base
UofU	Average 1.1%					-4.40%		Average 1.2%							Average 1.92%						
Calculated Base Budget	$229,400	$77,600				#########	$31,921,300	$226,200	$0					$32,147,500	$374,000	$0	$0	$2,518,100	$0	$0	$35,039,600
A-1 Base Budget							$37,291,154							$33,855,618							$37,266,634
Actual Expenditures							$38,587,693							$39,862,163							$42,203,596
Base Budget Above/(Below) Calculated Base							$5,369,854							$1,708,118							$2,227,034
Actual Exp. Above/(Below) Calculated Base							$6,666,393							$7,714,663							$7,163,996
USU																					
Calculated Base Budget	$105,300	$116,100				($720,600)	$15,877,993	$110,300	$560,100				$0	$16,548,393	$171,800	$0	$0	$1,620,200	$0	$0	$18,340,393
A-1 Base Budget							$15,894,500							$13,553,754							$16,290,800
Actual Expenditures							$17,741,954							$19,417,328							$21,631,224
Base Budget Above/(Below) Calculated Base							$16,507							($2,994,639)							($2,049,593)
Actual Exp. Above/(Below) Calculated Base							$1,863,961							$2,868,935							$3,290,831
WSU																					
Calculated Base Budget	$61,100	$69,900				($339,600)	$7,509,252	$65,100	$221,600				$0	$7,795,952	$106,900	$0	$0	$216,700	$0	$0	$8,119,552
A-1 Base Budget							$8,612,533							$8,730,914							$9,251,258
Actual Expenditures							$8,161,489							$9,350,440							$9,990,694
Base Budget Above/(Below) Calculated Base							$1,103,281							$934,962							$1,131,706
Actual Exp. Above/(Below) Calculated Base							$652,237							$1,554,488							$1,871,142
SUU																					
Calculated Base Budget	$26,800	$18,100				($244,300)	$5,352,887	$28,000	$0				$0	$5,380,887	$45,800	$0	$0	$128,800	$0	$0	$5,555,487
A-1 Base Budget							$4,725,942							$4,828,967							$6,056,651
Actual Expenditures							$4,999,925							$5,835,218							$5,976,838
Base Budget Above/(Below) Calculated Base							($626,945)							($551,920)							$501,164
Actual Exp. Above/(Below) Calculated Base							($352,962)							$454,331							$421,351
SNOW																					
Calculated Base Budget	$19,000	$100,000				($136,200)	$3,077,250	$14,800	$292,500		$200,000		$0	$3,584,550	$32,500	$0	$0	$28,900	$0	$0	$3,645,950
A-1 Base Budget							$3,340,274							$3,670,147							$3,329,626
Actual Expenditures							$2,975,733							$3,172,824							$3,650,159
Base Budget Above/(Below) Calculated Base							$263,024							$85,597							($316,324)
Actual Exp. Above/(Below) Calculated Base							($101,517)							($411,726)							$4,209
DIXIE																					
Calculated Base Budget	$20,200	$10,300				($164,400)	$3,601,957	$21,800	$48,400		$185,000		$0	$3,857,157	$20,300	$0	$0	$89,200	$0	$0	$3,966,657
A-1 Base Budget							$4,325,201							$4,478,112							$3,857,365
Actual Expenditures							$3,899,874							$4,132,917							$4,284,100
Base Budget Above/(Below) Calculated Base							$723,244							$620,955							($109,292)
Actual Exp. Above/(Below) Calculated Base							$297,917							$275,760							$317,443
CEU																					
Calculated Base Budget	$10,800	$150,000				($90,000)	$2,117,239	$10,100	$185,500		$215,000		$0	$2,527,839	$9,700	$0	$0	$29,000	$0	$0	$2,566,539
A-1 Base Budget							$1,759,753							$1,858,276							$1,925,280
Actual Expenditures							$1,781,149							$1,885,204							$1,854,200
Base Budget Above/(Below) Calculated Base							($357,486)							($669,563)							($641,259)
Actual Exp. Above/(Below) Calculated Base							($336,090)							($642,635)							($712,339)
UVSC																					
Calculated Base Budget	$46,500	$48,300				($264,900)	$5,850,327	$50,500	$602,100				$0	$6,502,927	$93,300	$0	$0	$188,900	$0	$0	$6,785,127
A-1 Base Budget							$7,553,575							$8,379,433							$8,767,876
Actual Expenditures							$8,213,350							$8,576,008							$9,055,839
Base Budget Above/(Below) Calculated Base							$1,703,248							$1,876,506							$1,982,749
Actual Exp. Above/(Below) Calculated Base							$2,363,023							$2,073,081							$2,270,712
SLCC*																					
Calculated Base Budget	$68,800	$136,100				($425,700)	$9,454,800	$73,400	$89,800				$0	$9,618,000	$126,400	$0	$0	$180,200	$0	$0	$9,924,600
A-1 Base Budget							$11,636,000							$11,635,900							$12,323,300
Actual Expenditures							$10,640,221							$11,180,209							$11,540,427
Base Budget Above/(Below) Calculated Base							$2,181,200							$2,017,900							$2,398,700
Actual Exp. Above/(Below) Calculated Base							$1,185,421							$1,562,209							$1,615,827
Total																					
Calculated Base Budget	$587,900	$726,400	$0	$0	$0	#########	$84,763,005	$600,200	$2,000,000	$0	$600,000	$0	$0	$87,963,205	$980,700	$0	$0	$5,000,000	$0	$0	$93,943,905
A-1 Base Budget	$0	$0	$0	$0	$0	$0	$95,138,932	$0	$0	$0	$0	$0	$0	$90,991,121	$0	$0	$0	$0	$0	$0	$99,068,790
Actual Expenditures	$0	$0	$0	$0	$0	$0	$97,001,388	$0	$0	$0	$0	$0	$0	$103,412,311	$0	$0	$0	$0	$0	$0	$110,187,077
Base Budget Above/(Below) Calculated Base	$0	$0	$0	$0	$0	$0	$10,375,927	$0	$0	$0	$0	$0	$0	$3,027,916	$0	$0	$0	$0	$0	$0	$5,124,885
Actual Exp. Above/(Below) Calculated Base	$0	$0	$0	$0	$0	$0	$12,238,383	$0	$0	$0	$0	$0	$0	$15,449,106	$0	$0	$0	$0	$0	$0	$16,243,172

USHE Annual Budgets and Expenditures for Operation and Maintenance
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	05-06 Comp 3.88%	05-06 New Space	05-06 Fuel & Pwr	05-06 O&M Base**	06-07 Comp 3.75%	06-07 New Space	06-07 Haz. Waste	06-07 Fuel & Pwr	06-07 Utilities	06-07 Budget Cuts	06-07 O&M Base	07-08 Comp 5.46%	07-08 New Space	07-08 Haz. Wast	07-08 Fuel & Pwr	07-08 Utilities	07-08 Fuel & Power	07-08 Budget Cut	07-08 O&M Base
UofU	Average 3.88%				Average 3.75%							Average 5.46%							
Calculated Base Budget	$809,600	$1,525,700		$37,374,900	$869,800	$846,000	$0	$2,299,600	$0	$0	$41,390,300	$1,323,500	$1,310,750	$0	$3,452,900	$0	$229,200		$47,706,650
A-1 Base Budget				$41,191,797							$43,055,542								$50,962,805
Actual Expenditures				$46,442,085							$47,471,405								$47,238,525
Base Budget Above/(Below) Calculated Base				$3,816,897							$1,665,242								$3,256,155
Actual Exp. Above/(Below) Calculated Base				$9,067,185							$6,081,105								($468,125)
USU																			
Calculated Base Budget	$395,100	$1,217,900		$19,953,393	$399,300	$0	$0	$1,200,000	$0	$0	$21,552,693	$699,600	$80,300	$0	$1,534,300	$0	$70,800	$0	$23,937,693
A-1 Base Budget				$18,283,300							$20,326,400								$22,863,900
Actual Expenditures				$23,464,622							$21,114,748								$22,191,087
Base Budget Above/(Below) Calculated Base				($1,670,093)							($1,226,293)								($1,073,793)
Actual Exp. Above/(Below) Calculated Base				$3,511,229							($437,945)								($1,746,606)
WSU																			
Calculated Base Budget	$223,900	$287,500		$8,630,952	$225,400	$43,200	$0	$385,900	$0	$0	$9,285,452	$343,200	$32,200	$0	$402,800	$0	$111,500	$0	$10,175,152
A-1 Base Budget				$10,009,819							$10,993,725								$11,807,923
Actual Expenditures				$10,698,266							$11,327,965								$12,072,360
Base Budget Above/(Below) Calculated Base				$1,378,867							$1,708,273								$1,632,771
Actual Exp. Above/(Below) Calculated Base				$2,067,314							$2,042,513								$1,897,208
SUU																			
Calculated Base Budget	$132,600	$0		$5,688,087	$130,400	($37,500)	$0	$494,600	$0	$0	$6,275,587	$197,500	$144,800	$0	$384,600	$0	$135,300	$0	$7,137,787
A-1 Base Budget				$6,467,171							$7,155,422								$7,831,979
Actual Expenditures				$6,462,643							$6,824,514								$8,020,429
Base Budget Above/(Below) Calculated Base				$779,084							$879,835								$694,192
Actual Exp. Above/(Below) Calculated Base				$774,556							$548,927								$882,642
SNOW																			
Calculated Base Budget	$66,800	$32,400		$3,745,150	$79,500	$0	$0	$0	$0	$0	$3,824,650	$120,000	$0	$0	$582,700	$0	$568,700	$0	$5,096,050
A-1 Base Budget				$4,294,363							$4,184,486								$5,089,868
Actual Expenditures				$4,909,087							$4,298,072								$5,392,448
Base Budget Above/(Below) Calculated Base				$549,213							$359,836								($6,182)
Actual Exp. Above/(Below) Calculated Base				$1,163,937							$473,422								$296,398
DIXIE																			
Calculated Base Budget	$70,000	$179,300		$4,215,957	$90,100	$0	$0	$149,600	$0	$0	$4,455,657	$139,100	$0	$0	$147,500	$0	$0	$0	$4,742,257
A-1 Base Budget				$4,635,110							$4,966,469								$4,759,185
Actual Expenditures				$4,490,380							$4,713,254								$5,136,008
Base Budget Above/(Below) Calculated Base				$419,153							$510,812								$16,928
Actual Exp. Above/(Below) Calculated Base				$274,423							$257,597								$393,751
CEU																			
Calculated Base Budget	$20,700	$186,500		$2,773,739	$20,900	$87,200	$0	$19,400	$0	$0	$2,901,239	$34,000	$64,800	$0	$182,000	$0	$86,300	$0	$3,268,339
A-1 Base Budget				$2,183,350							$2,384,213								$2,243,523
Actual Expenditures				$2,184,091							$2,052,981								$2,229,616
Base Budget Above/(Below) Calculated Base				($590,389)							($517,026)								($1,024,816)
Actual Exp. Above/(Below) Calculated Base				($589,648)							($848,258)								($1,038,723)
UVSC																			
Calculated Base Budget	$190,700	$1,184,400		$8,160,227	$205,200	$0	$0	$160,600	$0	$0	$8,526,027	$336,400	$0	$0	$483,000	$0	$246,900	$0	$9,592,327
A-1 Base Budget				$9,378,512							$11,543,523								$11,841,687
Actual Expenditures				$10,047,519							$10,632,344								$10,047,519
Base Budget Above/(Below) Calculated Base				$1,218,285							$3,017,496								$2,249,360
Actual Exp. Above/(Below) Calculated Base				$1,887,292							$2,106,317								$455,192
SLCC*																			
Calculated Base Budget	$265,100	$90,200		$10,279,900	$273,700	$612,500	$0	$290,300	$0	$0	$11,456,400	$456,200	$1,023,500	$0	$274,600	$0	$154,900	$0	$13,365,600
A-1 Base Budget				$13,367,900							$14,912,600								$16,544,500
Actual Expenditures				$12,578,255							$13,023,292								$15,100,351
Base Budget Above/(Below) Calculated Base				$3,088,000							$3,456,200								$3,178,900
Actual Exp. Above/(Below) Calculated Base				$2,298,355							$1,566,892								$1,734,751
Total																			
Calculated Base Budget	$2,174,500	$4,703,900	$0	$100,822,305	$2,294,300	$1,551,400	$0	$5,000,000	$0	$0	$109,668,005	$3,649,500	$2,656,350	$0	$7,444,400	$0	$1,603,600	$0	$125,021,855
A-1 Base Budget	$0	$0	$0	$109,811,322	$0	$0	$0	$0	$0	$0	$119,522,380	$0	$0	$0	$0	$0		$0	$133,945,370
Actual Expenditures	$0	$0	$0	$121,276,948	$0	$0	$0	$0	$0	$0	$121,458,575	$0	$0	$0	$0	$0		$0	$127,428,343
Base Budget Above/(Below) Calculated Base	$0	$0	$0	$8,989,017	$0	$0	$0	$0	$0	$0	$9,854,375	$0	$0	$0	$0	$0		$0	$8,923,515
Actual Exp. Above/(Below) Calculated Base	$0	$0	$0	$20,454,643	$0	$0	$0	$0	$0	$0	$11,790,570	$0	$0	$0	$0	$0		$0	$2,406,488

USHE Annual Budgets and Expenditures for Operation and Maintenance
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	08-09 Comp 3.68%	08-09 New Space	08-09 Haz. Waste	08-09 Fuel & Pwr	08-09 Utilities	08-09 Budget Cuts	08-09 O&M Base	09-10 Comp (0%)	09-10 New Space	09-10 Haz. Waste	09-10 Fuel & Pwr	09-10 Utilities	09-10 Budget Cuts	09-10 O&M Base	10-11 Comp (0%)	10-11 New Space	10-11 Haz. Waste	10-11 Fuel & Pwr	10-11 Utilities	10-11 Budget Cuts	10-11 O&M Base
UofU	Average 3.68%							Average 0%							Average 0%						
Calculated Base Budget	$921,800	$742,600	$0	$0	$94,600		$49,465,650	$0	$40,000	$0	$0	$0	($1,654,255)	$47,851,395	$0	$607,400	$0	$0	$0	($1,654,255)	$46,804,540
A-1 Base Budget							$50,962,805							$51,076,741							$51,036,227
Actual Expenditures							$48,005,104							$47,696,253							$53,454,664
Base Budget Above/(Below) Calculated Base							$1,497,155							$3,225,346							$4,231,687
Actual Exp. Above/(Below) Calculated Base							($1,460,546)							($155,142)							$6,650,124
USU																					
Calculated Base Budget	$428,500	$277,700	$0	$0	$15,400	($340,118)	$24,319,175	$0	$0	$0	$0	$0	($424,791)	$23,894,384	$0	$0	$0	$0	$0	($424,336)	$23,470,048
A-1 Base Budget							$23,973,267							$25,653,752							$25,277,900
Actual Expenditures							$26,653,676							$25,531,256							$27,284,195
Base Budget Above/(Below) Calculated Base							($345,908)							$1,759,368							$1,807,852
Actual Exp. Above/(Below) Calculated Base							$2,334,501							$1,636,872							$3,814,147
WSU																					
Calculated Base Budget	$244,800	$247,300	$0	$0	$171,600	$0	$10,838,852	$0	$123,600	$0	$0	$0	($1,016,582)	$9,945,870	$0	$0	$0	$0	$0	$0	$9,945,870
A-1 Base Budget							$12,068,635							$11,394,584							$11,649,376
Actual Expenditures							$11,741,139							$11,270,667							$11,617,749
Base Budget Above/(Below) Calculated Base							$1,229,783							$1,448,714							$1,703,506
Actual Exp. Above/(Below) Calculated Base							$902,287							$1,324,797							$1,671,879
SUU																					
Calculated Base Budget	$149,100	$60,600	$0	$0	$6,500	$0	$7,353,987	$0	$0	$0	$0	$0	($437,025)	$6,916,962	$0	$0	$0	$0	$0	($294,061)	$6,622,901
A-1 Base Budget							$8,170,011							$7,699,639							$8,172,674
Actual Expenditures							$7,536,992							$8,412,125							$8,406,766
Base Budget Above/(Below) Calculated Base							$816,024							$782,677							$1,549,773
Actual Exp. Above/(Below) Calculated Base							$183,005							$1,495,163							$1,783,865
SNOW																					
Calculated Base Budget	$84,400	$0	$0	$0	$0	$0	$5,180,450	$0	$150,700	$0	$0	$0	$0	$5,331,150	$0	$301,500	$0	$0	$0	($37,600)	$5,595,050
A-1 Base Budget							$4,837,879							5,081,844							4,849,865
Actual Expenditures							$4,388,818							4,520,981							4,663,306
Base Budget Above/(Below) Calculated Base							($342,571)							($249,306)							($745,185)
Actual Exp. Above/(Below) Calculated Base							($791,632)							($810,169)							($931,744)
DIXIE																					
Calculated Base Budget	$80,600	$281,600	$0	$0	$0	($215,613)	$4,888,844	$0	$68,900	$0	$0	$0	$0	$4,957,744	$0	$0	$0	$0	$0	$0	$4,957,744
A-1 Base Budget							$5,223,911							$5,166,288							$5,059,206
Actual Expenditures							$4,745,589							$4,738,660							$4,808,294
Base Budget Above/(Below) Calculated Base							$335,067							$208,544							$101,462
Actual Exp. Above/(Below) Calculated Base							($143,255)							($219,084)							($149,450)
CEU																					
Calculated Base Budget	$22,900	$0	$0	$0	$21,000	$0	$3,312,239	$0	$0	$0	$0	$0	$0	$3,312,239	$0	$0	$0	$0	$0	$0	$3,312,239
A-1 Base Budget							$2,129,114							$1,913,159							$1,932,566
Actual Expenditures							$2,107,228							$2,161,154							$2,319,634
Base Budget Above/(Below) Calculated Base							($1,183,125)							($1,399,080)							($1,379,673)
Actual Exp. Above/(Below) Calculated Base							($1,205,011)							($1,151,085)							($992,605)
UVSC																					
Calculated Base Budget	$231,300	$1,053,400	$0	$0	$0	$0	$10,877,027	$0	$0	$0	$0	$0	($604,340)	$10,272,687	$0	$0	$0	$0	$0	$0	$10,272,687
A-1 Base Budget							$12,244,536							$12,478,176							$13,104,401
Actual Expenditures							$16,174,118							$15,217,927							$15,865,244
Base Budget Above/(Below) Calculated Base							$1,367,509							$2,205,489							$2,831,714
Actual Exp. Above/(Below) Calculated Base							$5,297,091							$4,945,240							$5,592,557
SLCC*																					
Calculated Base Budget	$324,800	$96,000	$0	$0	$352,700	$0	$14,139,100	$0	$0	$0	$0	$0	($1,290,313)	$12,848,787	$0	$0	$0	$0	$0	$0	$12,848,787
A-1 Base Budget							$17,171,721							$16,524,507							$16,488,059
Actual Expenditures							$16,439,857							$16,613,617							$16,959,104
Base Budget Above/(Below) Calculated Base							$3,032,621							$3,675,720							$3,639,272
Actual Exp. Above/(Below) Calculated Base							$2,300,757							$3,764,830							$4,110,317
Total																					
Calculated Base Budget	$2,488,200	$2,759,200	$0	$0	$661,800	($555,731)	$130,375,324	$0	$383,200	$0	$0	$0	($5,427,306)	$125,331,218	$0	$908,900	$0	$0	$0	#########	$123,829,866
A-1 Base Budget	$0	$0	$0	$0	$0	$0	$136,781,879	$0	$0	$0	$0	$0	$0	$136,988,690	$0	$0	$0	$0	$0	$0	$137,570,274
Actual Expenditures	$0	$0	$0	$0	$0	$0	$137,792,521	$0	$0	$0	$0	$0	$0	$136,162,640	$0	$0	$0	$0	$0	$0	$145,378,956
Base Budget Above/(Below) Calculated Base	$0	$0	$0	$0	$0	$0	$6,406,555	$0	$0	$0	$0	$0	$0	$11,657,472	$0	$0	$0	$0	$0	$0	$13,740,408
Actual Exp. Above/(Below) Calculated Base	$0	$0	$0	$0	$0	$0	$7,417,197	$0	$0	$0	$0	$0	$0	$10,831,422	$0	$0	$0	$0	$0	$0	$21,549,090

USHE Annual Budgets and Expenditures for Operation and Maintenance
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	11-12 Comp (0%) Average 0%	11-12 New Space	11-12 Haz. Waste	11-12 Fuel & Pwr	11-12 Utilities	11-12 Budget Cuts	11-12 O&M Base
UofU							
Calculated Base Budget	$0	$951,200	$0	$0	$0		$47,755,740
A-1 Base Budget							$56,063,226
Actual Expenditures							$52,658,122
Base Budget Above/(Below) Calculated Base							$8,307,486
Actual Exp. Above/(Below) Calculated Base							$4,902,382
USU							
Calculated Base Budget	$0	$247,600	$0	$0	$0	$0	$23,717,648
A-1 Base Budget							$26,603,400
Actual Expenditures							$27,921,472
Base Budget Above/(Below) Calculated Base							$2,885,752
Actual Exp. Above/(Below) Calculated Base							$4,203,824
WSU							
Calculated Base Budget	$0	$0	$0	$0	$0	$0	$9,945,870
A-1 Base Budget							$12,025,741
Actual Expenditures							$12,347,681
Base Budget Above/(Below) Calculated Base							$2,079,871
Actual Exp. Above/(Below) Calculated Base							$2,401,811
SUU							
Calculated Base Budget	$0	$324,400	$0	$0	$0	$0	$6,947,301
A-1 Base Budget							$8,680,082
Actual Expenditures							$8,039,614
Base Budget Above/(Below) Calculated Base							$1,732,781
Actual Exp. Above/(Below) Calculated Base							$1,092,313
SNOW							
Calculated Base Budget	$0	$0	$0	$0	$0	$0	$5,595,050
A-1 Base Budget							$4,968,156
Actual Expenditures							$4,612,420
Base Budget Above/(Below) Calculated Base							($626,894)
Actual Exp. Above/(Below) Calculated Base							($982,630)
DIXIE							
Calculated Base Budget	$0	$0	$0	$0	$0	$0	$4,957,744
A-1 Base Budget							$5,040,944
Actual Expenditures							$4,804,294
Base Budget Above/(Below) Calculated Base							$83,200
Actual Exp. Above/(Below) Calculated Base							($153,450)
CEU							
Calculated Base Budget	$0	$0	$0	$0	$0	$0	$3,312,239
A-1 Base Budget							$2,133,900
Actual Expenditures							$2,378,800
Base Budget Above/(Below) Calculated Base							($1,178,339)
Actual Exp. Above/(Below) Calculated Base							($933,439)
UVSC							
Calculated Base Budget	$0	$415,800	$0	$0	$0	$0	$10,688,487
A-1 Base Budget							$14,461,448
Actual Expenditures							$16,959,978
Base Budget Above/(Below) Calculated Base							$3,772,961
Actual Exp. Above/(Below) Calculated Base							$6,271,491
SLCC*							
Calculated Base Budget	$0	$0	$0	$0	$0	$0	$12,848,787
A-1 Base Budget							$18,474,852
Actual Expenditures							$17,920,705
Base Budget Above/(Below) Calculated Base							$5,626,065
Actual Exp. Above/(Below) Calculated Base							$5,071,918
Total							
Calculated Base Budget	$0	$1,939,000	$0	$0	$0	$0	$125,768,866
A-1 Base Budget	$0	$0	$0	$0	$0	$0	$148,451,749
Actual Expenditures	$0	$0	$0	$0	$0	$0	$147,643,086
Base Budget Above/(Below) Calculated Base	$0	$0	$0	$0	$0	$0	$22,682,883
Actual Exp. Above/(Below) Calculated Base	$0	$0	$0	$0	$0	$0	$21,874,220

APPENDIX G
15 Year History of Capital Improvement Allocations

		UU	USU	USU-CEU	WSU	SUU	Snow	DSC	UVU	SLCC	USHE Total
FY 1999											
	Total CI Funding	$ 4,257,705	$ 3,010,453	$ 878,239	$ 2,502,417	$ 809,640	$ 883,159	$ 2,268,885	$ 2,012,165	$ 1,608,080	$ 18,230,743
	Utility Infrastructure Amount		700,000	620,110					982,000		2,302,110
	Utility Infrastructure % of Total	0.0%	23.3%	70.6%	0.0%	0.0%	0.0%	0.0%	48.8%	0.0%	12.6%
FY 2000											
	Total CI Funding	$ 4,469,900	$ 3,284,000	$ 1,081,800	$ 1,784,000	$ 1,139,700	$ 501,600	$ 999,300	$ 1,240,000	$ 1,342,000	$ 15,842,300
	Utility Infrastructure Amount		720,000	652,996			225,300	211,400	175,000		1,984,696
	Utility Infrastructure % of Total	0.0%	21.9%	60.4%	0.0%	0.0%	44.9%	21.2%	14.1%	0.0%	12.5%
FY 2001											
	Total CI Funding	$ 4,985,500	$ 3,549,000	$ 674,300	$ 2,583,000	$ 1,270,000	$ 692,000	$ 1,137,400	$ 1,329,000	$ 1,753,300	$ 17,973,500
	Utility Infrastructure Amount	1,916,379		30,000	1,300,000	995,000		1,307,800		165,000	5,714,179
	Utility Infrastructure % of Total	38.4%	0.0%	4.4%	50.3%	78.3%	0.0%	115.0%	0.0%	9.4%	31.8%
FY 2002											
	Total CI Funding	$ 5,473,700	$ 4,089,000	$ 1,097,400	$ 2,717,000	$ 4,456,000	$ 1,502,900	$ 1,801,900	$ 1,791,000	$ 2,638,000	$ 25,566,900
	Utility Infrastructure Amount	1,955,052	785,000	947,400	160,000	145,000	1,435,900		150,000		5,578,352
	Utility Infrastructure % of Total	35.7%	19.2%	86.3%	5.9%	3.3%	95.5%	0.0%	8.4%	0.0%	21.8%
FY 2003											
	Total CI Funding	$ 5,505,100	$ 3,414,000	$ 988,300	$ 2,119,000	$ 1,020,000	$ 1,404,000	$ 1,386,100	$ 1,113,000	$ 1,646,700	$ 18,596,200
	Utility Infrastructure Amount	57,870	2,675,000	798,300		200,000	1,057,000		125,000	452,017	5,365,187
	Utility Infrastructure % of Total	1.1%	78.4%	80.8%	0.0%	19.6%	75.3%	0.0%	11.2%	27.4%	28.9%
FY 2004											
	Total CI Funding	$ 6,722,300	$ 3,913,000	$ 1,081,000	$ 2,801,000	$ 1,649,100	$ 975,500	$ 1,145,500	$ 2,021,600	$ 1,731,300	$ 22,040,300
	Utility Infrastructure Amount	62,218	1,150,000	1,036,000		160,000	165,000	841,200	1,114,000	351,400	4,879,818
	Utility Infrastructure % of Total	0.9%	29.4%	95.8%	0.0%	9.7%	16.9%	73.4%	55.1%	20.3%	22.1%
FY 2005											
	Total CI Funding	$ 6,959,800	$ 4,146,000	$ 1,075,800	$ 2,487,800	$ 2,757,500	$ 1,100,000	$ 1,242,000	$ 2,151,000	$ 1,770,200	$ 23,690,100
	Utility Infrastructure Amount	774,810	1,950,000	255,800	275,000		135,000		310,000	37,000	3,737,610
	Utility Infrastructure % of Total	11.1%	47.0%	23.8%	11.1%	0.0%	12.3%	0.0%	14.4%	2.1%	15.8%
FY 2006											
	Total CI Funding	$ 9,406,000	$ 5,265,000	$ 1,743,900	$ 3,394,200	$ 1,857,800	$ 1,945,000	$ 1,427,800	$ 2,787,600	$ 2,460,600	$ 30,287,900
	Utility Infrastructure Amount	1,829,228	1,750,000	1,139,632	460,000	1,663,500	1,363,200	218,200	720,000	2,193,290	11,337,050
	Utility Infrastructure % of Total	19.4%	33.2%	65.3%	13.6%	89.5%	70.1%	15.3%	25.8%	89.1%	37.4%
FY 2007											
	Total CI Funding	$ 11,638,800	$ 6,432,800	$ 1,024,600	$ 3,795,700	$ 2,525,100	$ 1,847,500	$ 1,290,100	$ 2,682,800	$ 3,588,900	$ 34,826,300
	Utility Infrastructure Amount	4,174,880	950,000	645,000		645,100	805,000		252,000	772,837	8,244,817
	Utility Infrastructure % of Total	35.9%	14.8%	63.0%	0.0%	25.5%	43.6%	0.0%	9.4%	21.5%	23.7%
FY 2008											
	Total CI Funding	$ 13,035,400	$ 7,328,500	$ 974,300	$ 4,152,800	$ 2,510,400	$ 1,793,300	$ 1,779,600	$ 3,279,000	$ 3,848,000	$ 38,701,300
	Utility Infrastructure Amount	7,933,006	2,600,000	209,000	1,750,000	333,200			527,000	1,054,300	14,406,506
	Utility Infrastructure % of Total	60.9%	35.5%	21.5%	42.1%	13.3%	0.0%	0.0%	16.1%	27.4%	37.2%
FY 2009											
	Total CI Funding	$ 16,678,800	$ 8,405,000	$ 986,200	$ 4,248,800	$ 2,426,500	$ 1,682,000	$ 2,500,000	$ 2,931,300	$ 3,701,600	$ 43,560,200
	Utility Infrastructure Amount	4,427,866	1,600,000	297,500	196,000	565,400	34,964		216,000	611,200	7,948,930
	Utility Infrastructure % of Total	26.5%	19.0%	30.2%	4.6%	23.3%	2.1%	0.0%	7.4%	16.5%	18.2%
FY2010											
	Total CI Funding	$ 11,301,500	$ 5,656,700	$ 550,000	$ 3,518,500	$ 1,639,400	$ 2,081,700	$ 600,400	$ 1,526,300	$ 2,733,200	$ 29,607,700
	Utility Infrastructure Amount	4,549,215	1,150,000	130,000	1,186,000	580,800			378,400		7,974,415
	Utility Infrastructure % of Total	40.3%	20.3%	23.6%	33.7%	35.4%	0.0%	0.0%	24.8%	0.0%	26.9%
FY2011											
	Total CI Funding	$ 10,252,000	$ 4,970,000	$ 1,120,000	$ 2,449,500	$ 1,750,000	$ 1,046,500	$ 1,125,000	$ 2,411,000	$ 2,207,585	$ 27,331,585
	Utility Infrastructure Amount	8,068,472	1,200,000	500,000	1,720,000	1,200,000		1,125,000	1,225,000	310,000	15,348,472
	Utility Infrastructure % of Total	78.7%	24.1%	44.6%	70.2%	68.6%	0.0%	100.0%	50.8%	14.0%	56.2%
FY 2012											
	Total CI Funding	$ 11,124,000	$ 5,059,000	$ 910,000	$ 2,417,000	$ 1,646,000	$ 1,244,000	$ 1,323,100	$ 2,125,000	$ 2,260,000	$ 28,108,100
	Utility Infrastructure Amount	6,750,000	1,325,000		1,100,000	150,000	-		260,000	143,000	9,728,000
	Utility Infrastructure % of Total	60.7%	26.2%	0.0%	45.5%	9.1%	0.0%	0.0%	12.2%	6.3%	34.6%
FY 2013											
	Total CI Funding	$ 20,586,000	$ 5,752,000	$ 800,000	$ 2,775,500	$ 2,010,000	$ 1,448,000	$ 1,659,500	$ 2,645,000	$ 2,861,000	$ 40,537,000
	Utility Infrastructure Amount	8,000,000	1,100,000		1,353,000	250,000			456,815	550,000	11,709,815
	Utility Infrastructure % of Total	38.9%	19.1%	0.0%	48.7%	12.4%	0.0%	0.0%	17.3%	19.2%	28.9%
TOTAL											
	Total CI Funding	$ 142,396,505	$74,274,453	$14,985,839	$43,746,217	$29,467,140	$20,147,159	$21,686,585	$32,045,765	$36,150,465	$ 414,900,128
	Utility Infrastructure Amount	50,498,996	19,655,000	7,261,738	9,500,000	6,888,000	5,221,364	3,703,600	6,891,215	6,640,044	116,259,957
	Utility Infrastructure % of Total	35.5%	26.5%	48.5%	21.7%	23.4%	25.9%	17.1%	21.5%	18.4%	28.0%

APPENDIX H
Other Funding for Utility Production and Distribution Infrastructure

CAPITAL DEVELOPMENT FUNDING

The capital development funding for utility infrastructure projects listed below was either specifically part of a capital development budget funded by the Legislature or entailed use of funding designated for a stand-alone system (e.g., heating or cooling system) in a state-funded project that was instead connected to a central system.

- University of Utah – In FY 2008 $4,979,761 of the cost of the East Campus Chiller Plant Expansion project was financed from Capital Development funding provided for the Nursing Building renovation.
- University of Utah – Also in FY 2008 $2,427,217 of the cost of the North Campus Chilled Water Plant and Distribution System project was financed with funding for the USTAR project.
- University of Utah – In FY 2009 $322,500 of the cost of the New Chiller Plant (in the basement of the HTW Plant) and Chilled Water Distribution Lines project was financed with Capital Development funding for the Business Building replacement.
- University of Utah – For several years the University of Utah has been faced with increasingly serious HVAC and electrical utility infrastructure issues that have resulted in extensive power outages and steam line ruptures. $28.5 million was used over several years to repair system failures and to begin to address the remaining problems. The following are the sources of the funds used to date:
    - HTW System - A total of $15.7 million of capital improvement funds was used for the HTW system between FY07 and FY11, including a 2010 legislative reallocation of $3,550,000 of FY10 capital improvement funds originally dedicated to other needs. In addition, in FY2010, the University financed $5 million to address failed piping needed to support USTAR facilities.
    - Electrical System - $7.775 million of capital improvement funds were used during FY2009, FY2010, and 2011 to address the most critical aspects of this system.

The University requested $99 million of Capital Development funding from the 2010 Legislature to address the remaining serious problems. That funding was not provided, but the Legislature did authorize reallocation of the $3,550,000 of Capital Improvement funds that were used for the HTW system as noted above. The $99 million Capital Development request was submitted again to the 2011 Legislature without being funded. The request was reduced to $50 million for the 2012 Legislative request with the understanding that an alternative funding mechanism would be explored for the remaining balance needed. The 2012 Legislature funded $22 million of that request. An additional $13 million was authorized for that purpose from the Capital Improvement funding pool provided by the Legislature making a total of $35 million available for FY 2013.

- Utah State University – $38.9 million was provided ($9.2 million in FY 2001 and $29.7 million in FY 2002) for funding of a new Heat Plant and utilities distribution system (utility tunnels to house steam lines and other adjacent utilities). The new natural gas fired heat plant replaced the old coal fired plant, thereby significantly reducing air pollution, and the utility tunnels resulted in extended life of utility distribution systems and enabled maintenance to be performed without disrupting facilities above the surface.
- Weber State University – For FY 2008 the legislature approved $22.95 million for a new classroom building at the Ogden campus. Approximately $4.5 million of those funds were used to construct a new central chilled water plant to increase the cooling capacity for the campus.
- Weber State University - For FY 2011, the legislature approved $39.9 million (including $8.4 million of non-state funds) for construction of a new professional programs building at the Davis campus. Approximately $3.5 million of those funds were used to construct a new central chilled water plant and extend the underground utility tunnel system.
- Snow College – In FY 1997 $500,000 of the capital funding for the Greenwood Student Center was used to build a steam and condensate tunnel from the north side of the center to the Bell Tower junction on the southwest side.
- Snow College – In FY 2009 $656,525 of the capital funding for the Karen Huntsman Library was used to extend the steam and condensate main tunnel in order to connect with the new building and to install direct bury steam and condensate lines to connect with Center Street.
- Utah Valley University – In FY 2001, $7 million of the capital funding for the state-funded Classroom Building project was earmarked for the addition of a new central plant, boilers, chillers and piping to expand the existing utility infrastructure systems.
- Utah Valley University – In FY 2009, $120,000 of the new Track facility project funding was used to construct a storm water retention basin.
- Utah Valley University – In FY 2011, $1,225,000 of the funding for the Science/Health Sciences Building project was used for addition of a new chiller, expansion of a cooling tower in the Central Plant, and replacement of old boilers with new condensing boilers.

ESCO AND OTHER ENERGY SAVING PROJECT FUNDING

- University of Utah
  - 1997-2003 – New East HTW and Chilled Water Plant ($22.9 million)
  - 2006-08 – HTW/Co-generation Plant ($15.8 million)
  - 2008-11 – North Campus Chilled Water Plant and Distribution to Buildings ($7 million)
- Utah State University
  - 2003 – Cogeneration and Chilled Water Plant ($13.9 million)
  - 2012-13 - Chilled Water Thermal Storage Tank ($2.6 million)
- Weber State University
  - 2009 - Steam System Repairs and Upgrades Phase I ($1.2 million)
- Dixie State College
  - 2011-12 – Step Down Transformers ($.5 million)
  - 2011-12 HTW and Chilled Water System Projects ($1.3 million)
- Utah Valley University
  - 2004-05 – High Voltage Power Substation ($2.3 million)
  - 2004-05 – High Voltage Loops, Transformers and Switchgear ($2.3 million)
  - 2004-05 –Upgrading Central Lighting System Controls ($2 million)
  - 2011 – Upgrade Central Plant Motors and Pumps ($74,000)
  - 2011 – Upgrade Substation Transformers and Fans ($675,000)
- Salt Lake Community College
  - 2012-13 – High Voltage Power Substation ($3.8 million)

OTHER INSTITUTIONAL FUNDS

- University of Utah
  - 1997-2001 - Sewer Projects ($371,540)
  - 2004-12 - Culinary and Secondary Water System Projects ($437,580)
  - 2007-12 - HTW Distribution Lines ($773,718)
  - 2008-11 – No. Campus Chilled Water Plant & Distribution ($11.1 million)
  - 2008-12 - Chilled Water Plant and Distribution (2.3 million)
  - 2009-11 – Utility Tunnels & Utility Lines: USTAR ($17.9 million)
  - 2010-12 – Electrical Distribution System Upgrades ($573,404)
  - 2010-13 – Solar Power for PV Systems ($2.5 million)
- Weber State University

  - 2001-02 – Chiller Installation and Piping ($100,000)
  - 2006 – Transformer Replacement ($110,000)
- Southern Utah University
  - 2008-12 – A number of HVAC, Electrical, and other projects ($512,284)
- Snow College
  - 2000-2011 – A number of steam and condensate lines were replaced/installed ($154,445).
- Utah Valley University
  - 2002 – Compressed Air System Replacement ($225,000)
  - 2009 – Main Water Line Replacement ($45,000)
  - 2010-12 – Geothermal Well Rebuild ($90,000)
- Salt Lake Community College
  - 2003-2008 – Electrical Service Upgrades ($88,700)
  - 2006 – Hot Water Piping Upgrade ($540,000)

APPENDIX I
Utility Production and Distribution Infrastructure

Definition – The type of infrastructure inventoried and assessed includes utility equipment and distribution assets that will result in a capital expenditure or capital request to accomplish periodic replacement, overhaul, or reconditioning. The inventory includes those items that are currently in place as well as items for which installation is currently funded and/or will be underway by July 1, 2012. Other than utility plant buildings housing utility production and distribution assets, the inventory does not include items within campus buildings. An exception for items housed in other campus buildings is made for significant utility infrastructure within a non-utility plant structure that is supporting a larger utility system or group of buildings. Utility infrastructure that is/was acquired using lease/purchase financing should be included in the inventory. Items that are owned and/or leased to the institution by others, such as utility companies, municipalities or others are not included. Likewise, items that are routinely repaired or replaced with operation and maintenance budgets are not considered capital expenditures and are not included in the inventory.

PLANT PRODUCTION ASSETS

Electrical Generation Devices

- Cogeneration
- Hydro
- Solar
- Major Emergency Generators (utility plant backup or shared use)
- Backup Fuel Storage Systems

Heating Production Devices

- Steam Production
  - Heat Recovery Generators
  - Standard Boilers
  - Condensers
  - Economizers
  - Backup Fuel Storage Systems
- Heating Hot Water
  - Heat Exchangers
  - De-aerators
  - Large Primary Distribution Pumps
  - Variable Frequency Drives
  - Large Primary Valves
  - Expansion Tank Systems
- Geothermal Systems (Wells, Pumps, Heat Exchangers, Heat Pumps, Reversible Chillers)

Chilled Water Production

- Chillers of all types
- Evaporative Cooling Towers
- De-aerators
- Large Primary Distribution Pumps
- Variable Frequency Drives
- Large Primary Valves
- Expansion Tank Systems
- Chilled Water Storage Tanks

Water Conditioning Equipment (Central Plant Boilers, Chilled Water, Heating Hot Water)

- Polishers
- Softeners
- De-alkalizers

Central Control Systems

- SCADA Systems
- Servers and major control system technologies

Utility Meters (electrical and hydronic)

Potable (culinary) Water Production Systems

Water Production Wells
Elevated or Ground Water Storage Tanks
Chlorinators and Polishers
Major Distribution Pumps
Pressure Reducing Stations
Variable Frequency Drives
Major Primary Valves

Irrigation Production Systems

Production Wells
Pump Houses and Contents
Storage Tanks and Reservoirs
Centralized Treatment Devices
Filtration Systems

Centralized Compressed Air

Compressors
Dryers
After Coolers
Inner Coolers

DISTRIBUTION ASSETS

Electrical

Substations:
    Transformers
    Capacitors
    Major Switches and Switchgear
    Voltage Regulators
    Protective Devices (Re-closure switches, etc.)

Distribution:

    Wire feeders (underground or overhead)
    Duct Banks and Vaults
    Major Switchgear
    Underground Electrical Switching Manholes
    Protective Devices (Re-closure switches, etc.)
    Meters

Heating Distribution Systems

Steam and Heating Hot Water Distribution (System includes supply and return pipes, pipe insulation and valve jackets, containment systems (Perma-pipe and RickWil) expansion loops, condensate return pipe, traps, valves, pumps, controls, gauges, meters etc.)

Chilled Water Distribution (System includes supply and return pipes, valves, controls, gauges, meters, etc.)

Tunnel Systems (concrete, masonry and other walkthrough, shallow tunnel)

Natural Gas Distribution Infrastructure

Pipes, valves, metering devices, controls gauges, etc.

Potable Water Systems (pipes, valves, chlorinators, controls, tracers, etc.)

Irrigation Piping Systems (pressurized mains, controllers, valves, pressure reducing stations, pumps, VFDs, strainers, sprinklers, etc.)

Sanitary Waste Water (pipes, manholes, lift stations, grinder pumps, pretreatment systems, etc.)

Storm Water (pipes, inlet structures, retention and detention basins, infiltration wells, diversion structures, hardened channels)

Compressed Air Distribution from a Central Plant (piping, valves, regulators, dryers, etc.)

APPENDIX J
Information Technology Infrastructure

Information Technology (IT) has a rapidly and continuously developing infrastructure that has quickly transitioned over time from mainframe applications to PCs, and now toward cloud networking environments. There also have been tremendous advances in wireless technologies in recent years. New generations of IT equipment are emerging more rapidly than they can often be assimilated. Replacement is not driven by the component being worn out but rather by new generations of equipment with expanded capabilities that make the old equipment obsolete. Accordingly, it is very difficult to predict future IT needs or the economic service lives of current computer technologies and internet assets since most IT assets become obsolete long before they actually fail or require replacement due to age.

In contrast, the utility infrastructure applications found in this report are managed by the institutions' Facility Management (FM) organizations, and these components typically have predictable life cycles that are usually 20 years or more. The expected life of a transformer, conductor, air handler, boiler, chiller, pump or switch is very predictable. For example, with proper maintenance, boilers can last for over 50 years, transformers can last over 20 years, and chillers can last 20 years or more. FM supported infrastructure is usually replaced because of failure after a long service life, and can most often be expanded to add more capacity without discarding the equipment that is already in use. This long service life of FM supported utilities and the ability to expand capability or capacity without wholesale replacement distinguish these systems and make their management entirely different from those IT managed systems within the institution. It is, therefore, recommended that if it is determined to be desirable to inventory and evaluate IT infrastructure in USHE institutions, it should be done by a separate working group that specializes in IT infrastructure assets.

APPENDIX K
Construction Cost Control Corp.
Replacement Costing of USHE Utilities Infrastructure

The document that follows is the complete report of the study done by Construction Control Corporation for the purpose of estimating the cost, by time period, of future funding needs to renew and replace the utilities infrastructure production and distribution assets on USHE campuses. The study is based on comprehensive inventories of these assets that were compiled by facilities professionals at each of the USHE campuses and includes the relevant information about the types of assets, sizes, and installation dates.

Please note that the projected costs are based on ***current pricing factors with no inclusion of future inflation***.

UTAH HIGHER EDUCATION UTILITIES INFRASTRUCTURE ASSESSMENT

STATE OF UTAH

January 11, 2013

UTAH SYSTEM OF
HIGHER EDUCATION
Building a Stronger State of Minds™

CONSTRUCTION CONTROL
CORPORATION

CONSTRUCTION CONTROL
CORPORATION

January 11, 2013

UTAH HIGHER EDUCATION UTILITIES
INFRASTRUCTURE ASSESSMENT NARRATIVE

Due to ongoing problems with age and deterioration of the utility infrastructures on the various Utah higher education campuses, The Utah System of Higher Education (USHE) commissioned a study of an ongoing replacement program for these systems.

The facilities departments at the various USHE institutions were tasked with inventorying their utility infrastructures and establishing sizes and ages of installations for their campus utilities. This inventory was substantially completed in September, 2012.

In October, 2012 Construction Control Corporation of Salt Lake City was hired to establish costs for the proposed replacement of these systems. After a series of meetings with Ralph Hardy of the USHE and various representatives of the universities, a plan was developed for this cost analysis. The study would be priced for replacement of services over the next fifty years. These costs would be established as follows:

0-5 years (immediate needs)
5 years
10 years
20 years
30 years
40 years
50 years
Beyond 50 years

Utah colleges and universities included in this study are:

University of Utah (main campus) – Salt Lake City
Utah Valley University – Orem
Utah State University (main campus) – Logan
Utah State University (CEU) - Price
Weber State University (main campus) – Ogden
Southern Utah University – Cedar City
Snow College – Ephraim
Dixie State College – St. George
Salt Lake Community College – Redwood Taylorsville Campus, South Salt Lake Campus, Jordan Campus, Miller Campus, Meadowbrook Campus

Costs are based on Salt Lake City construction costs as established by Construction Control Corporation's data base. Unit costs are adjusted 5% for remote location factors for Southern Utah University and Dixie State College, and 10% for Utah State University (CEU) and Snow College.

Unit prices also include markups for the following:

Normal subcontractor construction cost
Plus
10% Design and administration fee
Plus
10% General contractor overhead and profit
Plus
10% Contingency

All costs are based on current dollars. No inflation is included in this study.

All campuses were visited by representatives of Construction Control Corporation. Facility representatives were interviewed. Facility utility systems were physically viewed and discussed.

The inventories established by the university facilities groups were entered into a master Excel spreadsheet.

Life expectancies for the various systems were established as follows:

Utility tunnels	50-75 years
Boilers & heating plant equipment	30-50 years
Steam lines	25-50 years
Condensate lines	25 years
Pump lines	15-30 years
Electrical switch gear	40 years
Electrical substation & distribution	40 years
Storm water systems	50-60 years
Smaller boilers & pumps	30 years
Chillers – large	20-25 years
Chillers – smaller	20 years
Controls systems	20 years
Chilled water systems	50 years
Sanitary sewer systems	60 years
Culinary water systems	50-60 years
Gas lines	50 years
Solar electrical systems	15 years

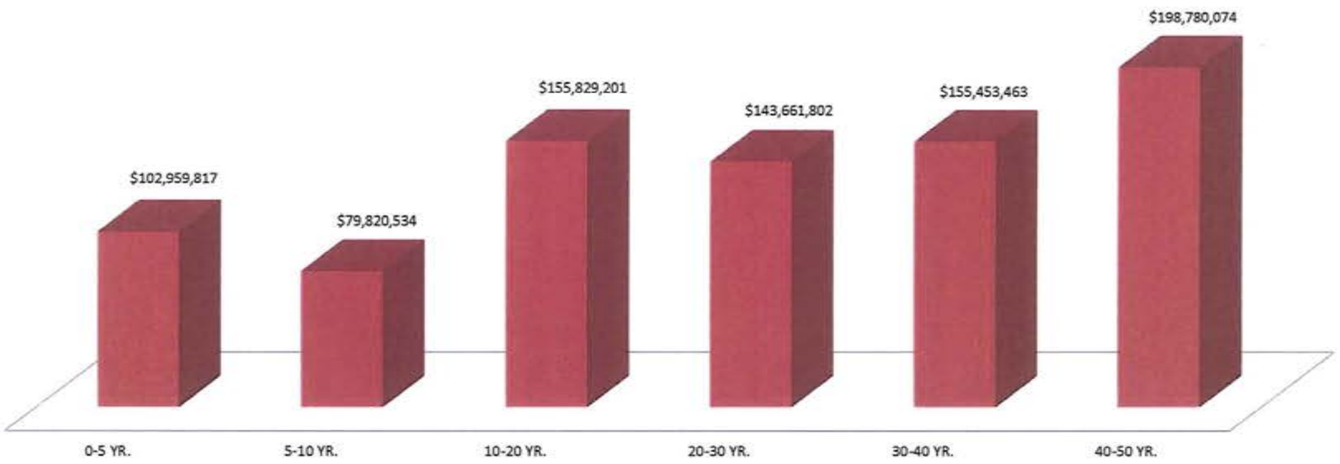
The unit pricing was established as discussed above and the spreadsheets were completed. The spreadsheets were then sent to the USHE, who reviewed the spreadsheets and sent them to the various universities for their review. Following this review, minor changes were made and Construction Control Corporation's report was incorporated into the final report submitted to the Utah Legislature by the USHE.

Signed:

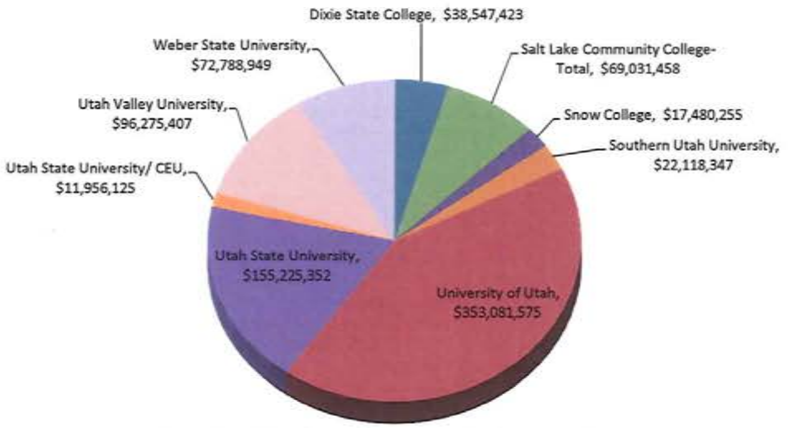
Kenneth W. Ament
President

Kris A. Larson, CPE
Senior Estimator

USHE Utilities Infrastructure Assessment

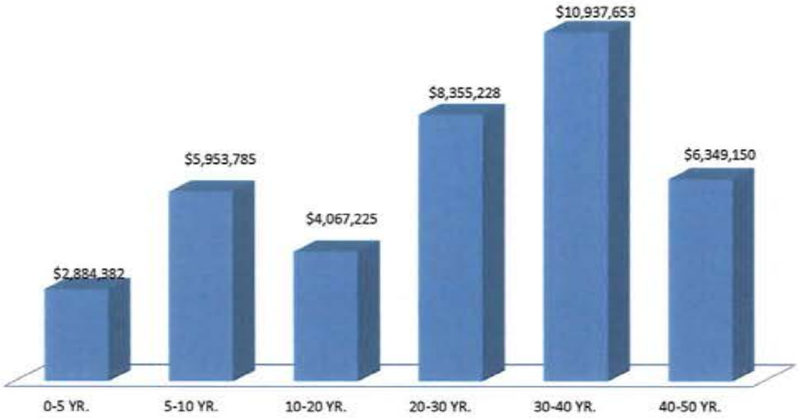


50 Year Replacement Cost- All Utilities
Total - $836,504,891

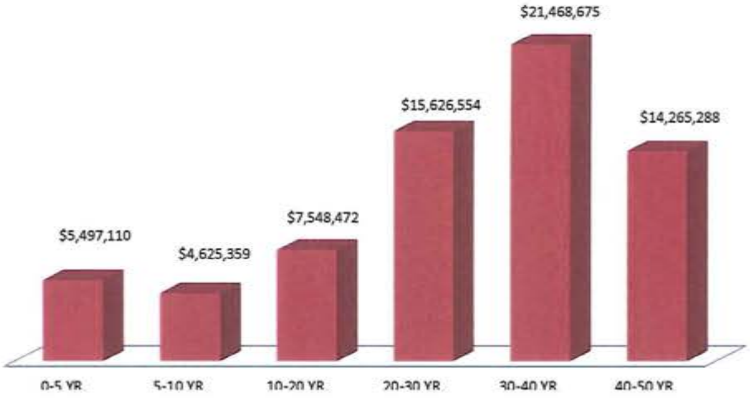


Total 50 Year Replacement Cost- By School

Dixie State College



Salt Lake Community College - All Locations

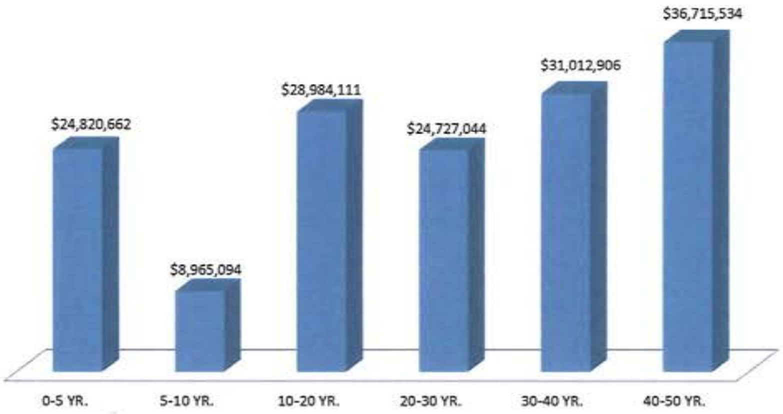


Snow College

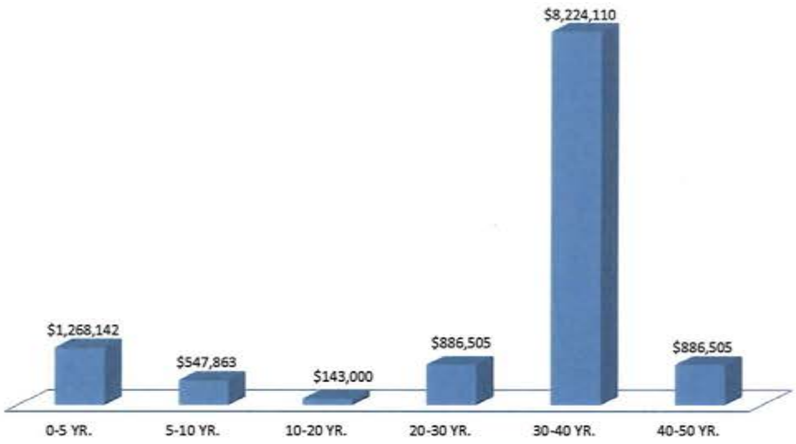
Southern Utah University

University of Utah

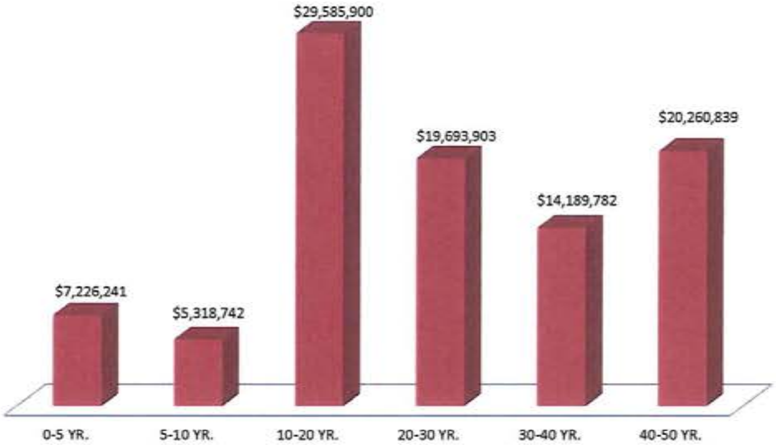
Utah State University



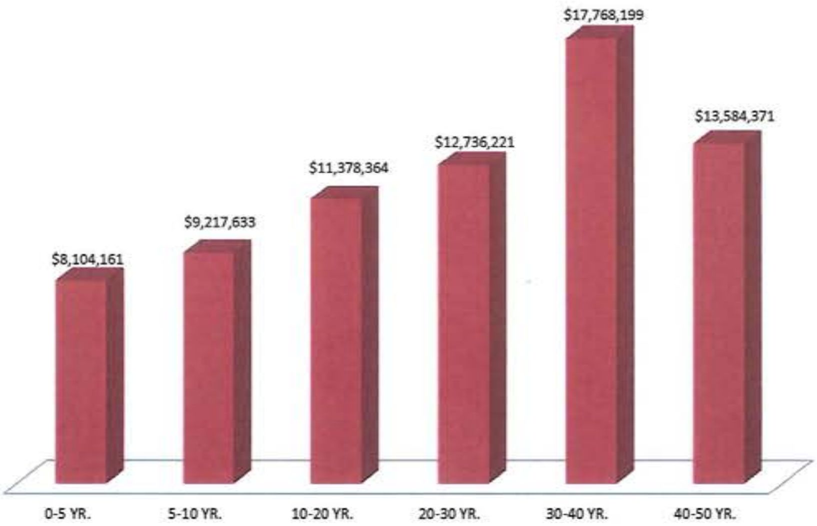
Utah State University/ College of Eastern Utah



UVU



Weber State University



Utah State Higher Education Utilities Infrastructure Assessment

Summary Page

DESCRIPTION	TOTAL 50 YR. REPLACEMENT COST		0-5 YR.	5-10 YR.	10-20 YR.	20-30 YR.	30-40 YR.	40-50 YR.	50+ YR. (Not Included)
Total to Budget	**$836,504,891**		**$102,959,817**	**$ 79,820,534**	**$155,829,201**	**$143,661,802**	**$155,453,463**	**$198,780,074**	**$ 56,411,426**
Dixie State College	**$ 38,547,423**		**$ 2,884,382**	**$ 5,953,785**	**$ 4,067,225**	**$ 8,355,228**	**$ 10,937,653**	**$ 6,349,150**	**$ 68,250**
Salt Lake Community College-Total	**$ 69,031,458**		**$ 5,497,110**	**$ 4,625,359**	**$ 7,548,472**	**$ 15,626,554**	**$ 21,468,675**	**$ 14,265,288**	**$ 9,367,228**
Taylorsville Redwood Campus	$ 45,955,426		$ 5,056,111	$ 2,433,219	$ 3,755,968	$ 11,737,674	$ 14,410,389	$ 8,562,063	$ 4,736,979
South City Campus	$ 7,498,410		$ 432,632	$ 185,591	$ 2,308,042	$ 583,809	$ 2,451,514	$ 1,536,821	$ 43,095
Jordan Campus	$ 14,128,838		$ 4,467	$ 1,900,854	$ 1,204,819	$ 3,160,350	$ 4,454,908	$ 3,403,440	$ 4,587,154
Miller Campus	$ 1,049,105		$ -	$ 94,080	$ 3,900	$ 97,980	$ 94,080	$ 759,064	$ -
Meadowbrook Campus	$ 399,680		$ 3,900	$ 11,614	$ 275,743	$ 46,740	$ 57,783	$ 3,900	$ -
Snow College	**$ 17,480,255**		**$ -**	**$ -**	**$ 3,118,367**	**$ 1,455,425**	**$ 5,117,681**	**$ 7,788,781**	**$ 71,500**
Southern Utah University	**$ 22,118,347**		**$ 1,895,032**	**$ 141,292**	**$ 8,093,856**	**$ 5,574,978**	**$ 5,134,454**	**$ 1,278,736**	**$ 8,664,767**
University of Utah	**$353,081,575**		**$ 51,264,088**	**$45,050,765**	**$ 62,909,906**	**$ 54,605,944**	**$ 41,600,003**	**$ 97,650,870**	**$ 5,791,322**
Utah State University	**$155,225,352**		**$ 24,820,662**	**$ 8,965,094**	**$ 28,984,111**	**$ 24,727,044**	**$ 31,012,906**	**$ 36,715,534**	**$ 26,691,106**
Utah State University/ CEU	**$ 11,956,125**		**$ 1,268,142**	**$ 547,863**	**$ 143,000**	**$ 886,505**	**$ 8,224,110**	**$ 886,505**	**$ 1,553,981**
Utah Valley University	**$ 96,275,407**		**$ 7,226,241**	**$ 5,318,742**	**$ 29,585,900**	**$ 19,693,903**	**$ 14,189,782**	**$ 20,260,839**	**$ 1,261,346**
Weber State University	**$ 72,788,949**		**$ 8,104,161**	**$ 9,217,633**	**$ 11,378,364**	**$ 12,736,221**	**$ 17,768,199**	**$ 13,584,371**	**$ 2,941,926**

FACILITY ASSESSMENT **CONSTRUCTION CONTROL CORPORATION** 1/11/2013

FACILITY...................**Dixie State College Utilities Infrastructure Assessment**
LOCATION...................St. George, UT

DESCRIPTION	QTY	UNIT	REPLACEMENT UNIT COST	TOTAL 50 YR. REPLACEMENT COST	YEAR INSTALLED	EXPECTED LIFE (YRS.)	PROJECTED REPLACEMENT DATE	0-5 YR.	5-10 YR.	10-20 YR.	20-30 YR.	30-40 YR	40-50 YR.	50+ YR. (First Replacement Cost)
Total to Budget				**$ 38,547,423**				**$ 2,884,382**	**$ 5,953,785**	**$ 4,067,225**	**$ 8,355,228**	**$ 10,937,653**	**$ 6,349,150**	**$ 68,250**
Substations & Electrical Distribution				$ 3,082,771				$ -	$ -	$ -	$ 3,082,771	$ -	$ -	$ -
3 Way Switch - Oil Enviro-temp 200	1	EA	$ 49,549.50	$ 49,550	1999	40	2039				$ 49,550			
4 Way Switch - Oil Enviro-temp 200	1	EA	$ 61,561.50	$ 61,562	1999	40	2039				$ 61,562			
5 Way Switch - SF 6 Gas	1	EA	$ 74,324.25	$ 74,324	1999	40	2039				$ 74,324			
3 Way Sectionalized Switch	1	EA	$ 51,651.60	$ 51,652	1999	40	2039				$ 51,652			
4 Way Sectionalized Switch	1	EA	$ 51,651.60	$ 51,652	1999	40	2039				$ 51,652			
5 Way Sectionalized Switch	1	EA	$ 51,651.60	$ 51,652	1999	40	2039				$ 51,652			
Duct Bank	11,062	LF	$ 177.18	$ 1,959,932	1999	40	2039				$ 1,959,932			
2/0	33,186	LF	$ 11.11	$ 368,663	1999	40	2039				$ 368,663			
350 MCM	5,000	LF	$ 22.52	$ 112,613	1999	40	2039				$ 112,613			
500 MCM	5,000	LF	$ 27.98	$ 139,913	1999	40	2039				$ 139,913			
150 KV Transformer	1	EA	$ 19,969.95	$ 19,970	1999	40	2039				$ 19,970			
225 KV Transformer	2	EA	$ 26,726.70	$ 53,453	1999	40	2039				$ 53,453			
300 KV Transformer	1	EA	$ 31,981.95	$ 31,982	1999	40	2039				$ 31,982			
500 KV Transformer	2	EA	$ 39,789.75	$ 79,580	1999	40	2039				$ 79,580			
750 KV Transformer	2	EA	$ 49,849.80	$ 99,700	1999	40	2039				$ 99,700			
1000 KV Transformer	1	EA	$ 59,759.70	$ 59,760	1999	40	2039				$ 59,760			
1500 KV Transformer	1	EA	$ 69,369.30	$ 69,369	1999	40	2039				$ 69,369			
2000 KV Transformer	1	EA	$ 84,834.75	$ 84,835	1999	40	2039				$ 84,835			
Digital Meter	1	EA	$ 1,501.50	$ 1,502	1999	40	2039				$ 1,502			
Electro-Mechanical Meter	1	EA	$ 1,501.50	$ 1,502	1999	40	2039				$ 1,502			
Central Plant Heating Production				$ 6,262,000				$ 2,252,250	$ 2,574,254	$ 29,130	$ 401,261	$ 975,975	$ 29,130	$ -
Central Plant Building	5,000	SF	$ 255.26	$ 1,276,275	1959	50	2009	$ 1,276,275						
Heating Plant Generator	1	Ea	$ 121,621.50	$ 121,622	2004	30	2034				$ 121,622			
Heating Plant East Generator	1	Ea	$ 121,621.50	$ 121,622	1989	30	2019, 2049		$ 121,622					
Heating Plant Boiler	4	Ea	$ 613,158.00	$ 2,452,632	1992	30	2022, 2052		$ 2,452,632					
Burns Arena Boiler	2	Ea	$ 465,465.00	$ 930,930	1986	30	2016, 2046	$ 930,930				$ 930,930		
Burns Arena Oil Burner	2	Ea	$ 22,522.50	$ 45,045	1986	30	2016, 2046	$ 45,045				$ 45,045		
Heating Pump	2	Ea	$ 7,282.28	$ 14,565	2002	30	2032, 2062			$ 14,565			$ 14,565	
Drives Heating Pump	2	Ea	$ 7,282.28	$ 14,565	2002	30	2032, 2062			$ 14,565			$ 14,565	
HTWP	4	Ea	$ 69,909.84	$ 279,639	2012	30	2042				$ 279,639			
Central Plant Chilled Water Production				$ 15,445,375				$ 632,132	$ 3,379,531	$ 1,775,103	$ 3,941,753	$ 1,775,103	$ 3,941,753	$ -
Chiller	3	Ea	$ 594,594.00	$ 1,783,782	1998	20	2018, 2038, 2058		$ 1,783,782		$ 1,783,782		$ 1,783,782	
Chiller	1	Ea	$ 594,594.00	$ 594,594	2011	20	2031, 2051			$ 594,594		$ 594,594		
Chiller	1	Ea	$ 594,594.00	$ 594,594	2004	20	2024, 2044			$ 594,594		$ 594,594		
Chiller	1	Ea	$ 594,594.00	$ 594,594	1996	20	2016, 2036, 2056	$ 594,594			$ 594,594		$ 594,594	
Chiller	2	Ea	$ 594,594.00	$ 1,189,188	2002	20	2022, 2042, 2062		$ 1,189,188		$ 1,189,188		$ 1,189,188	
Cooling Tower	1	Ea	$ 201,201.00	$ 201,201	2002	20	2022, 2042, 2062		$ 201,201		$ 201,201		$ 201,201	
Cooling Tower	2	Ea	$ 201,201.00	$ 402,402	2011	20	2031, 2051			$ 402,402		$ 402,402		
Boiler Balance Tank	1	Ea	$ 37,537.50	$ 37,538	1959	20	2013, 2033, 2053	$ 37,538			$ 37,538		$ 37,538	
Chilled Water Pump 1	1	Ea	$ 69,909.84	$ 69,910	2004	20	2024, 2044			$ 69,910		$ 69,910		
Chilled Water Pump 2	1	Ea	$ 69,909.84	$ 69,910	2012	20	2032, 2052			$ 69,910		$ 69,910		
Chilled Water Pump 3	1	Ea	$ 69,909.84	$ 69,910	1998	20	2018, 2038, 2058		$ 69,910		$ 69,910		$ 69,910	
Drives Pump Motor	1	Ea	$ 7,282.28	$ 7,282	2012	20	2032, 2052			$ 7,282		$ 7,282		
Chilled Water Pump	1	Ea	$ 7,282.28	$ 7,282	1998	20	2018, 2038, 2058		$ 7,282		$ 7,282		$ 7,282	
Drives Pump Motor	1	Ea	$ 7,282.28	$ 7,282	2002	20	2022, 2042, 2062		$ 7,282		$ 7,282		$ 7,282	
Condenser Pump	1	Ea	$ 7,282.28	$ 7,282	2012	20	2032, 2052			$ 7,282		$ 7,282		
Drives Pump Motor	1	Ea	$ 7,282.28	$ 7,282	2002	20	2022, 2042, 2062		$ 7,282		$ 7,282		$ 7,282	
Condenser Pump	1	Ea	$ 7,282.28	$ 7,282	2002	20	2022, 2042, 2062		$ 7,282		$ 7,282		$ 7,282	

FACILITY....................Dixie State College Utilities Infrastructure Assessment
LOCATION.......................St. George, UT

DESCRIPTION	QTY	UNIT	REPLACEMENT UNIT COST	TOTAL 50 YR. REPLACEMENT COST	YEAR INSTALLED	EXPECTED LIFE (YRS.)	PROJECTED REPLACEMENT DATE	0-5 YR	5-10 YR.	10-20 YR.	20-30 YR.	30-40 YR.	40-50 YR.	50+ YR. (First Replacement Cost)
Drives Pump Motor	1	Ea	$ 7,282.28	$ 7,282	2004	20	2024, 2044			$ 7,282		$ 7,282		
Condenser Pump	1	Ea	$ 7,282.28	$ 7,282	2004	20	2024, 2044			$ 7,282		$ 7,282		
Drives Pump Motor	1	Ea	$ 7,282.28	$ 7,282	2002	20	2022, 2042, 2062		$ 7,282		$ 7,282		$ 7,282	
Condenser Water Circ.	1	Ea	$ 7,282.28	$ 7,282	2002	20	2022, 2042, 2062		$ 7,282		$ 7,282		$ 7,282	
Condenser Pump	1	Ea	$ 7,282.28	$ 7,282	2002	20	2022, 2042, 2062		$ 7,282		$ 7,282		$ 7,282	
Drives Condenser Pump	1	Ea	$ 7,282.28	$ 7,282	2002	20	2022, 2042, 2062		$ 7,282		$ 7,282		$ 7,282	
Chilled Water Motor 2	1	Ea	$ 7,282.28	$ 7,282	2002	20	2022, 2042, 2062		$ 7,282		$ 7,282		$ 7,282	
CHWP 2	1	Ea	$ 69,909.84	$ 69,910	2002	20	2022, 2042, 2062		$ 69,910					
Condenser Motor 5	1	Ea	$ 7,282.28	$ 7,282	2011	20	2031, 2051			$ 7,282		$ 7,282		
Condenser Pump 5	1	Ea	$ 7,282.28	$ 7,282	2011	20	2031, 2051			$ 7,282		$ 7,282		
Steam/Chilled Water Distribution				**$ 3,170,811**				**$ -**	**$ -**	**$ 1,527,666**	**$ 194,117**	**$ 282,132**	**$ 1,166,897**	**$ -**
12" Piping - In Tunnel	754	LF	$ 285.29	$ 215,105	2011	50	2061						$ 215,105	
10" Piping - In Tunnel	474	LF	$ 262.08	$ 124,226	2011	50	2061						$ 124,226	
8" Piping - In Tunnel	2,796	LF	$ 227.27	$ 635,454	2011	50	2061						$ 635,454	
6" Piping - In Tunnel	1,708	LF	$ 208.57	$ 356,241	2011	50	2061						$ 356,241	
6" Piping - In Tunnel	512	LF	$ 208.57	$ 106,789	1993	50	2043					$ 106,789		
6" Piping - In Tunnel	1,080	LF	$ 208.57	$ 225,258	1979	50	2029			$ 225,258				
6" Piping - In Tunnel	604	LF	$ 208.57	$ 125,977	1978	50	2028			$ 125,977				
6" Piping - In Tunnel	604	LF	$ 208.57	$ 125,977	1975	50	2025			$ 125,977				
4" Piping - In Tunnel	788	LF	$ 191.92	$ 151,232	1993	50	2043					$ 151,232		
4" Piping - In Tunnel	450	LF	$ 191.92	$ 86,364	1988	50	2038				$ 86,364			
4" Piping - In Tunnel	1,820	LF	$ 191.92	$ 349,293	1979	50	2029			$ 349,293				
4" Piping - In Tunnel	738	LF	$ 191.92	$ 141,636	1978	50	2028			$ 141,636				
4" Piping - In Tunnel	738	LF	$ 191.92	$ 141,636	1975	50	2025			$ 141,636				
<4" Piping - In Tunnel	138	LF	$ 174.72	$ 24,111	1993	50	2043					$ 24,111		
<4" Piping - In Tunnel	450	LF	$ 174.72	$ 78,624	1988	50	2038				$ 78,624			
<4" Piping - In Tunnel	946	LF	$ 174.72	$ 165,285	1979	50	2029			$ 165,285				
<4" Piping - In Tunnel	1,014	LF	$ 174.72	$ 177,166	1978	50	2028			$ 177,166				
<4" Piping - In Tunnel	140	LF	$ 174.72	$ 24,461	1975	50	2025			$ 24,461				
District Pump	1	EA	$ 7,282.28	$ 7,282	2012	30	2042				$ 7,282			
District Pump	2	EA	$ 7,282.28	$ 14,565	2011	30	2041				$ 14,565			
Drives C/W Pump	4	EA	$ 7,282.28	$ 29,129	2002	30	2032, 2062			$ 29,129			$ 29,129	
Pumps to Smith/Cox	2	EA	$ 7,282.28	$ 14,565	2002	30	2032, 2062			$ 14,565			$ 14,565	
Pumps to Burns/Eccles	1	EA	$ 7,282.28	$ 7,282	2002	30	2032, 2062			$ 7,282			$ 7,282	
Pumps C/W to Burns/Eccles	1	EA	$ 7,282.28	$ 7,282	2012	30	2042				$ 7,282			
Fiber-Optic				**$ 2,001,229**				**$ -**	**$ -**	**$ 667,076**	**$ 667,076**	**$ -**	**$ 667,076**	**$ -**
Fiber Optic Backbone	28,451	LF	$ 23.45	$ 667,076	2010	15	2025, 2040, 2055			$ 667,076	$ 667,076		$ 667,076	
Culinary Water Production & Distribution				**$ 273,000**				**$ -**	**$ -**	**$ 68,250**	**$ 68,250**	**$ 68,250**	**$ 68,250**	**$ 68,250**
10 Yr. Allowance										$ 68,250	$ 68,250	$ 68,250	$ 68,250	$ 68,250
Tunnels (Including Pipe Rack and Cable Tray)				**$ 7,836,192**				**$ -**	**$ -**	**$ -**	**$ -**	**$ 7,836,192**	**$ -**	**$ -**
Tunnel Allowance (Average Age)	3,200	LF	$ 2,448.81	$ 7,836,192	1993	50	2043					$ 7,836,192		
Sanitary Waste				**$ 232,050**				**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 232,050**	**$ -**
12" Sewer Pipe Allowance	2,000	LF	$ 88.73	$ 177,450	1993	60	2053						$ 177,450	
Manhole Allowance	10	EA	$ 5,460.00	$ 54,600	1993	60	2053						$ 54,600	
Storm Water				**$ 243,994**				**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 243,994**	**$ -**
18" SD Pipe Allowance	2,500	LF	$ 78.49	$ 196,219	1993	60	2053						$ 196,219	
Catch Basin Allowance	10	EA	$ 4,777.50	$ 47,775	1993	60	2053						$ 47,775	

FACILITY ASSESSMENT **CONSTRUCTION CONTROL CORPORATION** **1/11/2013**

FACILITY.................. **Salt Lake Community College Utilities Infrastructure Assessment Summary**
LOCATION................Salt Lake City, UT

DESCRIPTION	TOTAL 50 YR. REPLACEMENT COST		0-5 YR.	5-10 YR.	10-20 YR.	20-30 YR.	30-40 YR.	40-50 YR.	50+ YR. (First Replacement Cost)
Total SLCC Budget	**$ 69,031,458**		**$ 5,497,110**	**$ 4,625,359**	**$ 7,548,472**	**$ 15,626,554**	**$ 21,468,675**	**$ 14,265,288**	**$ 9,367,228**
Taylorsville Redwood Campus	**$ 45,955,426**		**$ 5,056,111**	**$ 2,433,219**	**$ 3,755,968**	**$ 11,737,674**	**$ 14,410,389**	**$ 8,562,063**	**$ 4,736,979**
South City Campus	**$ 7,498,410**		**$ 432,632**	**$ 185,591**	**$ 2,308,042**	**$ 583,809**	**$ 2,451,514**	**$ 1,536,821**	**$ 43,095**
Jordan Campus	**$ 14,128,838**		**$ 4,467**	**$ 1,900,854**	**$ 1,204,819**	**$ 3,160,350**	**$ 4,454,908**	**$ 3,403,440**	**$ 4,587,154**
Miller Campus	**$ 1,049,105**		**$ -**	**$ 94,080**	**$ 3,900**	**$ 97,980**	**$ 94,080**	**$ 759,064**	**$ -**
Meadowbrook Campus	**$ 399,680**		**$ 3,900**	**$ 11,614**	**$ 275,743**	**$ 46,740**	**$ 57,783**	**$ 3,900**	**$ -**

FACILITY....................SLCC Taylorsville Redwood Campus Utilities Infrastructure Assessment
LOCATION.......................Salt Lake City, UT

DESCRIPTION	QTY	UNIT	REPLACEMENT UNIT COST	TOTAL 50 YR. REPLACEMENT COST	YEAR INSTALLED	EXPECTED LIFE (YRS.)	PROJECTED REPLACEMENT DATE	0-5 YR.	5-10 YR.	10-20 YR.	20-30 YR.	30-40 YR.	40-50 YR.	50+ YR. (First Replacement Cost)
Total to Budget				**$ 45,955,426**				**$ 5,056,111**	**$ 2,433,219**	**$ 3,755,968**	**$ 11,737,674**	**$ 14,410,389**	**$ 8,562,063**	**$ 4,736,979**
Heating Production				**$ 5,105,536**				**$ 375,167**	**$ 11,440**	**$ 1,164,335**	**$ 204,204**	**$ 2,196,301**	**$ 1,154,088**	**$ -**
Central Plant Building	9,000	SF	$ 243.10	$ 2,187,900	1993	50	2043					$ 2,187,900		
500 HP Boiler	1	EA	$ 392,392.00	$ 392,392	2001	30	2031, 2061			$ 392,392			$ 392,392	
500 HP Boiler	1	EA	$ 392,392.00	$ 392,392	2001	30	2031, 2061			$ 392,392			$ 392,392	
200 HP Boiler	1	EA	$ 165,100.00	$ 165,100	1971	30	2001, 2031, 2061	$ 165,100		$ 165,100			$ 165,100	
250 HP Boiler	1	EA	$ 198,900.00	$ 198,900	2001	30	2031, 2061			$ 198,900				
Surge Tank	1	EA	$ 7,150.00	$ 7,150	1993	30	2023, 2053			$ 7,150				
Boiler Air Compressors	4	EA	$ 2,860.00	$ 11,440	2001	20	2021, 2041, 2061		$ 11,440					
1/3 HP Condensate Receiver Pump	2	EA	$ 2,216.50	$ 4,433	1972	20	2013, 2033, 2053	$ 4,433			$ 4,433		$ 4,433	
5 HP Condensate Receiver Pump	2	EA	$ 5,434.00	$ 10,868	1972	20	2013, 2033, 2053	$ 10,868			$ 10,868		$ 10,868	
2 HP Condensate Receiver Pump	2	EA	$ 3,789.50	$ 7,579	1973	20	2013, 2033, 2053	$ 7,579			$ 7,579		$ 7,579	
1.5 HP Condensate Receiver Pump	2	EA	$ 3,503.50	$ 7,007	1996	20	2016, 2036, 2056	$ 7,007			$ 7,007		$ 7,007	
3/4 HP Condensate Receiver Pump	1	EA	$ 2,538.25	$ 2,538	2007	20	2027, 2047			$ 2,538		$ 2,538		
1.5 HP Condensate Receiver Pump	2	EA	$ 3,503.50	$ 7,007	1967	20	2013, 2033, 2053	$ 7,007			$ 7,007		$ 7,007	
1/3 HP Condensate Receiver Pump	1	EA	$ 2,216.50	$ 2,217	1967	20	2013, 2033, 2053	$ 2,217			$ 2,217		$ 2,217	
1 HP Condensate Receiver Pump	2	EA	$ 2,574.00	$ 5,148	1995	20	2015, 2035, 2055	$ 5,148			$ 5,148		$ 5,148	
1/2 HP Condensate Receiver Pump	2	EA	$ 1,966.25	$ 3,933	1995	20	2015, 2035, 2055	$ 3,933			$ 3,933		$ 3,933	
1.5 HP Condensate Receiver Pump	2	EA	$ 3,110.25	$ 6,221	1995	20	2015, 2035, 2055	$ 6,221			$ 6,221		$ 6,221	
1 HP Condensate Receiver Pump	2	EA	$ 2,574.00	$ 5,148	1966	20	2013, 2033, 2053	$ 5,148			$ 5,148		$ 5,148	
1 HP Condensate Receiver Pump	2	EA	$ 2,574.00	$ 5,148	1992	20	2012, 2032, 2052	$ 5,148		$ 5,148		$ 5,148		
2 HP Condensate Receiver Pump	2	EA	$ 3,789.50	$ 7,579	1985	20	2013, 2033, 2053	$ 7,579			$ 7,579		$ 7,579	
3 HP Condensate Receiver Pump	2	EA	$ 4,218.50	$ 8,437	1972	20	2013, 2033, 2053	$ 8,437			$ 8,437		$ 8,437	
1.5 HP Condensate Receiver Pump	2	EA	$ 3,503.50	$ 7,007	1995	20	2015, 2035, 2055	$ 7,007			$ 7,007		$ 7,007	
Steam Flow Meter	1	EA	$ 715.00	$ 715	1992	20	2012, 2032, 2052	$ 715		$ 715		$ 715		
25,000 Gal. Diesel Fuel Tank for Boilers	1	EA	$ 97,240.00	$ 97,240	1971	30	2013, 2033, 2053	$ 97,240			$ 97,240		$ 97,240	
Fuel Controller, Flow Meter	1	EA	$ 715.00	$ 715	1971	30	2013, 2033, 2053	$ 715			$ 715		$ 715	
1/3 HP Fuel Tank Pump	1	EA	$ 2,216.50	$ 2,217	1971	30	2013, 2033, 2053	$ 2,217			$ 2,217		$ 2,217	
De-Aerator	1	EA	$ 21,450.00	$ 21,450	1971	30	2013, 2033, 2053	$ 21,450			$ 21,450		$ 21,450	
Chilled Water Production				**$ 10,681,499**				**$ 1,524,380**	**$ 831,345**	**$ 1,440,439**	**$ 2,355,725**	**$ 1,440,439**	**$ 3,089,172**	**$ -**
700 Ton Chiller	1	EA	$ 566,280.00	$ 566,280	1999	20	2019, 2039, 2059		$ 566,280		$ 566,280		$ 566,280	
700 Ton Chiller	1	EA	$ 566,280.00	$ 566,280	2003	20	2023, 2043, 2063			$ 566,280		$ 566,280	$ 566,280	
Chiller #3	1	EA	$ 286,000.00	$ 286,000	2007	20	2027, 2047			$ 286,000		$ 286,000		
185 Ton Chiller	1	EA	$ 220,220.00	$ 220,220	1995	20	2015, 2035, 2055	$ 220,220			$ 220,220		$ 220,220	
600-700 Ton Chiller	1	EA	$ 566,280.00	$ 566,280	1995	20	2015, 2035, 2055	$ 566,280			$ 566,280		$ 566,280	
300 Ton Chiller	1	EA	$ 213,427.50	$ 213,428	1995	20	2015, 2035, 2055	$ 213,428			$ 213,428		$ 213,428	
Cooling Tower	1	EA	$ 191,620.00	$ 191,620	1999	20	2019, 2039, 2059		$ 191,620		$ 191,620		$ 191,620	
Cooling Tower	1	EA	$ 191,620.00	$ 191,620	2012	20	2032, 2052			$ 191,620		$ 191,620		
30 HP Cooling Tower	1	EA	$ 138,710.00	$ 138,710	1995	20	2015, 2035, 2055	$ 138,710			$ 138,710		$ 138,710	
15 HP Cooling Tower	1	EA	$ 77,220.00	$ 77,220	1995	20	2015, 2035, 2055	$ 77,220			$ 77,220		$ 77,220	
20 HP Chilled Water Loop Pump	1	EA	$ 25,454.00	$ 25,454	1995	20	2015, 2035, 2055	$ 25,454			$ 25,454		$ 25,454	
Chilled Water Loop Pump	1	EA	$ 25,454.00	$ 25,454	2012	20	2032, 2052			$ 25,454		$ 25,454		
7.5 HP CHWS Pump	1	EA	$ 6,935.50	$ 6,936	1992	20	2013, 2033, 2053	$ 6,936			$ 6,936		$ 6,936	
60 HP CHWS Pump	1	EA	$ 66,580.80	$ 66,581	1999	20	2019, 2039, 2059		$ 66,581		$ 66,581		$ 66,581	
75 HP CHWS Pump	2	EA	$ 83,226.00	$ 166,452	2007	20	2027, 2047			$ 166,452		$ 166,452		
60 HP VFD	1	EA	$ 14,443.00	$ 14,443	2007	20	2027, 2047			$ 14,443		$ 14,443		
75 HP VFD	1	EA	$ 16,159.00	$ 16,159	2007	20	2027, 2047			$ 16,159		$ 16,159		
25 HP Condenser Water Pump	2	EA	$ 27,742.00	$ 55,484	1995	20	2015, 2035, 2055	$ 55,484			$ 55,484		$ 55,484	
10 HP Condenser Water Pump	2	EA	$ 21,021.00	$ 42,042	1992	20	2013, 2033, 2053	$ 42,042			$ 42,042		$ 42,042	
75 HP Condenser Water Pump	2	EA	$ 83,226.00	$ 166,452	2003	20	2023, 2043, 2063			$ 166,452		$ 166,452	$ 166,452	
Condenser Water Pump	2	EA	$ 83,226.00	$ 166,452	1995	20	2015, 2035, 2055	$ 166,452			$ 166,452		$ 166,452	
Pressure Gauges	7	EA	$ 715.00	$ 5,005	1995	20	2015, 2035, 2055	$ 5,005			$ 5,005		$ 5,005	
BTU Meter	1	EA	$ 715.00	$ 715	2003	20	2023, 2043, 2063			$ 715		$ 715	$ 715	
Expansion Tank	1	EA	$ 7,150.00	$ 7,150	1971	20	2013, 2033, 2053	$ 7,150			$ 7,150		$ 7,150	
40 HP Compressor	2	EA	$ 2,860.00	$ 5,720	2010	10	2020, 2030, 2040, 2050, 2060		$ 5,720	$ 5,720	$ 5,720	$ 5,720	$ 5,720	
TC44 Air Dryer	1	EA	$ 429.00	$ 429	2010	10	2020, 2030, 2040, 2050, 2060		$ 429	$ 429	$ 429	$ 429	$ 429	
500 Gal. Air Tank	1	EA	$ 715.00	$ 715	2010	10	2020, 2030, 2040, 2050, 2060		$ 715	$ 715	$ 715	$ 715	$ 715	

FACILITY..................SLCC Taylorsville Redwood Campus Utilities Infrastructure Assessment
LOCATION..................Salt Lake City, UT

DESCRIPTION	QTY	UNIT	REPLACEMENT UNIT COST	TOTAL 50 YR. REPLACEMENT COST	YEAR INSTALLED	EXPECTED LIFE (YRS.)	PROJECTED REPLACEMENT DATE	0-5 YR.	5-10 YR.	10-20 YR.	20-30 YR.	30-40 YR.	40-50 YR.	50+ YR. (First Replacement Cost)
Hot Water/Chilled Water Distribution				**$ 4,022,565**				**$ 1,310,942**	**$ -**	**$ 442,199**	**$ 450,902**	**$ 507,580**	**$ 1,310,942**	**$ -**
4" Steam Lines in Tunnels	840	LF	$ 182.78	$ 153,535	2007	40	2047					$ 153,535		
4" Steam Lines in Tunnels	1,060	LF	$ 182.78	$ 193,747	1966	40	2013, 2053	$ 193,747					$ 193,747	
4" Steam Lines in Tunnels	175	LF	$ 182.78	$ 31,987	1985	40	2025			$ 31,987				
4" Steam Lines in Tunnels	100	LF	$ 182.78	$ 18,278	1973	40	2013, 2053	$ 18,278					$ 18,278	
4" Steam Lines in Tunnels	665	LF	$ 182.78	$ 121,549	1967	40	2013, 2053	$ 121,549					$ 121,549	
6" Steam Lines in Tunnels	935	LF	$ 198.64	$ 185,728	1972	40	2013, 2053	$ 185,728					$ 185,728	
6" Steam Lines in Tunnels	260	LF	$ 198.64	$ 51,646	1985	40	2025			$ 51,646				
6" Steam Lines in Tunnels	550	LF	$ 198.64	$ 109,252	1995	40	2035				$ 109,252			
6" Steam Lines in Tunnels	275	LF	$ 198.64	$ 54,626	1967	40	2013, 2053	$ 54,626					$ 54,626	
6" Steam Lines in Tunnels	450	LF	$ 198.64	$ 89,388	1967	40	2013, 2053	$ 89,388					$ 89,388	
8" Steam Lines in Tunnels	135	LF	$ 216.45	$ 29,221	1966	40	2013, 2053	$ 29,221					$ 29,221	
8" Steam Lines in Tunnels	410	LF	$ 216.45	$ 88,745	1992	40	2032			$ 88,745				
6" Chilled Water Lines in Tunnels	450	LF	$ 198.64	$ 89,388	1985	40	2025			$ 89,388				
6" Chilled Water Lines in Tunnels	300	LF	$ 198.64	$ 59,592	1985	40	2025			$ 59,592				
6" Chilled Water Lines in Tunnels	390	LF	$ 198.64	$ 77,470	2007	40	2047					$ 77,470		
6" Chilled Water Lines in Tunnels	290	LF	$ 198.64	$ 57,606	1995	40	2035				$ 57,606			
6" Chilled Water Lines in Tunnels	330	LF	$ 198.64	$ 65,551	1973	40	2013, 2053	$ 65,551					$ 65,551	
8" Chilled Water Lines in Tunnels	235	LF	$ 216.45	$ 50,866	1972	40	2013, 2053	$ 50,866					$ 50,866	
8" Chilled Water Lines in Tunnels	400	LF	$ 216.45	$ 86,580	2007	40	2047					$ 86,580		
8" Chilled Water Lines in Tunnels	560	LF	$ 216.45	$ 121,212	1995	40	2035				$ 121,212			
1" Condensate Lines in Tunnels	790	LF	$ 106.60	$ 84,214	2007	40	2047					$ 84,214		
2" Condensate Lines in Tunnels	1,060	LF	$ 119.60	$ 126,776	1966	40	2013, 2053	$ 126,776					$ 126,776	
2" Condensate Lines in Tunnels	175	LF	$ 119.60	$ 20,930	1985	40	2025			$ 20,930				
2" Condensate Lines in Tunnels	200	LF	$ 119.60	$ 23,920	1995	40	2035				$ 23,920			
2.5" Condensate Lines in Tunnels	790	LF	$ 133.90	$ 105,781	2007	40	2047					$ 105,781		
2.5" Condensate Lines in Tunnels	375	LF	$ 133.90	$ 50,213	1967	40	2013, 2053	$ 50,213					$ 50,213	
2.5" Condensate Lines in Tunnels	715	LF	$ 133.90	$ 95,739	1967	40	2013, 2053	$ 95,739					$ 95,739	
2.5" Condensate Lines in Tunnels	350	LF	$ 133.90	$ 46,865	1976	40	2016, 2056	$ 46,865					$ 46,865	
3" Condensate Lines in Tunnels	135	LF	$ 166.40	$ 22,464	1964	40	2013, 2053	$ 22,464					$ 22,464	
3" Condensate Lines in Tunnels	260	LF	$ 166.40	$ 43,264	1985	40	2025			$ 43,264				
4" Condensate Lines in Tunnels	875	LF	$ 182.78	$ 159,933	1972	40	2013, 2053	$ 159,933					$ 159,933	
4" Condensate Lines in Tunnels	760	LF	$ 182.78	$ 138,913	1995	40	2035				$ 138,913			
Steam Valves (Average Age)	17	EA	$ 1,657.50	$ 28,178	1985	40	2025			$ 28,178				
Condensate Valves (Average Age)	16	EA	$ 1,365.00	$ 21,840	1985	40	2025			$ 21,840				
Chilled Water Supply Valves (Average Age)	4	EA	$ 1,657.50	$ 6,630	1985	40	2025			$ 6,630				
Central Control Systems/Fiber				**$ 3,974,690**				**$ -**	**$ 1,324,897**	**$ -**	**$ 1,324,897**	**$ 1,324,897**	**$ -**	**$ -**
3 Strand Multi-Mode	90	LF	$ 7.15	$ 644	2006	15	2021, 2036, 2051		$ 644		$ 644	$ 644		
6 Strand Multi-Mode	8,055	LF	$ 11.17	$ 89,950	2006	15	2021, 2036, 2051		$ 89,950		$ 89,950	$ 89,950		
12 Strand Multi-Mode	6,795	LF	$ 22.33	$ 151,760	2006	15	2021, 2036, 2051		$ 151,760		$ 151,760	$ 151,760		
18 Strand Multi-Mode	120	LF	$ 32.76	$ 3,931	2006	15	2021, 2036, 2051		$ 3,931		$ 3,931	$ 3,931		
24 Strand Multi-Mode	5,245	LF	$ 44.71	$ 234,488	2006	15	2021, 2036, 2051		$ 234,488		$ 234,488	$ 234,488		
36 Strand Multi-Mode	1,825	LF	$ 66.99	$ 122,255	2006	15	2021, 2036, 2051		$ 122,255		$ 122,255	$ 122,255		
42 Strand Multi-Mode	1,235	LF	$ 81.52	$ 100,681	2006	15	2021, 2036, 2051		$ 100,681		$ 100,681	$ 100,681		
72 Strand Multi-Mode	1,685	LF	$ 133.99	$ 225,775	2006	15	2021, 2036, 2051		$ 225,775		$ 225,775	$ 225,775		
3 Strand Single Mode	50	LF	$ 7.15	$ 358	2006	15	2021, 2036, 2051		$ 358		$ 358	$ 358		
6 Strand Single mode	1,815	LF	$ 11.17	$ 20,268	2006	15	2021, 2036, 2051		$ 20,268		$ 20,268	$ 20,268		
12 Strand Single Mode	9,855	LF	$ 22.33	$ 220,102	2006	15	2021, 2036, 2051		$ 220,102		$ 220,102	$ 220,102		
24 Strand Single Mode	3,460	LF	$ 44.71	$ 154,686	2006	15	2021, 2036, 2051		$ 154,686		$ 154,686	$ 154,686		
Tunnels (Including Pipe Rack and Cable Tray)				**$ 7,451,080**				**$ -**	**$ -**	**$ -**	**$ 5,831,280**	**$ 694,200**	**$ 925,600**	**$ 4,688,710**
10 X 8 Tunnel	875	LF	$ 2,574.00	$ 2,252,250	1995	75	2070							$ 2,252,250
10 X 8 Tunnel	790	LF	$ 2,574.00	$ 2,033,460	2007	75	2082							$ 2,033,460
9 X 6 Tunnel	1,520	LF	$ 2,314.00	$ 3,517,280	1966	75	2041				$ 3,517,280			
9 X 6 Tunnel	1,000	LF	$ 2,314.00	$ 2,314,000	1967	75	2042				$ 2,314,000			
9 X 6 Tunnel	300	LF	$ 2,314.00	$ 694,200	1976	75	2051					$ 694,200		
9 X 6 Tunnel	400	LF	$ 2,314.00	$ 925,600	1985	75	2060						$ 925,600	

FACILITY.....................SLCC Taylorsville Redwood Campus Utilities Infrastructure Assessment
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DESCRIPTION	QTY	UNIT	REPLACEMENT UNIT COST	TOTAL 50 YR. REPLACEMENT COST	YEAR INSTALLED	EXPECTED LIFE (YRS.)	PROJECTED REPLACEMENT DATE	0-5 YR.	5-10 YR.	10-20 YR.	20-30 YR.	30-40 YR.	40-50 YR.	50+ YR. (First Replacement Cost)
13 X 8 Tunnel	125	LF	$ 3,224.00	$ 403,000	1995	75	2070							$ 403,000
Electrical Distribution				$ **9,429,421**				$ **1,699,697**	$ **-**	$ **340,342**	$ **264,264**	$ **5,425,420**	$ **1,699,697**	$ **-**
Substation Total Cost	1	EA	$ 4,810,000.00	$ 4,810,000	2012	40	2052					$ 4,810,000		
Duct Bank (2) 6" Conduit	2,737	LF	$ 137.28	$ 375,735	1964	40	2013, 2053	$ 375,735					$ 375,735	
(2) 6" Conduit Direct Bury	420	LF	$ 124.80	$ 52,416	1964	40	2013, 2053	$ 52,416					$ 52,416	
(2) 4" Conduit	290	LF	$ 115.70	$ 33,553	1964	40	2013, 2053	$ 33,553					$ 33,553	
750 MCM Cable	9,471	LF	$ 38.35	$ 363,213	1964	40	2013, 2053	$ 363,213					$ 363,213	
500 KCM	420	LF	$ 26.65	$ 11,193	1964	40	2013, 2053	$ 11,193					$ 11,193	
#4/0 Cable	7,620	EA	$ 14.81	$ 112,829	1992	40	2032			$ 112,829				
#2/0 Cable	10,425	EA	$ 10.58	$ 110,317	1967	40	2013, 2053	$ 110,317					$ 110,317	
#2 Cable	1,395	EA	$ 7.20	$ 10,047	1964	40	2013, 2053	$ 10,047					$ 10,047	
250 KVA Transformer/Vault	3	EA	$ 28,275.00	$ 84,825	1966	40	2013, 2053	$ 84,825					$ 84,825	
333 KVA Transformer/Vault	3	EA	$ 33,059.00	$ 99,177	1967	40	2013, 2053	$ 99,177					$ 99,177	
1000 KVA Transformer/Vault	2	EA	$ 56,914.00	$ 113,828	1966	40	2013, 2053	$ 113,828					$ 113,828	
500 KVA Transformer/Vault	3	EA	$ 37,895.00	$ 113,685	1985	40	2025			$ 113,685				
2500 KVA Transformer/Vault	1	EA	$ 95,095.00	$ 95,095	1976	40	2016, 2056	$ 95,095					$ 95,095	
300 KVA Transformer Pad Mount	1	EA	$ 30,459.00	$ 30,459	1964	40	2013, 2053	$ 30,459					$ 30,459	
1500 KVA Transformer Pad Mount	2	EA	$ 66,066.00	$ 132,132	1995	40	2035				$ 132,132			
500 KVA Transformer/Vault	3	EA	$ 37,895.00	$ 113,685	1972	40	2013, 2053	$ 113,685					$ 113,685	
1000 KVA Transformer/Vault	2	EA	$ 56,914.00	$ 113,828	1992	40	2032			$ 113,828				
1500 KVA Transformer Pad Mount	2	EA	$ 66,066.00	$ 132,132	1995	40	2035				$ 132,132			
250 KVA Transformer/Vault	3	EA	$ 28,080.00	$ 84,240	1973	40	2013, 2053	$ 84,240					$ 84,240	
167 KVA Transformer/Vault	6	EA	$ 20,319.00	$ 121,914	1973	40	2013, 2053	$ 121,914					$ 121,914	
5000 KVA at New Substation	2	EA	$ 307,710.00	$ 615,420	2012	40	2052					$ 615,420		
Electrical Generation				$ **365,820**				$ **-**	$ **121,940**	$ **-**	$ **121,940**	$ **-**	$ **121,940**	$ **-**
8 KW Mono Crystalline PV Array w/ wiring, disconnects, panels	8	KW	$ 15,242.50	$ 121,940	2001	20	2021, 2041, 2061		$ 121,940		$ 121,940		$ 121,940	
Culinary Water Production & Distribution				$ **1,327,248**				$ **18,200**	$ **143,598**	$ **114,459**	$ **715,943**	$ **315,029**	$ **20,020**	$ **48,269**
6" Water Line in Tunnel	400	LF	$ 46.80	$ 18,720	1985	60	2045					$ 18,720		
6" Water Line in Tunnel	50	LF	$ 46.80	$ 2,340	1972	60	2032			$ 2,340				
8" Water Line in Tunnel	475	LF	$ 61.10	$ 29,023	1973	60	2033				$ 29,023			
8" Water Line in Tunnel	715	LF	$ 61.10	$ 43,687	1967	60	2027			$ 43,687				
8" Water Line in Tunnel	350	LF	$ 61.10	$ 21,385	1976	60	2036				$ 21,385			
8" Water Line in Tunnel	1,120	LF	$ 61.10	$ 68,432	1966	60	2026			$ 68,432				
8" Water Line in Tunnel	790	LF	$ 61.10	$ 48,269	2007	60	2067							$ 48,269
12" Water Line in Tunnel	275	LF	$ 72.80	$ 20,020	1995	60	2055						$ 20,020	
6" Water Line Direct Bury	100	LF	$ 72.80	$ 7,280	1995	50	2045					$ 7,280		
6" Water Line Direct Bury	250	LF	$ 72.80	$ 18,200	1964	50	2014	$ 18,200						
8" Water Line Direct Bury	1,010	LF	$ 87.10	$ 87,971	1995	50	2045					$ 87,971		
8" Water Line Direct Bury	900	LF	$ 87.10	$ 78,390	1969	50	2019		$ 78,390					
8" Water Line Direct Bury	175	LF	$ 87.10	$ 15,243	1985	50	2035				$ 15,243			
8" Water Line Direct Bury	875	LF	$ 87.10	$ 76,213	1985	50	2035				$ 76,213			
12" Water Line Direct Bury	2,035	LF	$ 98.80	$ 201,058	1995	50	2045					$ 201,058		
12" Water Line Direct Bury	100	LF	$ 98.80	$ 9,880	1992	50	2042				$ 9,880			
12" Water Line Direct Bury	660	LF	$ 98.80	$ 65,208	1972	50	2022		$ 65,208					
24" Water Line Direct Bury	2,650	EA	$ 182.00	$ 482,300	1985	50	2035				$ 482,300			
Shut-Off Valves (Average Age)	42	EA	$ 1,950.00	$ 81,900	1989	50	2039				$ 81,900			
Irrigation Distribution				$ **1,096,625**				$ **127,725**	$ **-**	$ **188,538**	$ **464,100**	$ **188,538**	$ **127,725**	$ **-**
Irrigation Pump House	400	SF	$ 221.00	$ 88,400	2008	30	2038				$ 88,400			
40 HP Irrigation Pump	1	EA	$ 44,387.20	$ 44,387	2008	20	2028, 2048			$ 44,387		$ 44,387		
5 HP Pressure Maintenance Pump	1	EA	$ 14,443.00	$ 14,443	2008	20	2028, 2048			$ 14,443		$ 14,443		
Amiad 6" Filter 300 Micron	1	EA	$ 4,550.00	$ 4,550	2008	20	2028, 2048			$ 4,550		$ 4,550		
40 HP VFD	1	EA	$ 8,612.50	$ 8,613	2008	20	2028, 2048			$ 8,613		$ 8,613		
Khrone Flow Meter	1	EA	$ 2,145.00	$ 2,145	2008	20	2028, 2048			$ 2,145		$ 2,145		
Weather Station	1	EA	$ 1,950.00	$ 1,950	2008	20	2028			$ 1,950		$ 1,950		
6" Irrigation Piping (Average Age)	5,025	LF	$ 46.80	$ 235,170	1989	50	2039				$ 235,170			

FACILITY.....................SLCC Taylorsville Redwood Campus Utilities Infrastructure Assessment
LOCATION.....................Salt Lake City, UT

DESCRIPTION	QTY	UNIT	REPLACEMENT UNIT COST	TOTAL 50 YR. REPLACEMENT COST	YEAR INSTALLED	EXPECTED LIFE (YRS.)	PROJECTED REPLACEMENT DATE	0-5 YR.	5-10 YR.	10-20 YR.	20-30 YR.	30-40 YR.	40-50 YR.	50+ YR. (First Replacement Cost)
8" Irrigation Piping (Average Age)	2,050	LF	$ 61.10	$ 125,255	1989	50	2039				$ 125,255			
Valves	45	EA	$ 325.00	$ 14,625	1989	20	2013, 2033, 2053	$ 14,625			$ 14,625		$ 14,625	
Gauge	1	EA	$ 650.00	$ 650	1989	20	2013, 2033, 2053	$ 650			$ 650		$ 650	
Computer Station	1	EA	$ 3,250.00	$ 3,250	1989	15	2013, 2028, 2043, 2058	$ 3,250		$ 3,250		$ 3,250	$ 3,250	
Central Control Unit	3	EA	$ 3,900.00	$ 11,700	1989	15	2013, 2028, 2043, 2058	$ 11,700		$ 11,700		$ 11,700	$ 11,700	
Satellite Controller	35	EA	$ 1,950.00	$ 68,250	1989	15	2013, 2028, 2043, 2058	$ 68,250		$ 68,250		$ 68,250	$ 68,250	
PT 32 & Pulse Decoder	15	EA	$ 1,950.00	$ 29,250	1989	15	2013, 2028, 2043, 2058	$ 29,250		$ 29,250		$ 29,250	$ 29,250	
Sanitary Waste				**$ 1,052,799**				$ -	$ -	$ -	$ -	**$ 1,052,799**	$ -	$ -
Sewer Piping	10,013	LF	$ 84.50	$ 846,099	1985	60	2045					$ 846,099		
Clean-Outs	25	EA	$ 520.00	$ 13,000	1985	60	2045					$ 13,000		
Slurry Tank	1	EA	$ 19,500.00	$ 19,500	1985	60	2045					$ 19,500		
Sand Interceptor	4	EA	$ 43,550.00	$ 174,200	1985	60	2045					$ 174,200		
Storm Water				**$ 1,216,307**				$ -	$ -	$ -	$ -	**$ 1,216,307**	$ -	$ -
Storm Drain Piping	13,862	LF	$ 59.15	$ 819,937	1985	60	2045					$ 819,937		
Catch Basin	78	EA	$ 1,885.00	$ 147,030	1985	60	2045					$ 147,030		
Dry Well	28	EA	$ 8,905.00	$ 249,340	1985	60	2045					$ 249,340		
Gas Distribution				**$ 231,836**				$ -	$ -	**$ 65,657**	**$ 4,420**	**$ 48,880**	**$ 112,879**	$ -
1.5" Gas Line in Tunnel	200	LF	$ 26.00	$ 5,200	1995	50	2045					$ 5,200		
2" Gas Line in Tunnel	225	LF	$ 28.60	$ 6,435	1976	50	2026			$ 6,435				
3" Gas Line In Tunnel	1,400	LF	$ 31.20	$ 43,680	1995	50	2045					$ 43,680		
3" Gas Line In Tunnel	790	LF	$ 31.20	$ 24,648	1973	50	2023			$ 24,648				
1.5" Gas line Direct Bury	635	LF	$ 52.00	$ 33,020	2008	50	2058						$ 33,020	
2" Gas Line Direct Bury	635	LF	$ 54.60	$ 34,671	2003	50	2053						$ 34,671	
2" Gas Line Direct Bury	235	LF	$ 54.60	$ 12,831	1976	50	2026			$ 12,831				
2.5" Gas Line Direct Bury	790	LF	$ 57.20	$ 45,188	2008	50	2058						$ 45,188	
Gas Pressure Regulator (Average Age)	3	EA	$ 3,022.50	$ 9,068	1973	50	2023			$ 9,068				
Gas Shut-Off Valve (Average Age)	15	EA	$ 585.00	$ 8,775	1980	50	2030			$ 8,775				
Gas Meter (Average Age)	2	EA	$ 1,950.00	$ 3,900	1980	50	2030			$ 3,900				
Gas Vortex Flow Meter	4	EA	$ 1,105.00	$ 4,420	1986	50	2036				$ 4,420			

FACILITY ASSESSMENT CONSTRUCTION CONTROL CORPORATION 1/11/2013

FACILITY.....................Salt Lake Community College South City Campus Utilities Infrastructure Assessment
LOCATION.....................Salt Lake City, UT

DESCRIPTION	QTY	UNIT	REPLACEMENT UNIT COST	TOTAL 50 YR. REPLACEMENT COST	YEAR INSTALLED	EXPECTED LIFE (YRS.)	PROJECTED REPLACEMENT DATE	0-5 YR.	5-10 YR.	10-20 YR.	20-30 YR.	30-40 YR.	40-50 YR.	50+ YR. (First Replacement Cost)
Total to Budget				**$ 7,498,410**				**$ 432,632**	**$ 185,591**	**$ 2,308,042**	**$ 583,809**	**$ 2,451,514**	**$ 1,536,821**	**$ 43,095**
Heating Production				**$ 4,554,539.60**				**$ 426,782**	**$ 6,435**	**$ 1,080,469**	**$ 433,217**	**$ 1,100,385**	**$ 1,507,251**	**$ -**
Central Plant Building	4,500	SF	$ 243.10	$ 1,093,950	1994	50	2044					$ 1,093,950		
500 HP Boiler	2	EA	$ 392,392.00	$ 784,784	1994	30	2024, 2054			$ 784,784			$ 784,784	
150 HP Boiler	1	EA	$ 146,250.00	$ 146,250	1994	30	2024, 2054			$ 146,250			$ 146,250	
Boiler Feed Tank	1	EA	$ 7,150.00	$ 7,150	1994	30	2024, 2054			$ 7,150			$ 7,150	
3 HP Condensate Tank Pumps	2	EA	$ 4,754.10	$ 9,508	1994	20	2014, 2034, 2054	$ 9,508			$ 9,508		$ 9,508	
30,000 Gal Emergency Fuel Tank	1	EA	$ 107,250.00	$ 107,250	1994	30	2024, 2054			$ 107,250			$ 107,250	
1.5 HP Emergency Fuel Station Pumps	2	EA	$ 3,503.50	$ 7,007	1994	20	2014, 2034, 2054	$ 7,007			$ 7,007		$ 7,007	
Chemical Pump	3	EA	$ 5,005.00	$ 15,015	1994	20	2014, 2034, 2054	$ 15,015			$ 15,015		$ 15,015	
1.5 HP Feed Tank Pump	4	EA	$ 3,503.50	$ 14,014	1994	20	2014, 2034, 2054	$ 14,014			$ 14,014		$ 14,014	
1/3 HP Condensate Tank Pump	2	EA	$ 2,216.50	$ 4,433	1994	20	2014, 2034, 2054	$ 4,433			$ 4,433		$ 4,433	
Compressor	3	EA	$ 17,875.00	$ 53,625	1994	20	2014, 2034, 2054	$ 53,625			$ 53,625		$ 53,625	
Compressor Control Air (2) Motors Each	2	EA	$ 5,005.00	$ 10,010	1994	20	2014, 2034, 2054	$ 10,010			$ 10,010		$ 10,010	
Domestic Hot Water Heater	2	EA	$ 2,145.00	$ 4,290	1994	20	2014, 2034, 2054	$ 4,290			$ 4,290		$ 4,290	
50 Gal. Natural Gas Water	3	EA	$ 2,145.00	$ 6,435	2009	20	2029, 2049			$ 6,435		$ 6,435		
Gauges	9	EA	$ 715.00	$ 6,435	2001	20	2021, 2041, 2061		$ 6,435		$ 6,435		$ 6,435	
Valves/Shut-offs	8	EA	$ 715.00	$ 5,720	1994	30	2024, 2054			$ 5,720			$ 5,720	
Heat Exchanger Steam Traps	4	EA	$ 1,716.00	$ 6,864	1994	30	2024, 2054			$ 6,864			$ 6,864	
Condensate Tank	1	EA	$ 7,150.00	$ 7,150	1994	30	2024, 2054			$ 7,150			$ 7,150	
Condensate Tank Steam Trap	1	EA	$ 1,716.00	$ 1,716	1994	30	2024, 2054			$ 1,716			$ 1,716	
1980 Gal. Steam/Hot Water Heat Exchanger	2	EA	$ 154,440.00	$ 308,880	1994	20	2014, 2034, 2054	$ 308,880			$ 308,880		$ 308,880	
Condensate Receiver Tank	1	EA	$ 7,150.00	$ 7,150	1994	30	2024, 2054			$ 7,150			$ 7,150	
Chilled Water Production				**$ 2,199,639**				**$ -**	**$ 71,071**	**$ 1,028,749**	**$ -**	**$ 1,099,820**	**$ -**	**$ -**
400 Ton Chiller	2	EA	$ 284,570.00	$ 569,140	2012	20	2032, 2052			$ 569,140		$ 569,140		
150 HP Cooling Tower	1	EA	$ 71,071.00	$ 71,071	2011	20	2031, 2051		$ 71,071			$ 71,071		
60 HP Condenser/Chilled Water Pumps	5	EA	$ 60,528.00	$ 302,640	2012	20	2032, 2052			$ 302,640		$ 302,640		
Chiller VFD	2	EA	$ 14,443.00	$ 28,886	2012	20	2032, 2052			$ 28,886		$ 28,886		
10 HP Filtration System Pump	1	EA	$ 8,222.50	$ 8,223	2012	20	2032, 2052			$ 8,223		$ 8,223		
2 HP Condenser Drain Pump	2	EA	$ 3,445.00	$ 6,890	2012	20	2032, 2052			$ 6,890		$ 6,890		
5 HP Condensate Tank Pump	2	EA	$ 5,434.00	$ 10,868	2012	20	2032, 2052			$ 10,868		$ 10,868		
Cooling Tower VFD	2	EA	$ 32,175.00	$ 64,350	2012	20	2032, 2052			$ 64,350		$ 64,350		
Chiller BTU Meters	2	EA	$ 1,358.50	$ 2,717	2012	20	2032, 2052			$ 2,717		$ 2,717		
Gauges	7	EA	$ 715.00	$ 5,005	2012	20	2032, 2052			$ 5,005		$ 5,005		
Valves/Shut-offs	20	EA	$ 715.00	$ 14,300	2012	20	2032, 2052			$ 14,300		$ 14,300		
Filtration System	1	EA	$ 7,150.00	$ 7,150	2012	20	2032, 2052			$ 7,150		$ 7,150		
Chilled Water Thermometers	6	EA	$ 715.00	$ 4,290	2012	20	2032, 2052			$ 4,290		$ 4,290		
Chiller Thermometers	6	EA	$ 715.00	$ 4,290	2012	20	2032, 2052			$ 4,290		$ 4,290		
Hot Water/Chilled Water Distribution				**$ 447,336**				**$ -**	**$ 104,185**	**$ -**	**$ 146,692**	**$ 196,459**	**$ -**	**$ -**
10" Steam Line	370	LF	$ 249.60	$ 92,352	1994	40	2034				$ 92,352			
12" Steam Line	200	LF	$ 271.70	$ 54,340	1994	40	2034				$ 54,340			
4" Condensate Line	570	LF	$ 182.78	$ 104,185	1994	25	2019, 2044		$ 104,185			$ 104,185		
10" Condenser Water Supply/Return	140	LF	$ 249.60	$ 34,944	2012	40	2052					$ 34,944		
Shut-off/Isolation Valves	21	EA	$ 2,730.00	$ 57,330	2012	40	2052					$ 57,330		
Electrical Distribution				**$ 200,254**				**$ -**	**$ -**	**$ 198,824**	**$ -**	**$ 1,430**	**$ -**	**$ -**
350 MCM	900	LF	$ 21.45	$ 19,305	1990	40	2030			$ 19,305				
#4/0	30	LF	$ 14.81	$ 444	1990	40	2030			$ 444				
4" Conduit (Leaving Transformer)	1,000	LF	$ 89.70	$ 89,700	1990	40	2030			$ 89,700				
2000 KVA Transformer	1	EA	$ 80,795.00	$ 80,795	1990	40	2030			$ 80,795				
3 Way VFI	1	EA	$ 7,150.00	$ 7,150	1990	40	2030			$ 7,150				
Meter on Power Pole	1	EA	$ 1,430.00	$ 1,430	1990	40	2030			$ 1,430				
Annex Building Meter	1	EA	$ 1,430.00	$ 1,430	2011	40	2051					$ 1,430		
Culinary Water Production & Distribution				**$ 18,850**				**$ 5,850**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 13,000**	**$ 43,095**
2"	160	LF	$ 30.55	$ 4,888	2011	60	2071							$ 4,888

FACILITY.....................**Salt Lake Community College South City Campus Utilities Infrastructure Assessment**
LOCATION.....................Salt Lake City, UT

DESCRIPTION	QTY	UNIT	REPLACEMENT UNIT COST	TOTAL 50 YR. REPLACEMENT COST	YEAR INSTALLED	EXPECTED LIFE (YRS.)	PROJECTED REPLACEMENT DATE	0-5 YR.	5-10 YR.	10-20 YR.	20-30 YR.	30-40 YR.	40-50 YR.	50+ YR. (First Replacement Cost)
5"	640	LF	$ 43.55	$ 27,872	2011	60	2071							$ 27,872
Shut-off Valves	2	EA	$ 650.00	$ 1,300	2011	50	2061						$ 1,300	
PRV Station	3	EA	$ 3,900.00	$ 11,700	2011	50	2061						$ 11,700	
Man-holes	3	EA	$ 3,445.00	$ 10,335	2011	60	2071							$ 10,335
Water Meter	3	EA	$ 1,950.00	$ 5,850	1950	50	2000	$ 5,850						
Irrigation Distribution				**$ 28,270**				**$ -**	**$ 3,900**	**$ -**	**$ 3,900**	**$ 3,900**	**$ 16,570**	**$ -**
2" Main Line	424	LF	$ 21.45	$ 9,095	2003	50	2053						$ 9,095	
Shut-off Valves	5	EA	$ 325.00	$ 1,625	2003	50	2053						$ 1,625	
Irrigation Meter	1	EA	$ 1,950.00	$ 1,950	2003	50	2053						$ 1,950	
ESP Remote Controller	2	EA	$ 1,950.00	$ 3,900	2003	15	2018, 2033, 2048, 2063		$ 3,900		$ 3,900	$ 3,900	$ 3,900	
Gas Distribution				**$ 49,521**				**$ -**	**$ -**	**$ -**	**$ -**	**$ 49,521**	**$ -**	**$ -**
2" Gas Line	669	LF	$ 28.60	$ 19,133	1994	50	2044					$ 19,133		
3.5" Gas Line	250	LF	$ 33.80	$ 8,450	1994	50	2044					$ 8,450		
Gas Meter	3	EA	$ 1,950.00	$ 5,850	1994	50	2044					$ 5,850		
Shut-off Valves	12	EA	$ 585.00	$ 7,020	1994	50	2044					$ 7,020		
Gas PRV	3	EA	$ 3,022.50	$ 9,068	1994	50	2044					$ 9,068		

FACILITY......................Salt Lake Community College Jordan Campus Utilities Infrastructure Assessment
LOCATION......................Salt Lake City, UT

DESCRIPTION	QTY	UNIT	REPLACEMENT UNIT COST	TOTAL 50 YR. REPLACEMENT COST	YEAR INSTALLED	EXPECTED LIFE (YRS.)	PROJECTED REPLACEMENT DATE	0-5 YR.	5-10 YR.	10-20 YR.	20-30 YR.	30-40 YR.	40-50 YR.	50+ YR. (First Replacement Cost)
Total to Budget				**$ 14,128,838**				**$ 4,467**	**$ 1,900,854**	**$ 1,204,819**	**$ 3,160,350**	**$ 4,454,908**	**$ 3,403,440**	**$ 4,587,154**
Heating Production				**$ 5,383,673.30**				**$ -**	**$ 309,448**	**$ 946,527**	**$ 309,448**	**$ 2,577,728**	**$ 1,240,521**	**$ -**
Central Plant Building	10,540	SF	$ 243.10	$ 2,562,274	2001	50	2051					$ 2,562,274		
10,500 MBTU Boiler	1	EA	$ 275,132.00	$ 275,132	2001	30	2031, 2061			$ 275,132			$ 275,132	
21,000 MBTU Boiler	1	EA	$ 539,539.00	$ 539,539	2001	30	2031, 2061			$ 539,539			$ 539,539	
7.5 HP Hot Water Pump	1	EA	$ 7,629.05	$ 7,629	2012	20	2032, 2052			$ 7,629		$ 7,629		
10 HP Hot Water Pump	1	EA	$ 7,824.96	$ 7,825	2012	20	2032, 2052			$ 7,825		$ 7,825		
50 HP Condenser Water Pump	1	EA	$ 61,032.40	$ 61,032	2001	20	2021, 2041, 2061		$ 61,032		$ 61,032		$ 61,032	
25 HP Condenser Water Pump	1	EA	$ 30,516.20	$ 30,516	2001	20	2021, 2041, 2061		$ 30,516		$ 30,516		$ 30,516	
100 HP Condenser Water Pump	1	EA	$ 122,064.80	$ 122,065	2001	20	2021, 2041, 2061		$ 122,065		$ 122,065		$ 122,065	
50 HP VFD for Condenser Water Pump	1	EA	$ 18,089.50	$ 18,090	2001	20	2021, 2041, 2061		$ 18,090		$ 18,090		$ 18,090	
25 HP VFD for Condenser Water Pump	1	EA	$ 11,679.53	$ 11,680	2001	20	2021, 2041, 2061		$ 11,680		$ 11,680		$ 11,680	
100 HP VFD for Condenser Water Pump	1	EA	$ 30,201.60	$ 30,202	2001	20	2021, 2041, 2061		$ 30,202		$ 30,202		$ 30,202	
Emergency Fuel Tank - Unspecified Capacity	1	EA	$ 97,526.00	$ 97,526	2001	30	2031, 2061			$ 97,526			$ 97,526	
2 HP Emergency Fuel Tank Pump	2	EA	$ 4,168.45	$ 8,337	2002	20	2022, 2042, 2062		$ 8,337		$ 8,337		$ 8,337	
Fuel Oil Meter	1	EA	$ 786.50	$ 787	2002	20	2022, 2042, 2062		$ 787		$ 787		$ 787	
Air Compressor	1	EA	$ 3,932.50	$ 3,933	2001	20	2021, 2041, 2061		$ 3,933		$ 3,933		$ 3,933	
Gauges	7	EA	$ 786.50	$ 5,506	2001	20	2021, 2041, 2061		$ 5,506		$ 5,506		$ 5,506	
Shut-off Valves, Relief Valves	8	EA	$ 2,359.50	$ 18,876	2001	30	2031, 2061			$ 18,876			$ 18,876	
Pump Temp Sensor	2	EA	$ 786.50	$ 1,573	2001	20	2021, 2041, 2061		$ 1,573		$ 1,573		$ 1,573	
Expansion Tank	2	EA	$ 7,865.00	$ 15,730	2001	20	2021, 2041, 2061		$ 15,730		$ 15,730		$ 15,730	
Chilled Water Production				**$ 5,054,621**				**$ -**	**$ 1,515,657**	**$ 253,825**	**$ 1,515,657**	**$ 253,825**	**$ 1,515,657**	**$ -**
800 Ton Chiller	1	EA	$ 611,325.00	$ 611,325	2001	20	2021, 2041, 2061		$ 611,325		$ 611,325		$ 611,325	
250 Ton Chiller	1	EA	$ 274,560.00	$ 274,560	2001	20	2021, 2041, 2061		$ 274,560		$ 274,560		$ 274,560	
500 Ton Chiller	1	EA	$ 355,712.50	$ 355,713	2001	20	2021, 2041, 2061		$ 355,713		$ 355,713		$ 355,713	
51.8 Ton Chiller	1	EA	$ 88,803.00	$ 88,803	2001	20	2021, 2041, 2061		$ 88,803		$ 88,803		$ 88,803	
52 Ton Chiller	1	EA	$ 90,233.00	$ 90,233	2012	20	2032, 2052			$ 90,233		$ 90,233		
40 HP Cooling Tower	2	EA	$ 21,450.00	$ 42,900	2001	20	2021, 2041, 2061		$ 42,900		$ 42,900		$ 42,900	
100 Ton Chiller	1	EA	$ 136,136.00	$ 136,136	2012	20	2032, 2052			$ 136,136		$ 136,136		
10 HP Chilled Water Pump	1	EA	$ 7,114.25	$ 7,114	2001	20	2021, 2041, 2061		$ 7,114		$ 7,114		$ 7,114	
20 HP Chilled Water Pump	1	EA	$ 8,901.75	$ 8,902	2001	20	2021, 2041, 2061		$ 8,902		$ 8,902		$ 8,902	
3 HP Chilled Water Pump	1	EA	$ 4,218.50	$ 4,219	2001	20	2021, 2041, 2061		$ 4,219		$ 4,219		$ 4,219	
30 HP Chilled Water Pump	1	EA	$ 32,032.00	$ 32,032	2001	20	2021, 2041, 2061		$ 32,032		$ 32,032		$ 32,032	
VFD for Chiller #1	1	EA	$ 27,456.00	$ 27,456	2012	20	2032, 2052			$ 27,456		$ 27,456		
Gauges	15	EA	$ 715.00	$ 10,725	2001	20	2021, 2041, 2061		$ 10,725		$ 10,725		$ 10,725	
Shut-off Valve	22	EA	$ 2,145.00	$ 47,190	2001	20	2021, 2041, 2061		$ 47,190		$ 47,190		$ 47,190	
Check Valve	3	EA	$ 2,145.00	$ 6,435	2001	20	2021, 2041, 2061		$ 6,435		$ 6,435		$ 6,435	
Temp Sensors	16	EA	$ 715.00	$ 11,440	2001	20	2021, 2041, 2061		$ 11,440		$ 11,440		$ 11,440	
Expansion Tank	2	EA	$ 7,150.00	$ 14,300	2001	20	2021, 2041, 2061		$ 14,300		$ 14,300		$ 14,300	
Hot Water/Chilled Water Distribution				**$ 1,613,322**				**$ -**	**$ -**	**$ -**	**$ 760,072**	**$ 853,250**	**$ -**	**$ -**
3" Hot Water Supply/Return	92	LF	$ 177.45	$ 16,325	2001	40	2041				$ 16,325			
4" Hot Water Supply/Return	620	LF	$ 182.78	$ 113,324	2001	40	2041				$ 113,324			
10" Hot Water Supply/Return	2,428	LF	$ 249.60	$ 606,029	2001	40	2041				$ 606,029			
5" Hot Water Supply/Return	128	LF	$ 190.58	$ 24,394	2001	40	2041				$ 24,394			
5" Chilled Water Supply/Return	620	LF	$ 190.58	$ 118,160	2001	50	2051					$ 118,160		
6" Chilled Water Supply/Return	348	LF	$ 198.64	$ 69,127	2001	50	2051					$ 69,127		
10" Chilled Water Supply/Return	2,340	LF	$ 249.60	$ 584,064	2001	50	2051					$ 584,064		
Valves	60	EA	$ 1,365.00	$ 81,900	2004	40	2044					$ 81,900		
Central Control Systems/Fiber				**$ 194,414**				**$ 4,467**	**$ 58,849**	**$ 4,467**	**$ 58,849**	**$ 63,316**	**$ 4,467**	**$ -**
6 Strand Multi-Mode	20	LF	$ 11.17	$ 223	2007	15	2022, 2037, 2052		$ 223		$ 223	$ 223		
12 Strand Multi-Mode	1,544	LF	$ 22.33	$ 34,484	2007	15	2022, 2037, 2052		$ 34,484		$ 34,484	$ 34,484		
12 Strand Multi-Mode	200	LF	$ 22.33	$ 4,467	2001	15	2016, 2031, 2046, 2061	$ 4,467		$ 4,467		$ 4,467	$ 4,467	
24 Strand Multi-Mode	540	LF	$ 44.71	$ 24,142	2007	15	2022, 2037, 2052		$ 24,142		$ 24,142	$ 24,142		

FACILITY.....................Salt Lake Community College Jordan Campus Utilities Infrastructure Assessment
LOCATION.....................Salt Lake City, UT

DESCRIPTION	QTY	UNIT	REPLACEMENT UNIT COST	TOTAL 50 YR. REPLACEMENT COST	YEAR INSTALLED	EXPECTED LIFE (YRS.)	PROJECTED REPLACEMENT DATE	0-5 YR.	5-10 YR.	10-20 YR.	20-30 YR.	30-40 YR.	40-50 YR.	50+ YR. (First Replacement Cost)
Tunnels (Including Pipe Rack and Cable Tray)				$ -				$ -	$ -	$ -	$ -	$ -	$ -	**$ 4,587,154**
9 X 9	630	LF	$ 2,574.00	$ 1,621,620	2001	75	2076							$ 1,621,620
9 X 9	427	LF	$ 2,574.00	$ 1,099,098	2002	75	2077							$ 1,099,098
9 X 9	290	LF	$ 2,574.00	$ 746,460	2007	75	2082							$ 746,460
10 X 6	46	LF	$ 2,314.00	$ 106,444	2001	75	2076							$ 106,444
10 X 6	220	LF	$ 2,314.00	$ 509,080	2002	75	2077							$ 509,080
10 X 6	90	LF	$ 2,314.00	$ 208,260	2005	75	2080							$ 208,260
10 X 6	128	LF	$ 2,314.00	$ 296,192	2007	75	2082							$ 296,192
Electrical Distribution				**$ 731,799**				$ -	$ -	$ -	**$ 499,424**	**$ 232,375**	$ -	$ -
Duct Bank w/ (4) 6" Conduit	785	LF	$ 183.04	$ 143,686	2001	40	2041				$ 143,686			
Duct Bank w/ (2) 6" Conduit	15	LF	$ 137.28	$ 2,059	2001	40	2041				$ 2,059			
500 KCM	2,400	LF	$ 26.65	$ 63,960	2001	40	2041				$ 63,960			
2000 KVA Transformer	2	EA	$ 80,795.00	$ 161,590	2004	40	2044					$ 161,590		
1000 KVA Transformer	2	EA	$ 56,914.00	$ 113,828	2001	40	2041				$ 113,828			
3 Way Switch Gear	2	EA	$ 47,190.00	$ 94,380	2001	40	2041				$ 94,380			
4 Way Switch Gear	1	EA	$ 70,785.00	$ 70,785	2007	40	2047					$ 70,785		
6 Way Switch Gear	1	EA	$ 75,790.00	$ 75,790	2001	40	2041				$ 75,790			
Meter	4	EA	$ 1,430.00	$ 5,720	2001	40	2041				$ 5,720			
Culinary Water Production & Distribution				**$ 406,601**				$ -	$ -	$ -	$ -	**$ 378,833**	**$ 27,768**	$ -
5.5" Water Line	540	LF	$ 44.20	$ 23,868	2001	60	2061						$ 23,868	
6" Water Line Direct Bury	485	LF	$ 72.80	$ 35,308	2001	50	2051					$ 35,308		
8" Water Line Direct Bury	750	LF	$ 87.10	$ 65,325	2001	50	2051					$ 65,325		
12" Water Line Direct Bury	1,875	LF	$ 98.80	$ 185,250	2001	50	2051					$ 185,250		
Shut-off Valve	2	EA	$ 1,950.00	$ 3,900	2004	50	2054						$ 3,900	
6" Gate Valve	1	EA	$ 3,250.00	$ 3,250	2002	50	2052					$ 3,250		
8" Gate Valve	4	EA	$ 5,167.50	$ 20,670	2002	50	2052					$ 20,670		
12" Gate Valve	6	EA	$ 11,505.00	$ 69,030	2002	50	2052					$ 69,030		
Irrigation Distribution				**$ 281,499**				$ -	**$ 16,900**	$ -	**$ 16,900**	**$ 16,900**	**$ 230,799**	$ -
2" Irrigation	150	LF	$ 21.45	$ 3,218	2004	50	2054						$ 3,218	
3" Irrigation	1,085	LF	$ 29.25	$ 31,736	2004	50	2054						$ 31,736	
6" Irrigation	3,600	LF	$ 46.80	$ 168,480	2004	50	2054						$ 168,480	
8" Irrigation	150	LF	$ 61.10	$ 9,165	2004	50	2054						$ 9,165	
Shut-off/Isolation Valve	14	EA	$ 1,300.00	$ 18,200	2004	50	2054						$ 18,200	
Computer Station	1	EA	$ 3,250.00	$ 3,250	2004	15	2019, 2034, 2049		$ 3,250		$ 3,250	$ 3,250		
ESP Satellite Controller	6	EA	$ 1,950.00	$ 11,700	2004	15	2019, 2034, 2049		$ 11,700		$ 11,700	$ 11,700		
Weather Station	1	EA	$ 1,950.00	$ 1,950	2004	15	2019, 2034, 2049		$ 1,950		$ 1,950	$ 1,950		
Sanitary Waste				**$ 97,175**				$ -	$ -	$ -	$ -	$ -	**$ 97,175**	$ -
Sewer Water Pipe	1,150	LF	$ 84.50	$ 97,175	2000	60	2060						$ 97,175	
Storm Water				**$ 283,725**				$ -	$ -	$ -	$ -	$ -	**$ 283,725**	$ -
Storm Water Pipe	4,000	LF	$ 59.15	$ 236,600	2000	60	2060						$ 236,600	
Catch Basins	25	EA	$ 1,885.00	$ 47,125	2001	60	2061						$ 47,125	
Gas Distribution				**$ 82,009**				$ -	$ -	$ -	$ -	**$ 78,681**	**$ 3,328**	$ -
4.5"	1,170	LF	$ 46.80	$ 54,756	2001	50	2051					$ 54,756		
2.5"	182	LF	$ 28.60	$ 5,205	2002	50	2052					$ 5,205		
1.5"	128	LF	$ 26.00	$ 3,328	2003	50	2053						$ 3,328	
Shut-off /Isolation Valve	7	EA	$ 975.00	$ 6,825	2001	50	2051					$ 6,825		
PRV	2	EA	$ 3,022.50	$ 6,045	2001	50	2051					$ 6,045		
Gas Meter	3	EA	$ 1,950.00	$ 5,850	2001	50	2051					$ 5,850		

FACILITY ASSESSMENT **CONSTRUCTION CONTROL CORPORATION** 1/11/2013

FACILITY.................... **Salt Lake Community College Miller Campus Utilities Infrastructure Assessment**
LOCATION.................... Salt Lake City, UT

DESCRIPTION	QTY	UNIT	REPLACEMENT UNIT COST	TOTAL 50 YR. REPLACEMENT COST	YEAR INSTALLED	EXPECTED LIFE (YRS.)	PROJECTED REPLACEMENT DATE	0-5 YR.	5-10 YR.	10-20 YR.	20-30 YR.	30-40 YR.	40-50 YR.	50+ YR. (First Replacement Cost)
Total to Budget				**$ 1,049,105**				**$ -**	**$ 94,080**	**$ 3,900**	**$ 97,980**	**$ 94,080**	**$ 759,064**	**$ -**
Central Control Systems/Fiber				**$ 262,741**				**$ -**	**$ 87,580**	**$ -**	**$ 87,580**	**$ 87,580**	**$ -**	**$ -**
6 Strand Multi-Mode	1,035	LF	$ 11.17	$ 11,558	2006	15	2021, 2036, 2051		$ 11,558		$ 11,558	$ 11,558		
12 Strand Multi-Mode	450	LF	$ 22.33	$ 10,050	2006	15	2021, 2036, 2051		$ 10,050		$ 10,050	$ 10,050		
24 Strand Multi-Mode	400	LF	$ 44.71	$ 17,883	2006	15	2021, 2036, 2051		$ 17,883		$ 17,883	$ 17,883		
6 Strand Single mode	1,035	LF	$ 11.17	$ 11,558	2006	15	2021, 2036, 2051		$ 11,558		$ 11,558	$ 11,558		
12 Strand Single Mode	835	LF	$ 22.33	$ 18,649	2006	15	2021, 2036, 2051		$ 18,649		$ 18,649	$ 18,649		
24 Strand Single Mode	400	LF	$ 44.71	$ 17,883	2006	15	2021, 2036, 2051		$ 17,883		$ 17,883	$ 17,883		
Culinary Water Production & Distribution				**$ 281,385**				**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 281,385**	**$ -**
8" Water Line Direct Bury (Average Age)	2,400	LF	$ 87.10	$ 209,040	2003	60	2063						$ 209,040	
Shut-Off Valves (Average Age)	14	EA	$ 5,167.50	$ 72,345	2003	50	2053						$ 72,345	
Irrigation Distribution				**$ 88,732**				**$ -**	**$ 6,500**	**$ 3,900**	**$ 10,400**	**$ 6,500**	**$ 61,432**	**$ -**
2" Irrigation	160	LF	$ 21.45	$ 3,432	2003	50	2053						$ 3,432	
2.5" Irrigation	120	LF	$ 25.35	$ 3,042	2003	50	2053						$ 3,042	
3" Irrigation	1,190	LF	$ 29.25	$ 34,808	2003	50	2053						$ 34,808	
Ball Valve	60	EA	$ 162.50	$ 9,750	2003	50	2053						$ 9,750	
Central Control Unit	2	EA	$ 3,250.00	$ 6,500	2003	15	2018, 2033, 2048, 2063		$ 6,500		$ 6,500	$ 6,500	$ 6,500	
ESP Satellite Controller	2	EA	$ 1,950.00	$ 3,900	2008	15	2023, 2038, 2053			$ 3,900	$ 3,900		$ 3,900	
Sanitary Waste				**$ 192,660**				**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 192,660**	**$ -**
Sewer Pipe	2,280	LF	$ 84.50	$ 192,660	2000	60	2060						$ 192,660	
Storm Water				**$ 223,587**				**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 223,587**	**$ -**
Storm Water Pipe	3,780	LF	$ 59.15	$ 223,587	2000	60	2060						$ 223,587	

FACILITY....................**Salt Lake Community College Meadowbrook Campus Utilities Infrastructure Assessment**
LOCATION....................Salt Lake City, UT

DESCRIPTION	QTY	UNIT	REPLACEMENT UNIT COST	TOTAL 50 YR. REPLACEMENT COST	YEAR INSTALLED	EXPECTED LIFE (YRS.)	PROJECTED REPLACEMENT DATE	0-5 YR.	5-10 YR.	10-20 YR.	20-30 YR.	30-40 YR.	40-50 YR	50+ YR. (First Replacement Cost)
Total to Budget				**$ 399,680**				**$ 3,900**	**$ 11,614**	**$ 275,743**	**$ 46,740**	**$ 57,783**	**$ 3,900**	**$ -**
Central Control Systems/Fiber				**$ 34,841**				**$ -**	**$ 11,614**	**$ -**	**$ 11,614**	**$ 11,614**	**$ -**	**$ -**
12 Strand Multi-Mode	420	LF	$ 22.33	$ 9,380	2006	15	2021, 2036, 2051		$ 9,380		$ 9,380	$ 9,380		
6 Strand Single mode	200	LF	$ 11.17	$ 2,233	2006	15	2021, 2036, 2051		$ 2,233		$ 2,233	$ 2,233		
Electrical Distribution				**$ 291,343**				**$ -**	**$ -**	**$ 271,843**	**$ -**	**$ 19,500**	**$ -**	**$ -**
500 MCM	1,380	LF	$ 26.65	$ 36,777	1985	40	2025			$ 36,777				
4" Conduit	905	LF	$ 89.70	$ 81,179	1985	40	2025			$ 81,179				
Campus Transformer	1	EA	$ 68,900.00	$ 68,900	1991	40	2031			$ 68,900				
4 Way Switch Gear	1	EA	$ 58,987.50	$ 58,988	1991	40	2031			$ 58,988				
Metering Cabinet	2	EA	$ 13,000.00	$ 26,000	1991	40	2031			$ 26,000				
50 KW Emergency Generator	1	EA	$ 19,500.00	$ 19,500	2012	40	2052					$ 19,500		
Culinary Water Production & Distribution				**$ 35,126**				**$ -**	**$ -**	**$ -**	**$ 35,126**	**$ -**	**$ -**	**$ -**
3" Water Line Direct Bury (Average Age)	680	LF	$ 34.45	$ 23,426	1985	50	2035				$ 23,426			
Shut-Off Valves (Average Age)	6	EA	$ 1,950.00	$ 11,700	1985	50	2035				$ 11,700			
Irrigation Distribution				**$ 38,370**				**$ 3,900**	**$ -**	**$ 3,900**	**$ -**	**$ 26,670**	**$ 3,900**	**$ -**
2.5" Schedule 40 PVC	580	SF	$ 25.35	$ 14,703	2001	50	2051					$ 14,703		
6.5" PVC	95	EA	$ 50.70	$ 4,817	2001	50	2051					$ 4,817		
Ball Valves	10	EA	$ 325.00	$ 3,250	2001	50	2051					$ 3,250		
ESP Controller	2	EA	$ 1,950.00	$ 3,900	2001	15	2016, 2031, 2046, 2061	$ 3,900		$ 3,900		$ 3,900	$ 3,900	

FACILITY.................. **Snow College Utilities Infrastructure Assessment**
LOCATION.................. Ephraim, UT

DESCRIPTION	QTY	UNIT	REPLACEMENT UNIT COST	TOTAL 50 YR. REPLACEMENT COST	YEAR INSTALLED	EXPECTED LIFE (YRS.)	PROJECTED REPLACEMENT DATE	0-5 YR.	5-10 YR.	10-20 YR.	20-30 YR.	30-40 YR.	40-50 YR.	50+ YR. (First Replacement Cost)
Total to Budget				$ 17,480,255				$ -	$ -	$ 3,118,367	$ 1,455,425	$ 5,117,681	$ 7,788,781	$ 71,500
Electrical Distribution				$ 2,707,171				$ -	$ -	$ 2,707,171	$ -	$ -	$ -	$ -
3 Bay Sectionalizer	3	Ea	$ 54,111.20	$ 162,334	1986	40	2026			$ 162,334				
Switch Gear	5	Ea	$ 51,909.00	$ 259,545	1986	40	2026			$ 259,545				
5 Bay Switch Gear	1	Ea	$ 77,863.50	$ 77,864	1987	40	2027			$ 77,864				
Sectionalizer	5	Ea	$ 54,111.20	$ 270,556	1987	40	2027			$ 270,556				
Switch Gear	4	Ea	$ 51,909.00	$ 207,636	1987	40	2027			$ 207,636				
Switch Gear	5	Ea	$ 51,909.00	$ 259,545	1989	40	2029			$ 259,545				
Duct Bank - (4) 4" Conduits	7,918	LF	$ 185.61	$ 1,469,692	1987	40	2027			$ 1,469,692				
Central Plant Heating Production				$ 3,277,388				$ -	$ -	$ -	$ 1,383,925	$ -	$ 1,893,463	$ -
Heat Plant Building	5,000	SF	$ 267.41	$ 1,337,050	1986	50	2036				$ 1,337,050			
25,000 lb/hr Boiler	2	Ea	$ 642,356.00	$ 1,284,712	2005	50	2055						$ 1,284,712	
17,250 lb/hr Boiler	1	Ea	$ 487,630.00	$ 487,630	2007	50	2057						$ 487,630	
20,000 Gal. Emergency Fuel Storage Tank	1	Ea	$ 97,526.00	$ 97,526	2005	50	2055						$ 97,526	
De-aerator	1	Ea	$ 23,595.00	$ 23,595	2005	50	2055						$ 23,595	
7.5 HP Pump	1	Ea	$ 7,629.05	$ 7,629	2005	30	2035				$ 7,629			
7000 Gal. Water Softener	1	Ea	$ 31,460.00	$ 31,460	2005	30	2035				$ 31,460			
1 HP Make-up Water Pump	2	Ea	$ 3,893.18	$ 7,786	2005	30	2035				$ 7,786			
Steam Distribution				$ 2,658,090				$ -	$ -	$ -	$ -	$ -	$ 2,658,090	$ -
4" Steam Line - Direct Bury	2,689	LF	$ 251.68	$ 676,768	2005	50	2055						$ 676,768	
2.5" Condensate Line - Direct Bury	2,922	LF	$ 157.30	$ 459,631	2005	50	2055						$ 459,631	
8" Steam Line - In Tunnel	3,093	LF	$ 238.10	$ 736,428	2005	50	2055						$ 736,428	
4" Condensate Line - In Tunnel	3,093	LF	$ 201.06	$ 621,872	2005	50	2055						$ 621,872	
4" Steam Shut-off Valve	17	Ea	$ 1,215.50	$ 20,664	2005	50	2055						$ 20,664	
2.5" Condensate Shut-off Valve	13	Ea	$ 357.50	$ 4,648	2005	50	2055						$ 4,648	
Steam Trap	17	Ea	$ 8,122.40	$ 138,081	2005	50	2055						$ 138,081	
Tunnels (Including Pipe Rack, Cable Tray, Fiber-Optic)				$ 8,211,909				$ -	$ -	$ -	$ -	$ 5,046,181	$ 3,165,728	$ -
Tunnel	480	LF	$ 2,565.42	$ 1,231,402	1997	50	2047					$ 1,231,402		
Tunnel	710	LF	$ 2,565.42	$ 1,821,448	1998	50	2048					$ 1,821,448		
Tunnel	189	LF	$ 2,565.42	$ 484,864	2000	50	2050					$ 484,864		
Tunnel	588	LF	$ 2,565.42	$ 1,508,467	2002	50	2052					$ 1,508,467		
Tunnel	756	LF	$ 2,565.42	$ 1,939,458	2003	50	2053						$ 1,939,458	
Tunnel	154	LF	$ 2,565.42	$ 395,075	2004	50	2054						$ 395,075	
Tunnel	324	LF	$ 2,565.42	$ 831,196	2009	50	2059						$ 831,196	
Culinary Water Production & Distribution				$ 286,000				$ -	$ -	$ 71,500	$ 71,500	$ 71,500	$ 71,500	$ 71,500
10 Yr. Allowance										$ 71,500	$ 71,500	$ 71,500	$ 71,500	$ 71,500
Sanitary Waste				$ 208,458				$ -	$ -	$ 208,458	$ -	$ -	$ -	$ -
12" Sewer Pipe	1,935	LF	$ 92.95	$ 179,858	1965	60	2025			$ 179,858				
Manholes	5	Ea	$ 5,720.00	$ 28,600	1965	60	2025			$ 28,600				
			$ -											
Storm Water				$ 131,238				$ -	$ -	$ 131,238	$ -	$ -	$ -	$ -
18" SD Pipe	1,170	LF	$ 82.23	$ 96,203	1965	60	2025			$ 96,203				
Catch Basins	5	Ea	$ 5,005.00	$ 25,025	1965	60	2025			$ 25,025				
Bubble-up Boxes	2	Ea	$ 5,005.00	$ 10,010	1965	60	2025			$ 10,010				

FACILITY ASSESSMENT **CONSTRUCTION CONTROL CORPORATION** 1/11/2013

FACILITY..................Southern Utah University Utilities Infrastructure Assessment
LOCATION.......................Cedar City, UT

DESCRIPTION	QTY	UNIT	REPLACEMENT UNIT COST	TOTAL 50 YR. REPLACEMENT COST	YEAR INSTALLED	EXPECTED LIFE (YRS.)	PROJECTED REPLACEMENT DATE	0-5 YR	5-10 YR.	10-20 YR.	20-30 YR.	30-40 YR.	40-50 YR.	50+ YR (First Replacement Cost)
Total to Budget				$ 22,118,347				$ 1,895,032	$ 141,292	$ 8,093,856	$ 5,574,978	$ 5,134,454	$ 1,278,736	$ 8,664,767
Substations & Electrical Distribution				$ 6,331,651				$ 266,219	$ 141,292	$ 3,915,429	$ 430,180	$ 1,171,020	$ 407,511	$ -
3 Way Switch	1	Ea	$ 49,549.50	$ 49,550	2000	40	2040				$ 49,550			
3 Way Switch	2	Ea	$ 49,549.50	$ 99,099	2010	40	2050					$ 99,099		
4 Way Switch	4	Ea	$ 61,561.50	$ 246,246	2011	40	2051					$ 246,246		
4 Way Switch	3	Ea	$ 61,561.50	$ 184,685	2012	40	2052					$ 184,685		
4 Way Switch	2	Ea	$ 61,561.50	$ 123,123	2010	40	2050					$ 123,123		
4 Way Switch	1	Ea	$ 61,561.50	$ 61,562	2007	40	2047					$ 61,562		
5 Way Switch	1	Ea	$ 74,324.25	$ 74,324	1985	40	2025			$ 74,324				
5 Way Switch	1	Ea	$ 74,324.25	$ 74,324	2009	40	2049					$ 74,324		
5 Way Switch	1	Ea	$ 74,324.25	$ 74,324	2011	40	2051					$ 74,324		
3 Way Sectionalizer	1	Ea	$ 51,651.60	$ 51,652	1968	40	2013, 2053	$ 51,652					$ 51,652	
3 Way Sectionalizer	1	Ea	$ 51,651.60	$ 51,652	1996	40	2036				$ 51,652			
4 Way Sectionalizer	2	Ea	$ 51,651.60	$ 103,303	1991	40	2031			$ 103,303				
4 Way Sectionalizer	1	Ea	$ 51,651.60	$ 51,652	2007	40	2047					$ 51,652		
5 Way Sectionalizer	1	Ea	$ 51,651.60	$ 51,652	1992	40	2032			$ 51,652				
150 KVA Transformer	1	Ea	$ 19,969.95	$ 19,970	1985	40	2025			$ 19,970				
225 KVA Transformer	1	Ea	$ 26,726.70	$ 26,727	1967	40	2013, 2053	$ 26,727					$ 26,727	
225 KVA Transformer	1	Ea	$ 26,726.70	$ 26,727	1979	40	2019, 2059		$ 26,727				$ 26,727	
225 KVA Transformer	2	Ea	$ 26,726.70	$ 53,453	1989	40	2029			$ 53,453				
225 KVA Transformer	1	Ea	$ 26,726.70	$ 26,727	2004	40	2044					$ 26,727		
300 KVA Transformer	1	Ea	$ 31,981.95	$ 31,982	1964	40	2013, 2053	$ 31,982					$ 31,982	
300 KVA Transformer	1	Ea	$ 31,981.95	$ 31,982	1977	40	2017, 2057	$ 31,982					$ 31,982	
300 KVA Transformer	1	Ea	$ 31,981.95	$ 31,982	1978	40	2018, 2058		$ 31,982				$ 31,982	
300 KVA Transformer	1	Ea	$ 31,981.95	$ 31,982	1991	40	2031			$ 31,982				
300 KVA Transformer	2	Ea	$ 31,981.95	$ 63,964	1993	40	2033				$ 63,964			
300 KVA Transformer	1	Ea	$ 31,981.95	$ 31,982	2003	40	2043					$ 31,982		
500 KVA Transformer	1	Ea	$ 39,789.75	$ 39,790	1970	40	2013, 2053	$ 39,790					$ 39,790	
500 KVA Transformer	1	Ea	$ 39,789.75	$ 39,790	1973	40	2013, 2053	$ 39,790					$ 39,790	
500 KVA Transformer	1	Ea	$ 39,789.75	$ 39,790	1975	40	2015, 2055	$ 39,790					$ 39,790	
500 KVA Transformer	2	Ea	$ 39,789.75	$ 79,580	1980	40	2020, 2060		$ 79,580				$ 79,580	
500 KVA Transformer	1	Ea	$ 39,789.75	$ 39,790	1989	40	2029			$ 39,790				
500 KVA Transformer	1	Ea	$ 39,789.75	$ 39,790	1992	40	2032			$ 39,790				
500 KVA Transformer	3	Ea	$ 39,789.75	$ 119,369	1997	40	2037				$ 119,369			
500 KVA Transformer	1	Ea	$ 39,789.75	$ 39,790	2007	40	2047					$ 39,790		
500 KVA Transformer	1	Ea	$ 39,789.75	$ 39,790	2009	40	2049					$ 39,790		
750 KVA Transformer	1	Ea	$ 49,849.80	$ 49,850	2004	40	2044					$ 49,850		
750 KVA Transformer	1	Ea	$ 49,849.80	$ 49,850	2011	40	2051					$ 49,850		
1000 KVA Transformer	1	Ea	$ 59,759.70	$ 59,760	1996	40	2036				$ 59,760			
1500 KVA Transformer	1	Ea	$ 69,369.30	$ 69,369	1992	40	2032			$ 69,369				
1500 KVA Transformer	1	Ea	$ 69,369.30	$ 69,369	2000	40	2040				$ 69,369			
2000 KVA Transformer	1	Ea	$ 84,834.75	$ 84,835	1985	40	2025			$ 84,835				
2000 KVA Transformer	1	Ea	$ 84,834.75	$ 84,835	1988	40	2028			$ 84,835				
Meter	1	Ea	$ 1,501.50	$ 1,502	1964	40	2013, 2053	$ 1,502					$ 1,502	
Meter	1	Ea	$ 1,501.50	$ 1,502	1973	40	2013, 2053	$ 1,502					$ 1,502	
Meter	1	Ea	$ 1,501.50	$ 1,502	1977	40	2017, 2057	$ 1,502					$ 1,502	
Meter	2	Ea	$ 1,501.50	$ 3,003	1980	40	2020, 2060		$ 3,003				$ 3,003	
Meter	3	Ea	$ 1,501.50	$ 4,505	1985	40	2025			$ 4,505				
Meter	1	Ea	$ 1,501.50	$ 1,502	1988	40	2028			$ 1,502				
Meter	2	Ea	$ 1,501.50	$ 3,003	1989	40	2029			$ 3,003				
Meter	1	Ea	$ 1,501.50	$ 1,502	1991	40	203			$ 1,502				

FACILITY....................Southern Utah University Utilities Infrastructure Assessment
LOCATION........................Cedar City, UT

DESCRIPTION	QTY	UNIT	REPLACEMENT UNIT COST	TOTAL 50 YR. REPLACEMENT COST	YEAR INSTALLED	EXPECTED LIFE (YRS.)	PROJECTED REPLACEMENT DATE	0-5 YR.	5-10 YR.	10-20 YR.	20-30 YR.	30-40 YR.	40-50 YR.	50+ YR. (First Replacement Cost)
Meter	2	Ea	$ 1,501.50	$ 3,003	1992	40	2032			$ 3,003				
Meter	1	Ea	$ 1,501.50	$ 1,502	1993	40	2033				$ 1,502			
Meter	2	Ea	$ 1,501.50	$ 3,003	1995	40	2035				$ 3,003			
Meter	2	Ea	$ 1,501.50	$ 3,003	1996	40	2036				$ 3,003			
Meter	3	Ea	$ 1,501.50	$ 4,505	1997	40	2037				$ 4,505			
Meter	1	Ea	$ 1,501.50	$ 1,502	1998	40	2038				$ 1,502			
Meter	1	Ea	$ 1,501.50	$ 1,502	2000	40	2040				$ 1,502			
Meter	1	Ea	$ 1,501.50	$ 1,502	2001	40	2041				$ 1,502			
Meter	1	Ea	$ 1,501.50	$ 1,502	2003	40	2043					$ 1,502		
Meter	3	Ea	$ 1,501.50	$ 4,505	2004	40	2044					$ 4,505		
Meter	2	Ea	$ 1,501.50	$ 3,003	2007	40	2047					$ 3,003		
Meter	2	Ea	$ 1,501.50	$ 3,003	2008	40	2048					$ 3,003		
Meter	3	Ea	$ 1,501.50	$ 4,505	2009	40	2049					$ 4,505		
Meter	1	Ea	$ 1,501.50	$ 1,502	2011	40	2051					$ 1,502		
2/0 Cable	39,453	LF	$ 11.11	$ 438,366	1985	40	2025			$ 438,366				
4/0 Cable	3,000	LF	$ 15.54	$ 46,622	1985	40	2025			$ 46,622				
500 MCM Cable	3,000	LF	$ 27.98	$ 83,948	1985	40	2025			$ 83,948				
Duct Bank w/ (4) 4" Conduit	12,177	LF	$ 177.18	$ 2,157,484	1985	40	2025			$ 2,157,484				
Conduit In Tunnel	3,300	LF	$ 103.60	$ 341,892	1985	40	2025			$ 341,892				
200 Amp Load Break Elbow	291	Ea	$ 619.59	$ 180,302	1985	40	2025			$ 180,302				
Central Plant Heating Production				$ 5,327,226				$ -	$ -	$ 858,408	$ 2,552,550	$ 1,079,033	$ 837,236	$ -
Heat Plant Building	10,000	SF	$ 255.26	$ 2,552,550	1985	50	2035				$ 2,552,550			
30,000 lb/hr Boiler #1	1	Ea	$ 735,735.00	$ 735,735	2011	50	2061						$ 735,735	
40,000 lb/hr Boiler #2	1	Ea	$ 1,079,032.50	$ 1,079,033	2001	50	2051					$ 1,079,033		
35,000 lb/hr Boiler #3	1	Ea	$ 858,407.55	$ 858,408	1973	50	2023			$ 858,408				
15,000 Gal. Emergency Back-up Fuel Tank	2	Ea	$ 50,750.70	$ 101,501	2007	50	2057						$ 101,501	
Central Plant Chilled Water Production				$ -				$ -	$ -	$ -	$ -	$ -	$ -	$ -
Chilled water is produced individually at each building														
Central Plant Water Conditioning				$ 30,030				$ -	$ -	$ 15,015	$ -	$ 15,015	$ -	$ -
Heat Plant Softener	1	Ea	$ 15,015.00	$ 15,015	2010	20	2030, 2050			$ 15,015		$ 15,015		
Steam/Chilled Water Distribution				$ 1,795,832				$ -	$ -	$ 1,795,832	$ -	$ -	$ -	$ -
10" Steam Line - In Tunnel	496	LF	$ 262.08	$ 129,992	1980	50	2030			$ 129,992				
8" Steam Line - In Tunnel	1,260	LF	$ 227.27	$ 286,363	1980	50	2030			$ 286,363				
6" Steam Line - In Tunnel	1,798	LF	$ 208.57	$ 375,012	1980	50	2030			$ 375,012				
4" Steam Line - In Tunnel	434	LF	$ 191.92	$ 83,293	1980	50	2030			$ 83,293				
3" Steam Line - In Tunnel	811	LF	$ 174.72	$ 141,698	1980	50	2030			$ 141,698				
6" Steam Line - Direct Bury	147	LF	$ 253.89	$ 37,322	1980	50	2030			$ 37,322				
5" Steam Line - Direct Bury	537	LF	$ 247.07	$ 132,674	1980	50	2030			$ 132,674				
4" Steam Line - Direct Bury	1,714	LF	$ 240.24	$ 411,771	1980	50	2030			$ 411,771				
3" Steam Line - Direct Bury	852	LF	$ 232.05	$ 197,707	1980	50	2030			$ 197,707				
Electrical Generation				$ 3,011,110				$ -	$ -	$ 1,505,555	$ 1,505,555	$ -	$ -	$ -
Roof Mount Arrays	94	KW	$ 16,004.63	$ 1,505,555	2010	15	2025, 2040			$ 1,505,555	$ 1,505,555			
Culinary Water Production & Distribution				$ 1,092,153				$ -	$ -	$ 3,617	$ 1,055,980	$ 10,852	$ 21,704	$ -
8" Water Pipe	6,045	LF	$ 64.16	$ 387,817	1990	50	2040				$ 387,817			
6" Water Pipe	4,047	LF	$ 49.14	$ 198,870	1990	50	2040				$ 198,870			
4" Water Pipe	4,297	LF	$ 40.27	$ 173,029	1990	50	2040				$ 173,029			
3" Water Pipe	1,148	LF	$ 36.17	$ 41,526	1990	50	2040				$ 41,526			
2" Water Pipe	3,249	LF	$ 32.08	$ 104,220	1990	50	2040				$ 104,220			
8" Valve	6	Ea	$ 3,207.75	$ 19,247	1990	50	2040				$ 19,247			

FACILITY..................Southern Utah University Utilities Infrastructure Assessment
LOCATION.....................Cedar City, UT

DESCRIPTION	QTY	UNIT	REPLACEMENT UNIT COST	TOTAL 50 YR. REPLACEMENT COST	YEAR INSTALLED	EXPECTED LIFE (YRS.)	PROJECTED REPLACEMENT DATE	0-5 YR.	5-10 YR.	10-20 YR.	20-30 YR.	30-40 YR.	40-50 YR.	50+ YR. (First Replacement Cost)
6" Valve	14	Ea	$ 2,627.63	$ 36,787	1990	50	2040				$ 36,787			
4" Valve	28	Ea	$ 1,965.60	$ 55,037	1990	50	2040				$ 55,037			
3" Valve	4	Ea	$ 1,126.13	$ 4,505	1990	50	2040				$ 4,505			
2" Valve	7	Ea	$ 341.25	$ 2,389	1990	50	2040				$ 2,389			
Fire Hydrant	1	Ea	$ 3,617.25	$ 3,617	1975	50	2025			$ 3,617				
Fire Hydrant	1	Ea	$ 3,617.25	$ 3,617	1983	50	2033				$ 3,617			
Fire Hydrant	1	Ea	$ 3,617.25	$ 3,617	1984	50	2034				$ 3,617			
Fire Hydrant	2	Ea	$ 3,617.25	$ 7,235	1985	50	2035				$ 7,235			
Fire Hydrant	1	Ea	$ 3,617.25	$ 3,617	1987	50	2037				$ 3,617			
Fire Hydrant	2	Ea	$ 3,617.25	$ 7,235	1988	50	2038				$ 7,235			
Fire Hydrant	2	Ea	$ 3,617.25	$ 7,235	1990	50	2040				$ 7,235			
Fire Hydrant	2	Ea	$ 3,617.25	$ 7,235	1993	50	2043					$ 7,235		
Fire Hydrant	1	Ea	$ 3,617.25	$ 3,617	1999	50	2049					$ 3,617		
Fire Hydrant	4	Ea	$ 3,617.25	$ 14,469	2003	50	2053						$ 14,469	
Fire Hydrant	1	Ea	$ 3,617.25	$ 3,617	2005	50	2055						$ 3,617	
Fire Hydrant	1	Ea	$ 3,617.25	$ 3,617	2006	50	2056						$ 3,617	
Tunnels (Including Pipe Rack, Cable Tray, Fiber-Optic)				**$ 1,628,813**				**$ 1,628,813**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 8,572,698**
8 X 8 Tunnel - Old	665	LF	$ 2,449.34	$ 1,628,813	1960	75	2013	$ 1,628,813						
8 X 8 Tunnel - Newer	3,500	LF	$ 2,449.34	$ 8,572,698	1990	75	2065							$ 8,572,698
Sanitary Waste				**$ 1,675,572**				**$ -**	**$ -**	**$ -**	**$ -**	**$ 1,675,572**	**$ -**	**$ -**
Sanitary Waste Piping	18,885	LF	$ 88.73	$ 1,675,572	1985	60	2045					$ 1,675,572		
Storm Water				**$ 695,230**				**$ -**	**$ -**	**$ -**	**$ -**	**$ 695,230**	**$ -**	**$ 92,069**
4" Storm Drain Pipe	1,219	LF	$ 45.05	$ 54,910	1990	60	2050					$ 54,910		
6" Storm Drain Pipe	2,699	LF	$ 50.51	$ 136,313	1990	60	2050					$ 136,313		
8" Storm Drain Pipe	1,289	LF	$ 55.97	$ 72,139	1990	60	2050					$ 72,139		
10" Storm Drain Pipe	223	LF	$ 58.01	$ 12,937	1990	60	2050					$ 12,937		
12" Storm Drain Pipe	1,132	LF	$ 62.11	$ 70,306	1990	60	2050					$ 70,306		
16" Storm Drain Pipe	69	LF	$ 73.71	$ 5,086	1990	60	2050					$ 5,086		
18" Storm Drain Pipe	4,377	LF	$ 78.49	$ 343,540	1990	60	2050					$ 343,540		
Future Line	1,173	LF	$ 78.49	$ 92,069	2013	60	2073							$ 92,069
Gas Distribution				**$ 530,731**				**$ -**	**$ -**	**$ -**	**$ 30,713**	**$ 487,734**	**$ 12,285**	**$ -**
6" Gas Line	807	LF	$ 43.68	$ 35,250	1995	50	2045					$ 35,250		
4" Gas Line	6,808	LF	$ 35.49	$ 241,616	1995	50	2045					$ 241,616		
2" Gas Line	5,730	LF	$ 30.03	$ 172,072	1995	50	2045					$ 172,072		
1" Gas Line	1,079	LF	$ 24.57	$ 26,511	1995	50	2045					$ 26,511		
Gas Meter	9	Ea	$ 2,047.50	$ 18,428	1985	50	2035				$ 18,428			
Gas Meter	3	Ea	$ 2,047.50	$ 6,143	1989	50	2039				$ 6,143			
Gas Meter	2	Ea	$ 2,047.50	$ 4,095	1991	50	2041				$ 4,095			
Gas Meter	1	Ea	$ 2,047.50	$ 2,048	1992	50	2042				$ 2,048			
Gas Meter	1	Ea	$ 2,047.50	$ 2,048	1993	50	2043					$ 2,048		
Gas Meter	1	Ea	$ 2,047.50	$ 2,048	1994	50	2044					$ 2,048		
Gas Meter	1	Ea	$ 2,047.50	$ 2,048	1996	50	2046					$ 2,048		
Gas Meter	1	Ea	$ 2,047.50	$ 2,048	1997	50	2047					$ 2,048		
Gas Meter	1	Ea	$ 2,047.50	$ 2,048	1998	50	2048					$ 2,048		
Gas Meter	1	Ea	$ 2,047.50	$ 2,048	2000	50	2050					$ 2,048		
Gas Meter	3	Ea	$ 2,047.50	$ 6,143	2004	50	2054						$ 6,143	
Gas Meter	1	Ea	$ 2,047.50	$ 2,048	2009	50	2059						$ 2,048	
Gas Meter	1	Ea	$ 2,047.50	$ 2,048	2010	50	2060						$ 2,048	
Gas Meter	1	Ea	$ 2,047.50	$ 2,048	2011	50	2061						$ 2,048	

FACILITY...................**University of Utah Utilities Infrastructure Assessment**
LOCATION......................Salt Lake City, UT

DESCRIPTION	QTY	UNIT	REPLACEMENT UNIT COST	TOTAL 50 YR. REPLACEMENT COST	YEAR INSTALLED	EXPECTED LIFE (YRS.)	PROJECTED REPLACEMENT DATE	0-5 YR.	5-10 YR.	10-20 YR.	20-30 YR.	30-40 YR.	40-50 YR.	50+ YR. (First Replacement Cost)
Total to Budget				**$ 353,081,575**				**$ 51,264,088**	**$ 45,050,765**	**$ 62,909,906**	**$ 54,605,944**	**$ 41,600,003**	**$ 97,650,870**	**$ 5,791,322**
Substations & Electrical Distribution				**$ 155,639,945**				**$ 36,954,775**	**$ 33,618,955**	**$ 15,461,953**	**$ 31,555,882**	**$ 4,269,980**	**$ 33,778,400**	**$ -**
Substation 1	1	Ea	$ 14,300,000.00	$ 14,300,000	1990	40	2030			$ 14,300,000				
Substation 2	1	Ea	$ 14,300,000.00	$ 14,300,000	2000	40	2040				$ 14,300,000			
Substation 3	1	Ea	$ 14,300,000.00	$ 14,300,000	2000	40	2040				$ 14,300,000			
100 KVA Transformer	1	Ea	$ 8,580.00	$ 8,580	1973	40	2013, 2053	$ 8,580					$ 8,580	
100 KVA Transformer	1	Ea	$ 8,580.00	$ 8,580	1973	40	2013, 2053	$ 8,580					$ 8,580	
750 KVA Transformer	1	Ea	$ 47,476.00	$ 47,476	1973	40	2013, 2053	$ 47,476					$ 47,476	
1000 KVA Transformer	1	Ea	$ 56,914.00	$ 56,914	1973	40	2013, 2053	$ 56,914					$ 56,914	
500 KVA Transformer	1	Ea	$ 37,895.00	$ 37,895	1973	40	2013, 2053	$ 37,895					$ 37,895	
50 KVA Transformer	1	Ea	$ 7,150.00	$ 7,150	1980	40	2020, 2060		$ 7,150				$ 7,150	
75 KVA Transformer	6	Ea	$ 8,580.00	$ 51,480	1981	40	2021, 2061		$ 51,480				$ 51,480	
75 KVA Transformer	2	Ea	$ 8,580.00	$ 17,160	1982	40	2022, 2062		$ 17,160				$ 17,160	
150 KVA Transformer	2	Ea	$ 19,019.00	$ 38,038	1983	40	2023			$ 38,038				
167 KVA Transformer	3	Ea	$ 20,319.00	$ 60,957	1984	40	2024			$ 60,957				
167 KVA Transformer	9	Ea	$ 20,319.00	$ 182,871	1985	40	2025			$ 182,871				
225 KVA Transformer	1	Ea	$ 25,454.00	$ 25,454	1986	40	2026			$ 25,454				
250 KVA Transformer	1	Ea	$ 28,275.00	$ 28,275	1987	40	2027			$ 28,275				
250 KVA Transformer	1	Ea	$ 28,275.00	$ 28,275	1988	40	2028			$ 28,275				
300 KVA Transformer	1	Ea	$ 30,459.00	$ 30,459	1989	40	2029			$ 30,459				
300 KVA Transformer	6	Ea	$ 30,459.00	$ 182,754	1990	40	2030			$ 182,754				
500 KVA Transformer	2	Ea	$ 37,895.00	$ 75,790	1991	40	2031			$ 75,790				
500 KVA Transformer	4	Ea	$ 37,895.00	$ 151,580	1992	40	2032			$ 151,580				
750 KVA Transformer	3	Ea	$ 47,476.00	$ 142,428	1993	40	2033				$ 142,428			
750 KVA Transformer	4	Ea	$ 47,476.00	$ 189,904	1994	40	2034				$ 189,904			
1000 KVA Transformer	1	Ea	$ 56,914.00	$ 56,914	1995	40	2035				$ 56,914			
1000 KVA Transformer	6	Ea	$ 56,914.00	$ 341,484	1996	40	2036				$ 341,484			
1500 KVA Transformer	4	Ea	$ 66,066.00	$ 264,264	1997	40	2037				$ 264,264			
1500 KVA Transformer	5	Ea	$ 66,066.00	$ 330,330	1998	40	2038				$ 330,330			
2000 KVA Transformer	6	Ea	$ 80,795.00	$ 484,770	1999	40	2039				$ 484,770			
2000 KVA Transformer	3	Ea	$ 80,795.00	$ 242,385	2000	40	2040				$ 242,385			
2500 KVA Transformer	5	Ea	$ 95,095.00	$ 475,475	2001	40	2041				$ 475,475			
3000 KVA Transformer	3	Ea	$ 142,642.50	$ 427,928	2002	40	2042				$ 427,928			
3000 KVA Transformer	2	Ea	$ 142,642.50	$ 285,285	2003	40	2043					$ 285,285		
2000 KVA Transformer	1	Ea	$ 95,095.00	$ 95,095	2004	40	2044					$ 95,095		
Unspecified Transformer	102	Ea	$ 37,180.00	$ 3,792,360	2004	40	2044					$ 3,792,360		
Digital Meter	68	Ea	$ 1,430.00	$ 97,240	2008	40	2048					$ 97,240		
Electro-Mechanical Meter	250	Ea	$ 1,430.00	$ 357,500	1990	40	2030			$ 357,500				
3 Way Switch	54	Ea	$ 47,190.00	$ 2,548,260	1976	40	2016, 2056	$ 2,548,260						
5 Way Switch	38	Ea	$ 70,785.00	$ 2,689,830	1976	40	2016, 2056	$ 2,689,830						
6 Way Switch	31	Ea	$ 75,790.00	$ 2,349,490	1976	40	2016, 2056	$ 2,349,490						
Switch - Various Types, Sizes	817	Ea	$ 35,750.00	$ 29,207,750	1976	40	2016, 2056	$ 29,207,750						
Wire Feeder (Overhead)	3,366	LF	$ 190.55	$ 641,405	1982	40	2022, 2062		$ 641,405				$ 641,405	
Duct Banks	168,868	LF	$ 168.74	$ 28,494,786	1982	40	2022, 2062		$ 28,494,786				$ 28,494,786	
Vaults	59	Ea	$ 35,750.00	$ 2,109,250	1982	40	2022, 2062		$ 2,109,250				$ 2,109,250	
Underground Switches - Manholes	103	Ea	$ 22,308.00	$ 2,297,724	1982	40	2022, 2062		$ 2,297,724				$ 2,297,724	
Central Plant Heating Production				**$ 68,365,326**				**$ 8,131,323**	**$ 7,316,452**	**$ 5,577,000**	**$ 861,775**	**$ 8,580,000**	**$ 37,898,775**	**$ -**
Central Plant Building - Lower	30,000	SF	$ 243.10	$ 7,293,000	1960	50	2013, 2063	$ 7,293,000					$ 7,293,000	
Central Plant Building - Upper	20,000	SF	$ 243.10	$ 4,862,000	1982	50	2032			$ 4,862,000				
Building Exterior Skin Fix & Asbestos Pipe Insulation Abatement	1	LS	$ 1,072,500.00	$ 1,072,500			2022		$ 1,072,500					

FACILITY....................University of Utah Utilities Infrastructure Assessment
LOCATION......................Salt Lake City, UT

DESCRIPTION	QTY	UNIT	REPLACEMENT UNIT COST	TOTAL 50 YR REPLACEMENT COST	YEAR INSTALLED	EXPECTED LIFE (YRS.)	PROJECTED REPLACEMENT DATE	0-5 YR.	5-10 YR.	10-20 YR.	20-30 YR.	30-40 YR.	40-50 YR.	50+ YR. (First Replacement Cost)
70 MMBTU/HR HTW Boiler	3	Ea	$ 2,860,000.00	$ 8,580,000	2001	50	2051					$ 8,580,000		
105 MMBTU/HR HTW Boiler	2	Ea	$ 3,575,000.00	$ 7,150,000	1968	50	2018		$ 7,150,000					
40 MMBTU/HR HTW Boiler (To Replace 105 MM Unit).	2	Ea	$ 1,644,500.00	$ 3,289,000	2013	50	2063						$ 3,289,000	
85 MMBTU/HR Co-Gen Waste Heat Recovery	1	Ea	$ 25,740,000.00	$ 25,740,000	2006	50	2056						$ 25,740,000	
10,000 Gal. HTW Expansion Tank	1	Ea	$ 143,000.00	$ 143,000	1971	30	2013, 2043	$ 143,000						
HTW Circulation Pump	3	Ea	$ 143,000.00	$ 429,000	1972	20	2013, 2033, 2053	$ 429,000			$ 429,000		$ 429,000	
HTW Flash Tank	1	Ea	$ 357,500.00	$ 357,500	2001	30	2031, 2061			$ 357,500			$ 357,500	
HTW Dump Tank	1	Ea	$ 357,500.00	$ 357,500	2001	30	2031, 2061			$ 357,500			$ 357,500	
60 HP Pump	4	Ea	$ 66,580.80	$ 266,323	1971	20	2013, 2033, 2053	$ 266,323			$ 266,323		$ 266,323	
75 HP Pump	2	Ea	$ 83,226.00	$ 166,452	2001	20	2021, 2041, 2061		$ 166,452		$ 166,452		$ 166,452	
Central Plant Chilled Water Production				$ 25,782,864				$ -	$ 2,048,358	$ 7,238,746	$ 3,225,248	$ 6,286,294	$ 6,984,218	$ -
Chiller Building - Near Ustar	6,480	SF	$ 243.10	$ 1,575,288	2011	50	2061						$ 1,575,288	
2000 Ton Chiller	4	Ea	$ 1,001,000.00	$ 4,004,000	2001	25	2026, 2051			$ 4,004,000		$ 4,004,000		
2000 Ton Chiller	2	Ea	$ 1,001,000.00	$ 2,002,000	2005	25	2030, 2055			$ 2,002,000			$ 2,002,000	
1400 Ton Chiller (Replacing w/ 2000 Ton)	2	Ea	$ 1,001,000.00	$ 2,002,000	2011	25	2036, 2061				$ 2,002,000		$ 2,002,000	
320 Ton Chiller	2	Ea	$ 160,160.00	$ 320,320	2011	25	2036, 2061				$ 320,320		$ 320,320	
323 Ton Chiller	1	Ea	$ 161,661.50	$ 161,662	2007	25	2032, 2057			$ 161,662			$ 161,662	
600 Ton Chiller	2	Ea	$ 300,300.00	$ 600,600	1996	25	2021, 2046		$ 600,600			$ 600,600		
630 Ton Chiller	2	Ea	$ 315,315.00	$ 630,630	1993	25	2018, 2043		$ 630,630			$ 630,630		
415 Ton Chiller	1	Ea	$ 207,707.50	$ 207,708	1998	25	2023, 2048			$ 207,708		$ 207,708		
40 Ton Chiller	1	Ea	$ 20,020.00	$ 20,020	2007	25	2032, 2057			$ 20,020			$ 20,020	
Condenser Pumps Heat Ex	1	Ea	$ 85,800.00	$ 85,800	2011	25	2036, 2061				$ 85,800		$ 85,800	
60 HP Condenser Pump	1	Ea	$ 66,580.80	$ 66,581	2011	20	2031, 2051			$ 66,581		$ 66,581		
200 HP Condenser Pump	2	Ea	$ 221,936.00	$ 443,872	2001	20	2021, 2041, 2061		$ 443,872		$ 443,872		$ 443,872	
150 HP Condenser Pump	2	Ea	$ 166,452.00	$ 332,904	2005	20	2025, 2045			$ 332,904		$ 332,904		
75 HP Primary Pump	2	Ea	$ 75,660.00	$ 151,320	2001	20	2021, 2041, 2061		$ 151,320		$ 151,320		$ 151,320	
60 HP Primary Pump	2	Ea	$ 66,580.80	$ 133,162	2005	20	2025, 2045			$ 133,162		$ 133,162		
30 HP Primary Pump	2	Ea	$ 33,290.40	$ 66,581	2011	20	2031, 2051			$ 66,581		$ 66,581		
60 HP CWS Pump	2	Ea	$ 66,580.80	$ 133,162	2005	20	2025, 2045			$ 133,162		$ 133,162		
100 HP CWS Pump	2	Ea	$ 110,968.00	$ 221,936	2001	20	2021, 2041, 2061		$ 221,936		$ 221,936		$ 221,936	
50 HP CWS Pump	2	Ea	$ 55,484.00	$ 110,968	2011	20	2031, 2051			$ 110,968		$ 110,968		
Steam/Chilled Water Distribution				$ 17,954,355				$ -	$ -	$ 155,610	$ -	$ 7,051,496	$ 10,747,249	$ -
10" HTW Pipe Supply	8,387	LF	$ 249.60	$ 2,093,395	2012	50	2062						$ 2,093,395	
8" HTW Pipe Return	8,387	LF	$ 216.45	$ 1,815,366	2012	50	2062						$ 1,815,366	
10" HTW Pipe - Direct Bury Triple Wall	8,387	LF	$ 416.00	$ 3,488,992	2012	50	2062						$ 3,488,992	
8" HTW Pipe - Direct Bury Triple Wall	8,387	LF	$ 396.50	$ 3,325,446	2012	50	2062						$ 3,325,446	
HTW Meters	37	Ea	$ 650.00	$ 24,050	2012	50	2062						$ 24,050	
HTW/CTW Manholes	42	Ea	$ 3,705.00	$ 155,610	1982	50	2032			$ 155,610				
24" CW Pipe	3,458	LF	$ 557.05	$ 1,926,279	1999	50	2049					$ 1,926,279		
16" CW Pipe	3,458	LF	$ 328.25	$ 1,135,089	1999	50	2049					$ 1,135,089		
24" CW Pipe - Direct Bury Triple Wall	3,458	LF	$ 689.00	$ 2,382,562	1999	50	2049					$ 2,382,562		
16" CW Pipe - Direct Bury Triple Wall	3,458	LF	$ 461.50	$ 1,595,867	1999	50	2049					$ 1,595,867		
CW Meters	18	Ea	$ 650.00	$ 11,700	1999	50	2049					$ 11,700		
Central Control Systems				$ 3,315,000				$ 325,000	$ 520,000	$ 390,000	$ 845,000	$ 390,000	$ 845,000	$ -
Wonderware HTW	1	Ea	$ 325,000.00	$ 325,000	2001	20	2021, 2041, 2061		$ 325,000		$ 325,000		$ 325,000	
Johnson Yokagowa HTW	1	Ea	$ 325,000.00	$ 325,000	1996	20	2016, 2036, 2056	$ 325,000			$ 325,000		$ 325,000	
Johnson Controls CHW	1	Ea	$ 195,000.00	$ 195,000	2011	20	2031, 2051			$ 195,000		$ 195,000		

FACILITY..................University of Utah Utilities Infrastructure Assessment
LOCATION....................Salt Lake City, UT

DESCRIPTION	QTY	UNIT	REPLACEMENT UNIT COST	TOTAL 50 YR. REPLACEMENT COST	YEAR INSTALLED	EXPECTED LIFE (YRS.)	PROJECTED REPLACEMENT DATE	0-5 YR.	5-10 YR.	10-20 YR.	20-30 YR.	30-40 YR.	40-50 YR.	50+ YR. (First Replacement Cost)
Johnson Controls CHW	1	Ea	$ 195,000.00	$ 195,000	2001	20	2021, 2041, 2061		$ 195,000		$ 195,000		$ 195,000	
Johnson Controls CHW	1	Ea	$ 195,000.00	$ 195,000	2012	20	2032, 2052			$ 195,000		$ 195,000		
Electrical Generation				$ 31,817,500				$ -	$ -	$ 15,372,500	$ 1,072,500	$ 14,300,000	$ 1,072,500	$ -
6000 KW Co-Gen Gas Turbine	1	Ea	$ 14,300,000.00	$ 14,300,000	2008	20	2028, 2048			$ 14,300,000		$ 14,300,000		
8 KW Solar PV	1	Ea	$ 121,550.00	$ 121,550	2008	15	2023, 2038, 2053			$ 121,550	$ 121,550		$ 121,550	
6 KW Solar PV	1	Ea	$ 92,950.00	$ 92,950	2009	15	2024, 2039, 2054			$ 92,950	$ 92,950		$ 92,950	
262 KW Solar PV Power Purchase Agreement	1	Ea	$ 378,950.00	$ 378,950	2011	15	2026, 2041, 2056			$ 378,950	$ 378,950		$ 378,950	
330 KW Solar PV Power Purchase Agreement	1	Ea	$ 479,050.00	$ 479,050	2011	15	2026, 2041, 2056			$ 479,050	$ 479,050		$ 479,050	
Culinary Water Production & Distribution				$ 14,032,715				$ 391,950	$ 1,547,000	$ 8,607,815	$ 1,547,000	$ 391,950	$ 1,547,000	$ -
Culinary Water Line	53,733	LF	$ 67.21	$ 3,611,395	1982	50	2032			$ 3,611,395				
Elevated Storage Tank	1	Ea	$ 2,426,710.00	$ 2,426,710	1982	50	2032			$ 2,426,710				
In-Ground Storage Tank	1	Ea	$ 2,426,710.00	$ 2,426,710	1982	50	2032			$ 2,426,710				
19,000 GPM Major Distribution Pump	5	Ea	$ 309,400.00	$ 1,547,000	2002	20	2022, 2042, 2062		$ 1,547,000		$ 1,547,000		$ 1,547,000	
PRV Station	2	Ea	$ 6,500.00	$ 13,000	1982	30	2013, 2043	$ 13,000				$ 13,000		
Major Primary Valves	6	Ea	$ 3,575.00	$ 21,450	1982	30	2013, 2043	$ 21,450				$ 21,450		
Production Well Including 800 GPM Pump	1	Ea	$ 357,500.00	$ 357,500	1982	20	2013, 2043	$ 357,500				$ 357,500		
Pump House	1	Ea	$ 143,000.00	$ 143,000	1982	50	2032			$ 143,000				
Tunnels (Including Pipe Rack & Cable Tray)				$ 10,922,080				$ 5,461,040	$ -	$ 5,461,040	$ -	$ -	$ -	$ 5,461,040
Tunnel (Varying Size, Old)	2,360	LF	$ 2,314.00	$ 5,461,040	1890	75	2013	$ 5,461,040						
Tunnel (Varying Size, Mid-Age)	2,360	LF	$ 2,314.00	$ 5,461,040	1950	75	2025			$ 5,461,040				
Tunnel (Varying Size, New)	2,360	LF	$ 2,314.00	$ 5,461,040	2010	75	2085							$ 5,461,040
Irrigation Water Production & Distribution				$ 4,576,147				$ -	$ -	$ 64,350	$ 64,350	$ -	$ 4,447,447	$ -
10" and Less Irrigation Line	66,279	LF	$ 61.10	$ 4,049,647	2012	50	2062						$ 4,049,647	
Irrigation Controller	171	Ea	$ 1,950.00	$ 333,450	2012	50	2062						$ 333,450	
800 GPM Irrigation Pump	1	Ea	$ 48,750.00	$ 48,750	2011	15	2026, 2041, 2056			$ 48,750	$ 48,750		$ 48,750	
50 GPM Irrigation Pump	1	Ea	$ 3,250.00	$ 3,250	2011	15	2026, 2041, 2056			$ 3,250	$ 3,250		$ 3,250	
Main Pump VFD	1	Ea	$ 7,800.00	$ 7,800	2011	15	2026, 2041, 2056			$ 7,800	$ 7,800		$ 7,800	
Irrigation Meter	1	Ea	$ 650.00	$ 650	2011	15	2026, 2041, 2056			$ 650	$ 650		$ 650	
Irrigation Control System	1	Ea	$ 3,900.00	$ 3,900	2011	15	2026, 2041, 2056			$ 3,900	$ 3,900		$ 3,900	
Sanitary Waste				$ 9,460,477				$ -	$ -	$ -	$ 9,460,477	$ -	$ -	$ -
Sewer Line	83,466	LF	$ 84.50	$ 7,052,877	1982	60	2042				$ 7,052,877			
Sewer Manholes	463	Ea	$ 5,200.00	$ 2,407,600	1982	60	2042				$ 2,407,600			
Storm Water				$ 5,571,737				$ -	$ -	$ 4,580,892	$ 330,282	$ 330,282	$ 330,282	$ 330,282
RCP Storm Water Line Replacement 10 Yr. Cycle	27,919	LF	$ 59.15	$ 1,651,409	1982	50	2032			$ 330,282	$ 330,282	$ 330,282	$ 330,282	$ 330,282
Catch Basin	2,186	Ea	$ 1,885.00	$ 4,120,610	1982	50	2032			$ 4,120,610				
Retention Basin	2	Ea	$ 13,000.00	$ 26,000	1982	50	2032			$ 26,000				
Detention Basin	8	Ea	$ 13,000.00	$ 104,000	1982	50	2032			$ 104,000				
Gas Distribution				$ 5,643,430				$ -	$ -	$ -	$ 5,643,430	$ -	$ -	$ -
Utility Metered Connections	8	Ea	$ 3,250.00	$ 26,000	1985	50	2035				$ 26,000			
Pressure Regulator	8	Ea	$ 3,022.50	$ 24,180	1985	50	2035				$ 24,180			
Distribution Piping	100,500	LF	$ 52.00	$ 5,226,000	1985	50	2035				$ 5,226,000			
Internal Campus Meters	113	Ea	$ 3,250.00	$ 367,250	1985	50	2035				$ 367,250			

FACILITY ASSESSMENT **CONSTRUCTION CONTROL CORPORATION** 1/11/2013

FACILITY....................**Utah State University Utilities Infrastructure Assessment**
LOCATION.....................Logan, UT

DESCRIPTION	QTY	UNIT	REPLACEMENT UNIT COST	TOTAL 50 YR. REPLACEMENT COST	YEAR INSTALLED	EXPECTED LIFE (YRS.)	PROJECTED REPLACEMENT DATE	0-5 YR.	5-10 YR.	10-20 YR.	20-30 YR.	30-40 YR.	40-50 YR	50+ YR. (First Replacement Cost)
Total to Budget				**$ 155,225,352**				**$ 24,820,662**	**$ 8,965,094**	**$ 28,984,111**	**$ 24,727,044**	**$ 31,012,906**	**$ 36,715,534**	**$ 26,691,106**
Electrical Generation				**$ 29,185,255**				**$ -**	**$ -**	**$ 13,058,238**	**$ 2,032,030**	**$ 13,058,238**	**$ 1,036,750**	**$ 715,000**
Cogeneration - 5 MW Gas Turbine Generator	1	EA	$ 11,917,000.00	$ 11,917,000	2004	20	2024, 2044			$ 11,917,000		$ 11,917,000		
Hydro - 300 KW Generator	1	EA	$ 1,036,750.00	$ 1,036,750	2000	40	2040, 2060				$ 1,036,750		$ 1,036,750	
Hydro -Generator Building	2,500	SF	$ 243.10	$ 607,750	2004	20	2024, 2044			$ 607,750		$ 607,750		
Dam	1	Ea	$ 715,000.00	$ 715,000	2000	100	2100							$ 715,000
Solar - 35 KW PV Array	35	KW	$ 15,242.50	$ 533,488	2011	20	2031, 2051			$ 533,488		$ 533,488		
Utility Plant Backup - 1.2 MW Diesel Generator	1	EA	$ 463,320.00	$ 463,320	2004	30	2034				$ 463,320			
Backup Fuel Tanks - 20,000 Gal	6	EA	$ 88,660.00	$ 531,960	2004	30	2034				$ 531,960			
Heating Production				**$ 10,495,225**				**$ -**	**$ -**	**$ 5,247,613**	**$ -**	**$ 214,500**	**$ 5,033,113**	**$ -**
Steam Boiler 80,000 LB	2	EA	$ 1,808,950.00	$ 3,617,900	2002	30	2032, 2062			$ 3,617,900			$ 3,617,900	
Steam Boiler 60,000 LB	1	EA	$ 1,356,712.50	$ 1,356,713	2002	30	2032, 2062			$ 1,356,713			$ 1,356,713	
De-aerator 250,000 LB	1	EA	$ 58,500.00	$ 58,500	2002	30	2032, 2062			$ 58,500			$ 58,500	
Heat Recovery 50,000 LB	1	EA	$ 214,500.00	$ 214,500	2004	20	2024, 2044			$ 214,500		$ 214,500		
Chilled Water Production				**$ 10,275,980**				**$ -**	**$ -**	**$ 5,137,990**	**$ -**	**$ 5,137,990**	**$ -**	**$ -**
Chiller 1800 TON	2	EA	$ 1,244,100.00	$ 2,488,200	2005	20	2025, 2045			$ 2,488,200		$ 2,488,200		
Chiller 900 TON	2	EA	$ 654,225.00	$ 1,308,450	2004	20	2024, 2044			$ 1,308,450		$ 1,308,450		
Cooling Tower 900 TON	7	EA	$ 191,620.00	$ 1,341,340	2004	20	2024, 2044			$ 1,341,340		$ 1,341,340		
Central Plant Water Conditioning				**$ 772,200**				**$ -**	**$ 257,400**	**$ -**	**$ 257,400**	**$ -**	**$ 257,400**	**$ -**
De-alkalizers 80 GPM	3	EA	$ 21,450.00	$ 64,350	2002	20	2022, 2042, 2062		$ 64,350		$ 64,350		$ 64,350	
Softener 80 GPM	3	EA	$ 28,600.00	$ 85,800	2002	20	2022, 2042, 2062		$ 85,800		$ 85,800		$ 85,800	
Polisher 120 GPM	3	EA	$ 35,750.00	$ 107,250	2002	20	2022, 2042, 2062		$ 107,250		$ 107,250		$ 107,250	
Culinary Water Production				**$ 1,763,450**				**$ -**	**$ 1,609,400**	**$ 16,250**	**$ 72,150**	**$ 16,250**	**$ 49,400**	**$ 97,760**
8" Production Well	1	EA	$ 32,760.00	$ 32,760	1982	100	2082							$ 32,760
12" Production Well	1	EA	$ 65,000.00	$ 65,000	2008	100	2108							$ 65,000
350 GPM Well Pump	1	EA	$ 9,750.00	$ 9,750	2006	30	2036				$ 9,750			
850 GPM Well Pump	1	EA	$ 13,000.00	$ 13,000	2008	30	2038				$ 13,000			
2,000 GPM Booster Pump	2	EA	$ 19,500.00	$ 39,000	1999	20	2019, 2039, 2059		$ 39,000		$ 39,000		$ 39,000	
1,200 GPM Booster Pump	1	EA	$ 16,250.00	$ 16,250	2007	20	2027, 2047			$ 16,250		$ 16,250		
1,000,000 Gal Storage Reservoir	1	EA	$ 1,560,000.00	$ 1,560,000	1969	50	2019		$ 1,560,000					
8" PRV Station	1	EA	$ 6,500.00	$ 6,500	2001	20	2021, 2041, 2061		$ 6,500		$ 6,500		$ 6,500	
4" PRV Station	1	EA	$ 3,900.00	$ 3,900	2002	20	2022, 2042, 2062		$ 3,900		$ 3,900		$ 3,900	
Electrical Distribution				**$ 49,047,104**				**$ 15,771,700**	**$ -**	**$ 1,852,028**	**$ 10,902,018**	**$ 4,749,658**	**$ 15,771,700**	**$ -**
Substation Transformer 10 MVA	1	EA	$ 214,500.00	$ 214,500	2011	40	2051					$ 214,500		
Substation Transformer 10 MVA	1	EA	$ 214,500.00	$ 214,500	2002	40	2042				$ 214,500			
Substation Transformer 10 MVA	2	EA	$ 214,500.00	$ 429,000	1994	40	2034				$ 429,000			
Substation Capacitor 1.65 MVAR	4	EA	$ 80,795.00	$ 323,180	1994	40	2034				$ 323,180			
Substation Voltage Regulator 7600V, 500 KVA	4	EA	$ 429,000.00	$ 1,716,000	2011	40	2051					$ 1,716,000		
Substation Voltage Regulator 7600V, 500 KVA	5	EA	$ 429,000.00	$ 2,145,000	1994	40	2034				$ 2,145,000			
Substation Voltage Regulator 7600V, 500 KVA	3	EA	$ 429,000.00	$ 1,287,000	2002	40	2042				$ 1,287,000			
15 KV 600A Circuit Breaker	10	EA	$ 105,105.00	$ 1,051,050	1994	40	2034				$ 1,051,050			
15 KV 600A Circuit Breaker	1	EA	$ 105,105.00	$ 105,105	2004	40	2044					$ 105,105		
46KV 1200A Circuit Breaker	1	EA	$ 137,995.00	$ 137,995	2004	40	2044					$ 137,995		
Revenue/PG Substation Meter	4	EA	$ 35,750.00	$ 143,000	2005	40	2045					$ 143,000		
Duct Bank - 2 - 4" Concrete Encased (0 - 25 yrs old)	1,631	LF	$ 127.27	$ 207,577	2000	40	2040				$ 207,577			
Duct Bank - 2 - 4" Concrete Encased (26 - 50 yrs old)	7,432	LF	$ 127.27	$ 945,871	1975	40	20[illegible]2055	$ 945,871					$ 945,871	

FACILITY....................Utah State University Utilities Infrastructure Assessment
LOCATION....................Logan, UT

DESCRIPTION	QTY	UNIT	REPLACEMENT UNIT COST	TOTAL 50 YR. REPLACEMENT COST	YEAR INSTALLED	EXPECTED LIFE (YRS.)	PROJECTED REPLACEMENT DATE	0-5 YR.	5-10 YR.	10-20 YR.	20-30 YR.	30-40 YR.	40-50 YR.	50+ YR (First Replacement Cost)
Duct Bank - 2 - 4" Concrete Encased (50+ yrs old)	7,093	LF	$ 127.27	$ 902,726	1960	40	2013, 2053	$ 902,726					$ 902,726	
Duct Bank - 4 - 4" Concrete Encased (0 - 25 yrs old)	4,893	LF	$ 168.74	$ 825,645	2000	40	2040				$ 825,645			
Duct Bank - 4 - 4" Concrete Encased (26 - 50 yrs old)	22,296	LF	$ 168.74	$ 3,762,227	1975	40	2015, 2055	$ 3,762,227					$ 3,762,227	
Duct Bank - 4 - 4" Concrete Encased (50+ yrs old)	21,281	LF	$ 168.74	$ 3,590,956	1960	40	2013, 2053	$ 3,590,956					$ 3,590,956	
Duct Bank - 2 - 6" Concrete Encased (0 - 25 yrs old)	1,631	LF	$ 137.28	$ 223,904	2000	40	2040				$ 223,904			
Duct Bank - 2 - 6" Concrete Encased (26 - 50 yrs old)	7,432	LF	$ 137.28	$ 1,020,265	1975	40	2015, 2055	$ 1,020,265					$ 1,020,265	
Duct Bank - 2 - 6" Concrete Encased (50+ yrs old)	7,093	LF	$ 137.28	$ 973,727	1960	40	2013, 2053	$ 973,727					$ 973,727	
Duct Bank - 4 - 6" Concrete Encased (0 - 25 yrs old)	543	LF	$ 183.04	$ 99,391	2000	40	2040				$ 99,391			
Duct Bank - 4 - 6" Concrete Encased (26 - 50 yrs old)	2,477	LF	$ 183.04	$ 453,390	1975	40	2015, 2055	$ 453,390					$ 453,390	
Duct Bank - 4 - 6" Concrete Encased (50+ yrs old)	2,364	LF	$ 183.04	$ 432,707	1960	40	2013, 2053	$ 432,707					$ 432,707	
Manhole - Switch Vault/Pull Box (0 - 25 yrs old)	35	EA	$ 22,308.00	$ 780,780	2000	40	2040				$ 780,780			
Manhole - Switch Vault/Pull Box (26 - 50 yrs old)	61	EA	$ 22,308.00	$ 1,360,788	1975	40	2015, 2055	$ 1,360,788					$ 1,360,788	
Manhole - Switch Vault/Pull Box (50+ yrs old)	45	EA	$ 22,308.00	$ 1,003,860	1950	40	2013, 2053	$ 1,003,860					$ 1,003,860	
Cables - #2 (40+ yrs old)	9,062	LF	$ 7.21	$ 65,312	1967	40	2013, 2053	$ 65,312					$ 65,312	
Cables - #2 (31 - 40 yrs old)	96	LF	$ 7.21	$ 692	1977	40	2017, 2057	$ 692					$ 692	
Cables - #2 (21 - 30 yrs old)	2,963	LF	$ 7.21	$ 21,355	1987	40	2027			$ 21,355				
Cables - #2 (11 - 20 yrs old)	7,678	LF	$ 7.21	$ 55,337	1997	40	2037				$ 55,337			
Cables - #2 (0 - 10 yrs old)	9,158	LF	$ 7.21	$ 66,004	2007	40	2047					$ 66,004		
Cables - '4/0 (40+ yrs old)	11,319	LF	$ 14.80	$ 167,527	1967	40	2013, 2053	$ 167,527					$ 167,527	
Cables - '4/0 (31 - 40 yrs old)	396	LF	$ 14.80	$ 5,861	1977	40	2017, 2057	$ 5,861					$ 5,861	
Cables - '4/0 (21 - 30 yrs old)	519	LF	$ 14.80	$ 7,681	1987	40	2027			$ 7,681				
Cables - '4/0 (11 - 20 yrs old)	1,840	LF	$ 14.80	$ 27,233	1997	40	2037				$ 27,233			
Cables - 4/0 (0 - 10 yrs old)	1,331	LF	$ 14.80	$ 19,699	2007	40	2047					$ 19,699		
Cables - '350 MCM (40 + yrs old)	7,176	LF	$ 21.45	$ 153,925	1967	40	2013, 2053	$ 153,925					$ 153,925	
Cables - 350 MCM (31 - 40 yrs old)	2,057	LF	$ 21.45	$ 44,123	1977	40	2017, 2057	$ 44,123					$ 44,123	
Cables - 350 MCM (21 - 30 yrs old)	4,629	LF	$ 21.45	$ 99,292	1987	40	2027			$ 99,292				
Cables - 350 MCM (11 - 20 yrs old)	27,539	LF	$ 21.45	$ 590,712	1997	40	2037				$ 590,712			
Cables - 350 MCM (0 - 10 yrs old)	9,550	LF	$ 21.45	$ 204,848	2007	40	2047					$ 204,848		
Transformers - 75 KVA, 12.47kV (0 - 10 yrs old)	1	EA	$ 8,580.00	$ 8,580	2007	40	2047					$ 8,580		
Transformers - 75 KVA, 12.47kV (11 - 20 yrs old)	4	EA	$ 8,580.00	$ 34,320	1997	40	2037				$ 34,320			
Transformers - 112.5 KVA, 12.47kV (0 - 10 yrs old)	1	EA	$ 16,851.90	$ 16,852	2007	40	2047					$ 16,852		
Transformers - 112.5 KVA, 12.47kV (21 - 30 yrs old)	1	EA	$ 16,851.90	$ 16,852	1987	40	2027			$ 16,852				
Transformers - 150 KVA, 12.47kV (0 - 10 yrs old)	3	EA	$ 19,019.00	$ 57,057	2007	40	2047					$ 57,057		
Transformers - 150 KVA, 12.47kV (11 - 20 yrs old)	5	EA	$ 19,019.00	$ 95,095	1997	40	2037				$ 95,095			
Transformers - 150 KVA, 12.47kV (21 - 30 yrs old)	3	EA	$ 19,019.00	$ 57,057	1987	40	2027			$ 57,057				
Transformers - 150 KVA, 12.47kV (31 - 40 yrs old)	3	EA	$ 19,019.00	$ 57,057	1977	40	2017, 2057	$ 57,057					$ 57,057	
Transformers - 150 KVA, 12.47kV (40+ yrs old)	1	EA	$ 19,019.00	$ 19,019	1967	40	2013, 2053	$ 19,019					$ 19,019	
Transformers - 225 KVA, 12.47kV (0 - 10 yrs old)	2	EA	$ 25,454.00	$ 50,908	2007	40	2047					$ 50,908		
Transformers - 225 KVA, 12.47kV (11 - 20 yrs old)	2	EA	$ 25,454.00	$ 50,908	1997	40	2037				$ 50,908			
Transformers - 300 KVA, 12.47kV (0 - 10 yrs old)	2	EA	$ 30,459.00	$ 60,918	2007	40	2047					$ 60,918		
Transformers - 300 KVA, 12.47kV (11 - 20 yrs old)	2	EA	$ 30,459.00	$ 60,918	1997	40	2037				$ 60,918			
Transformers - 300 KVA, 12.47kV (21 - 30 yrs old)	8	EA	$ 30,459.00	$ 243,672	1987	40	2027			$ 243,672				
Transformers - 300 KVA, 12.47kV (31 - 40 yrs old)	1	EA	$ 30,459.00	$ 30,459	1977	40	2017, 2057	$ 30,459					$ 30,459	
Transformers - 300 KVA, 12.47kV (40+ yrs old)	2	EA	$ 30,459.00	$ 60,918	1967	40	2013, 2053	$ 60,918					$ 60,918	
Transformers - 500 KVA, 12.47kV (0 - 10 yrs old)	7	EA	$ 37,895.00	$ 265,265	2007	40	2047					$ 265,265		
Transformers - 500 KVA, 12.47kV (11 - 20 yrs old)	11	EA	$ 37,895.00	$ 416,845	1997	40	2037				$ 416,845			
Transformers - 500 KVA, 12.47kV (21 - 30 yrs old)	3	EA	$ 37,895.00	$ 113,685	1987	40	2027			$ 113,685				
Transformers - 500 KVA, 12.47kV (31 - 40 yrs old)	3	EA	$ 37,895.00	$ 113,685	1977	40	2017, 2057	$ 113,685					$ 113,685	
Transformers - 500 KVA, 12.47kV (40+ yrs old)	2	EA	$ 37,895.00	$ 75,790	1967	40	2013, 2053	$ 75,790					$ 75,790	
Transformers - 750 KVA, 12.47kV (0 - 10 yrs old)	3	EA	$ 47,476.00	$ 142,428	2007	40	2047					$ 142,428		
Transformers - 750 KVA, 12.47kV (11 - 20 yrs old)	5	EA	$ 47,476.00	$ 237,380	1997	40	2037				$ 237,380			

FACILITY.................. **Utah State University Utilities Infrastructure Assessment**
LOCATION.................... Logan, UT

DESCRIPTION	QTY	UNIT	REPLACEMENT UNIT COST	TOTAL 50 YR. REPLACEMENT COST	YEAR INSTALLED	EXPECTED LIFE (YRS.)	PROJECTED REPLACEMENT DATE	0-5 YR.	5-10 YR.	10-20 YR.	20-30 YR	30-40 YR.	40-50 YR.	50+ YR. (First Replacement Cost)
Transformers - 750 KVA, 12.47kV (21 - 30 yrs old)	7	EA	$ 47,476.00	$ 332,332	1987	40	2027			$ 332,332				
Transformers - 750 KVA, 12.47kV (31 - 40 yrs old)	1	EA	$ 47,476.00	$ 47,476	1977	40	2017, 2057	$ 47,476					$ 47,476	
Transformers - 750 KVA, 12.47kV (40+ yrs old)	5	EA	$ 47,476.00	$ 237,380	1967	40	2013, 2053	$ 237,380					$ 237,380	
Transformers - 1000 KVA, 12.47kV (0 - 10 yrs old)	1	EA	$ 56,914.00	$ 56,914	2007	40	2047					$ 56,914		
Transformers - 1000 KVA, 12.47kV (11 - 20 yrs old)	1	EA	$ 56,914.00	$ 56,914	1997	40	2037				$ 56,914			
Transformers - 1000 KVA, 12.47kV (21 - 30 yrs old)	4	EA	$ 56,914.00	$ 227,656	1987	40	2027			$ 227,656				
Transformers - 1000 KVA, 12.47kV (40+ yrs old)	2	EA	$ 56,914.00	$ 113,828	1967	40	2013, 2053	$ 113,828					$ 113,828	
Transformers - 1500 KVA, 12.47kV (0 - 10 yrs old)	1	EA	$ 66,066.00	$ 66,066	2007	40	2047					$ 66,066		
Transformers - 1500 KVA, 12.47kV (11 - 20 yrs old)	3	EA	$ 66,066.00	$ 198,198	1997	40	2037				$ 198,198			
Transformers - 1500 KVA, 12.47kV (21 - 30 yrs old)	1	EA	$ 66,066.00	$ 66,066	1987	40	2027			$ 66,066				
Transformers - 1500 KVA, 12.47kV (40+ yrs old)	2	EA	$ 66,066.00	$ 132,132	1967	40	2013, 2053	$ 132,132					$ 132,132	
Transformers - 2500 KVA, 12.47kV (0 - 10 yrs old)	2	EA	$ 101,010.00	$ 202,020	2007	40	2047					$ 202,020		
Transformers - 3000 KVA, 12.47kV (11 - 20 yrs old)	1	EA	$ 121,192.50	$ 121,193	1997	40	2037				$ 121,193			
Meters - Digital (0 - 10 yrs old)	44	EA	$ 1,430.00	$ 62,920	2007	40	2047					$ 62,920		
Meters - Digital (11 - 20 yrs old)	78	EA	$ 1,430.00	$ 111,540	1997	40	2037				$ 111,540			
Meters - Electromechanical (21+ yrs old)	34	EA	$ 1,430.00	$ 48,620	1987	40	2027			$ 48,620				
VFI - Solid Dielectric (0 - 10 yrs old)	26	EA	$ 22,880.00	$ 594,880	2007	40	2047					$ 594,880		
Switch - Solid Dielectric (0 - 10 yrs old)	15	EA	$ 22,880.00	$ 343,200	2007	40	2047					$ 343,200		
VFI - SF6 Dielectric (11 - 20 yrs old)	18	EA	$ 22,880.00	$ 411,840	1997	40	2037				$ 411,840			
Switch - SF6 Dielectric (11 - 20 yrs old)	37	EA	$ 22,880.00	$ 846,560	1997	40	2037				$ 846,560			
OFC - Oil Dielectric (20+ yrs old)	10	EA	$ 22,880.00	$ 228,800	1987	40	2027			$ 228,800				
Switch - Oil Dielectric (20+ yrs old)	17	EA	$ 22,880.00	$ 388,960	1987	40	2027			$ 388,960				
Metal Clad 15KV Switchgear	2	EA	$ 107,250.00	$ 214,500	2005	40	2045					$ 214,500		
			$ -											
Steam/Chilled Water Distribution				$ 32,219,559				$ 2,388,835	$ 3,024,320	$ 3,232,099	$ 9,299,206	$ 5,805,319	$ 8,469,780	$ -
Steam Lines (in Tunnel) - 18" Steel Insul/Alum. Jacket	100	LF	$ 355.55	$ 35,555	2001	40	2041				$ 35,555			
Steam Lines (in Tunnel) - 14" Steel Insul/Alum. Jacket	4,400	LF	$ 302.25	$ 1,329,900	2001	40	2041				$ 1,329,900			
Steam Lines (in Tunnel) - 12" Steel Insul/Alum. Jacket	2,000	LF	$ 271.70	$ 543,400	2001	40	2041				$ 543,400			
Steam Lines (in Tunnel) - 10" Steel Insul/Alum. Jacket	1,800	LF	$ 249.60	$ 449,280	2001	40	2041				$ 449,280			
Steam Lines (in Tunnel) - 8" Steel Insul/Alum. Jacket	500	LF	$ 216.45	$ 108,225	2001	40	2041				$ 108,225			
Steam Lines (in Tunnel) - 6" Steel Insul/Alum. Jacket	1,200	LF	$ 198.64	$ 238,368	2001	40	2041				$ 238,368			
Steam Lines (in Tunnel) - 4" Steel Insul/Alum. Jacket	600	LF	$ 182.78	$ 109,668	2001	40	2041				$ 109,668			
Condensate Lines (In Tunnel) - 10" S.Steel Insul/Alum. Jacket	100	LF	$ 249.60	$ 24,960	2001	25	2026, 2051			$ 24,960		$ 24,960		
Condensate Lines (In Tunnel) - 8" S.Steel Insul/Alum. Jacket	5,600	LF	$ 216.45	$ 1,212,120	2001	25	2026, 2051			$ 1,212,120		$ 1,212,120		
Condensate Lines (In Tunnel) - 6" S.Steel Insul/Alum. Jacket	2,400	LF	$ 198.25	$ 475,800	2001	25	2026, 2051			$ 475,800		$ 475,800		
Condensate Lines (In Tunnel) - 4" S.Steel Insul/Alum. Jacket	2,000	LF	$ 182.78	$ 365,560	2001	25	2026, 2051			$ 365,560		$ 365,560		
Steam Lines (Direct Bury) - 20" Steel Gilsulate Insulation	500	LF	$ 406.90	$ 203,450	1995	40	2035				$ 203,450			
Steam Lines (Direct Bury) - 12" Steel Gilsulate Insulation	1,000	LF	$ 300.30	$ 300,300	1995	40	2035				$ 300,300			
Steam Lines (Direct Bury) - 12" Steel Gilsulate Insulation	500	LF	$ 300.30	$ 150,150	1985	40	2025			$ 150,150				
Steam Lines (Direct Bury) - 12" Steel Gilsulate Insulation	500	LF	$ 300.30	$ 150,150	1960	40	2013, 2053	$ 150,150				$ 150,150		
Steam Lines (Direct Bury) - 10" Steel Gilsulate Insulation	1,500	LF	$ 282.10	$ 423,150	2010	40	2050					$ 423,150		
Steam Lines (Direct Bury) - 10" Steel Gilsulate Insulation	1,000	LF	$ 282.10	$ 282,100	1995	40	2035				$ 282,100			
Steam Lines (Direct Bury) - 10" Steel Gilsulate Insulation	500	LF	$ 282.10	$ 141,050	1960	40	2013, 2053	$ 141,050				$ 141,050		
Steam Lines (Direct Bury) - 8" Steel Gilsulate Insulation	1,000	LF	$ 254.80	$ 254,800	1995	40	2035				$ 254,800			
Steam Lines (Direct Bury) - 8" Steel Gilsulate Insulation	500	LF	$ 254.80	$ 127,400	1975	40	2015, 2055	$ 127,400				$ 127,400		
Steam Lines (Direct Bury) - 6" Steel Gilsulate Insulation	1,000	LF	$ 241.80	$ 241,800	1995	40	2035				$ 241,800			
Steam Lines (Direct Bury) - 6" Steel Gilsulate Insulation	500	LF	$ 241.80	$ 120,900	1985	40	2025			$ 120,900				
Steam Lines (Direct Bury) - 4" Steel Gilsulate Insulation	1,900	LF	$ 228.80	$ 434,720	1995	40	2035				$ 434,720			
Steam Lines (Direct Bury) - 4" Steel Gilsulate Insulation	1,500	LF	$ 228.80	$ 343,200	1985	40	2025			$ 343,200				
Steam Lines (Direct Bury) - 4" Steel Gilsulate Insulation	1,000	LF	$ 228.80	$ 228,800	1975	40	2015, 2055	$ 228,800					$ 228,800	
Condensate Lines (Direct Bury) - 10" S.Steel Insul/Alum. Jacket	200	LF	$ 413.40	$ 82,680	1995	25	2020, 2045		$ 82,680			$ 82,680		

FACILITY....................Utah State University Utilities Infrastructure Assessment
LOCATION.......................Logan, UT

DESCRIPTION	QTY	UNIT	REPLACEMENT UNIT COST	TOTAL 50 YR. REPLACEMENT COST	YEAR INSTALLED	EXPECTED LIFE (YRS.)	PROJECTED REPLACEMENT DATE	0-5 YR.	5-10 YR.	10-20 YR.	20-30 YR	30-40 YR.	40-50 YR	50+ YR (First Replacement Cost)
Condensate Lines (Direct Bury) - 6" S.Steel Insul/Alum. Jacket	1,600	LF	$ 314.60	$ 503,360	2000	25	2025, 2050			$ 503,360		$ 503,360		
Condensate Lines (Direct Bury) - 6" S.Steel Insul/Alum. Jacket	1,500	LF	$ 314.60	$ 471,900	1995	25	2020, 2045		$ 471,900			$ 471,900		
Condensate Lines (Direct Bury) - 6" S.Steel Insul/Alum. Jacket	1,000	LF	$ 314.60	$ 314,600	1985	25	2013, 2038, 2053	$ 314,600			$ 314,600		$ 314,600	
Condensate Lines (Direct Bury) - 6" S.Steel Insul/Alum. Jacket	500	LF	$ 314.60	$ 157,300	1960	25	2013, 2038, 2053	$ 157,300			$ 157,300		$ 157,300	
Condensate Lines (Direct Bury) - 5" S.Steel Insul/Alum. Jacket	400	LF	$ 283.40	$ 113,360	1995	25	2020, 2045		$ 113,360			$ 113,360		
Condensate Lines (Direct Bury) - 5" S.Steel Insul/Alum. Jacket	400	LF	$ 283.40	$ 113,360	1980	25	2013, 2038, 2053	$ 113,360			$ 113,360		$ 113,360	
Condensate Lines (Direct Bury) - 4" S.Steel Insul/Alum. Jacket	400	LF	$ 253.50	$ 101,400	1995	25	2020, 2045		$ 101,400			$ 101,400		
Condensate Lines (Direct Bury) - 4" S.Steel Insul/Alum. Jacket	400	LF	$ 253.50	$ 101,400	1985	25	2013, 2038, 2053	$ 101,400			$ 101,400		$ 101,400	
Condensate Lines (Direct Bury) - 3" S.Steel Insul/Alum. Jacket	600	LF	$ 227.50	$ 136,500	1995	25	2020, 2045		$ 136,500			$ 136,500		
Condensate Lines (Direct Bury) - 3" S.Steel Insul/Alum. Jacket	500	LF	$ 227.50	$ 113,750	1985	25	2013, 2038, 2053	$ 113,750			$ 113,750		$ 113,750	
Condensate Lines (Direct Bury) - 2" S.Steel Insul/Alum. Jacket	3,800	LF	$ 184.60	$ 701,480	1995	25	2020, 2045		$ 701,480			$ 701,480		
Condensate Lines (Direct Bury) - 2" S.Steel Insul/Alum. Jacket	2,000	LF	$ 184.60	$ 369,200	1985	25	2013, 2038, 2053	$ 369,200			$ 369,200		$ 369,200	
Steam Trap (1/300 FT)	100	EA	$ 7,384.00	$ 738,400	2001	20	2021, 2046		$ 738,400			$ 738,400		
Steam Trap (1/300 FT)	75	EA	$ 7,384.00	$ 553,800	1985	20	2013, 2038, 2053	$ 553,800			$ 553,800		$ 553,800	
Pressure Gauges (2/400 FT)	100	EA	$ 78.65	$ 7,865	2001	25	2026, 2051			$ 7,865		$ 7,865		
Pressure Gauges (2/400 FT)	50	EA	$ 78.65	$ 3,933	1985	25	2013, 2038, 2053	$ 3,933			$ 3,933		$ 3,933	
Thermometers (1/500 FT)	80	EA	$ 352.30	$ 28,184	2001	25	2026, 2051			$ 28,184		$ 28,184		
Thermometers (1/500 FT)	40	EA	$ 352.30	$ 14,092	1985	25	2013, 2038, 2053	$ 14,092			$ 14,092		$ 14,092	
Chilled Water Piping - 20" Steel Insul/Al. Jacket (Tunnel)	4,200	LF	$ 466.05	$ 1,957,410	2004	50	2054						$ 1,957,410	
Chilled Water Piping - 18" Steel Insul/Al. Jacket (Tunnel)	5,400	LF	$ 355.55	$ 1,919,970	2004	50	2054						$ 1,919,970	
Chilled Water Piping - 14" Steel Insul/Al. Jacket (Tunnel)	1,300	LF	$ 302.25	$ 392,925	2004	50	2054						$ 392,925	
Chilled Water Piping - 12" Steel Insul/Al. Jacket (Tunnel)	1,600	LF	$ 271.70	$ 434,720	2004	50	2054						$ 434,720	
Chilled Water Piping - 10" Steel Insul/Al. Jacket(Tunnel)	3,500	LF	$ 249.60	$ 873,600	2004	50	2054						$ 873,600	
Chilled Water Piping - 8" Steel Insul/Al. Jacket (Tunnel)	400	LF	$ 216.45	$ 86,580	2004	50	2054						$ 86,580	
Chilled Water Piping - 6" Steel Insul/Al. Jacket (Tunnel)	600	LF	$ 198.64	$ 119,184	2004	50	2054						$ 119,184	
Chilled Water Piping - 4" Steel Insul/Al. Jacket (Tunnel)	200	LF	$ 182.78	$ 36,556	2004	50	2054						$ 36,556	
Chilled Water Piping - 16" PVC Preinsul. (Direct Bury)	400	LF	$ 487.50	$ 195,000	2012	30	2042				$ 195,000			
Chilled Water Piping - 12" PVC Preinsul. (Direct Bury)	1,500	LF	$ 452.40	$ 678,600	1998	20	2018, 2038, 2058		$ 678,600		$ 678,600		$ 678,600	
Chilled Water Piping - 6" PVC Preinsul. (Direct Bury)	4,400	LF	$ 314.60	$ 1,384,240	2008	30	2038				$ 1,384,240			
Chilled Water Piping - 4" PVC Preinsul. (Direct Bury)	1,500	LF	$ 253.50	$ 380,250	2008	30	2038				$ 380,250			
Pressure Gauges (2/400 FT)	100	EA	$ 78.65	$ 7,865	2004	30	2034				$ 7,865			
20" Valves	10	EA	$ 16,120.00	$ 161,200	2004	30	2034				$ 161,200			
18" Valves	12	EA	$ 12,122.50	$ 145,470	2004	30	2034				$ 145,470			
16" Valves	2	EA	$ 7,767.50	$ 15,535	2004	30	2034				$ 15,535			
12"Valves	6	EA	$ 2,730.00	$ 16,380	2004	30	2034				$ 16,380			
10" Valves	8	EA	$ 2,405.00	$ 19,240	2004	30	2034				$ 19,240			
8" Valves	2	EA	$ 1,657.50	$ 3,315	2004	30	2034				$ 3,315			
6" Valves	14	EA	$ 1,365.00	$ 19,110	2004	30	2034				$ 19,110			
Tunnels (Including Pipe Rack & Cable Tray)				$ 5,652,400				$ 3,679,000	$ -	$ -	$ -	$ -	$ 1,973,400	$ 25,878,346
Main Tunnel (10 x 10) - (0 - 10 yrs old)	745	LF	$ 2,600.00	$ 1,937,000	2011	75	2086							$ 1,937,000
Main Tunnel (10 x 10) - (11 - 30 yrs old)	7,260	LF	$ 2,600.00	$ 18,876,000	2000	75	2075							$ 18,876,000
Main Tunnel (10 x 10) - (31 - 50 yrs old)	759	LF	$ 2,600.00	$ 1,973,400	1988	75	2063						$ 1,973,400	
Main Tunnel (10 x 10) - (71+ yrs old)	1,415	LF	$ 2,600.00	$ 3,679,000	1925	75	2013	$ 3,679,000						
Branch Tunnels - 9 x 8	2,189	LF	$ 2,314.00	$ 5,065,346	2000	75	2075							$ 5,065,346
Pedestrian 10 x 8	398	LF		NIC	1995	75	2070							NIC
Culinary Water Distribution				$ 5,866,910				$ 641,014	$ 2,053,504	$ 116,675	$ 911,242	$ 431,990	$ 1,712,485	$ -
14-inch (41 - 60 yrs old)	5,879	LF	$ 108.55	$ 638,165	1962	60	2022		$ 638,165					
Piping - 12-inch (0 - 20 yrs old)	1,179	LF	$ 98.80	$ 116,485	2002	60	2062						$ 116,485	
Piping - 12-inch (21 - 40 yrs old)	578	LF	$ 98.80	$ 57,106	1982	60	2042				$ 57,106			

FACILITY..................Utah State University Utilities Infrastructure Assessment
LOCATION...................Logan, UT

DESCRIPTION	QTY	UNIT	REPLACEMENT UNIT COST	TOTAL 50 YR. REPLACEMENT COST	YEAR INSTALLED	EXPECTED LIFE (YRS.)	PROJECTED REPLACEMENT DATE	0-5 YR.	5-10 YR.	10-20 YR.	20-30 YR.	30-40 YR.	40-50 YR.	50+ YR (First Replacement Cost)
Piping - 12-inch (41 - 60 yrs old)	1,264	LF	$ 98.80	$ 124,883	1962	60	2022		$ 124,883					
Piping - 10-inch (0 - 20 yrs old)	2,635	LF	$ 93.60	$ 246,636	2002	60	2062						$ 246,636	
Piping - 10-inch (21 - 40 yrs old)	732	LF	$ 93.60	$ 68,515	1982	60	2042				$ 68,515			
Piping - 10-inch (41 - 60 yrs old)	1,567	LF	$ 93.60	$ 146,671	1962	60	2022		$ 146,671					
Piping - 10-inch (60+ yrs old)	1,651	LF	$ 93.60	$ 154,534	1942	60	2013	$ 154,534						
Piping - 8-inch (0 - 20 yrs old)	8,223	LF	$ 87.10	$ 716,223	2002	60	2062						$ 716,223	
Piping - 8-inch (21 - 40 yrs old)	1,389	LF	$ 87.10	$ 120,982	1982	60	2042				$ 120,982			
Piping - 8-inch (41 - 60 yrs old)	5,504	LF	$ 87.10	$ 479,398	1962	60	2022		$ 479,398					
Piping - 6-inch (0 - 20 yrs old)	6,166	LF	$ 72.80	$ 448,885	2002	60	2062						$ 448,885	
Piping - 6-inch (21 - 40 yrs old)	7,260	LF	$ 72.80	$ 528,528	1982	60	2042				$ 528,528			
Piping - 6-inch (41 - 60 yrs old)	4,604	LF	$ 72.80	$ 335,171	1962	60	2022		$ 335,171					
Piping - 6-inch (60+ yrs old)	83	LF	$ 72.80	$ 6,042	1942	60	2013	$ 6,042						
Piping - 4-inch (0 - 20 yrs old)	729	LF	$ 64.35	$ 46,911	2002	60	2062						$ 46,911	
Piping - 4-inch (21 - 40 yrs old)	600	LF	$ 64.35	$ 38,610	1982	60	2042				$ 38,610			
Piping - 4-inch (41 - 60 yrs old)	5,116	LF	$ 64.35	$ 329,215	1962	60	2022		$ 329,215					
Piping - 4-inch (60+ yrs old)	164	LF	$ 64.35	$ 10,553	1942	60	2013	$ 10,553						
Meters - 12-inch (11 - 20 yrs old)	1	EA	$ 19,500.00	$ 19,500	1997	30	2027, 2057			$ 19,500			$ 19,500	
Meters - 10-inch (0 - 10 yrs old)	1	EA	$ 16,250.00	$ 16,250	2007	30	2037				$ 16,250			
Meters - 8-inch (11 - 20 yrs old)	2	EA	$ 13,000.00	$ 26,000	1997	30	2027, 2057			$ 26,000			$ 26,000	
Meters - 8-inch (30+ yrs old)	2	EA	$ 13,000.00	$ 26,000	1977	30	2013, 2043	$ 26,000				$ 26,000		
Meters - 6-inch (0 - 10 yrs old)	5	EA	$ 9,750.00	$ 48,750	2007	30	2037				$ 48,750			
Meters - 6-inch (11 - 20 yrs old)	2	EA	$ 9,750.00	$ 19,500	1997	30	2027, 2057			$ 19,500			$ 19,500	
Meters - 6-inch (21 - 30 yrs old)	3	EA	$ 9,750.00	$ 29,250	1987	30	2017, 2047	$ 29,250				$ 29,250		
Meters - 6-inch (30+ yrs old)	8	EA	$ 9,750.00	$ 78,000	1977	30	2013, 2043	$ 78,000				$ 78,000		
Meters - 4-inch (0 - 10 yrs old)	3	EA	$ 6,500.00	$ 19,500	2007	30	2037				$ 19,500			
Meters - 4-inch (21 - 30 yrs old)	2	EA	$ 6,500.00	$ 13,000	1987	30	2017, 2047	$ 13,000				$ 13,000		
Meters - 4-inch (30+ yrs old)	12	EA	$ 6,500.00	$ 78,000	1977	30	2013, 2043	$ 78,000				$ 78,000		
Meters - < 4-inch (0 - 10 yrs old)	2	EA	$ 6,500.00	$ 13,000	2007	30	2037				$ 13,000			
Meters - < 4-inch (30+ yrs old)	15	EA	$ 6,500.00	$ 97,500	1977	30	2013, 2043	$ 97,500				$ 97,500		
Fire Hydrants - 6-inch (0 - 20 yrs old)	32	EA	$ 3,445.00	$ 110,240	2002	50	2052					$ 110,240		
Fire Hydrants - 6-inch (21 - 40 yrs old)	15	EA	$ 3,445.00	$ 51,675	1982	50	2032			$ 51,675				
Fire Hydrants - 6-inch (41-50 yrs old)	22	EA	$ 3,445.00	$ 75,790	1967	50	2017	$ 75,790						
Fire Hydrants - 6-inch (50+ yrs old)	21	EA	$ 3,445.00	$ 72,345	1952	50	2013, 2063	$ 72,345					$ 72,345	
Irrigation Distribution				$ 5,363,326				$ 1,967,299	$ 358,332	$ 131,339	$ 606,178	$ 1,598,961	$ 701,216	$ -
6" PRV	1	EA	$ 2,275.00	$ 2,275	1983	30	2013, 2043	$ 2,275				$ 2,275		
Pump - 75 hp split-case	2	EA	$ 83,226.00	$ 166,452	1986	20	2013, 2033, 2053	$ 166,452			$ 166,452		$ 166,452	
Pump - 75 hp split-case	2	EA	$ 83,226.00	$ 166,452	1992	20	2013, 2033, 2053	$ 166,452			$ 166,452		$ 166,452	
Pump - 25 hp turbine pumps	2	EA	$ 27,742.00	$ 55,484	1993	20	2013, 2033, 2053	$ 55,484			$ 55,484		$ 55,484	
Pump - 25 hp closed-case	2	EA	$ 27,742.00	$ 55,484	2012	20	2032			$ 55,484				
Pump - 20 hp closed-case	1	EA	$ 25,454.00	$ 25,454	2002	20	2022		$ 25,454					
VFD - 75 hp	2	EA	$ 14,690.00	$ 29,380	1992	20	2013, 2033, 2053	$ 29,380			$ 29,380		$ 29,380	
VFD - 75 hp	2	EA	$ 14,690.00	$ 29,380	2005	20	2025			$ 29,380				
VFD - 40 hp	2	EA	$ 8,612.50	$ 17,225	2007	20	2027			$ 17,225				
VFD - 25 hp	1	EA	$ 6,597.50	$ 6,598	1993	20	2013, 2033, 2053	$ 6,598			$ 6,598		$ 6,598	
Strainers - Amiad SAF-6000 auto	2	EA	$ 4,550.00	$ 9,100	2006	20	2026			$ 9,100				
Strainers - Amiad SAF-6000 auto	2	EA	$ 4,550.00	$ 9,100	2008	20	2028			$ 9,100				
Strainers - Rotating Drum Screen	1	EA	$ 6,500.00	$ 6,500	2002	25	2027			$ 6,500				
Strainers - Amiad SAF-4500	1	EA	$ 4,550.00	$ 4,550	2007	20	2027			$ 4,550				
Piping - 24" HDPE	4,300	LF	$ 54.60	$ 234,780	1936	50	2013, 2063	$ 234,780					$ 234,780	
Piping - 18" HDPE	760	LF	$ 32.50	$ 24,700	1936	50	2013, 2063	$ 24,700					$ 24,700	
Piping - 15" HDPE	4,840	LF	$ 24.57	$ 118,919	1986	50	2036				$ 118,919			

FACILITY..................Utah State University Utilities Infrastructure Assessment
LOCATION....................Logan, UT

DESCRIPTION	QTY	UNIT	REPLACEMENT UNIT COST	TOTAL 50 YR. REPLACEMENT COST	YEAR INSTALLED	EXPECTED LIFE (YRS.)	PROJECTED REPLACEMENT DATE	0-5 YR.	5-10 YR.	10-20 YR.	20-30 YR.	30-40 YR.	40-50 YR.	50+ YR. (First Replacement Cost)
Piping - 12" HDPE	1,020	LF	$ 17.03	$ 17,371	1953	50	2013, 2063	$ 17,371					$ 17,371	
Piping - 8" Class 200 O-ring	420	LF	$ 61.10	$ 25,662	1950	30	2013, 2043	$ 25,662				$ 25,662		
Piping - 8" Class 200 O-ring	1,200	LF	$ 61.10	$ 73,320	1970	30	2013, 2043	$ 73,320				$ 73,320		
Piping - 8" Class 200 O-ring	500	LF	$ 61.10	$ 30,550	1990	30	2020, 2050		$ 30,550			$ 30,550		
Piping - 6" Class 200 O-ring	3,260	LF	$ 46.80	$ 152,568	1950	30	2013, 2043	$ 152,568				$ 152,568		
Piping - 6" Class 200 O-ring	8,420	LF	$ 46.80	$ 394,056	1970	30	2013, 2043	$ 394,056				$ 394,056		
Piping - 6" Class 200 O-ring	5,280	LF	$ 46.80	$ 247,104	1990	30	2020, 2050		$ 247,104			$ 247,104		
Piping - 4" Class 200 O-ring	6,880	LF	$ 38.35	$ 263,848	1950	30	2013, 2043	$ 263,848				$ 263,848		
Piping - 4" Class 200 O-ring	9,240	LF	$ 38.35	$ 354,354	1970	30	2013, 2043	$ 354,354				$ 354,354		
Piping - 4" Class 200 O-ring	1,440	LF	$ 38.35	$ 55,224	1990	30	2020, 2050		$ 55,224			$ 55,224		
Piping - 4" Class 200 O-ring	1,640	LF	$ 38.35	$ 62,894	2005	30	2035				$ 62,894			
Sanitary Waste				$ 4,029,623				$ 372,814	$ 1,662,138	$ -	$ 646,820	$ -	$ 1,347,850	$ -
Piping - 15-inch (41 - 60 yrs old)	287	LF	$ 91.00	$ 26,117	1962	60	2022		$ 26,117					
Piping - 12-inch (0 - 20 yrs old)	1,264	LF	$ 84.50	$ 106,808	2002	60	2062						$ 106,808	
Piping - 12-inch (21 - 40 yrs old)	193	LF	$ 84.50	$ 16,309	1982	60	2042				$ 16,309			
Piping - 12-inch (41 - 60 yrs old)	633	LF	$ 84.50	$ 53,489	1962	60	2022		$ 53,489					
Piping - 10-inch (0 - 20 yrs old)	1,356	LF	$ 75.40	$ 102,242	2002	60	2062						$ 102,242	
Piping - 10-inch (41 - 60 yrs old)	1,894	LF	$ 75.40	$ 142,808	1962	60	2022		$ 142,808					
Piping - 8-inch (0 - 20 yrs old)	5,432	LF	$ 68.90	$ 374,265	2002	60	2062						$ 374,265	
Piping - 8-inch (21 - 40 yrs old)	1,617	LF	$ 68.90	$ 111,411	1982	60	2042				$ 111,411			
Piping - 8-inch (41 - 60 yrs old)	3,633	LF	$ 68.90	$ 250,314	1962	60	2022		$ 250,314					
Piping - 8-inch (60+ yrs old)	216	LF	$ 68.90	$ 14,882	1942	60	2002	$ 14,882						
Piping - 6-inch (0 - 20 yrs old)	2,688	LF	$ 62.40	$ 167,731	2002	60	2062						$ 167,731	
Piping - 6-inch (21 - 40 yrs old)	4,288	LF	$ 62.40	$ 267,571	1982	60	2042				$ 267,571			
Piping - 6-inch (41 - 60 yrs old)	7,072	LF	$ 62.40	$ 441,293	1962	60	2022		$ 441,293					
Piping - 6-inch (60+ yrs old)	2,348	LF	$ 62.40	$ 146,515	1942	60	2002	$ 146,515						
Piping - 4-inch (0 - 20 yrs old)	3,980	LF	$ 59.80	$ 238,004	2002	60	2062						$ 238,004	
Piping - 4-inch (21 - 40 yrs old)	2,554	LF	$ 59.80	$ 152,729	1982	60	2042				$ 152,729			
Piping - 4-inch (41 - 60 yrs old)	7,206	LF	$ 59.80	$ 430,919	1962	60	2022		$ 430,919					
Piping - 4-inch (60+ yrs old)	2,318	LF	$ 59.80	$ 138,616	1942	60	2002	$ 138,616						
Manholes - (0 - 20 yrs old)	56	EA	$ 5,200.00	$ 291,200	2002	60	2062						$ 291,200	
Manholes - (21 - 40 yrs old)	14	EA	$ 5,200.00	$ 72,800	1982	60	2042				$ 72,800			
Manholes - (41 - 60 yrs old)	58	EA	$ 5,200.00	$ 301,600	1962	60	2022		$ 301,600					
Manholes - (60+ yrs old)	14	EA	$ 5,200.00	$ 72,800	1942	60	2002	$ 72,800						
Pre-Treatment - (0 - 20 yrs old)	13	EA	$ 5,200.00	$ 67,600	2002	60	2062						$ 67,600	
Pre-Treatment - (21 - 40 yrs old)	5	EA	$ 5,200.00	$ 26,000	1982	60	2042				$ 26,000			
Pre-Treatment - (41 - 60 yrs old)	3	EA	$ 5,200.00	$ 15,600	1962	60	2022		$ 15,600					
Storm Water				$ 191,880				$ -	$ -	$ 191,880	$ -	$ -	$ -	$ -
Piping - 12" ADS	2,800	LF	$ 59.15	$ 165,620	1970	60	2030			$ 165,620				
Catch Basins	10	EA	$ 1,885.00	$ 18,850	1970	60	2030			$ 18,850				
4' Manholes	2	EA	$ 3,705.00	$ 7,410	1970	60	2030			$ 7,410				
Gas Distribution				$ 362,440				$ -	$ -	$ -	$ -	$ -	$ 362,440	$ -
Piping - 3" Poly	1,300	LF	$ 31.20	$ 40,560	2003	50	2053						$ 40,560	
Piping - 3" Poly	2,000	LF	$ 31.20	$ 62,400	2008	50	2058						$ 62,400	
Piping - 2" Poly	2,100	LF	$ 28.60	$ 60,060	2003	50	2053						$ 60,060	
Piping - 2" Poly	2,300	LF	$ 28.60	$ 65,780	2008	50	2058						$ 65,780	
Piping - 1-1/4" Poly	1,800	LF	$ 24.70	$ 44,460	2003	50	2053						$ 44,460	
Piping - 1-1/4" Poly	2,000	LF	$ 24.70	$ 49,400	2008	50	2058						$ 49,400	
Piping - 1" Poly	900	LF	$ 23.40	$ 21,060	2003	50	2053						$ 21,060	
Piping - 1" Poly	800	LF	$ 23.40	$ 18,720	2008	50	2058						$ 18,720	

FACILITY ASSESSMENT **CONSTRUCTION CONTROL CORPORATION** 1/11/2013

FACILITY....................**Utah State University/College of Eastern Utah Utilities Infrastructure Assessment**
LOCATION.................Price, UT

DESCRIPTION	QTY	UNIT	REPLACEMENT UNIT COST	TOTAL 50 YR. REPLACEMENT COST	YEAR INSTALLED	EXPECTED LIFE (YRS.)	PROJECTED REPLACEMENT DATE	0-5 YR.	5-10 YR.	10-20 YR.	20-30 YR.	30-40 YR.	40-50 YR.	50+ YR. (First Replacement Cost)
Total to Budget				**$ 11,956,125**				**$ 1,268,142**	**$ 547,863**	**$ 143,000**	**$ 886,505**	**$ 8,224,110**	**$ 886,505**	**$ 1,553,981**
Electrical Distribution				**$ 3,134,471**				**$ -**	**$ -**	**$ -**	**$ -**	**$ 3,134,471**	**$ -**	**$ -**
Substation Total Cost	1	Ea	$ 1,255,725.90	$ 1,255,726	2003	40	2043					$ 1,255,726		
Wire Feeders	3548	LF	$ 209.60	$ 743,669	2005	40	2045					$ 743,669		
Vaults	7	Ea	$ 39,325.00	$ 275,275	2005	40	2045					$ 275,275		
Switchgear	8	Ea	$ 51,909.00	$ 415,272	2005	40	2045					$ 415,272		
Switching Manholes	16	Ea	$ 24,538.80	$ 392,621	2005	40	2045					$ 392,621		
Re-closer Switches	1	Ea	$ 51,909.00	$ 51,909	2005	40	2045					$ 51,909		
Central Plant Heating Production				**$ 1,715,357**				**$ -**	**$ -**	**$ -**	**$ -**	**$ 1,715,357**	**$ -**	**$ -**
Heat Plant Building	3,000	SF	$ 267.41	$ 802,230	2000	50	2050					$ 802,230		
16738 MBH Boiler	1	Ea	$ 430,058.20	$ 430,058	2002	50	2052					$ 430,058		
16738 MBH Boiler	1	Ea	$ 430,058.20	$ 430,058	2002	50	2052					$ 430,058		
5 HP Feed Water Pump	1	Ea	$ 5,977.40	$ 5,977	2002	50	2052					$ 5,977		
7.5 HP Feed Water Pump	1	Ea	$ 7,629.05	$ 7,629	2002	50	2052					$ 7,629		
3700 Gal. De-aerator Tank	1	Ea	$ 4,168.45	$ 4,168	2002	50	2052					$ 4,168		
10,000 Gal. Fuel Oil Tank	1	Ea	$ 35,235.20	$ 35,235	2002	50	2052					$ 35,235		
Central Plant Chilled Water Production				**$ 2,144,715**				**$ 195,642**	**$ 519,263**	**$ -**	**$ 714,905**	**$ -**	**$ 714,905**	**$ -**
250 Ton Chiller	1	Ea	$ 195,641.88	$ 195,642	1997	20	2017, 2037, 2057	$ 195,642			$ 195,642		$ 195,642	
250 Ton Chiller	1	Ea	$ 195,641.88	$ 195,642	1998	20	2018, 2038, 2058		$ 195,642		$ 195,642		$ 195,642	
250 Ton Chiller	1	Ea	$ 195,641.88	$ 195,642	2002	20	2022, 2042, 2062		$ 195,642		$ 195,642		$ 195,642	
30 HP Pump	2	Ea	$ 36,619.44	$ 73,239	1998	20	2018, 2038, 2058		$ 73,239		$ 73,239		$ 73,239	
30 HP VFD	2	Ea	$ 27,370.20	$ 54,740	1998	20	2018, 2038, 2058		$ 54,740		$ 54,740		$ 54,740	
Central Plant Water Conditioning				**$ 85,800**				**$ -**	**$ 28,600**	**$ -**	**$ 28,600**	**$ -**	**$ 28,600**	**$ -**
2472 Gal. Water Softener	2	Ea	$ 14,300.00	$ 28,600	2002	20	2022, 2042, 2062		$ 28,600		$ 28,600		$ 28,600	
Central Control Systems				**$ 107,250**				**$ -**	**$ -**	**$ -**	**$ -**	**$ 107,250**	**$ -**	**$ -**
I-NET HVAC automation control system	1	Ea	$ 107,250.00	$ 107,250	2001	50	2051					$ 107,250		
Steam/Chilled Water Distribution				**$ 3,090,427**				**$ -**	**$ -**	**$ -**	**$ -**	**$ 3,090,427**	**$ -**	**$ -**
4" Steam Distribution Pipe - Direct Bury (Average Age)	3582	LF	$ 251.68	$ 901,518	1995	50	2045					$ 901,518		
2" Condensate Return Pipe - Direct Bury (Average Age)	3582	LF	$ 203.06	$ 727,361	1995	50	2045					$ 727,361		
Steam Pump	8	Ea	$ 7,629.05	$ 61,032	1995	50	2045					$ 61,032		
6" Chilled Water Pipe - Direct Bury	2676	LF	$ 265.98	$ 711,762	1999	50	2049					$ 711,762		
4" Chilled Water Return Pipe - Direct Bury	2676	LF	$ 251.68	$ 673,496	1999	50	2049					$ 673,496		
CW Pump	2	Ea	$ 7,629.05	$ 15,258	1995	50	2045					$ 15,258		
Culinary Water Production & Distribution				**$ 286,000**				**$ -**	**$ -**	**$ 71,500**	**$ 71,500**	**$ 71,500**	**$ 71,500**	**$ 71,500**
10 Year Allowance										$ 71,500	$ 71,500	$ 71,500	$ 71,500	$ 71,500
Tunnels (Including Pipe Rack, Cable Tray, Fiber-Optic)				**$ -**				**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 1,410,981**
Old Tunnel - to be abandoned, replaced w/ direct bury														
New Tunnel	550	LF	$ 2,565.42	$ 1,410,981	2006	75	2081							$ 1,410,981
Irrigation Water Production & Distribution				**$ 1,072,500**				**$ 1,072,500**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**
Rework Irrigation System	1	LS	$ 1,072,500.00	$ 1,072,500			2013	$ 1,072,500						
Sanitary Waste				**$ 286,000**				**$ -**	**$ -**	**$ 71,500**	**$ 71,500**	**$ 71,500**	**$ 71,500**	**$ 71,500**
10 Year Allowance										$ 71,500	$ 71,500	$ 71,500	$ 71,500	$ 71,500
Gas Distribution				**$ 33,605**				**$ -**	**$ -**	**$ -**	**$ -**	**$ 33,605**	**$ -**	**$ -**
2" Gas Line	1,000	LF	$ 31.46	$ 31,460	1998	50	2048					$ 31,460		
Gas Meter	1	LF	$ 2,145.00	$ 2,145	1998	50	2048					$ 2,145		

FACILITY....................Utah Valley University Utilities Infrastructure Assessment
LOCATION.....................Orem, UT

DESCRIPTION	QTY	UNIT	REPLACEMENT UNIT COST	TOTAL 50 YR. REPLACEMENT COST	YEAR INSTALLED	EXPECTED LIFE (YRS.)	PROJECTED REPLACEMENT DATE	0-5 YR.	5-10 YR.	10-20 YR.	20-30 YR.	30-40 YR.	40-50 YR.	50+ YR. (First Replacement
Total to Budget				**$ 96,275,407**				**$ 7,226,241**	**$ 5,318,742**	**$ 29,585,900**	**$ 19,693,903**	**$ 14,189,782**	**$ 20,260,839**	**$ 1,261,346**
Substation & Electrical Loops				**$ 17,576,130**				**$ 2,210,065**	**$ 3,289,000**	**$ -**	**$ 3,289,000**	**$ 3,289,000**	**$ 5,499,065**	**$ -**
Substation Total Cost	1	Ea	$ 3,289,000.00	$ 3,289,000	2006	40	2046					$ 3,289,000		
Pathways/Vaults/Wire	1	LS	$ 1,033,890.00	$ 1,033,890	1975	40	2015, 2055	$ 1,033,890					$ 1,033,890	
External Transformers	15	Ea	$ 20,735.00	$ 311,025	1975	40	2015, 2055	$ 311,025					$ 311,025	
Switching Systems	1	LS	$ 293,150.00	$ 293,150	1975	40	2015, 2055	$ 293,150					$ 293,150	
Underground Electrical Vaults	16	Ea	$ 35,750.00	$ 572,000	1975	40	2015, 2055	$ 572,000					$ 572,000	
Generators, Controls, & Exterior Switches	10	Ea	$ 328,900.00	$ 3,289,000	2000	20	2020, 2040, 2060		$ 3,289,000		$ 3,289,000		$ 3,289,000	
Central Plant Heating Production				**$ 9,696,744**				**$ 215,358**	**$ -**	**$ 2,015,256**	**$ 373,516**	**$ 5,077,358**	**$ 2,015,256**	**$ -**
Central Plant Building	20,000	SF	$ 243.10	$ 4,862,000	2000	50	2050					$ 4,862,000		
Domestic Boiler 12.6M BTU Capacity	2	Ea	$ 294,294.00	$ 588,588	2000	30	2030, 2060			$ 588,588			$ 588,588	
Condensing Boiler 4M BTU	4	Ea	$ 93,379.00	$ 373,516	2012	30	2042				$ 373,516			
2 Domestic Boilers and Tanks - Not Defined	2	Ea	$ 128,700.00	$ 257,400	1997	30	2027, 2057			$ 257,400			$ 257,400	
125 HP w/ 125 HP VFD Hot Water Pump	2	Ea	$ 167,596.00	$ 335,192	2000	30	2030, 2060			$ 335,192			$ 335,192	
60 HP w/ 60 HP VFD Hot Water Pump	2	Ea	$ 90,318.80	$ 180,638	2000	30	2030, 2060			$ 180,638			$ 180,638	
125 HP 2400 GPM @ 150' HD with 125 HP VFD Boost Pump	2	Ea	$ 167,596.00	$ 335,192	2000	30	2030, 2060			$ 335,192			$ 335,192	
Plate Frame Heat Exchanger	1	Ea	$ 71,500.00	$ 71,500	2000	30	2030, 2060			$ 71,500			$ 71,500	
Domestic Hot Water Tank	2	Ea	$ 7,150.00	$ 14,300	2000	30	2030, 2060			$ 14,300			$ 14,300	
Fuel Tank & Dispenser 15,000 Gal. Capacity	1	Ea	$ 48,334.00	$ 48,334	2000	30	2030, 2060			$ 48,334			$ 48,334	
Fuel Pump - 20 GPM, 40 PT Head, 1/3 HP, 200V	1	Ea	$ 2,216.50	$ 2,217	2000	30	2030, 2060			$ 2,217			$ 2,217	
8" - 10" Valves	48	Ea	$ 572.00	$ 27,456	2000	30	2030, 2060			$ 27,456			$ 27,456	
6" - 10" Valves	68	Ea	$ 643.50	$ 43,758	1975	30	2013, 2043	$ 43,758				$ 43,758		
Electric Actuators	18	Ea	$ 8,580.00	$ 154,440	2000	30	2030, 2060			$ 154,440			$ 154,440	
Electric Actuators	20	Ea	$ 8,580.00	$ 171,600	1975	30	2013, 2043	$ 171,600				$ 171,600		
Central Plant Chilled Water Production				**$ 15,987,915**				**$ 1,945,830**	**$ 2,001,142**	**$ 2,073,500**	**$ 3,946,972**	**$ 2,073,500**	**$ 3,946,972**	**$ -**
Centrifugal York Chiller 625 Ton	2	Ea	$ 500,500.00	$ 1,001,000	1993	20	2013, 2033, 2053	$ 1,001,000			$ 1,001,000		$ 1,001,000	
Centravac Trane Chiller 625 Ton	1	Ea	$ 500,500.00	$ 500,500	2010	20	2030, 2050			$ 500,500		$ 500,500		
Centrifugal York Chiller 625 Ton	2	Ea	$ 500,500.00	$ 1,001,000	2000	20	2020, 2040, 2060		$ 1,001,000		$ 1,001,000		$ 1,001,000	
Centravac Trane Chiller 725 Ton	2	Ea	$ 572,000.00	$ 1,144,000	2006	20	2026, 2046			$ 1,144,000		$ 1,144,000		
Centravac Trane Chiller 575 Ton	1	Ea	$ 429,000.00	$ 429,000	2011	20	2031, 2051			$ 429,000		$ 429,000		
1200 Chilled Water Pump	3	Ea	$ 7,150.00	$ 21,450	2000	20	2020, 2040, 2060		$ 21,450		$ 21,450		$ 21,450	
125 HP w/ 125 HP VFD Chilled Water Pump	2	Ea	$ 167,596.00	$ 335,192	1975	20	2013, 2033, 2053	$ 335,192			$ 335,192		$ 335,192	
60 HP w/ 60 HP VFD Chilled Water Pump	2	Ea	$ 90,318.80	$ 180,638	1975	20	2013, 2033, 2053	$ 180,638			$ 180,638		$ 180,638	
125 HP 2400 GPM @ 150' HD with 125 HP VFD Boost Pump	2	Ea	$ 167,596.00	$ 335,192	1999	20	2019, 2039, 2059		$ 335,192		$ 335,192		$ 335,192	
Upper Plant Cooling Towers 600 Ton - 1800 GPM, 40 HP, VFD	3	Ea	$ 214,500.00	$ 643,500	2000	20	2020, 2040, 2060		$ 643,500		$ 643,500		$ 643,500	
Lower Plant Cooling Tower 600 Ton - 1200 GPM	2	Ea	$ 214,500.00	$ 429,000	1975	20	2013, 2033, 2053	$ 429,000			$ 429,000		$ 429,000	
Central Plant Water Conditioning				**$ 514,800**				**$ -**	**$ 28,600**	**$ 214,500**	**$ 28,600**	**$ 214,500**	**$ 28,600**	**$ -**
Hot Water Softener System	2	Ea	$ 14,300.00	$ 28,600	1998	20	2018, 2038, 2058		$ 28,600		$ 28,600		$ 28,600	
Automatic Water Treatment System	1	Ea	$ 107,250.00	$ 107,250	2008	20	2028, 2048			$ 107,250		$ 107,250		
Automatic Water Treatment System	1	Ea	$ 107,250.00	$ 107,250	2004	20	2024, 2044			$ 107,250		$ 107,250		
Steam/Chilled Water Distribution				**$ 14,713,218**				**$ -**	**$ -**	**$ 14,713,218**	**$ -**	**$ -**	**$ -**	**$ -**
4 Pipe System of 12" Pipe	24,264	LF	$ 604.50	$ 14,667,588	1985	40	2025			$ 14,667,588				
Valves & Actuators	60	Ea	$ 760.50	$ 45,630	1985	40	2025			$ 45,630				

FACILITY....................Utah Valley University Utilities Infrastructure Assessment
LOCATION.....................Orem, UT

DESCRIPTION	QTY	UNIT	REPLACEMENT UNIT COST	TOTAL 50 YR. REPLACEMENT COST	YEAR INSTALLED	EXPECTED LIFE (YRS.)	PROJECTED REPLACEMENT DATE	0-5 YR.	5-10 YR.	10-20 YR.	20-30 YR.	30-40 YR.	40-50 YR.	50+ YR. (First Replacement
Central Control Systems				$ 1,146,132				$ -	$ -	$ 382,044	$ 382,044	$ -	$ 382,044	$ -
Yamas Controls - Enterprise Server	1	Ea	$ 7,384.00	$ 7,384	2008	15	2023, 2038, 2053			$ 7,384	$ 7,384		$ 7,384	
UNC 520's	36	Ea	$ 3,185.00	$ 114,660	2008	15	2023, 2038, 2053			$ 114,660	$ 114,660		$ 114,660	
Fiber and Copper Communications Support	50,000	LF	$ 5.20	$ 260,000	2008	15	2023, 2038, 2053			$ 260,000	$ 260,000		$ 260,000	
Fiber-Optic				$ 23,424,262				$ -	$ -	$ 7,605,287	$ 7,909,487	$ -	$ 7,909,487	$ -
6 Count	1,000	LF	$ 11.17	$ 11,167	2008	15	2023, 2038, 2053			$ 11,167	$ 11,167		$ 11,167	
6 Count Multi-Mode	1,500	LF	$ 11.17	$ 16,751	2008	15	2023, 2038, 2053			$ 16,751	$ 16,751		$ 16,751	
12 Count	11,400	LF	$ 22.33	$ 254,608	2008	15	2023, 2038, 2053			$ 254,608	$ 254,608		$ 254,608	
24 Count	10,400	LF	$ 44.71	$ 464,953	2008	15	2023, 2038, 2053			$ 464,953	$ 464,953		$ 464,953	
36 Count	2,900	LF	$ 66.99	$ 194,268	2008	15	2023, 2038, 2053			$ 194,268	$ 194,268		$ 194,268	
48 Count	10,600	LF	$ 89.32	$ 946,824	2008	15	2023, 2038, 2053			$ 946,824	$ 946,824		$ 946,824	
72 Count	7,000	LF	$ 133.99	$ 937,937	2008	15	2023, 2038, 2053			$ 937,937	$ 937,937		$ 937,937	
96 Count	12,500	LF	$ 178.65	$ 2,233,075	2008	15	2023, 2038, 2053			$ 2,233,075	$ 2,233,075		$ 2,233,075	
144 Count	9,500	LF	$ 267.97	$ 2,545,706	2008	15	2023, 2038, 2053			$ 2,545,706	$ 2,545,706		$ 2,545,706	
Underground Vault	15	Ea	$ 20,280.00	$ 304,200	2008	25	2033, 2058				$ 304,200		$ 304,200	
Wells and Well Houses				$ 4,751,146				$ 2,375,573	$ -	$ -	$ -	$ 2,375,573	$ -	$ 1,261,346
200 HP Vertical Direct Drive Pump	3	Ea	$ 221,936.00	$ 665,808	1975	30	2013, 2043	$ 665,808				$ 665,808		
Well Pump 12" Pipe w/ 3 Stage Head	420	LF	$ 646.36	$ 271,471	1975	30	2013, 2043	$ 271,471				$ 271,471		
24" Well Casing	1,020	LF	$ 1,122.55	$ 1,145,001	1975	100	2075							$ 1,145,001
VFD 200 HP 480V	2	Ea	$ 41,470.00	$ 82,940	1975	30	2013, 2043	$ 82,940				$ 82,940		
De-Aerator	2	Ea	$ 3,789.50	$ 7,579	1975	30	2013, 2043	$ 7,579				$ 7,579		
12" Butterfly Valves	2	Ea	$ 6,649.50	$ 13,299	1975	30	2013, 2043	$ 13,299				$ 13,299		
Actuator	1	Ea	$ 7,150.00	$ 7,150	1975	30	2013, 2043	$ 7,150				$ 7,150		
180' Deep Well	180	LF	$ 646.36	$ 116,345	1975	100	2075							$ 116,345
12" Well Water Line	2,022	LF	$ 143.00	$ 289,146	1975	30	2013, 2043	$ 289,146				$ 289,146		
Brick Building w/ heat, power, and water	1,800	SF	$ 243.10	$ 437,580	1975	30	2013, 2043	$ 437,580				$ 437,580		
Large Plate Frame Heat Exchangers	3	Ea	$ 143,000.00	$ 429,000	1975	30	2013, 2043	$ 429,000				$ 429,000		
Medium Plate Frame Heat Exchangers	2	Ea	$ 85,800.00	$ 171,600	1975	30	2013, 2043	$ 171,600				$ 171,600		
Tunnels				$ -				$ -	$ -	$ -	$ -	$ -	$ -	$ -
Tunnels are concourses that are part of the buildings								NIC						
Fire Loop				$ 2,312,305				$ -	$ -	$ 2,102,680	$ 209,625	$ -	$ -	$ -
8" Ductile Iron Pipe	21,338	LF	$ 87.10	$ 1,858,540	1975	50	2025			$ 1,858,540				
Fire Hydrants	52	Ea	$ 3,445.00	$ 179,140	1980	50	2030			$ 179,140				
8" Valves	50	Ea	$ 2,242.50	$ 112,125	1985	50	2035				$ 112,125			
Hot Boxes	10	Ea	$ 9,750.00	$ 97,500	1990	50	2040				$ 97,500			
8" PRV Back-Flow Assemblies	10	Ea	$ 6,500.00	$ 65,000	1985	40	2025			$ 65,000				
Irrigation Distribution				$ 3,347,660				$ 479,415	$ -	$ 479,415	$ 1,430,000	$ 479,415	$ 479,415	$ -
Irrigation Pond (Large)	1	Ea	$ 975,000.00	$ 975,000	1983	50	2033				$ 975,000			
Irrigation Pond (Small)	1	Ea	$ 455,000.00	$ 455,000	1983	50	2033				$ 455,000			
100 HP Pumps	2	Ea	$ 110,968.00	$ 221,936	1983	15	2013, 2028, 2043, 2058	$ 221,936		$ 221,936		$ 221,936	$ 221,936	
50 HP Pumps	2	Ea	$ 55,484.00	$ 110,968	1983	15	2013, 2028, 2043, 2058	$ 110,968		$ 110,968		$ 110,968	$ 110,968	
7.5 HP PM Pump	1	Ea	$ 6,935.50	$ 6,936	1983	15	2013, 2028, 2043, 2058	$ 6,936		$ 6,936		$ 6,936	$ 6,936	
100 HP Frequency Drive	1	Ea	$ 27,456.00	$ 27,456	1983	15	2013, 2028, 2043, 2058	$ 27,456		$ 27,456		$ 27,456	$ 27,456	
AMIAD EBS Filter #03-9	1	Ea	$ 4,550.00	$ 4,550	1983	15	2013, 2028, 2043, 2058	$ 4,550		$ 4,550		$ 4,550	$ 4,550	
15 HP Pumps	2	Ea	$ 21,307.00	$ 42,614	1983	15	2013, 2028, 2043, 2058	$ 42,614		$ 42,614		$ 42,614	$ 42,614	

FACILITY....................Utah Valley University Utilities Infrastructure Assessment
LOCATION.....................Orem, UT

DESCRIPTION	QTY	UNIT	REPLACEMENT UNIT COST	TOTAL 50 YR. REPLACEMENT COST	YEAR INSTALLED	EXPECTED LIFE (YRS.)	PROJECTED REPLACEMENT DATE	0-5 YR.	5-10 YR.	10-20 YR.	20-30 YR.	30-40 YR.	40-50 YR.	50+ YR. (First Replacement
15 HP Frequency Drive	1	Ea	$ 8,079.50	$ 8,080	1983	15	2013, 2028, 2043, 2058	$ 8,080		$ 8,080		$ 8,080	$ 8,080	
Elevator Man Lift	1	Ea	$ 32,500.00	$ 32,500	1983	15	2013, 2028, 2043, 2058	$ 32,500		$ 32,500		$ 32,500	$ 32,500	
MAXI COM Wiring	13,000	LF	$ 0.98	$ 12,675	1983	15	2013, 2028, 2043, 2058	$ 12,675		$ 12,675		$ 12,675	$ 12,675	
Weather Station	1	Ea	$ 1,950.00	$ 1,950	1983	15	2013, 2028, 2043, 2058	$ 1,950		$ 1,950		$ 1,950	$ 1,950	
MAXI COM CCU	3	Ea	$ 3,250.00	$ 9,750	1983	15	2013, 2028, 2043, 2058	$ 9,750		$ 9,750		$ 9,750	$ 9,750	
Sanitary Waste				$ 680,436				$ -	$ -	$ -	$ -	$ 680,436	$ -	$ -
6"	1,085	LF	$ 62.40	$ 67,704	1983	60	2043					$ 67,704		
8"	4,285	LF	$ 68.90	$ 295,237	1983	60	2043					$ 295,237		
10"	1,729	LF	$ 75.40	$ 130,367	1983	60	2043					$ 130,367		
12"	153	LF	$ 84.50	$ 12,929	1983	60	2043					$ 12,929		
Man-Holes	27	Ea	$ 5,200.00	$ 140,400	1983	60	2043					$ 140,400		
Grease Interceptor	4	Ea	$ 8,450.00	$ 33,800	1983	60	2043					$ 33,800		
Storm Water				$ 1,791,748				$ -	$ -	$ -	$ 1,791,748	$ -	$ -	$ -
Catch Basins - Parking Lots L14 & L9	1	Ea	$ 4,550.00	$ 4,550	1982	60	2042				$ 4,550			
Rock Lined Catch Basins - WS Building	2	Ea	$ 6,500.00	$ 13,000	1982	60	2042				$ 13,000			
Rock Lined Catch Basins - HP Building	1	Ea	$ 6,500.00	$ 6,500	1982	60	2042				$ 6,500			
8" RCP	496	LF	$ 53.30	$ 26,437	1982	60	2042				$ 26,437			
10" RCP	2,248	LF	$ 55.25	$ 124,202	1982	60	2042				$ 124,202			
12" RCP	13,556	LF	$ 59.15	$ 801,837	1982	60	2042				$ 801,837			
15" RCP	3,289	LF	$ 70.20	$ 230,888	1982	60	2042				$ 230,888			
18" RCP	3,270	LF	$ 74.75	$ 244,433	1982	60	2042				$ 244,433			
21" RCP	78	LF	$ 82.55	$ 6,439	1982	60	2042				$ 6,439			
24" RCP	2,258	LF	$ 84.50	$ 190,801	1982	60	2042				$ 190,801			
27" RCP	147	LF	$ 91.00	$ 13,377	1982	60	2042				$ 13,377			
30" RCP	1,326	LF	$ 97.50	$ 129,285	1982	60	2042				$ 129,285			
Gas Distribution				$ 332,911				$ -	$ -	$ -	$ 332,911	$ -	$ -	$ -
2" Gas Line	350	LF	$ 28.60	$ 10,010	1983	50	2033				$ 10,010			
3" Gas Line	6,990	LF	$ 31.20	$ 218,088	1983	50	2033				$ 218,088			
Pressure Regulators	25	Ea	$ 3,022.50	$ 75,563	1983	50	2033				$ 75,563			
Isolation & Shut Off Valves	50	Ea	$ 585.00	$ 29,250	1983	50	2033				$ 29,250			

FACILITY....................Weber State University Utilities Infrastructure Assessment
LOCATION......................Ogden, UT

DESCRIPTION	QTY	UNIT	REPLACEMENT UNIT COST	TOTAL 50 YR. REPLACEMENT COST	YEAR INSTALLED	EXPECTED LIFE (YRS.)	PROJECTED REPLACEMENT DATE	0-5 YR.	5-10 YR.	10-20 YR.	20-30 YR.	30-40 YR	40-50 YR.	50+ YR. (First Replacement Cost)
Total to Budget				**$ 72,788,949**				**$ 8,104,161**	**$ 9,217,633**	**$ 11,378,364**	**$ 12,736,221**	**$ 17,768,199**	**$ 13,584,371**	**$ 2,941,926**
Substations & Electrical Distribution				$ 9,398,520				$ 1,930,273	$ 340,860	$ 244,004	$ 2,133,082	$ 2,387,557	$ 2,362,744	$ -
12,500 KVA Transformer	1	Ea	$ 846,082.38	$ 846,082	1996	40	2036				$ 846,082			
12,500 KVA Transformer	1	Ea	$ 846,082.38	$ 846,082	2005	40	2045					$ 846,082		
7.62 KV Voltage Regulator	3	Ea	$ 429,000.00	$ 1,287,000	1996	40	2036				$ 1,287,000			
7.62 KV Voltage Regulator	3	Ea	$ 429,000.00	$ 1,287,000	2005	40	2045					$ 1,287,000		
2" PVC Direct Bury	550	LF	$ 97.50	$ 53,625	1970	40	2013, 2053	$ 53,625					$ 53,625	
3" PVC Direct Bury	480	LF	$ 136.50	$ 65,520	1982	40	2022, 2062		$ 65,520				$ 65,520	
4" Conduit In Tunnel w/ 500 MCM Cable	1,050	LF	$ 169.65	$ 178,133	1960	40	2013, 2053	$ 178,133					$ 178,133	
4" Conduit In Tunnel w/ 500 MCM Cable	750	LF	$ 169.65	$ 127,238	1966	40	2013, 2053	$ 127,238					$ 127,238	
4" Conduit In Tunnel w/ 500 MCM Cable	1,100	LF	$ 169.65	$ 186,615	1968	40	2013, 2053	$ 186,615					$ 186,615	
4" Conduit In Tunnel w/ 500 MCM Cable	650	LF	$ 169.65	$ 110,273	1969	40	2013, 2053	$ 110,273					$ 110,273	
4" Conduit In Tunnel w/ 500 MCM Cable	650	LF	$ 169.65	$ 110,273	1969	40	2013, 2053	$ 110,273					$ 110,273	
4" Conduit In Tunnel w/ 500 MCM Cable	1,150	LF	$ 169.65	$ 195,098	1974	40	2014, 2054	$ 195,098					$ 195,098	
4" Conduit In Tunnel w/ 500 MCM Cable	200	LF	$ 169.65	$ 33,930	1987	40	2027			$ 33,930				
4" Conduit In Tunnel w/ 500 MCM Cable	1,100	LF	$ 169.65	$ 186,615	2011	40	2051					$ 186,615		
4" Conduit In Tunnel w/ 500 MCM Cable	400	LF	$ 169.65	$ 67,860	2011	40	2051					$ 67,860		
4" Conduit In Tunnel w/ 500 MCM Cable	700	LF	$ 169.65	$ 118,755	1952	40	2013, 2053	$ 118,755					$ 118,755	
4" Conduit In Tunnel w/ 500 MCM Cable	500	LF	$ 169.65	$ 84,825	1954	40	2013, 2053	$ 84,825					$ 84,825	
4" Conduit In Tunnel w/ 500 MCM Cable	700	LF	$ 169.65	$ 118,755	1960	40	2013, 2053	$ 118,755					$ 118,755	
4" Conduit In Tunnel w/ 500 MCM Cable	800	LF	$ 169.65	$ 135,720	1964	40	2013, 2053	$ 135,720					$ 135,720	
4" Conduit In Tunnel w/ 500 MCM Cable	400	LF	$ 169.65	$ 67,860	1966	40	2013, 2053	$ 67,860					$ 67,860	
4" Conduit In Tunnel w/ 500 MCM Cable	350	LF	$ 169.65	$ 59,378	1969	40	2013, 2053	$ 59,378					$ 59,378	
4" Conduit In Tunnel w/ 500 MCM Cable	100	LF	$ 169.65	$ 16,965	1970	40	2013, 2053	$ 16,965					$ 16,965	
4" Conduit In Tunnel w/ 500 MCM Cable	800	LF	$ 169.65	$ 135,720	1972	40	2013, 2053	$ 135,720					$ 135,720	
4" Conduit In Tunnel w/ 500 MCM Cable	450	LF	$ 169.65	$ 76,343	1973	40	2013, 2053	$ 76,343					$ 76,343	
4" Conduit In Tunnel w/ 500 MCM Cable	540	LF	$ 169.65	$ 91,611	1983	40	2023, 2063			$ 91,611			$ 91,611	
4" Conduit In Tunnel w/ 500 MCM Cable	250	LF	$ 169.65	$ 42,413	1987	40	2027			$ 42,413				
15 KV Switch 5 Way	1	EA	$ 70,785.00	$ 70,785	1971	40	2013, 2053	$ 70,785					$ 70,785	
15 KV Switch 5 Way	1	EA	$ 70,785.00	$ 70,785	1981	40	2021, 2061		$ 70,785				$ 70,785	
15 KV Switch	1	EA	$ 36,725.00	$ 36,725	1980	40	2020, 2060		$ 36,725				$ 36,725	
15 KV Switch	1	EA	$ 36,725.00	$ 36,725	1978	40	2018, 2058		$ 36,725				$ 36,725	
15 KV Switch	1	EA	$ 36,725.00	$ 36,725	1969	40	2013, 2053	$ 36,725					$ 36,725	
15 KV Switch	1	EA	$ 36,725.00	$ 36,725	1978	40	2018, 2058		$ 36,725				$ 36,725	
15 KV Switch 3 Way	1	EA	$ 47,190.00	$ 47,190	1980	40	2020, 2060		$ 47,190				$ 47,190	
15 KV Switch 3 Way	1	EA	$ 47,190.00	$ 47,190	1969	40	2013, 2053	$ 47,190					$ 47,190	
15 KV Switch 3 Way	1	EA	$ 47,190.00	$ 47,190	1980	40	2020, 2060		$ 47,190				$ 47,190	
15 KV Switch 6 Way	1	EA	$ 76,050.00	$ 76,050	1990	40	2030			$ 76,050				
Central Plant Heating Production				$ 7,544,842				$ 919,347	$ 2,646,072	$ 1,132,953	$ 705,509	$ 1,008,007	$ 1,132,953	$ -
Central Heating Plant Building	10,520	SF	$ 243.10	$ 2,557,412	1971	50	2021		$ 2,557,412					
30,000 lb/hr Boiler	1	Ea	$ 680,198.09	$ 680,198	2010	30	2040				$ 680,198			
40,000 lb/hr Boiler	1	Ea	$ 906,477.00	$ 906,477	1972	30	2013, 2043	$ 906,477				$ 906,477		
45,000 lb/hr Boiler	1	Ea	$ 1,019,804.50	$ 1,019,805	1994	30	2024, 2054			$ 1,019,805			$ 1,019,805	
100 GPM Feed Water Pump	3	Ea	$ 4,754.75	$ 14,264	1994	30	2024, 2054			$ 14,264			$ 14,264	
90 GPM Condensate Pump	3	Ea	$ 4,218.50	$ 12,656	1994	30	2024, 2054			$ 12,656			$ 12,656	
90 GPM Condensate Pump	3	Ea	$ 4,218.50	$ 12,656	2010	30	2040				$ 12,656			
60 GPM Feed Water Pump	3	Ea	$ 4,218.50	$ 12,656	2010	30	2040				$ 12,656			
1960 Gal. DA Tank	1	Ea	$ 5,720.00	$ 5,720	1972	30	2013, 2043	$ 5,720				$ 5,720		
1600 Gal. DA Tank	1	Ea	$ 5,720.00	$ 5,720	1994	30	2024, 2054			$ 5,720			$ 5,720	
6000 Gal. Condensate Tank	1	Ea	$ 21,450.00	$ 21,450	1994	30	2024, 2054			$ 21,450			$ 21,450	

FACILITY....................Weber State University Utilities Infrastructure Assessment
LOCATION.....................Ogden, UT

DESCRIPTION	QTY	UNIT	REPLACEMENT UNIT COST	TOTAL 50 YR. REPLACEMENT COST	YEAR INSTALLED	EXPECTED LIFE (YRS.)	PROJECTED REPLACEMENT DATE	0-5 YR.	5-10 YR.	10-20 YR.	20-30 YR.	30-40 YR.	40-50 YR.	50+ YR. (First Replacement Cost)
2850 Gal. Condensate Tank	1	Ea	$ 7,150.00	$ 7,150	1972	30	2013, 2043	$ 7,150				$ 7,150		
55 Gallon Chemical Feed System	1	Ea	$ 10,725.00	$ 10,725	1994	30	2024, 2054			$ 10,725			$ 10,725	
20,000 Gal. Fuel Tank	1	Ea	$ 88,660.00	$ 88,660	1992	30	2022, 2052		$ 88,660			$ 88,660		
15,000 Gal. Fuel Tank	1	Ea	$ 48,334.00	$ 48,334	1994	30	2024, 2054			$ 48,334			$ 48,334	
Central Plant Chilled Water Production				$ 14,402,400				$ 527,027	$ 1,779,954	$ 3,180,749	$ 2,306,980	$ 3,180,749	$ 3,426,942	$ -
Chilled Water Plant Building	4,607	SF	$ 243.10	$ 1,119,962	2007	50	2057						$ 1,119,962	
650 Ton Chiller	1	Ea	$ 527,026.50	$ 527,027	1993	20	2013, 2033, 2053	$ 527,027			$ 527,027		$ 527,027	
1250 Ton Chiller	1	Ea	$ 1,013,512.50	$ 1,013,513	2001	20	2021, 2041, 2061		$ 1,013,513		$ 1,013,513		$ 1,013,513	
1500 Ton Chiller	1	Ea	$ 1,216,215.00	$ 1,216,215	2007	20	2027, 2047			$ 1,216,215		$ 1,216,215		
1500 Ton Chiller	1	Ea	$ 1,216,215.00	$ 1,216,215	2007	20	2027, 2047			$ 1,216,215		$ 1,216,215		
4275 GPM Chilled Water Pump	3	Ea	$ 76,505.00	$ 229,515	2007	20	2027, 2047			$ 229,515		$ 229,515		
5400 GPM Condenser Pump	3	Ea	$ 96,668.00	$ 290,004	2007	20	2027, 2047			$ 290,004		$ 290,004		
650 Ton Cooling Tower	5	Ea	$ 143,715.00	$ 718,575	2001	20	2021, 2041, 2061		$ 718,575		$ 718,575		$ 718,575	
Cooling Tower Piping 20"	140	LF	$ 341.90	$ 47,866	2001	20	2021, 2041, 2061		$ 47,866		$ 47,866		$ 47,866	
7200 MBH Heat Exchanger	1	Ea	$ 143,000.00	$ 143,000	2007	20	2027, 2047			$ 143,000		$ 143,000		
1800 MBH Heat Exchanger	1	Ea	$ 85,800.00	$ 85,800	2007	20	2027, 2047			$ 85,800		$ 85,800		
Steam/Chilled Water Distribution				$ 11,137,910				$ 2,625,017	$ 2,986,181	$ 661,739	$ 1,250,862	$ 974,386	$ 2,639,726	$ -
12" Steam Pipe - In Tunnel	495	LF	$ 271.70	$ 134,492	1963	50	2013, 2063	$ 134,492					$ 134,492	
12" Steam Pipe - In Tunnel	500	LF	$ 271.70	$ 135,850	1968	50	2018		$ 135,850					
12" Steam Pipe - In Tunnel	240	LF	$ 271.70	$ 65,208	1995	50	2045					$ 65,208		
10" Steam Pipe - In Tunnel	330	LF	$ 249.60	$ 82,368	1963	50	2013, 2063	$ 82,368					$ 82,368	
10" Steam Pipe - In Tunnel	560	LF	$ 249.60	$ 139,776	1963	50	2013, 2063	$ 139,776					$ 139,776	
10" Steam Pipe - In Tunnel	950	LF	$ 249.60	$ 237,120	1970	50	2020		$ 237,120					
10" Steam Pipe - In Tunnel	900	LF	$ 249.60	$ 224,640	1970	50	2020		$ 224,640					
8" Steam Pipe - In Tunnel	300	LF	$ 216.45	$ 64,935	1969	50	2019		$ 64,935					
8" Steam Pipe - In Tunnel	475	LF	$ 216.45	$ 102,814	1970	50	2020		$ 102,814					
8" Steam Pipe - In Tunnel	260	LF	$ 216.45	$ 56,277	1972	50	2022		$ 56,277					
8" Steam Pipe - In Tunnel	230	LF	$ 216.45	$ 49,784	1974	50	2024			$ 49,784				
8" Steam Pipe - In Tunnel	500	LF	$ 216.45	$ 108,225	1974	50	2024			$ 108,225				
8" Steam Pipe - In Tunnel	490	LF	$ 216.45	$ 106,061	2001	50	2051					$ 106,061		
6" Steam Pipe - In Tunnel	150	LF	$ 198.64	$ 29,796	1972	50	2022		$ 29,796					
6" Steam Pipe - In Tunnel	150	LF	$ 198.64	$ 29,796	2001	50	2051					$ 29,796		
4" Steam Pipe - In Tunnel	600	LF	$ 182.78	$ 109,668	1955	50	2013, 2063	$ 109,668					$ 109,668	
4" Steam Pipe - In Tunnel	125	LF	$ 182.78	$ 22,848	1970	50	2020		$ 22,848					
4" Steam Pipe - In Tunnel	60	LF	$ 182.78	$ 10,967	1995	50	2045					$ 10,967		
4" Steam Pipe - In Tunnel	195	LF	$ 182.78	$ 35,642	2001	50	2051					$ 35,642		
3" Steam Pipe - In Tunnel	170	LF	$ 167.05	$ 28,399	1983	50	2033				$ 28,399			
3" Steam Pipe - In Tunnel	50	LF	$ 167.05	$ 8,353	1990	50	2040				$ 8,353			
6" Condensate Pipe - In Tunnel	495	LF	$ 198.64	$ 98,327	1963	50	2013, 2063	$ 98,327					$ 98,327	
6" Condensate Pipe - In Tunnel	500	LF	$ 198.64	$ 99,320	1968	50	2018		$ 99,320					
6" Condensate Pipe - In Tunnel	240	LF	$ 198.64	$ 47,674	1995	50	2045					$ 47,674		
6" Condensate Pipe - In Tunnel	330	LF	$ 198.64	$ 65,551	1963	50	2013, 2063	$ 65,551					$ 65,551	
6" Condensate Pipe - In Tunnel	560	LF	$ 198.64	$ 111,238	1963	50	2013, 2063	$ 111,238					$ 111,238	
6" Condensate Pipe - In Tunnel	950	LF	$ 198.64	$ 188,708	1970	50	2020		$ 188,708					
6" Condensate Pipe - In Tunnel	900	LF	$ 198.64	$ 178,776	1970	50	2020		$ 178,776					
4" Condensate Pipe - In Tunnel	300	LF	$ 182.78	$ 54,834	1969	50	2019		$ 54,834					
4" Condensate Pipe - In Tunnel	475	LF	$ 182.78	$ 86,821	1970	50	2020		$ 86,821					
4" Condensate Pipe - In Tunnel	260	LF	$ 182.78	$ 47,523	1972	50	2022		$ 47,523					
4" Condensate Pipe - In Tunnel	230	LF	$ 182.78	$ 42,039	1974	50	2024			$ 42,039				

FACILITY..................Weber State University Utilities Infrastructure Assessment
LOCATION.....................Ogden, UT

DESCRIPTION	QTY	UNIT	REPLACEMENT UNIT COST	TOTAL 50 YR. REPLACEMENT COST	YEAR INSTALLED	EXPECTED LIFE (YRS.)	PROJECTED REPLACEMENT DATE	0-5 YR.	5-10 YR.	10-20 YR.	20-30 YR.	30-40 YR.	40-50 YR.	50+ YR. (First Replacement Cost)
4" Condensate Pipe - In Tunnel	500	LF	$ 182.78	$ 91,390	1974	50	2024			$ 91,390				
4" Condensate Pipe - In Tunnel	490	LF	$ 182.78	$ 89,562	2001	50	2051					$ 89,562		
4" Condensate Pipe - In Tunnel	150	LF	$ 182.78	$ 27,417	1972	50	2022		$ 27,417					
4" Condensate Pipe - In Tunnel	150	LF	$ 182.78	$ 27,417	2001	50	2051					$ 27,417		
2.5" Condensate Pipe - In Tunnel	600	LF	$ 143.00	$ 85,800	1955	50	2013, 2063	$ 85,800					$ 85,800	
2.5" Condensate Pipe - In Tunnel	125	LF	$ 143.00	$ 17,875	1970	50	2020		$ 17,875					
2.5" Condensate Pipe - In Tunnel	60	LF	$ 143.00	$ 8,580	1995	50	2045					$ 8,580		
2.5" Condensate Pipe - In Tunnel	195	LF	$ 143.00	$ 27,885	2001	50	2051					$ 27,885		
2" Condensate Pipe - In Tunnel	170	LF	$ 119.60	$ 20,332	1983	50	2033				$ 20,332			
2" Condensate Pipe - In Tunnel	50	LF	$ 119.60	$ 5,980	1990	50	2040				$ 5,980			
10" Chilled Water Pipe - In Tunnel	500	LF	$ 249.60	$ 124,800	1970	50	2020		$ 124,800					
10" Chilled Water Pipe - In Tunnel	600	LF	$ 249.60	$ 149,760	1978	50	2028			$ 149,760				
10" Chilled Water Pipe - In Tunnel	980	LF	$ 249.60	$ 244,608	2001	50	2051					$ 244,608		
8" Chilled Water Pipe - In Tunnel	2,200	LF	$ 216.45	$ 476,190	1970	50	2020		$ 476,190					
6" Chilled Water Pipe - In Tunnel	2,590	LF	$ 198.64	$ 514,481	1970	50	2020		$ 514,481					
6" Chilled Water Pipe - In Tunnel	720	LF	$ 198.64	$ 143,022	1978	50	2028			$ 143,022				
6" Chilled Water Pipe - In Tunnel	220	LF	$ 198.64	$ 43,701	1984	50	2034				$ 43,701			
6" Chilled Water Pipe - In Tunnel	300	LF	$ 198.64	$ 59,592	1995	50	2045					$ 59,592		
6" Chilled Water Pipe - In Tunnel	460	LF	$ 198.64	$ 91,375	1999	50	2049					$ 91,375		
5" Chilled Water Pipe - In Tunnel	810	LF	$ 218.40	$ 176,904	1987	50	2037				$ 176,904			
5" Chilled Water Pipe - In Tunnel	60	LF	$ 218.40	$ 13,104	1995	50	2045					$ 13,104		
4" Chilled Water Pipe - In Tunnel	990	LF	$ 182.78	$ 180,952	1970	50	2020		$ 180,952					
3" Chilled Water Pipe - In Tunnel	240	LF	$ 162.50	$ 39,000	1970	50	2020		$ 39,000					
3" Chilled Water Pipe - In Tunnel	240	LF	$ 162.50	$ 39,000	1971	50	2021		$ 39,000					
3" Chilled Water Pipe - In Tunnel	550	LF	$ 162.50	$ 89,375	2008	50	2058						$ 89,375	
24" Chilled Water Pipe - Direct Bury	1,700	LF	$ 357.50	$ 607,750	2001	40	2041				$ 607,750			
20" Chilled Water Pipe - Direct Bury	2,850	LF	$ 341.90	$ 974,415	1968	40	2013, 2053	$ 974,415					$ 974,415	
10" Chilled Water Pipe - Direct Bury	800	LF	$ 217.10	$ 173,680	1968	40	2013, 2053	$ 173,680					$ 173,680	
6" Chilled Water Pipe - Direct Bury	1,800	LF	$ 176.80	$ 318,240	2001	40	2041				$ 318,240			
4" Chilled Water Pipe - Direct Bury	160	LF	$ 163.80	$ 26,208	1984	40	2024			$ 26,208				
12" Steam Valve - In Tunnel	2	EA	$ 2,730.00	$ 5,460	2011	50	2061						$ 5,460	
12" Steam Valve - In Tunnel	1	EA	$ 2,730.00	$ 2,730	1995	50	2045					$ 2,730		
10" Steam Valve - In Tunnel	1	EA	$ 2,405.00	$ 2,405	2011	50	2061						$ 2,405	
10" Steam Valve - In Tunnel	1	EA	$ 2,405.00	$ 2,405	1971	50	2021		$ 2,405					
8" Steam Valve - In Tunnel	1	EA	$ 1,657.50	$ 1,658	2011	50	2061						$ 1,658	
8" Steam Valve - In Tunnel	1	EA	$ 1,657.50	$ 1,658	1995	50	2045					$ 1,658		
8" Steam Valve - In Tunnel	1	EA	$ 1,657.50	$ 1,658	1974	50	2024			$ 1,658				
8" Steam Valve - In Tunnel	2	EA	$ 1,657.50	$ 3,315	1972	50	2022		$ 3,315					
6" Steam Valve - In Tunnel	1	EA	$ 1,365.00	$ 1,365	2011	50	2061						$ 1,365	
6" Steam Valve - In Tunnel	1	EA	$ 1,365.00	$ 1,365	2001	50	2051					$ 1,365		
6" Steam Valve - In Tunnel	1	EA	$ 1,365.00	$ 1,365	1978	50	2028			$ 1,365				
6" Steam Valve - In Tunnel	1	EA	$ 1,365.00	$ 1,365	1974	50	2024			$ 1,365				
4" Steam Valve - In Tunnel	1	EA	$ 1,105.00	$ 1,105	2011	50	2061						$ 1,105	
4" Steam Valve - In Tunnel	1	EA	$ 1,105.00	$ 1,105	2002	50	2052					$ 1,105		
4" Steam Valve - In Tunnel	1	EA	$ 1,105.00	$ 1,105	1995	50	2045					$ 1,105		
4" Steam Valve - In Tunnel	1	EA	$ 1,105.00	$ 1,105	1972	50	2022		$ 1,105					
4" Steam Valve - In Tunnel	1	EA	$ 1,105.00	$ 1,105	1970	50	2020		$ 1,105					
3" Steam Valve - In Tunnel	1	EA	$ 975.00	$ 975	1974	50	2024			$ 975				
3" Steam Valve - In Tunnel	1	EA	$ 975.00	$ 975	1972	50	2022		$ 975					
6" Condensate Valve - In Tunnel	1	EA	$ 1,365.00	$ 1,365	1957	50	2013, 2053	$ 1,365					$ 1,365	
6" Condensate Valve - In Tunnel	3	EA	$ 1,365.00	$ 4,095	1963	50	2013, 2053	$ 4,095					$ 4,095	

FACILITY.....................Weber State University Utilities Infrastructure Assessment
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DESCRIPTION	QTY	UNIT	REPLACEMENT UNIT COST	TOTAL 50 YR. REPLACEMENT COST	YEAR INSTALLED	EXPECTED LIFE (YRS.)	PROJECTED REPLACEMENT DATE	0-5 YR.	5-10 YR.	10-20 YR.	20-30 YR.	30-40 YR.	40-50 YR.	50+ YR. (First Replacement Cost)
6" Condensate Valve - In Tunnel	1	EA	$ 1,365.00	$ 1,365	1968	50	2018		$ 1,365					
6" Condensate Valve - In Tunnel	1	EA	$ 1,365.00	$ 1,365	1971	50	2021		$ 1,365					
6" Condensate Valve - In Tunnel	1	EA	$ 1,365.00	$ 1,365	1995	50	2045					$ 1,365		
6" Condensate Valve - In Tunnel	1	EA	$ 1,365.00	$ 1,365	2002	50	2052					$ 1,365		
4" Condensate Valve - In Tunnel	1	EA	$ 1,105.00	$ 1,105	1970	50	2020		$ 1,105					
4" Condensate Valve - In Tunnel	1	EA	$ 1,105.00	$ 1,105	1974	50	2024			$ 1,105				
4" Condensate Valve - In Tunnel	1	EA	$ 1,105.00	$ 1,105	1978	50	2028			$ 1,105				
4" Condensate Valve - In Tunnel	1	EA	$ 1,105.00	$ 1,105	2001	50	2051					$ 1,105		
3" Condensate Valve - In Tunnel	1	EA	$ 975.00	$ 975	1963	50	2013, 2063	$ 975					$ 975	
3" Condensate Valve - In Tunnel	1	EA	$ 975.00	$ 975	1972	50	2022		$ 975					
3" Condensate Valve - In Tunnel	1	EA	$ 975.00	$ 975	1987	50	2037				$ 975			
2.5" Condensate Valve - In Tunnel	1	EA	$ 877.50	$ 878	1974	50	2024			$ 878				
2" Condensate Valve - In Tunnel	1	EA	$ 845.00	$ 845	1970	50	2020		$ 845					
2" Condensate Valve - In Tunnel	1	EA	$ 845.00	$ 845	1972	50	2022		$ 845					
2" Condensate Valve - In Tunnel	1	EA	$ 845.00	$ 845	1974	50	2024			$ 845				
2" Condensate Valve - In Tunnel	1	EA	$ 845.00	$ 845	1990	50	2040				$ 845			
2" Condensate Valve - In Tunnel	1	EA	$ 845.00	$ 845	1995	50	2045					$ 845		
2" Condensate Valve - In Tunnel	1	EA	$ 845.00	$ 845	2002	50	2052					$ 845		
10" Chilled Water Valve	2	EA	$ 2,405.00	$ 4,810	1970	50	2020		$ 4,810					
10" Chilled Water Valve	2	EA	$ 2,405.00	$ 4,810	1978	50	2028			$ 4,810				
10" Chilled Water Valve	2	EA	$ 2,405.00	$ 4,810	1995	50	2045					$ 4,810		
10" Chilled Water Valve	2	EA	$ 2,405.00	$ 4,810	2001	50	2051					$ 4,810		
8" Chilled Water Valve	4	EA	$ 1,657.50	$ 6,630	1970	50	2020		$ 6,630					
8" Chilled Water Valve	1	EA	$ 1,657.50	$ 1,658	1990	50	2040				$ 1,658			
6" Chilled Water Valve	2	EA	$ 1,365.00	$ 2,730	1970	50	2020		$ 2,730					
6" Chilled Water Valve	4	EA	$ 1,365.00	$ 5,460	1978	50	2028			$ 5,460				
6" Chilled Water Valve	2	EA	$ 1,365.00	$ 2,730	1984	50	2034				$ 2,730			
6" Chilled Water Valve	2	EA	$ 1,365.00	$ 2,730	1999	50	2049					$ 2,730		
6" Chilled Water Valve	2	EA	$ 1,365.00	$ 2,730	1987	50	2037				$ 2,730			
5" Chilled Water Valve	2	EA	$ 1,235.00	$ 2,470	1995	50	2045					$ 2,470		
5" Chilled Water Valve	2	EA	$ 1,235.00	$ 2,470	1970	50	2020		$ 2,470					
4" Chilled Water Valve	2	EA	$ 1,105.00	$ 2,210	1970	50	2020		$ 2,210					
3" Chilled Water Valve	2	EA	$ 975.00	$ 1,950	1971	50	2021		$ 1,950					
3" Chilled Water Valve	2	EA	$ 975.00	$ 1,950	2008	50	2058						$ 1,950	
20" Chilled Water Valve - Direct Bury	8	EA	$ 16,120.00	$ 128,960	1968	40	2013, 2053	$ 128,960					$ 128,960	
10" Chilled Water Valve - Direct Bury	2	EA	$ 2,405.00	$ 4,810	1968	40	2013, 2053	$ 4,810					$ 4,810	
6" Chilled Water Valve - Direct Bury	2	EA	$ 1,365.00	$ 2,730	2001	40	2041				$ 2,730			
4" Chilled Water Valve - Direct Bury	2	EA	$ 1,105.00	$ 2,210	1984	40	2024			$ 2,210				
3/4" Steam Traps - In Tunnel	7	EA	$ 7,384.00	$ 51,688	1954	40	2013, 2053	$ 51,688					$ 51,688	
3/4" Steam Traps - In Tunnel	8	EA	$ 7,384.00	$ 59,072	1968	40	2013, 2053	$ 59,072					$ 59,072	
3/4" Steam Traps - In Tunnel	14	EA	$ 7,384.00	$ 103,376	1963	40	2013, 2053	$ 103,376					$ 103,376	
3/4" Steam Traps - In Tunnel	28	EA	$ 7,384.00	$ 206,752	1970	40	2013, 2053	$ 206,752					$ 206,752	
3/4" Steam Traps - In Tunnel	12	EA	$ 7,384.00	$ 88,608	1974	40	2014	$ 88,608						
3/4" Steam Traps - In Tunnel	4	EA	$ 7,384.00	$ 29,536	1990	40	2030			$ 29,536				
3/4" Steam Traps - In Tunnel	10	EA	$ 7,384.00	$ 73,840	2009	40	2049					$ 73,840		
3/4" Steam Traps - In Tunnel	4	EA	$ 7,384.00	$ 29,536	2001	40	2041				$ 29,536			
3/4" Steam Traps - In Tunnel	2	EA	$ 7,384.00	$ 14,768	2007	40	2047					$ 14,768		
Culinary Water Production & Distribution				$ 1,794,948				$ 499,910	$ 280,514	$ 435,607	$ 38,825	$ 207,116	$ 332,977	$ -
12" Water Pipe - Direct Bury	1,800	LF	$ 98.80	$ 177,840	1970	50	2020		$ 177,840					
12" Water Pipe - Direct Bury	690	LF	$ 98.80	$ 68,172	1966	50	2016	$ 68,172						

FACILITY....................Weber State University Utilities Infrastructure Assessment
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DESCRIPTION	QTY	UNIT	REPLACEMENT UNIT COST	TOTAL 50 YR. REPLACEMENT COST	YEAR INSTALLED	EXPECTED LIFE (YRS.)	PROJECTED REPLACEMENT DATE	0-5 YR.	5-10 YR.	10-20 YR.	20-30 YR.	30-40 YR.	40-50 YR.	50+ YR. (First Replacement Cost)
10" Water Pipe - Direct Bury	1,850	LF	$ 93.60	$ 173,160	1977	50	2027			$ 173,160				
10" Water Pipe - Direct Bury	1,200	LF	$ 93.60	$ 112,320	1995	50	2045					$ 112,320		
8" Water Pipe - Direct Bury	1,010	LF	$ 87.10	$ 87,971	1965	50	2015	$ 87,971						
8" Water Pipe - Direct Bury	550	LF	$ 87.10	$ 47,905	2008	50	2058						$ 47,905	
8" Water Pipe - Direct Bury	300	LF	$ 87.10	$ 26,130	1964	50	2014	$ 26,130						
8" Water Pipe - Direct Bury	250	LF	$ 87.10	$ 21,775	1996	50	2046					$ 21,775		
6" Water Pipe - Direct Bury	420	LF	$ 72.80	$ 30,576	1960	50	2013, 2063	$ 30,576					$ 30,576	
6" Water Pipe - Direct Bury	1,700	LF	$ 72.80	$ 123,760	1961	50	2013, 2063	$ 123,760					$ 123,760	
6" Water Pipe - Direct Bury	450	LF	$ 72.80	$ 32,760	1964	50	2014	$ 32,760						
6" Water Pipe - Direct Bury	70	LF	$ 72.80	$ 5,096	1966	50	2016	$ 5,096						
6" Water Pipe - Direct Bury	400	LF	$ 72.80	$ 29,120	1968	50	2018		$ 29,120					
6" Water Pipe - Direct Bury	350	LF	$ 72.80	$ 25,480	1970	50	2020		$ 25,480					
6" Water Pipe - Direct Bury	130	LF	$ 72.80	$ 9,464	1972	50	2022		$ 9,464					
6" Water Pipe - Direct Bury	160	LF	$ 72.80	$ 11,648	1973	50	2023			$ 11,648				
6" Water Pipe - Direct Bury	160	LF	$ 72.80	$ 11,648	1974	50	2024			$ 11,648				
6" Water Pipe - Direct Bury	2,680	LF	$ 72.80	$ 195,104	1977	50	2027			$ 195,104				
6" Water Pipe - Direct Bury	330	LF	$ 72.80	$ 24,024	1987	50	2037				$ 24,024			
6" Water Pipe - Direct Bury	750	LF	$ 72.80	$ 54,600	1995	50	2045					$ 54,600		
6" Water Pipe - Direct Bury	520	LF	$ 72.80	$ 37,856	2008	50	2058						$ 37,856	
4" Water Pipe - Direct Bury	130	LF	$ 64.35	$ 8,366	1960	50	2013, 2063	$ 8,366					$ 8,366	
4" Water Pipe - Direct Bury	400	LF	$ 64.35	$ 25,740	1957	50	2013, 2063	$ 25,740					$ 25,740	
4" Water Pipe - Direct Bury	230	LF	$ 64.35	$ 14,801	1983	50	2033				$ 14,801			
4" Water Pipe - Direct Bury	600	LF	$ 64.35	$ 38,610	1970	50	2020		$ 38,610					
4" Water Pipe - Direct Bury	300	LF	$ 64.35	$ 19,305	1973	50	2023			$ 19,305				
4" Water Pipe - Direct Bury	330	LF	$ 64.35	$ 21,236	1961	50	2013, 2063	$ 21,236					$ 21,236	
4" Water Pipe - Direct Bury	260	LF	$ 64.35	$ 16,731	2001	50	2051					$ 16,731		
4" Water Pipe - Direct Bury	350	LF	$ 64.35	$ 22,523	2011	50	2061						$ 22,523	
4" Water Pipe - In Tunnel	500	LF	$ 38.35	$ 19,175	1954	60	2014	$ 19,175						
2.5" Water Pipe - In Tunnel	600	LF	$ 29.25	$ 17,550	1954	60	2014	$ 17,550						
2.5" Water Pipe - In Tunnel	275	LF	$ 29.25	$ 8,044	1971	60	2031			$ 8,044				
1.5" Water Pipe - In Tunnel	210	LF	$ 25.35	$ 5,324	1969	60	2029			$ 5,324				
12" Water Valve - Direct Bury	6	EA	$ 2,730.00	$ 16,380	1966	50	2016	$ 16,380						
10" Water Valve - Direct Bury	4	EA	$ 2,405.00	$ 9,620	1977	50	2027			$ 9,620				
6" Water Valve - Direct Bury	11	EA	$ 1,365.00	$ 15,015	1960	50	2013, 2063	$ 15,015					$ 15,015	
2" Water Valve - Direct Bury	2	EA	$ 845.00	$ 1,690	2001	50	2051					$ 1,690		
4" Water Valve - In Tunnel	1	EA	$ 1,105.00	$ 1,105	1954	60	2014	$ 1,105						
2.5" Water Valve - In Tunnel	1	EA	$ 877.50	$ 878	1954	60	2014	$ 878						
2.5" Water Valve - In Tunnel	2	EA	$ 877.50	$ 1,755	1969	60	2029			$ 1,755				
Tunnels (Including Pipe Rack and Cable Tray)				$ 17,663,490				$ -	$ -	$ 3,719,560	$ 4,213,794	$ 7,566,546	$ 2,163,590	$ 2,776,800
4' X 6'-8"	450	LF	$ 2,314.00	$ 1,041,300	1953	75	2028			$ 1,041,300				
12'-4" X 7'-3"	600	LF	$ 2,574.00	$ 1,544,400	1954	75	2029			$ 1,544,400				
4' X 6'-8"	490	LF	$ 2,314.00	$ 1,133,860	1957	75	2032			$ 1,133,860				
6' X 7'	655	LF	$ 2,314.00	$ 1,515,670	1960	75	2035				$ 1,515,670			
5' X 7'	56	LF	$ 2,314.00	$ 129,584	1960	75	2035				$ 129,584			
7' X 7'	495	LF	$ 2,314.00	$ 1,145,430	1960	75	2035				$ 1,145,430			
5'-8" X 7'	230	LF	$ 2,314.00	$ 532,220	1964	75	2039				$ 532,220			
6' X 7'	30	LF	$ 2,314.00	$ 69,420	1964	75	2039				$ 69,420			
5' X 7'	355	LF	$ 2,314.00	$ 821,470	1964	75	2039				$ 821,470			
7' X 7'	800	LF	$ 2,314.00	$ 1,851,200	1968	75	2043					$ 1,851,200		
3'-6" X 5'	210	LF	$ 2,314.00	$ 485,940	1969	75	2044					$ 485,940		

FACILITY..................**Weber State University Utilities Infrastructure Assessment**
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DESCRIPTION	QTY	UNIT	REPLACEMENT UNIT COST	TOTAL 50 YR. REPLACEMENT COST	YEAR INSTALLED	EXPECTED LIFE (YRS.)	PROJECTED REPLACEMENT DATE	0-5 YR	5-10 YR.	10-20 YR.	20-30 YR.	30-40 YR.	40-50 YR.	50+ YR. (First Replacement Cost)
5'6" X 7'8"	565	LF	$ 2,314.00	$ 1,307,410	1970	75	2045					$ 1,307,410		
7'3" X 6'8"	120	LF	$ 2,314.00	$ 277,680	1970	75	2045					$ 277,680		
7' X 7'3"	530	LF	$ 2,314.00	$ 1,226,420	1971	75	2046					$ 1,226,420		
6'1" X 12'	275	LF	$ 2,574.00	$ 707,850	1971	75	2046					$ 707,850		
5' X 7'	739	LF	$ 2,314.00	$ 1,710,046	1974	75	2049					$ 1,710,046		
5'6" X 8'2"	360	LF	$ 2,314.00	$ 833,040	1978	75	2053						$ 833,040	
7' X 7'3"	170	LF	$ 2,314.00	$ 393,380	1983	75	2058						$ 393,380	
5'6" X 8'2"	405	LF	$ 2,314.00	$ 937,170	1987	75	2062						$ 937,170	
6' X 7'	110	LF	$ 2,314.00	$ 254,540	1990	75	2065							$ 254,540
7'6" X 7'6"	255	LF	$ 2,314.00	$ 590,070	1995	75	2070							$ 590,070
7' X 7'	640	LF	$ 2,314.00	$ 1,480,960	2001	75	2076							$ 1,480,960
7'6" X 4'	195	LF	$ 2,314.00	$ 451,230	2002	75	2077							$ 451,230
Irrigation Distribution				$ 4,804,995				$ 529,594	$ 473,896	$ -	$ 250,231	$ 2,179,015	$ 1,372,261	$ -
500,000 Gal. Irrigation Reservoir	1	Ea	$ 780,000.00	$ 780,000	1981	80	2061						$ 780,000	
12" Irrigation PVC Pipe - Direct Bury	740	LF	$ 89.70	$ 66,378	1970	50	2020		$ 66,378					
10" Irrigation PVC Pipe - Direct Bury	550	LF	$ 75.40	$ 41,470	1965	50	2015	$ 41,470						
10" Irrigation PVC Pipe - Direct Bury	550	LF	$ 75.40	$ 41,470	1966	50	2016	$ 41,470						
10" Irrigation PVC Pipe - Direct Bury	150	LF	$ 75.40	$ 11,310	1968	50	2018		$ 11,310					
10" Irrigation PVC Pipe - Direct Bury	500	LF	$ 75.40	$ 37,700	1987	50	2037				$ 37,700			
10" Irrigation PVC Pipe - Direct Bury	640	LF	$ 75.40	$ 48,256	1990	50	2040				$ 48,256			
8" Irrigation PVC Pipe - Direct Bury	700	LF	$ 61.10	$ 42,770	1952	50	2013, 2063	$ 42,770					$ 42,770	
8" Irrigation PVC Pipe - Direct Bury	1,070	LF	$ 61.10	$ 65,377	1954	50	2013, 2063	$ 65,377					$ 65,377	
8" Irrigation PVC Pipe - Direct Bury	750	LF	$ 61.10	$ 45,825	1956	50	2013, 2063	$ 45,825					$ 45,825	
8" Irrigation PVC Pipe - Direct Bury	800	LF	$ 61.10	$ 48,880	1961	50	2013, 2063	$ 48,880					$ 48,880	
8" Irrigation PVC Pipe - Direct Bury	1,160	LF	$ 61.10	$ 70,876	1965	50	2015	$ 70,876					$ 70,876	
8" Irrigation PVC Pipe - Direct Bury	2,300	LF	$ 61.10	$ 140,530	1968	50	2018		$ 140,530					
8" Irrigation PVC Pipe - Direct Bury	1,050	LF	$ 61.10	$ 64,155	1970	50	2020		$ 64,155					
8" Irrigation PVC Pipe - Direct Bury	2,050	LF	$ 61.10	$ 125,255	1972	50	2022		$ 125,255					
8" Irrigation PVC Pipe - Direct Bury	400	LF	$ 61.10	$ 24,440	1995	50	2045					$ 24,440		
8" Irrigation PVC Pipe - Direct Bury	560	LF	$ 61.10	$ 34,216	2001	50	2051					$ 34,216		
8" Irrigation PVC Pipe - Direct Bury	3,900	LF	$ 61.10	$ 238,290	2008	50	2058						$ 238,290	
6" Irrigation Pipe - Direct Bury	150	LF	$ 46.80	$ 7,020	1970	50	2020		$ 7,020					
4" Irrigation Pipe - Direct Bury	300	LF	$ 38.35	$ 11,505	1960	50	2013, 2063	$ 11,505					$ 11,505	
4" Irrigation Pipe - Direct Bury	900	LF	$ 38.35	$ 34,515	1966	50	2016	$ 34,515						
4" Irrigation Pipe - Direct Bury	650	LF	$ 38.35	$ 24,928	1970	50	2020		$ 24,928					
4" Irrigation Pipe - Direct Bury	700	LF	$ 38.35	$ 26,845	1972	50	2022		$ 26,845					
4" Irrigation Pipe - Direct Bury	600	LF	$ 38.35	$ 23,010	1988	50	2038				$ 23,010			
4" Irrigation Pipe - Direct Bury	160	LF	$ 38.35	$ 6,136	1995	50	2045					$ 6,136		
4" Irrigation Pipe - Direct Bury	250	LF	$ 38.35	$ 9,588	2008	50	2058						$ 9,588	
3" Irrigation Pipe - Direct Bury	1,170	LF	$ 29.25	$ 34,223	2002	50	2052					$ 34,223		
2" Irrigation Pipe - Direct Bury	1,450	LF	$ 21.45	$ 31,103	1983	50	2033				$ 31,103			
2" Irrigation Pipe - Direct Bury	1,500	LF	$ 21.45	$ 32,175	2008	50	2058						$ 32,175	
2"-12" Irrigation Valves - Direct Bury (Average Age)	30	EA	$ 650.00	$ 19,500	1984	50	2034				$ 19,500			
Pineview Pump House Structure	486	SF	$ 221.00	$ 107,406	1966	50	2016	$ 107,406						
Lindquist Pump House Structure	247	SF	$ 221.00	$ 54,587	1988	50	2038				$ 54,587			
12" Irrigation Filter	2	EA	$ 4,550.00	$ 9,100	1989	50	2039				$ 9,100			
12" Irrigation Backflow Preventer	1	EA	$ 4,550.00	$ 4,550	1989	20	2013, 2033, 2053	$ 4,550			$ 4,550		$ 4,550	
600 GPM Irrigation Pump	1	EA	$ 7,475.00	$ 7,475	1966	20	2013, 2033, 2053	$ 7,475			$ 7,475		$ 7,475	
600 GPM Irrigation Pump	1	EA	$ 7,475.00	$ 7,475	1966	20	2013, 2033, 2053	$ 7,475			$ 7,475		$ 7,475	
500 GPM Irrigation Pump	1	EA	$ 7,475.00	$ 7,475	2000	20	2020, 2040, 2060		$ 7,475		$ 7,475		$ 7,475	

FACILITY....................Weber State University Utilities Infrastructure Assessment
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DESCRIPTION	QTY	UNIT	REPLACEMENT UNIT COST	TOTAL 50 YR. REPLACEMENT COST	YEAR INSTALLED	EXPECTED LIFE (YRS.)	PROJECTED REPLACEMENT DATE	0-5 YR.	5-10 YR.	10-20 YR.	20-30 YR.	30-40 YR.	40-50 YR.	50+ YR. (First Replacement Cost)
Lindquist Irrigation Pond (2 Acres)	1	EA	$ 2,080,000.00	$ 2,080,000	1972	80	2052					$ 2,080,000		
Sanitary Waste				$ 1,608,867				$ 145,262	$ 102,609	$ 436,917	$ 690,222	$ 197,379	$ 36,478	$ 165,126
10" DI Sewer Pipe	760	LF	$ 75.40	$ 57,304	1969	60	2029			$ 57,304				
10" DI Sewer Pipe	310	LF	$ 75.40	$ 23,374	2011	60	2071							$ 23,374
8" DI Sewer Pipe	1,100	LF	$ 68.90	$ 75,790	1952	60	2012	$ 75,790						
8" DI Sewer Pipe	800	LF	$ 68.90	$ 55,120	1954	60	2014	$ 55,120						
8" DI Sewer Pipe	580	LF	$ 68.90	$ 39,962	1960	60	2020		$ 39,962					
8" DI Sewer Pipe	710	LF	$ 68.90	$ 48,919	1961	60	2021		$ 48,919					
8" DI Sewer Pipe	630	LF	$ 68.90	$ 43,407	1964	60	2024			$ 43,407				
8" DI Sewer Pipe	900	LF	$ 68.90	$ 62,010	1965	60	2025			$ 62,010				
8" DI Sewer Pipe	950	LF	$ 68.90	$ 65,455	1966	60	2026			$ 65,455				
8" DI Sewer Pipe	970	LF	$ 68.90	$ 66,833	1968	60	2028			$ 66,833				
8" DI Sewer Pipe	540	LF	$ 68.90	$ 37,206	1969	60	2029			$ 37,206				
8" DI Sewer Pipe	300	LF	$ 68.90	$ 20,670	1970	60	2030			$ 20,670				
8" DI Sewer Pipe	1,980	LF	$ 68.90	$ 136,422	1977	60	2037				$ 136,422			
8" DI Sewer Pipe	850	LF	$ 68.90	$ 58,565	1987	60	2047					$ 58,565		
8" DI Sewer Pipe	960	LF	$ 68.90	$ 66,144	1990	60	2050					$ 66,144		
8" DI Sewer Pipe	120	LF	$ 68.90	$ 8,268	1992	60	2052					$ 8,268		
8" DI Sewer Pipe	1,360	LF	$ 68.90	$ 93,704	2008	60	2068							$ 93,704
6" DI Sewer Pipe	230	LF	$ 62.40	$ 14,352	1956	60	2016	$ 14,352						
6" DI Sewer Pipe	220	LF	$ 62.40	$ 13,728	1961	60	2021		$ 13,728					
6" DI Sewer Pipe	180	LF	$ 62.40	$ 11,232	1970	60	2030			$ 11,232				
6" DI Sewer Pipe	400	LF	$ 62.40	$ 24,960	1972	60	2032			$ 24,960				
6" DI Sewer Pipe	100	LF	$ 62.40	$ 6,240	1977	60	2037				$ 6,240			
6" DI Sewer Pipe	620	LF	$ 62.40	$ 38,688	1983	60	2043					$ 38,688		
6" DI Sewer Pipe	430	LF	$ 62.40	$ 26,832	2008	60	2068							$ 26,832
6" DI Sewer Pipe	340	LF	$ 62.40	$ 21,216	2011	60	2071							$ 21,216
4" DI Sewer Pipe	400	LF	$ 59.80	$ 23,920	1968	60	2028			$ 23,920				
4" DI Sewer Pipe	100	LF	$ 59.80	$ 5,980	1970	60	2030			$ 5,980				
4" DI Sewer Pipe	300	LF	$ 59.80	$ 17,940	1972	60	2032			$ 17,940				
4" DI Sewer Pipe	200	LF	$ 59.80	$ 11,960	1977	60	2037				$ 11,960			
4" DI Sewer Pipe	360	LF	$ 59.80	$ 21,528	1983	60	2043					$ 21,528		
4" DI Sewer Pipe	70	LF	$ 59.80	$ 4,186	1990	60	2050					$ 4,186		
4" DI Sewer Pipe	610	LF	$ 59.80	$ 36,478	2001	60	2061						$ 36,478	
Man-holes (Average Age)	103	EA	$ 5,200.00	$ 535,600	1982	60	2042				$ 535,600			
Storm Water				$ 4,045,074				$ 855,296	$ 546,683	$ 1,507,961	$ 1,135,134	$ -	$ -	$ -
36" RCP	1,070	LF	$ 166.40	$ 178,048	1970	60	2030			$ 178,048				
30" CMP	330	LF	$ 80.60	$ 26,598	1968	60	2028			$ 26,598				
30" RCP	1,680	LF	$ 97.50	$ 163,800	1960	60	2020		$ 163,800					
30" RCP	1,240	LF	$ 97.50	$ 120,900	1968	60	2028			$ 120,900				
30" RCP	1,000	LF	$ 97.50	$ 97,500	1977	60	2037				$ 97,500			
24" CMP	1,090	LF	$ 75.40	$ 82,186	1957	60	2017	$ 82,186						
24" RCP	1,220	LF	$ 84.50	$ 103,090	1957	60	2017	$ 103,090						
21" RCP	2,730	LF	$ 82.55	$ 225,362	1955	60	2015	$ 225,362						
21" RCP	1,540	LF	$ 82.55	$ 127,127	1970	60	2030			$ 127,127				
21" RCP	230	LF	$ 82.55	$ 18,987	1960	60	2020		$ 18,987					
18" RCP	1,480	LF	$ 74.75	$ 110,630	1955	60	2015	$ 110,630						
18" RCP	910	LF	$ 74.75	$ 68,023	1970	60	2030			$ 68,023				
18" RCP	820	LF	$ 74.75	$ 61,295	1960	60	2020		$ 61,295					

FACILITY....................Weber State University Utilities Infrastructure Assessment
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DESCRIPTION	QTY	UNIT	REPLACEMENT UNIT COST	TOTAL 50 YR. REPLACEMENT COST	YEAR INSTALLED	EXPECTED LIFE (YRS.)	PROJECTED REPLACEMENT DATE	0-5 YR.	5-10 YR.	10-20 YR.	20-30 YR.	30-40 YR.	40-50 YR.	50+ YR. (First Replacement Cost)
18" RCP	990	LF	$ 74.75	$ 74,003	1977	60	2037				$ 74,003			
15" CMP	510	LF	$ 46.15	$ 23,537	1957	60	2017	$ 23,537						
15" RCP	250	LF	$ 70.20	$ 17,550	1955	60	2015	$ 17,550						
15" RCP	3,120	LF	$ 70.20	$ 219,024	1970	60	2030			$ 219,024				
15" RCP	1,990	LF	$ 70.20	$ 139,698	1960	60	2020		$ 139,698					
15" RCP	1,360	LF	$ 70.20	$ 95,472	1977	60	2037				$ 95,472			
12" RCP	1,280	LF	$ 59.15	$ 75,712	1955	60	2015	$ 75,712						
12" RCP	8,210	LF	$ 59.15	$ 485,622	1970	60	2030			$ 485,622				
12" RCP	620	LF	$ 59.15	$ 36,673	1960	60	2020		$ 36,673					
12" RCP	4,830	LF	$ 59.15	$ 285,695	1977	60	2037				$ 285,695			
10" HDPE	470	LF	$ 42.90	$ 20,163	1957	60	2017	$ 20,163						
10" PVC	1,710	LF	$ 42.90	$ 73,359	1970	60	2030			$ 73,359				
10" RCP	320	LF	$ 55.25	$ 17,680	1955	60	2015	$ 17,680						
10" RCP	120	LF	$ 55.25	$ 6,630	1970	60	2030			$ 6,630				
10" VCP	420	LF	$ 42.90	$ 18,018	1957	60	2017	$ 18,018						
8" CI	100	LF	$ 36.40	$ 3,640	1960	60	2020		$ 3,640					
8" HDPE	660	LF	$ 36.40	$ 24,024	1957	60	2017	$ 24,024						
8" PVC	2,180	LF	$ 36.40	$ 79,352	1970	60	2030			$ 79,352				
8" RCP	1,360	LF	$ 53.30	$ 72,488	1955	60	2015	$ 72,488						
8" RCP	960	LF	$ 53.30	$ 51,168	1966	60	2026			$ 51,168				
8" RCP	2,300	LF	$ 53.30	$ 122,590	1960	60	2020		$ 122,590					
6" RCP	1,170	LF	$ 48.10	$ 56,277	1955	60	2015	$ 56,277						
6" PVC	240	LF	$ 29.90	$ 7,176	1970	60	2030			$ 7,176				
6" RCP	1,350	LF	$ 48.10	$ 64,935	1970	60	2030			$ 64,935				
4" RCP	200	LF	$ 42.90	$ 8,580	1955	60	2015	$ 8,580						
Catch Basins (Average Age)	309	EA	$ 1,885.00	$ 582,465	1982	60	2042				$ 582,465			
Gas Distribution				$ 387,904				$ 72,436	$ 60,866	$ 58,874	$ 11,583	$ 67,444	$ 116,701	$ -
4" Gas Pipe - In Tunnel	950	LF	$ 33.80	$ 32,110	1954	50	2013, 2063	$ 32,110					$ 32,110	
4" Gas Pipe - In Tunnel	490	LF	$ 33.80	$ 16,562	1957	50	2013, 2063	$ 16,562					$ 16,562	
4" Gas Pipe - In Tunnel	655	LF	$ 33.80	$ 22,139	1960	50	2013, 2063	$ 22,139					$ 22,139	
4" Gas Pipe - In Tunnel	468	LF	$ 33.80	$ 15,818	1974	50	2024			$ 15,818				
3" Gas Pipe - In Tunnel	485	LF	$ 31.20	$ 15,132	1968	50	2018		$ 15,132					
3" Gas Pipe - In Tunnel	530	LF	$ 31.20	$ 16,536	1971	50	2021		$ 16,536					
3" Gas Pipe - In Tunnel	255	LF	$ 31.20	$ 7,956	1995	50	2045					$ 7,956		
3" Gas Pipe - In Tunnel	640	LF	$ 31.20	$ 19,968	2001	50	2051					$ 19,968		
2" Gas Pipe - In Tunnel	415	LF	$ 28.60	$ 11,869	1968	50	2018		$ 11,869					
2" Gas Pipe - In Tunnel	565	LF	$ 28.60	$ 16,159	1970	50	2020		$ 16,159					
2" Gas Pipe - In Tunnel	360	LF	$ 28.60	$ 10,296	1978	50	2028			$ 10,296				
2" Gas Pipe - In Tunnel	405	LF	$ 28.60	$ 11,583	1987	50	2037				$ 11,583			
4" Gas Pipe - Direct Bury	700	LF	$ 46.80	$ 32,760	1977	50	2027			$ 32,760				
4" Gas Pipe - Direct Bury	600	LF	$ 46.80	$ 28,080	2011	50	2061						$ 28,080	
2" Gas Pipe - Direct Bury	950	LF	$ 41.60	$ 39,520	2001	50	2051					$ 39,520		
2" Gas Pipe - Direct Bury	400	LF	$ 41.60	$ 16,640	2008	50	2058						$ 16,640	
4" Gas Valve - In Tunnel	1	EA	$ 715.00	$ 715	1961	50	2013, 2063	$ 715					$ 715	
2" Gas Valve - In Tunnel	1	EA	$ 455.00	$ 455	1962	50	2013, 2063	$ 455					$ 455	
2" Gas Valve - In Tunnel	1	EA	$ 455.00	$ 455	1966	50	2016	$ 455						
2" Gas Valve - In Tunnel	1	EA	$ 455.00	$ 455	1971	50	2021		$ 455					
4" Gas Valve - Direct Bury	1	EA	$ 715.00	$ 715	1968	50	2018		$ 715					

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