# Utilities and Economic Development Competitiveness for Colorado Springs

*Prepared for:*

The Greater Colorado Springs
Economic Development Corporation

*Prepared by:*

Economic Development
RESEARCH GROUP

Ticknor
& Associates

*in association with*
**Location Advisory Service**

**August 1, 2005**

# Table of Contents

# EXECUTIVE SUMMARY

## Colorado Springs Utilities Economic Development Competitiveness Study

*Prepared for the Greater Colorado Springs Economic Development Corporation*
*Prepared by: Economic Development Research Group and Ticknor & Associates*
*July 18, 2005*

**Objective.** This report evaluates the economic development competitiveness of Colorado Springs, focusing specifically on implications of utility rates, fees and policies. It compares economic performance as well as water, sewer, electric and natural gas costs for 14 cities, and summarizes findings from interviews of site selection advisors, utility staff and economic development organizations spanning these competing cities. It concludes with program and policy considerations for the Colorado Springs economic development system, including the City Council, the Greater Colorado Springs Economic Development Corporation (EDC), and Colorado Springs Utilities (CSU).

### The CSU/EDC Partnership

The Colorado Springs Utilities are above average in terms of utility financial support for the public/private economic development corporation. CSU and the EDC also cooperate well in terms of business retention and expansion programming and consideration of the economic development impact of the new utility fee structure.

CSU plus the City of Colorado Springs, however, rank in the bottom third in terms of total municipal and electric utility funding for the lead public/private development corporation.

In addition, CSU lags best practice utilities, especially Omaha Public Power District and Duke Energy in terms of supporting direct economic development professional staff and programming as well as underwriting the public/private EDC.

**Business Patterns and Trends.** The region features high concentrations of employment in Scientific and Technical Services, Technology-related Federal Government facilities and Computer/Electronics. These sectors reflect the region's technology strength, which has been an important draw for attracting technology-dependent businesses and associated investment to the region.

However, those industries that helped attract industry to Colorado Springs to date have now slowed in their growth, and competition among other economic development partnerships to develop these sectors is especially keen. Colorado Springs faces strong competition within Colorado, from such technology centers as Austin, San Jose, and Phoenix, and increasing from abroad as well.

A 14-area comparison of competing regions shows that there is now strong competition for the computer, data processing and aerospace/R&D technology related industries that have been strengths of the Colorado Springs region. For many of these industries, Colorado Springs will need to make efforts to enhance its cost competitiveness and quality in order to avoid further slippage and once again sustain advancement in its key clusters.

**Utility Rates.** The assessment compares net effective rates for electricity, natural gas, water and sewer services among the 14 areas. For each type of utility, Colorado Springs rates in the "middle of the pack" with a rank somewhere between fifth and twelfth lowest (best) of the 14. In general, electric and gas costs in Colorado Springs are quite competitive with other cities. Water rates are above average but still competitive. Prospective increases in future water rates for Colorado Springs are higher than in other cities and are likely to reduce the relative competitive position of Colorado Springs, though the area still remains competitive because its cooler summers lead to less water use than business locations in other areas.

A comparison among these locations for a typical industrial plant shows that Colorado Springs currently rates 7$^{th}$ best in terms of total utility cost. (Colorado Springs would rate 6$^{th}$ best if the same analysis is done with the slightly different set of comparison cities used by CSU for its annual bill survey.) None of the utilities at competing locations have public plans for future increases as large as those planned by CSU, though we cannot be certain about the level of increases that they will end up having in the future. However, it currently appears likely that most competing cities will have more modest rate increases, which will only serve to further reduce the ranking of Colorado Springs. In addition, future planned water and sewer hook up fees are highly non-competitive with charges among other major Western metropolitan areas.

**Operating Costs for Target Industries.** To assess how utility costs differentially affect target industries, CSU developed profiles for four typical examples of target industry facilities – a semiconductor plant, an aviation parts manufacturing plant, a data center, and an office building (representing both an administrative office and an R&D facility).

The analysis confirmed that Colorado Springs is neither the lowest cost location nor the highest cost location for any of the target industries, regardless of assumptions made about temperature adjustments or rate increases. This finding

indicates the need for carefully monitoring relative costs in the future to ensure that Colorado Springs remains competitive for attracting these industries.

**Utility Connection Fees.** All competitor utilities have some form of one-time connection fee for new customers. However, pending CSU water and sewer utilities stand out for having a major charge for new customers sharing in costs of the utility system capital facilities. The capital facilities charge is sometimes referred to as a "System Development Charge," "Facilities Connection Charge," "Participation Fee" or "Tap Fee." Colorado Springs and Denver both have water and sewer connection charges that are substantially above all of the other comparison cities. Even comparing them to cities with the next four highest connection costs, Colorado Springs and Denver charges appear as roughly double those of Las Vegas, four times those of Portland and Albuquerque, and six times those of Austin.

This is not an impediment for businesses to consider Colorado Springs, but it can be an impediment to "closing the deal" when consideration focuses on finalist locations.

For our four prototypes of target industries, the combined water and sewer connection charges in Colorado Springs would be: $4.6 million to $13.8 million for a semiconductor plant (depending on pipe configuration), $277,000 for a small parts manufacturer, and $136,000 for an average office building or data center. These charges are not insurmountable obstacles to economic development. But they do put strong pressure upon the City to make up these costs with other incentives. The potential barrier to the retention and expansion of local semiconductor operations is especially onerous.

**Flexibility, Incentives and Concessions.** While not present in Colorado Springs, a variety of other cities have policies to relax, reduce or offset some of the water, sewer and electricity connection charges for desired economic development projects.

These are typically applied for new development in desired development areas or for attraction of new business from out of state. In addition, several other cities have policies to treat connection charges as deposits that are eventually reimbursed to customers. Yet other cities have policies that reduce connection fees to the extent that those customers will be generating substantial monthly revenues. Finally, various electric, gas and water utility programs in other cities help existing and new businesses save operating costs by implementing energy efficiency.

While the specifics of policies and programs vary among the competing cities, most have some form of business incentive or support program. Colorado Springs may have opportunities to learn from "best practices" used in some of these other competing areas.

**Other Business Attraction Factors.** We compared other factors that influence the business site selection process among the 14 competitor cities, including various costs (e.g., utilities, housing, land, labor, taxes), qualities (worker skills, industrial/office facilities), access (to airports, highways, railroads) and supporting infrastructure (broadband, business resources).

In general, Colorado Springs is competitive with the other cities, however, as utility rates and connection fees increase, these other competitiveness factors will take on greater importance as companies endeavor to protect their bottom lines.

The bottom line is that businesses view location and operating costs together (i.e., "a dollar is a dollar"), as part of a total business case combining cost and non-cost factors.

Utility charges and connection fees are seen by prospective businesses as just some of cost components to be added up in determining total initial and continuing cost of doing business. Thus, it is misleading to compare utility use costs and utility connection fees independently of each other or other cost factors. Higher utility fees and charges may not be a problem if an area has low labor costs or other low business operating costs. However, when applied in an area such as Colorado Springs with average costs in most areas, the incremental impact of utility charges on business cost competitiveness can make it more difficult for the city to stand out among competing locations.

**Policy and Program Implications for Colorado Springs**

Whether to enact stronger programs to ensure quality economic development is ultimately an investment decision with regard to expected benefits in terms of tax base, quality jobs, self-sustaining economic vitality, and higher discretionary income to support a high quality of community life.

**For Overall City Economic Development**

1. The City should reconsider whether the negative impact of current water and wastewater connection fees is in the best interest of the total tax base and best long-term utilization of the ongoing water and wastewater capital investment.

2. Current water and wastewater connection practices place stronger pressure upon municipal and county government to offer other economic development incentives.

3. The City should fully explore whether to craft utility incentive rates and discounted hookup fees for very high wage, high employment, high tax base anchor industries as a business retention and expansion policy.

**For the Greater Colorado Springs Economic Development Corporation**

4. Current water and wastewater hookup fees place and extra burden on the EDC to be exceedingly good in all other areas of economic development.

5. Current water and sewer hookup fees require the EDC and the City to be very skilled at incentive and client negotiations.

**For the EDC and Colorado Springs Utilities**

6. The EDC and CSU should continue to integrate staff and resources to enhance the Business Retention and Expansion Visitation Program (BREV).

7. The City, CSU and the EDC should continue joint analysis of the economic development impact of utility rate and connection policies in the future.

**For Colorado Springs Utilities**

8. Develop options for controlling connection charges for larger water and wastewater users.

9. Develop further energy and water efficiency customer service programs to aid business location, retention and expansion and offset the financial and perceptual impacts of connection charges and water and sewer rate increases.

# 1 THE ECONOMIC POSITION OF COLORADO SPRINGS

## 1.1 Background: Role of Economic Development and Purpose of this Study

While Colorado Springs Economic Development Corporation, Colorado Springs Utilities, the Chamber of Commerce, and local elected officials have long supported economic development, the subject has become even more important because the recent survey of Colorado Springs residents indicated that attracting and retaining jobs is the city's top priority.

There are a number of strong reasons why quality economic development is important to Colorado Springs future.

- To provide non-residential tax base to support quality municipal services and quality public education
- To provide quality job opportunities and a high standard of living for local residents
- To provide commercial and industrial customers to spread the cost of fixed capital investment of the Southern Delivery System
- To support the overall quality of life.

Fortunately, Colorado Springs has strong economic development fundamentals to support quality future development. Important growth factors include:

- A highly educated population
- A relatively affordable cost of living
- Many strong quality of life amenities
- A strong cluster of economic activity based around advanced defense operations and a strong electronics, publishing, and non-profit administrative economic base.

Favorable ratings and performance indicators include:

- Colorado Springs ranked 8th among the nation's top 100 largest metro areas for business growth during the past four years according to a study completed by InfoUSA.
- It placed 18th in Expansion Management's "America's 50 Hottest Cities"

list in 2004, based on a survey of site selection professionals.

- Colorado Springs ranked 6th in Relocate-America.com's 2004 list of America's Top 100 places to live.

The Colorado Demographers Office projected last year that El Paso County (the Colorado Springs metropolitan area) will increase in population from 516,926 in 2000 to 606,000 by 2010 and 701,000 by 2020.

Those in charge of proactive economic development policies for Colorado Strings seek to sustain job growth and improve upon job quality, taking advantage of the community's strong economic potential.

The challenge is that Colorado Springs competes against other, highly effective metropolitan economies for quality job growth—including Denver, Austin, Albuquerque, Phoenix, San Jose and Portland, among others. At the same time, Colorado Springs faces growing international competition for its non-defense industries. "The United States now has to compete for every job going forward. That has not been on the table before. It has been assumed we had a lock on white-collar jobs and high-tech jobs. That is no longer the case" – Craig Barrett CEO, Intel (2003).

Growth has had important consequences for Colorado Springs Utilities, especially for water and wastewater capacity. Planning for the Southern Delivery System, a regional water delivery project that, once complete, will address future growth and water needs for the region. SDS Phase I is scheduled for completion in 2012 at a total cost of $500 million, with a second phase of damns and reservoirs to follow, bringing projected total cost to $1 billion. At the same time, construction begun on the Northern Water Reclamation Facility in August, 2003 to reduce demand on the current wastewater treatment facility, meet expanding EPA regulations, and support increasing population on the north and northeast sides of Colorado Springs. Aging infrastructure and anticipated new regulations have also triggered further planning for additional wastewater facilities investment.

The outcome of the systems extension project is that the community has increased water development fees for large commercial customers by about 50% in 2005, with scheduled further increases of about 20% per year over the next four years, thereby doubling rates again by 2010.

The Economic Development Corporation therefore requested from the Utilities Board that the Colorado Springs Utilities sponsor this project to evaluate the impact of these water development fees on Colorado Springs overall economic competitiveness.

Colorado Springs Utilities forecasts sufficient generating resources to meet customer load for the next ten years. Electric rates in Colorado Springs should

remain highly competitive, so electric rate issues play only a secondary part in this project.

We also examined gas rates and fees but concluded that they do not exert a significant impact on the city's economic competitiveness.

The project has five major goals:

(1) To assess the extent to which utility fees and rates for Colorado Springs differ significantly from competing communities, and represent a factor in the City's competitiveness for attracting business investment.
(2) To assess how different types of businesses are affected by utility costs and other factors in their decisions to remain, expand or relocate to the city.
(3) To explore policies or programs for promoting economic development that can offset negative effects of other rate/fee changes.
(4) To show how communities and utilities can work together in pursuing economic development related policies and relationships.
(5) To recommend methods for evaluating future rates and fees in terms of their impacts on local economic competitiveness.

To ground our conclusions in the realities of the types of facilities that the region is targeting for future growth, we have focused upon four major industries and facility types: Semiconductors, Data centers, Aviation electronics and Offices (Administrative and R&D).

**Approach and Methodology.** The analysis results shown in this report are based on a series of data collection and analysis efforts, which form the basis for the report's policy conclusions:

- Interviews to understand synergies between other utilities and economic development corporations for major competitor regions. Comparison of patterns and trends in the regional economy of Colorado Springs and competing region, to identify sectors of the economy that are performing well and those that are threatened by growing competition. The comparisons used federal data and the Local Economic Assessment Package (LEAP) to measure relative performance. (Chapter 1)

- Comparison of utility rates and policies among competing regions, to identify the extent to which they support or hinder the competitiveness of Colorado Springs and key target industries. This analysis was based on surveys of competing utilities, and models to calculate utility costs for target industries in alternative locations. (Chapter 2)

- Evaluation of the factors affecting business location decisions, and perceptions of how Colorado Springs is generally viewed as a competitor for attracting new and expanding business. This analysis was based on interviews of site selection consultants, plus discussions with economic development officials in other cities. (Chapter 3)

- An assessment of the comparative position of Colorado Springs in terms of other (non-utility) factors affecting business location, and an evaluation of the implications for local competitiveness using the Local Economic Assessment Package. (Chapter 4)

- Identification of policy implications resulting from the data collection and analysis findings. (Chapter 5)

## 1.2 EDC/Utility Economic Development Synergies in Competitor Locations

**The Local Setting**

CSU and the Greater Colorado Springs Economic Development Corporation cooperate in many important ways beyond its role as a utility service provider.

- CSU provides $200,000 annual investment in the EDC.
- It has committed $40,000 per year for three years, matched by $45,000 per year from the City of Colorado Springs, to sponsor the business retention and expansion program housed at the EDC during that period
- The CSU Chief Executive Officer sits on the EDC board.
- Utility Customer Care staff work with EDC staff as they interact with existing employers/customers and work with utility sensitive location projects.

**Competitor Locations**

Among competitor locations, water/wastewater utilities only rarely support public/private economic development corporations directly, although municipal investment can reach as much as $1 per capita in the most aggressive locations.

Investor-owned gas utilities (in contrast to combined electric and gas utilities) frequently invest at an organizational membership level, typically making 3 to 5 year pledges of around $10,000 – 25,000 per year.

Electric utilities are the strongest economic development supporters because

economic development typically produces net long-term margins with a positive benefit/cost. This is especially the case when electric utilities consider both the long-term direct benefit of new or expanded customers and the spin-off benefits of related commercial and residential growth, which generally yields higher margins than industrial or office projects.

Most competitor city electric utilities invest directly in their lead public/private economic development organizations, typically in the $30,000 to $150,000 per year range. This means that the CSU investment in the EDC is very solid for a utility of its size, but for the fact that CSU is the major source of municipal funding for the EDC. Many competitor city governments invest $.50 or more per capita in their EDCs. The combined CSU and City of Colorado Springs investment in the EDC is average, at best.

*Altogether, these findings indicate that Colorado Springs should have combined municipal and utility funding for economic development in the range of $360,000 to $500,000/year to be in line with other competitor locations.*

Another factor that contrasts leading competitor utility programs with CSU is their investment in their own direct economic development programs and staff. CSU does have several staff members who work in support of economic development although there are no direct staff with that as their only role.

**Illustrative Electric Utilities Serving Comparison Communities With Important Economic Development Programs**

| City | Electric Utility | Key Assistance to Metropolitan EDC |
|---|---|---|
| Albuquerque | Public Service of New Mexico | Provide "second senior staff professional," a twenty-five year ED veteran with strong marketing and legislative development skills. Led efforts to pass state venture capital and technology jobs tax credit legislation. Though PSNM is statewide, the vast majority of benefit from its ED functions accrues to metropolitan Albuquerque and Santa Fe. |
| Omaha | Omaha Public Power District | Have five-person ED staff assisting Omaha Chamber EDC with marketing and retention/expansion. |
| Portland | Portland Gen Elec. | One ED professional actively involved in marketing to technology targets and supporting key local technology cluster groups. |
| Raleigh Research Triangle | Progress Energy Duke Power | Progress is downsizing from 3-state ED staff of 14. Duke is substantially growing its program, including hiring key staff from its target industries to lead business attraction for their sector. See ED team and Duke President as catalysts to improve ally ED at state and metropolitan levels. Disproportionate benefits accrue to metro Raleigh, Charlotte and the Piedmont Triad. Vying for electric utility economic development department of the year award. |
| Reno | Sierra Pacific Power | Two-person ED staff is critical, nearly fulltime adjunct to the metro EDC. Stress consultant, key customer and key developer relations. |

*Note: Selected cities from the set of competitors, identified for comparison purposes by Greater Colorado Springs Economic Development Corporation*

Among the comparison cities selected by the Greater Colorado Springs Economic Development Corporation for this study, Omaha represents an example of a publicly-owned electric utility with an active direct economic development program. Omaha Public Power District (OPPD) had 2004 electric revenues of $566 million, approximately double CSU electric sales.

"Its publicly owned status makes it highly responsive to the needs of the eastern Nebraska region it serves. Economic strength has always been recognized as a primary need of any community, and OPPD emphasizes and actively supports the recruitment, development and nurturing of business and industry in our area." (OPPD website, opp.com). OPPD has an approximately $475,000 direct annual economic development budget, including a four-person economic development team lead by a former Director of the Departments of Commerce of Nebraska and Kansas.

Economic development services for businesses include rate and incentive calculators, building and site information files, assistance with workforce development, financial packaging, and incentive applications. Economic development staff also helps smaller communities in such areas as leadership development, community needs assessment, resource identification, and business retention & expansion programming. The company sees itself as an economic development catalyst, not just a banker.

In addition, economic development also helps OPPD maintain a customer service focus. Economic development services are prominently featured on the OPPD website. Besides working directly with local and state economic development allies, the OPPD key accounts program has important business retention and expansion aspects. Economic development staff members are a portal to utility customer programs in such diverse areas as distributed generation, electrical system solutions, energy efficiency programs, and financial solutions. OPPD also offers performance consulting through CMS Viron Energy Services in Kansas City, a comprehensive energy review seeking to pay for energy improvements through cost savings.

## 1.3 Regional Economic Characteristics

Overall, Colorado Springs has continued to attract industry and employment at triple the national rate, increasing job and income opportunities for both existing and new residents. However, to ensure that the region continues to maintain this position, it is important to monitor the region's business mix and growth rates, and benchmark them against comparable areas. This makes it possible to assess the extent to which Colorado Springs is maintaining its economic strengths, identify the extent of any slippage in the economy, and then assess factors causing those changes.

Table 1 shows a profile of employment by type of business in the Colorado Springs metro region, how that mix differs from national patterns, and how that pattern has changed over time. It draws on data from the US Bureau of Economic Analysis, which has been carefully adjusted to include self-employed entrepreneurs and other non-salaried workers usually missed in most data on county business patterns. Key findings are summarized in Table 2 which follows.

The following observations are key findings:

- The existing large numbers and high concentrations of employment in "Scientific and Technical Services", technology-related Federal Government facilities and Computer/Electronics are particularly notable as they reflect the region's technology strength, which has been an important draw for attracting technology-dependent businesses to date. The other major sector of note is Religious/Civic organizations, which is not a technology driver of other industries. (All the other large sectors such as retail, lodging, restaurants, construction and health care are major employers in all growing regions of the country and do not have a higher than normal representation in this region.)
- The technology related industries that have helped attract industry to Colorado Springs to date are no longer among the fastest growing industries anymore. That fast growing industries are now Religious & Civic Organizations, Recreation, and sectors directly supporting population growth (real estate, broadcasting, leasing, finance/credit, etc.).

## Table 1. Colorado Springs Employment Profile

| | | 1997 Employment | | 2002 Employment | | | | |
|---|---|---|---|---|---|---|---|---|
| NAICS | Sector | Total | % | Total | % | % Change | Av. Annual Growth | 2002 Mix Ratio[1] |
| 920 | Government | 65,705 | 20.4% | 70,840 | 18.5% | 7.8% | 1.5% | 1.36 |
| 441-454 | Retail Trade | 36,784 | 11.4% | 38,158 | 10.0% | 3.7% | 0.7% | 0.92 |
| 813 | Relig, Civic & Prof. Org. | 7,415 | 2.3% | 35,019 | 9.2% | 372.3% | 36.4% | 5.08 |
| 541-551 | Prof., Scientific & Tech. | 22,100 | 6.9% | 30,687 | 8.0% | 38.9% | 6.8% | 1.06 |
| 721-722 | Accomm., Eating & Drink | 24,465 | 7.6% | 26,139 | 6.8% | 6.8% | 1.3% | 1.00 |
| 230 | Construction | 21,558 | 6.7% | 24,623 | 6.4% | 14.2% | 2.7% | 1.03 |
| 621-624 | Health Care & Social Svcs | 20,691 | 6.4% | 24,550 | 6.4% | 18.7% | 3.5% | 0.68 |
| 561 | Administrative & Support | 23,527 | 7.3% | 19,451 | 5.1% | -17.3% | -3.7% | 0.94 |
| 334 | Computer & Elec Prod | 12,017 | 3.7% | 12,154 | 3.2% | 1.1% | 0.2% | 3.64 |
| 811-812 | Repair, Maint., & Personal | 8,841 | 2.7% | 11,274 | 3.0% | 27.5% | 5.0% | 0.87 |
| 531 | Real Estate | 5,525 | 1.7% | 10,752 | 2.8% | 94.6% | 14.2% | 0.99 |
| 711-713 | Amusement & Recreation | 6,533 | 2.0% | 10,195 | 2.7% | 56.1% | 9.3% | 1.34 |
| 521-523 | Monetary, Fin. & Credit | 7,101 | 2.2% | 9,478 | 2.5% | 33.5% | 5.9% | 0.89 |
| 513 | Broadcasting | 5,527 | 1.7% | 8,184 | 2.1% | 48.1% | 8.2% | 2.20 |
| 420 | Wholesale Trade | 7,225 | 2.2% | 6,616 | 1.7% | -8.4% | -1.7% | 0.49 |
| 524 | Insurance Carriers | 7,686 | 2.4% | 6,487 | 1.7% | -15.6% | -3.3% | 1.04 |
| 611 | Educational Services | 5,824 | 1.8% | 5,553 | 1.5% | -4.7% | -0.9% | 0.84 |
| 511 | Publishing Industries | 5,495 | 1.7% | 3,861 | 1.0% | -29.7% | -6.8% | 1.64 |
| 491-493 | Mail , pkg. & warehouse | 2,906 | 0.9% | 3,381 | 0.9% | 16.3% | 3.1% | 0.68 |
| 481-487 | Transportation | 4,186 | 1.3% | 3,324 | 0.9% | -20.6% | -4.5% | 0.37 |
| 814 | Private Households | 2,100 | 0.7% | 3,154 | 0.8% | 50.2% | 8.5% | 0.69 |
| 332 | Fabricated Metal Products | 3,993 | 1.2% | 3,028 | 0.8% | -24.2% | -5.4% | 0.86 |
| 532 | Rental & Leasing Services | 1,576 | 0.5% | 2,205 | 0.6% | 39.9% | 6.9% | 0.94 |
| 339 | Misc Mfg | 1,184 | 0.4% | 1,787 | 0.5% | 50.9% | 8.6% | 1.02 |
| 336 | Transportation Equipment | 757 | 0.2% | 1,001 | 0.3% | 32.2% | 5.7% | 0.24 |
| 112 | Animal Production | 474 | 0.1% | 890 | 0.2% | 87.8% | 13.4% | 0.31 |
| 327 | Nonmetallic Mineral Prod | 1,016 | 0.3% | 880 | 0.2% | -13.4% | -2.8% | 0.74 |
| 514 | Internet & data svcs | 1,411 | 0.4% | 817 | 0.2% | -42.1% | -10.4% | 0.73 |
| 323 | Printing & Related | 912 | 0.3% | 796 | 0.2% | -12.7% | -2.7% | 0.47 |
| 337 | Furniture & Related | 616 | 0.2% | 779 | 0.2% | 26.5% | 4.8% | 0.56 |
| 562 | Waste Mgt & Remediation | 224 | 0.1% | 677 | 0.2% | 202.2% | 24.8% | 0.86 |
| 221 | Utilities | 619 | 0.2% | 668 | 0.2% | 7.9% | 1.5% | 0.52 |
| 311 | Food Products | 438 | 0.1% | 652 | 0.2% | 48.9% | 8.3% | 0.18 |
| 212-213 | Mining & Support Activities | 563 | 0.2% | 515 | 0.1% | -8.5% | -1.8% | 0.53 |
| 335 | Electric Equip, Appliances | 538 | 0.2% | 490 | 0.1% | -8.9% | -1.9% | 0.43 |
| 333 | Machinery Manufacturing | 662 | 0.2% | 474 | 0.1% | -28.4% | -6.5% | 0.17 |
| 512 | Motion Picture & Sound | 528 | 0.2% | 451 | 0.1% | -14.6% | -3.1% | 0.46 |
| 321 | Wood Products | 698 | 0.2% | 417 | 0.1% | -40.3% | -9.8% | 0.30 |
| 326 | Plastics & Rubber Prod | 613 | 0.2% | 247 | 0.1% | -59.7% | -16.6% | 0.13 |
| 325 | Chemical Manufacturing | 222 | 0.1% | 234 | 0.1% | 5.4% | 1.1% | 0.11 |
| 111 | Crop Production | 463 | 0.1% | 183 | 0.0% | -60.5% | -16.9% | 0.05 |
| 312 | Beverage & Tobacco | 204 | 0.1% | 174 | 0.0% | -14.7% | -3.1% | 0.37 |
| 322 | Paper Manufacturing | 77 | 0.0% | 137 | 0.0% | 77.9% | 12.2% | 0.11 |
| 525 | Funds, Trusts | 246 | 0.1% | 134 | 0.0% | -45.5% | -11.4% | 0.23 |
| 114 | Fishing, Hunting & Trap. | 34 | 0.0% | 115 | 0.0% | 238.2% | 27.6% | 0.39 |
| 315 | Apparel Manufacturing | 130 | 0.0% | 110 | 0.0% | -15.4% | -3.3% | 0.13 |
| 211 | Oil & Gas Extraction | 433 | 0.1% | 74 | 0.0% | -82.9% | -29.8% | 0.10 |
| 316 | Leather & Allied Products | 70 | 0.0% | 45 | 0.0% | -35.7% | -8.5% | 0.35 |
| 115 | Support for Agr & Forestry | 209 | 0.1% | 42 | 0.0% | -79.9% | -27.5% | 0.02 |
| 113 | Forestry & Logging | 27 | 0.0% | 41 | 0.0% | 51.9% | 8.7% | 0.12 |
| 314 | Textile Product Mills | 94 | 0.0% | 40 | 0.0% | -57.4% | -15.7% | 0.09 |
| 533 | Franchises | 83 | 0.0% | 38 | 0.0% | -54.2% | -14.5% | 0.55 |
| 331 | Primary Metal Mfg | 28 | 0.0% | 35 | 0.0% | 25.0% | 4.6% | 0.03 |
| 313 | Textile Mills | 3 | 0.0% | 10 | 0.0% | 233.3% | 27.2% | 0.02 |
| 324 | Petroleum & Coal Prod. | 0 | 0.0% | 8 | 0.0% | 800.0% | n/a | 0.03 |
| | **TOTAL** | **322,35** | **100%** | **382,07** | **100%** | **18.5%** | **3.5%** | |

[1]This is a form of Location Quotient, measuring employment concentration. It is the ratio of the percent of total employment in a particular sector in Colorado Springs relative to the percent of employment in that sector
Source: EDR-LEAP using BEA and IMPLAN data.

**Table 2. Leading Industries in Colorado Springs**

| Largest Industries by Employment | Employees |
|---|---|
| Government | 70,840 |
| Retail Trade | 38,158 |
| Religious, Civic, Professional, Org. | 35,019 |
| Professional Scientific, Technical, Svcs | 30,687 |
| Lodging, Eating & Drinking | 26,139 |
| Construction | 24,623 |
| Health Care & Social Services | 24,550 |
| **Most Highly Concentrated Industries** | **Rel to National Avg[1]** |
| Religious, Civic, and Professional Organizations | 5.08 |
| Computer & Electronic Products | 3.64 |
| Broadcasting | 2.20 |
| Publishing Industries | 1.64 |
| Government | 1.36 |
| Amusement & Recreation | 1.34 |
| Professional Scientific, Technical, Services | 1.06 |
| Insurance Carriers & Related Activities | 1.04 |
| **Fastest Growing Industries[2]** | **Avg Annual Growth** |
| Religious, Civic, and Professional Organizations | 36.4% |
| Real Estate | 14.2% |
| Amusement & Recreation | 9.3% |
| Miscellaneous Manufacturing | 8.6% |
| Broadcasting | 8.2% |
| Rental & Leasing Services | 6.9% |
| Professional Scientific, Technical, Services | 6.8% |
| Monetary, Financial, & Credit Activity | 5.9% |
| Transportation Equipment (mostly Aviation Parts) | 5.8% |

*1) This is a form of Location Quotient, measuring employment concentration. It is the ratio of the percent of total employment in a particular sector in Colorado Springs relative to the percent of employment in that sector nationwide. Shown only for industries with 1,000 employees or greater. Source: EDR-LEAP analysis system, using BEA and IMPLAN data.*

# 1.4 Performance of Target Industries

**Selection of Target Industries.** The Greater Colorado Springs Economic Development Corp. (EDC) seeks to maintain and enhance the economic development and well-being of the region by supporting the retention, expansion and attraction of industries that bring in outside dollars into the economy and help to generate broader jobs in the community. Key target industries have to meet several criteria. (a) They must be industries that "export" products and services to the rest of the nation and world, thus bringing net inward flow of dollars into the region's economy. (b) They must also support the generation of additional local jobs in other industries supplying materials and services for their operation. (c) They must be industries that are growing nationally, or provide a special niche market growth opportunity for the region. (d) And of course they must be industries that would find local strengths of the Colorado Springs area attractive

to them. Based on these criteria, the EDC has selected six target industries of most relevance for this study. They are:

| Industry Sector | NAICS | Reason | Jobs |
|---|---|---|---|
| Government: Technology/R&D | 920 | Largest employer; high concentration | 70,840 |
| Computer/ Electronic Products | 334 | High Concentration (local strength) | 12,154 |
| Insurance Carriers | 534 | High Concentration (local strength) | 6,487 |
| Transportation Equip: Aviation | 336 | Fast Growing; niche market opportunity | 1,001 |
| Fabricated Metal Products | 332 | Specialty niche market opportunity | 3,028 |
| Data Processing Services | 514 | Specialty niche market opportunity | 817 |

**Relative Concentration.** To evaluate the current position of Colorado Springs in attracting or maintaining these target industries, Table 3 shows the relative concentration of those industries among 14 cities. These represent Colorado Springs and 13 other comparison cities considered by EDC to be competitors for these industries. The comparison cities are generally in the western half of the US and all feature strong positions in computer, data processing and aerospace technology. (In the table, a value over 1 indicates a higher concentration in those cities and a value under 1 indicates a lower concentration in those cities, compared to Colorado Springs).[1]

Overall, it shows that Colorado Springs is in the top third for Government, Computer/ Electronics and Fabricated Metal, and in the "middle of the pack" for Insurance. While the region is in the lower half of the list in its concentrations for Transportation Equipment and Data Processing, it has seen specialty opportunities for developing aviation equipment and insurance-related database processing.

**Table 3. Ranking Target Industry Concentration among Comparison Cities**

| Fabricated Metal Products (332) | | Computer & Electronic Products (334) | | Transportation Equipment (336) | |
|---|---|---|---|---|---|
| Houston | 1.8 | San Jose | 2.6 | Huntsville | 19.4 |
| Portland | 1.2 | Huntsville | 1.3 | Phoenix | 3.6 |
| Reno | 1.1 | Austin | 1.2 | Portland | 2.9 |
| Huntsville | 1.0 | **Col. Springs** | **1.0** | San Jose | 2.1 |
| **Col. Springs** | **1.0** | Portland | 0.9 | Denver | 1.9 |
| San Jose | 0.9 | Albuquerque | 0.7 | Salt Lake City | 1.5 |
| Phoenix | 0.8 | Phoenix | 0.6 | Albuquerque | 1.0 |
| Denver | 0.7 | Raleigh | 0.4 | Houston | 1.0 |
| Salt Lake City | 0.7 | Salt Lake City | 0.3 | **Col. Springs** | **1.0** |
| Omaha | 0.6 | Houston | 0.2 | Omaha | 0.4 |
| Raleigh | 0.6 | Omaha | 0.1 | Austin | 0.0 |
| Albuquerque | 0.4 | Denver | 0.1 | Reno | 0.0 |
| Austin | 0.3 | Reno | 0.1 | Las Vegas | 0.0 |
| Las Vegas | 0.2 | Las Vegas | 0.0 | Raleigh | 0.0 |

[1] *The set of comparison cities selected by EDC for use in this study is somewhat different from the set used in the past by CSU for its rate comparisons. Both lists include Albuquerque, Austin, Colorado Springs, Denver, Las Vegas, Phoenix, Portland (OR), Reno, Salt Lake City and San Jose. The new list adds Houston, Huntsville (AL), Omaha and Raleigh, while deleting Tucson, Los Angeles, Sacramento, San Diego, Boise, Dallas and San Antonio.*

**Table 3. Ranking Target Industry Concentration among Comparison Cities (continued)**

| Internet & Data Processing Svcs (514) | | Insurance Carriers & Related Activities (524) | | Government (920) | |
|---|---|---|---|---|---|
| Omaha | 7.7 | Omaha | 2.1 | Austin | 1.1 |
| San Jose | 4.7 | Austin | 1.1 | Huntsville | 1.1 |
| Salt Lake City | 3.3 | Denver | 1.1 | **Col. Springs** | **1.0** |
| Albuquerque | 1.8 | Phoenix | 1.1 | Albuquerque | 0.9 |
| Austin | 2.1 | Portland | 1.1 | Raleigh | 0.9 |
| Denver | 2.1 | Salt Lake City | 1.1 | Salt Lake City | 0.7 |
| Phoenix | 1.9 | Albuquerque | 1.0 | Denver | 0.6 |
| Houston | 1.2 | **Col. Springs** | **1.0** | Omaha | 0.6 |
| Portland | 1.1 | Houston | 0.8 | Houston | 0.6 |
| Raleigh | 1.0 | Raleigh | 0.8 | Phoenix | 0.6 |
| **Col. Springs** | **1.0** | Reno | 0.8 | Portland | 0.6 |
| Huntsville | 0.6 | Las Vegas | 0.7 | Reno | 0.5 |
| Las Vegas | 0.0 | San Jose | 0.4 | Las Vegas | 0.5 |
| Reno | 0.0 | Huntsville | 0.3 | San Jose | 0.4 |

*Note: Numbers reflect Mix Ratio, a form of Location Quotient, measuring employment concentration. It is the ratio of the percent of total employment in a particular sector in Colorado Springs relative to the percent of employment in that sector nationwide.*
*Source: EDR-LEAP analysis system, using BEA and IMPLAN data.*
*See Appendix for details on numbers used to generate these ratios*

**Relative Growth.** Even more important is the ability of Colorado Springs to keep up with the competition in terms of growth of employment in these target industries. Table 4 shows the relative growth rates of those industries among the 14 cities. It shows that Colorado Springs has been at the top third of the pack in growth of Transportation Equipment and Computer/Electronics industries, but is in the bottom third in performance of its other target industries. Key findings:

- Transportation Equipment – Colorado Springs has started from a small base but ranked first in terms of job growth among comparison cities. Huntsville was the only other city to gain jobs in this sector, which lost jobs nationally.
- Computer and Electronics Products – Colorado Springs ranks third. It has grown slowly in this region, beating a national trend of job loss but lagging behind Raleigh and Las Vegas where jobs grew at a faster rate.
- Government– Colorado Springs outstripped the national growth rate for this sector, which is the region's leading source of jobs. However, it still ranked eleventh among comparison cities because other cities had higher growth rates but started from a far lower concentration of jobs in this sector.
- Fabricated Metal Products – Colorado Springs ranks eleventh, losing jobs faster than the national loss rate. During this period, Phoenix and Huntsville continued to gain jobs.
- Internet and Data Processing Services – Colorado Springs ranks eleventh, having lost jobs at a time when the nation gained jobs and other cities (Omaha, Albuquerque and Salt Lake City) experienced notable growth.

- Insurance Carriers – Colorado Springs ranked eleventh, experiencing job loss consistent with a national pattern over the analysis time period. However, it had major gains in 2004, allowing Colorado Springs to rebound and join other comparison cities (Las Vegas, Albuquerque, Phoenix, Denver, and Omaha) in gaining jobs.

**Table 4. Ranking Target Industry Growth among Comparison Cities**

| Growth Rank | 332 - Fabricated Metal Products |
|---|---|
| 1 | Phoenix |
| 2 | Huntsville |
| 3 | Salt Lake City |
| 4 | Houston |
| 5 | Denver |
| 6 | Omaha |
| 7 | Reno |
| 8 | Albuquerque |
| 9 | Portland |
| 10 | Las Vegas |
| 11 | **Colorado Springs** |
| 12 | Raleigh |
| 13 | Austin |
| 14 | San Jose |

| Growth Rank | 334 – Computer & Electronic Prod. |
|---|---|
| 1 | Raleigh |
| 2 | Las Vegas |
| 3 | **Colorado Springs** |
| 4 | Houston |
| 5 | Albuquerque |
| 6 | Denver |
| 7 | Portland |
| 8 | San Jose |
| 9 | Phoenix |
| 10 | Austin |
| 11 | Huntsville |
| 12 | Salt Lake City |
| 13 | Reno |
| 14 | Omaha |

| Growth Rank | 336 – Transport Equipment |
|---|---|
| 1 | **Colorado Springs** |
| 2 | Huntsville |
| 3 | Houston |
| 4 | Denver |
| 5 | Portland |
| 6 | Omaha |
| 7 | Phoenix |
| 8 | San Jose |
| 9 | Austin |
| 10 | Albuquerque |
| 11 | Salt Lake City |
| 12 | Reno |
| 13 | Las Vegas |
| 14 | Raleigh |

| Growth Rank | 514 - Internet & Data Process Svcs |
|---|---|
| 1 | Omaha |
| 2 | Albuquerque |
| 3 | Salt Lake City |
| 4 | Phoenix |
| 5 | Austin |
| 6 | Denver |
| 7 | Houston |
| 8 | Portland |
| 9 | San Jose |
| 10 | Las Vegas |
| 11 | **Colorado Springs** |
| 12 | Raleigh |
| 13 | Reno |
| 14 | Huntsville |

| Growth Rank | 524 – Insurance Carriers & Related |
|---|---|
| 1 | Las Vegas |
| 2 | Albuquerque |
| 3 | Phoenix |
| 4 | Reno |
| 5 | Portland |
| 6 | Denver |
| 7 | Omaha |
| 8 | Salt Lake City |
| 9 | Houston |
| 10 | Austin |
| 11 | **Colorado Springs** |
| 12 | San Jose |
| 13 | Raleigh |
| 14 | Huntsville |

| Growth Rank | 920 - Govt & non NAICS |
|---|---|
| 1 | Las Vegas |
| 2 | Phoenix |
| 3 | Houston |
| 4 | Portland |
| 5 | Denver |
| 6 | San Jose |
| 7 | Raleigh |
| 8 | Omaha |
| 9 | Salt Lake City |
| 10 | Reno |
| 11 | **Colorado Springs** |
| 12 | Albuquerque |
| 13 | Huntsville |
| 14 | Austin |

*Source: EDR-LEAP analysis system, using BEA and IMPLAN data. See Appendix for details on numbers used to generate these ratios*

## 1.4 Implications for the Overall Economic Development Effort

The regional economic patterns show a region with a growing economy and a pattern of broad job creation to date.

Growth in the government/military sectors and in religious organizations and publishing has been particularly outstanding. There is good reason to believe,

especially with the recent BRAC decisions favoring Colorado Springs, that the military/defense part of the local economic engine will continue.

The challenge relates to area's ability to compete with the very best Western, US and international areas for research, design, development and sophisticated production within some of the most attractive target sectors within the international economy.

Comparison with other cities shows that there has been very strong competition for the computer, data processing and aerospace/R&D technology related industries that have been strengths of the Colorado Springs region. The region has competed well against the nation, which is to be expected given the importance of the Air Force command and NORAD to the regional cluster of economic activities and local talent pool. But the region has not competed nearly as well against the Western technology centers—San Jose, Austin, Phoenix and others—in terms of the growth rate of technology clusters.

For many of its key future industries, the Colorado Springs region will have to be make efforts to enhance its cost competitiveness and quality in order to avoid further slippage in its position. The chapters that follow will continue this theme by examining the region's competitiveness for utilities and other factors affecting business attraction.

# 2 THE COMPETITIVE UTILITY POSITION

## 2.1 Issues in Comparing Utility Costs

**Variation in Utility Costs among Industries.** When considering the competitiveness of Colorado Springs, it is important to evaluate the full range of utility costs (considered in this chapter) as well as other non-utility factors (considered later in this report). Utility costs can include electricity, natural gas, water and sewer (wastewater) supply services. The associated costs generally include one-time connection fees, plus charges for ongoing account maintenance, utility volume of usage and reservation of capacity for peak demand. The costs of utilities vary widely and systematically among different types of businesses, depending on the type of facilities and the production processes that they utilize. These systematic industry relationships are illustrated in summary tables provided in the Appendix.

To illustrate how utility requirements differ by industry and facility, consider that office activities tend to rely on electric supply for computer and office equipment and for summer cooling, often use natural gas for heating, and use water for landscaping, sanitation and cooling. Data centers are similar to offices but with significantly higher electricity and water costs for maintaining computer banks and cooling them. Semiconductor manufacturing involves production equipment that requires much higher levels of electricity and water use for computer chip making. The highest levels of water use are needed for beer brewing, aluminum and iron/steel foundries, and some metal and equipment fabrication. Those latter activities generally seek areas with the lowest water costs and hence are already absent from Colorado Springs.

To assess how utility costs differentially affect target industries, CSU developed profiles of a standard industrial plant and four examples of target industries – a semiconductor plant, an administrative office, a data center and an aviation parts manufacturing plant. The latter was deemed representative of profiles for both fabricated metals and transportation equipment manufacturing facilities. No profile was developed for government (federal or military R& D) facilities because of the special and highly specific nature of such facilities. These profiles are summarized in Table 5.

**Table 5. Typical Profiles by Industry & Project Type**

| Type | Building Sq.ft. | Employees | Electricity kWh/month | Water/Sewer (cf) Pipes (inch) | Nat Gas Therms |
|---|---|---|---|---|---|
| Semiconductor Manufacturer | 400k | 1600 | 4.6 million *(19% on-peak)* | 2.2 million 10" | 234,000 |
| Aviation Manufacturer | 165k | 300 | 435,000 *(23% on-peak)* | 53,000 4" and 2" | 18,000 |
| Office – admin or call center | 147k | 500 | 400,000 *(20% on-peak)* | 48,000 3" | 882 |
| Data Center | 150k | 550 | 563,000 *(22% on-peak)* | 70,000 3" | 965 |
| Industrial Average | NA | NA | 450,000 kWh *(22% on-peak)* | 50,000 2" | 10,000 |

*Source: CSU*

**Variation in Utility Costs among Areas.** When assessing the competitiveness of Colorado Springs for its target industries, it is important to measure variation in utility costs among locations. There are two aspects to this variation – (a) differences in utility rates and unit charges among communities and service providers, and (b) variation among localities associated with climate. Both are examined in the text which follows.

## 2.2 Comparison of Utility Usage Rates

**Comparison of Utility Rates.** When considering the competitiveness of utility rates for different types of target industries, it is important to measure the net effective rates, which include basic utility service usage fees, plus applicable fixed monthly customer charges for meter, pipe and service subscriptions, franchise fees, environmental or conservation surcharges, permit fees and taxes. The net effective electric rate per kWh also incorporates assumed demand charges and assumptions about peak vs. off-peak usage.

Table 6 presents a comparison of the net effective utility rates applicable for the industrial average profile (as was reflected in Table 5). Among the 14 comparison areas, Colorado Springs ranks:

- Fifth lowest in effective electricity rate (or 6th lowest if including a lower value for Houston's negotiated rate),
- tenth lowest in effective natural gas rate,
- thirteenth lowest in effective water rate, and
- ninth lowest in effective wastewater rate.

## Table 6. Comparison of Net Effective Utility Rates[1]

**2005 Industrial – Effective Average Rate per Unit of Use[1]**
**With Rank from Lowest to Highest**

| | Electric | | Gas | | Water | | Wastewater | |
|---|---|---|---|---|---|---|---|---|
| City | Cents/ kWh | Rank | Cents/ kWh | Rank | Cents Per c.f. | Rank | Cents Per c.f. | Rank |
| Albuquerque | 6.4 | ( 7) | 90.3 | ( 7) | 1.8 | ( 9) | 1.7 | ( 7) |
| Austin | 8.6 | (11) | 92.0 | ( 8) | 2.2 | (12) | 3.4 | (13) |
| **Colorado Springs** | **6.1** | **( 5)** | **98.7** | **(10)** | **2.2** | **(13)** | **1.9** | **( 9)** |
| Denver | 5.3 | ( 1) | 79.2 | ( 3) | 1.3 | ( 6) | 1.5 | ( 6) |
| Houston | NA* | -- | NA* | -- | 0.3 | ( 1) | 0.5 | ( 1) |
| Huntsville | 6.0 | ( 3) | 104.5 | (12) | 0.8 | ( 3) | 2.3 | (10) |
| Las Vegas | 8.5 | (10) | 79.8 | ( 4) | 1.7 | ( 7) | 0.7 | ( 2) |
| Omaha | 6.7 | ( 8) | 72.7 | ( 2) | 0.9 | ( 4) | 1.3 | ( 4) |
| Phoenix | 5.6 | ( 2) | 81.1 | ( 5) | 1.9 | (11) | 1.4 | ( 5) |
| Portland | 6.3 | ( 6) | 88.3 | ( 6) | 1.8 | ( 8) | 4.2 | (14) |
| Raleigh | 6.8 | ( 9) | 100.0 | (11) | 1.2 | ( 5) | 1.1 | ( 3) |
| Reno | 9.9 | (12) | 94.7 | ( 9) | 1.8 | (10) | 2.3 | (11) |
| Salt Lake City | 6.0 | ( 4) | 68.7 | ( 1) | 0.8 | ( 2) | 2.4 | (12) |
| San Jose | 12.5 | (13) | 112.6 | (13) | 2.3 | (14) | 1.8 | ( 8) |

[1] *basic utility service usage fees, plus applicable customer charges for meter, pipe and service subscriptions, as well as franchise fees, environmental or conservation surcharges, permit fees and taxes. Note: some communities charge gas based on cubic feet (roughly 100 cubic feet per therm), and water based on gallons (roughly 7.5 gallons per cubic feet)*

** Houston data is "Not Available." Due to electricity competition in Texas, every major industrial facility negotiates its own rate with competing suppliers.*

Applying these effective rates in other cities (from Table 6) to the industrial average profile in Colorado Springs (from Table 5) yields an estimate of the total annual utility cost for an industrial plant in various locations. The results are shown in Table 7. Key findings are:

- Among the 13 comparison areas with full rate information, Colorado Springs currently falls in the very middle of the pack – rating 7th best in terms of total utility cost. Colorado Springs would rate 6th best if the same analysis is used to with the slightly different set of comparison cities used by CSU for its annual bill survey.
- If planned rate increases go through as forecast by CSU and other cities have more nominal cost increases tied only to fuel costs, then Colorado Springs could drop as low as 10th best in the total cost competition.
- With the planned water rate increases, Colorado Springs could move from the 3rd most expensive to the top most expensive city for water use. However, these figures do not include the possibility of modest cost increases in other cities nor do they adjust for differences in temperatures among the cities.

**Table 7. Comparison of Annual Utility Cost of Industrial Plant Operation With Rank from Lowest to Highest**

| | *Electric Cost* | | *Gas Cost* | | *Water Cost* | | *Wastewater Cost* | | *Total Cost* | |
|---|---|---|---|---|---|---|---|---|---|---|
| ***City*** | ***'000 $*** | ***Rank*** | ***'000 $*** | ***Rank*** | ***'000 $*** | ***Rank*** | ***'000 $*** | ***Rank*** | ***'000 $*** | ***Rank*** |
| Denver | $252.2 | 1 | $95.0 | 3 | $7.9 | 6 | $9.3 | 6 | $364.3 | 1 |
| Phoenix | $270.4 | 2 | $97.4 | 5 | $11.4 | 11 | $8.2 | 5 | $387.5 | 2 |
| Salt Lake City | $287.0 | 4 | $82.4 | 1 | $4.8 | 2 | $14.2 | 12 | $388.4 | 3 |
| Omaha | $323.0 | 8 | $87.3 | 2 | $5.4 | 4 | $7.7 | 4 | $423.4 | 4 |
| Huntsville | $286.3 | 3 | $125.4 | 12 | $5.1 | 3 | $13.6 | 10 | $430.4 | 5 |
| Albuquerque | $307.0 | 7 | $108.3 | 7 | $10.9 | 9 | $10.0 | 7 | $436.2 | 6 |
| **Col Springs 2005** | **$294.6** | **5** | **$118.4** | **10** | **$13.1** | **12** | **$11.1** | **9** | **$437.2** | **7** |
| Portland | $301.6 | 6 | $105.9 | 6 | $10.5 | 8 | $24.9 | 14 | $443.0 | 8 |
| Raleigh | $325.3 | 9 | $120.0 | 11 | $6.9 | 5 | $6.4 | 3 | $458.6 | 9 |
| ***Col Springs 2010*** | $341.7 | | $131.4 | | $23.4 | | $17.5 | | $507.1 | |
| Las Vegas | $409.1 | 10 | $95.7 | 4 | $10.4 | 7 | $4.5 | 2 | $519.6 | 10 |
| Austin | $412.1 | 11 | $110.3 | 8 | $13.2 | 13 | $20.6 | 13 | $556.2 | 11 |
| Reno | $477.5 | 12 | $113.7 | 9 | $10.9 | 10 | $13.6 | 11 | $615.7 | 12 |
| San Jose | $599.8 | 13 | $135.2 | 13 | $13.5 | 14 | $10.9 | 8 | $759.3 | 13 |
| Houston | NA | | NA | | $1.7 | 1 | $2.7 | 1 | NA | |

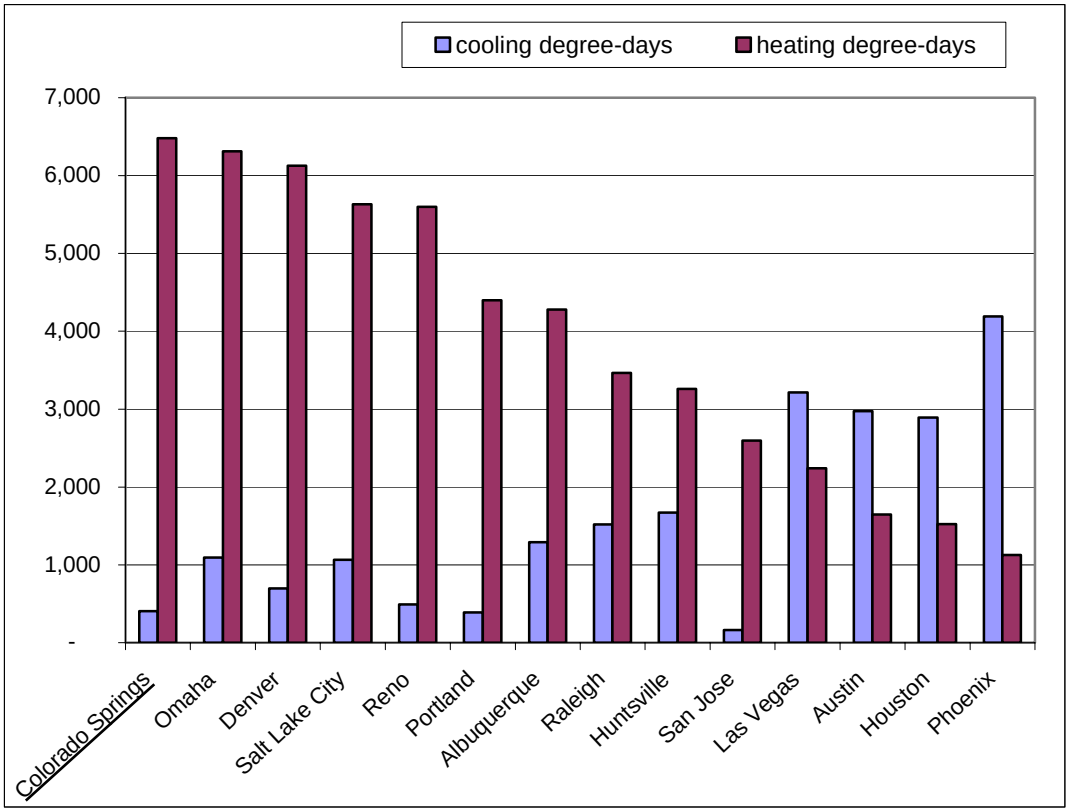
**Temperature/Climate Differences.** Most utility costs vary from month to month. This is due in part to variation in natural gas prices and to a lesser extent, electric prices. However, it is also due to differences in heating and cooling needs from month to month. Office and industrial bills in Colorado Springs show that natural gas use goes up with greater heating needs in the winter month, while water and wastewater use goes up with greater cooling and irrigation needs in the summer months. Electricity rises with both heating and cooling needs. Table 8 shows the percent of annual utility costs that vary by season, for each of the four target industries. It is clear that cooling leads to especially higher use of water, particularly for office buildings, while heating leads to especially high use of natural gas (and to a lesser extent higher use of electricity) in all of the target industries.

**Table 8. Percent of Colorado Springs Utility Bill that Varies by Season**
***(denotes use for heating, cooling and/or irrigation, in addition to ongoing operations)***

| Utility Type | Electric | Gas | Water | Wastewater |
|---|---|---|---|---|
| Seasonal Use>>> | Heating & Cooling | Heating | Cooling & Irrigation | -- |
| Semiconductor Mfg | 25% | 26% | 35% | 5% |
| Aviation Parts Mfg | 2% | 30% | 43% | 7% |
| Office: Administration | 11% | 30% | 59% | 4% |
| Data Processing Center | 0% | 30% | 57% | 0% |

Figure 1 shows how the climates differ among Colorado Springs and the comparison cities. Basically, all of the comparison cities have warmer summers (with greater cooling needs) and milder winters (with less heating needs) than Colorado Springs. This means that, for any given type of target industry, the electricity and gas use will tend to be higher while the water and wastewater bills will be lower in those other cities than would occur if those businesses were sited in Colorado Springs.

**Figure 1. Heating and Cooling Degree Days, by City**




*( Source: NOAA, 30-year averages for heating and cooling degree-days)*

## 2.3 Operating Costs for Target Industries

The competitiveness of Colorado Springs for the specific target industries is determined by the differences in rates among utilities, and differences in utility use among industries. The latter factor can also vary with climate differences among locations. The results are shown on the next four pages of tables. Tables 9-12 show the calculated utility costs for each industry in each city. The upper half of each table shows the cost range when assuming that levels of utility use for

any given industry will differ with seasonal temperature differences. The lower half of each table shows the cost range when assuming that the profile of utility usage by a business in other cities is similar to that occurring in Colorado Springs.

The bottom line is that utility costs in Colorado Springs are generally competitive with other cities though the prospect of higher cost increases may reduce that competitiveness in the future. The competitiveness of Colorado Springs also appears even better if allowing for potential differences in utility consumption levels due to climate differences among cities. The cost models indicate that adjusting for temperature differences among cities reduces costs for electricity and especially natural gas in most of the comparison cities (due to lower heating requirements in those other locations) but dramatically raises costs for water in all of the comparison cities (due to higher cooling requirements in other locations).

***Overall, Colorado Springs is neither the lowest cost location nor the highest cost location for any of the target industries, under any assumptions about temperature adjustments or rate increases***. In many cases, however, Colorado Springs ranks in the lower half of the cities in terms of competitiveness for energy costs. This finding indicates the need for carefully monitoring relative costs in the future to ensure that Colorado Springs will be competitive for attracting these industries. Specific rankings among 14 cities are as follows:

- **Semiconductor Plant** – Without adjusting for temperature differences, Colorado Springs ranks 8$^{th}$ lowest among the 14 with the prospect that rate increases could drop that rank to #11. Allowing for temperature differences, Colorado Springs ranks #4 with the prospect that rate increases could drop that rank to #10.

- **Administrative Office -** Without adjusting for temperature differences, Colorado Springs ranks #4 with the prospect that rate increases could drop that rank to #11. Allowing for temperature differences, Colorado Springs ranks #3 with the prospect that rate increases could drop that rank to #11.

- **Data Processing Center** - Without adjusting for temperature differences, Colorado Springs ranks #6 with the prospect that rate increases could drop that rank to #11. Allowing for temperature differences, Colorado Springs ranks #3 with the prospect that rate increases could drop that rank to #11.

- **Aviation Parts Plant** - Without adjusting for temperature differences, Colorado Springs ranks #9 with the prospect that rate increases could drop that rank to #10. Allowing for temperature differences, Colorado Springs ranks #5 with the prospect that rate increases could drop that rank to #11.

## Table 9. Comparison of Utility Costs for a Semiconductor Fabrication Plant (in Millions)

***A. With adjustment for temperature differences***

| City | Electric | Gas | Water | Wastewater | Total | Rank* |
|---|---|---|---|---|---|---|
| Albuquerque | $5.42 | $2.01 | $0.66 | $0.42 | $8.50 | 5 |
| Austin | $7.26 | $1.98 | $1.28 | $0.94 | $11.46 | 12 |
| **Colorado Springs** | **$5.21** | **$2.25** | **$0.54** | **$0.44** | **$8.44** | **4** |
| **Col Springs-2010** | **$6.04** | **$2.50** | **$0.97** | **$0.69** | **$10.20** | |
| Denver | $4.46 | $1.80 | $0.38 | $0.37 | $7.00 | 1 |
| Houston* | $5.19 | $2.12 | $1.25 | $0.51 | $9.07 | 10 |
| Huntsville | $5.19 | $2.17 | $0.90 | $0.47 | $8.73 | 9 |
| Las Vegas | $7.22 | $1.73 | $1.06 | $0.21 | $10.22 | 11 |
| Omaha | $5.21 | $2.25 | $0.74 | $0.46 | $8.65 | 6 |
| Phoenix | $4.77 | $1.74 | $1.42 | $0.40 | $8.32 | 3 |
| Portland | $5.31 | $1.97 | $0.43 | $0.98 | $8.70 | 8 |
| Raleigh | $5.19 | $2.17 | $0.86 | $0.47 | $8.69 | 7 |
| Reno | $8.43 | $2.14 | $0.47 | $0.54 | $11.58 | 13 |
| Salt Lake City | $5.07 | $1.55 | $0.27 | $0.58 | $7.47 | 2 |
| San Jose | $10.54 | $2.46 | $0.49 | $0.42 | $13.90 | 14 |

***B. Unadjusted for temperature differences***

| City | Electric | Gas | Water | Wastewater | Total | Rank* |
|---|---|---|---|---|---|---|
| Albuquerque | $5.43 | $2.06 | $0.45 | $0.39 | $8.33 | 7 |
| Austin | $7.28 | $2.10 | $0.54 | $0.81 | $10.74 | 12 |
| **Colorado Springs** | **$5.21** | **$2.25** | **$0.54** | **$0.44** | **$8.44** | **8** |
| **Col Springs-2010** | **$6.04** | **$2.50** | **$0.97** | **$0.69** | **$9.79** | |
| Denver | $4.46 | $1.81 | $0.33 | $0.37 | $6.96 | 1 |
| Houston | $5.21 | $2.25 | $0.07 | $0.11 | $7.64 | 4 |
| Huntsville | $5.06 | $2.39 | $0.21 | $0.54 | $8.19 | 6 |
| Las Vegas | $7.23 | $1.82 | $0.43 | $0.18 | $9.66 | 11 |
| Omaha | $5.71 | $1.66 | $0.22 | $0.30 | $7.89 | 5 |
| Phoenix | $4.78 | $1.85 | $0.47 | $0.32 | $7.43 | 3 |
| Portland | $5.33 | $2.01 | $0.44 | $0.99 | $8.77 | 10 |
| Raleigh | $5.75 | $2.28 | $0.29 | $0.25 | $8.57 | 9 |
| Reno | $8.44 | $2.16 | $0.45 | $0.54 | $11.59 | 13 |
| Salt Lake City | $5.07 | $1.57 | $0.20 | $0.56 | $7.40 | 2 |
| San Jose | $10.60 | $2.57 | $0.56 | $0.43 | $14.16 | 14 |

**Ranked from lowest to highest.*

*Note: Houston electricity and gas rates are negotiated on a case by case basis under open competition; for purposes of this analysis, they are assigned an electric and gas cost parallel to that of Colorado Springs.*

*Source: estimates based on calculations by Economic Development Research Group, using data on industry profiles from CSU, temperature data from NOAA and rate information compiled from surveys of utilities.*

## Table 10. Comparison of Utility Costs for an Administrative Office Building

***A. With adjustment for temperature differences***

| City | Electric | Gas | Water | Wastewater | Total | Rank* |
|---|---|---|---|---|---|---|
| Albuquerque | $262,347 | $7,485 | $24,008 | $2,198 | $296,038 | 8 |
| Austin | $349,352 | $7,029 | $55,092 | $4,880 | $416,353 | 12 |
| **Colorado Springs** | **$254,453** | **$8,714** | **$15,111** | **$2,348** | **$280,627** | **3** |
| **Col Springs-2010** | **$295,166** | **$9,673** | **$27,048** | **$3,687** | **$335,574** | |
| Denver | $217,719 | $6,926 | $11,822 | $1,983 | $238,449 | 1 |
| Houston* | $249,294 | $7,513 | $53,445 | $2,632 | $312,883 | 10 |
| Huntsville | $250,371 | $7,934 | $34,624 | $2,492 | $295,422 | 7 |
| Las Vegas | $349,230 | $6,212 | $46,293 | $1,071 | $402,806 | 11 |
| Omaha | $255,545 | $8,673 | $25,753 | $2,427 | $292,399 | 5 |
| Phoenix | $230,589 | $6,099 | $64,299 | $2,054 | $303,041 | 9 |
| Portland | $256,002 | $7,344 | $12,026 | $5,262 | $280,634 | 4 |
| Raleigh | $250,482 | $7,983 | $32,314 | $2,475 | $293,255 | 6 |
| Reno | $409,752 | $8,161 | $13,782 | $2,885 | $434,580 | 13 |
| Salt Lake City | $247,529 | $5,924 | $9,308 | $3,089 | $265,850 | 2 |
| San Jose | $500,516 | $8,872 | $11,795 | $2,265 | $523,449 | 14 |

***B. Unadjusted for temperature differences***

| City | Electric | Gas | Water | Wastewater | Total | Rank* |
|---|---|---|---|---|---|---|
| Albuquerque | $265,211 | $7,973 | $12,616 | $2,107 | $287,906 | 10 |
| Austin | $355,973 | $8,121 | $15,221 | $4,339 | $383,654 | 12 |
| **Colorado Springs** | **$254,453** | **$8,714** | **$15,111** | **$2,348** | **$280,627** | **4** |
| **Col Springs-2010** | **$295,166** | **$9,673** | **$27,048** | **$3,687** | **$335,574** | |
| Denver | $217,826 | $6,995 | $9,110 | $1,955 | $235,886 | 1 |
| Houston* | $254,453 | $8,714 | $15,111 | $2,348 | $280,627 | 5 |
| Huntsville | $254,453 | $8,714 | $15,111 | $2,348 | $280,627 | 6 |
| Las Vegas | $353,388 | $7,044 | $11,981 | $942 | $373,355 | 11 |
| Omaha | $254,453 | $8,714 | $15,111 | $2,348 | $280,627 | 7 |
| Phoenix | $233,605 | $7,167 | $13,236 | $1,735 | $255,743 | 2 |
| Portland | $260,487 | $7,795 | $12,200 | $5,265 | $285,748 | 9 |
| Raleigh | $254,453 | $8,714 | $15,111 | $2,348 | $280,627 | 8 |
| Reno | $412,435 | $8,366 | $12,636 | $2,873 | $436,309 | 13 |
| Salt Lake City | $247,910 | $6,067 | $5,558 | $2,993 | $262,528 | 3 |
| San Jose | $518,084 | $9,947 | $15,636 | $2,292 | $545,959 | 14 |

**Ranked from lowest to highest.*

*Note: Houston electricity and gas rates are negotiated on a case by case basis under open competition; for purposes of this analysis, they are assigned an electric and gas cost parallel to that of Colorado Springs.*

*Source: estimates based on calculations by Economic Development Research Group, using data on industry profiles from CSU, temperature data from NOAA and rate information compiled from surveys of utilities.*

## Table 11. Comparison of Utility Costs for a Data Processing Center

***A. With adjustment for temperature differences***

| City | Electric | Gas | Water | Wastewater | Total | Rank* |
|---|---|---|---|---|---|---|
| Albuquerque | $405,296 | $8,245 | $31,958 | $4,902 | $450,401 | 8 |
| Austin | $543,999 | $7,770 | $73,333 | $10,301 | $635,402 | 12 |
| **Colorado Springs** | **$388,856** | **$9,577** | **$20,114** | **$5,404** | **$423,951** | **3** |
| **Col Springs-2010** | **$451,073** | **$10,630** | **$36,004** | **$8,484** | **$506,191** | |
| Denver | $332,882 | $7,614 | $15,736 | $4,516 | $360,748 | 1 |
| Houston* | $388,856 | $8,306 | $71,141 | $5,569 | $473,872 | 10 |
| Huntsville | $388,856 | $8,751 | $46,089 | $5,488 | $449,184 | 7 |
| Las Vegas | $540,048 | $6,862 | $61,621 | $2,244 | $610,774 | 11 |
| Omaha | $388,856 | $9,533 | $34,280 | $5,450 | $438,119 | 5 |
| Phoenix | $356,996 | $6,747 | $85,589 | $4,179 | $453,511 | 9 |
| Portland | $398,077 | $8,089 | $16,008 | $12,115 | $434,289 | 4 |
| Raleigh | $388,856 | $8,803 | $43,014 | $5,478 | $446,151 | 6 |
| Reno | $630,284 | $8,977 | $18,345 | $6,618 | $664,224 | 13 |
| Salt Lake City | $378,856 | $6,516 | $12,390 | $6,945 | $404,707 | 2 |
| San Jose | $791,737 | $9,795 | $15,701 | $5,259 | $822,492 | 14 |

***B. Unadjusted for temperature differences***

| City | Electric | Gas | Water | Wastewater | Total | Rank* |
|---|---|---|---|---|---|---|
| Albuquerque | $405,296 | $8,761 | $16,793 | $4,849 | $435,699 | 8 |
| Austin | $543,999 | $8,924 | $20,261 | $9,985 | $583,169 | 12 |
| **Colorado Springs** | **$388,856** | **$9,577** | **$20,114** | **$5,404** | **$423,951** | **6** |
| **Col Springs-2010** | **$451,073** | **$10,630** | **$36,004** | **$8,484** | **$491,783** | |
| Denver | $332,882 | $7,687 | $12,127 | $4,499 | $357,195 | 1 |
| Houston* | $388,856 | $9,577 | $2,679 | $1,316 | $402,427 | 4 |
| Huntsville | $377,997 | $10,142 | $7,806 | $6,601 | $402,547 | 5 |
| Las Vegas | $540,048 | $7,741 | $15,947 | $2,169 | $565,905 | 11 |
| Omaha | $426,439 | $7,057 | $8,271 | $3,738 | $445,505 | 9 |
| Phoenix | $356,996 | $7,876 | $17,619 | $3,993 | $386,484 | 2 |
| Portland | $398,077 | $8,567 | $16,239 | $12,117 | $435,000 | 7 |
| Raleigh | $429,449 | $9,702 | $10,652 | $3,129 | $452,932 | 10 |
| Reno | $630,284 | $9,194 | $16,819 | $6,611 | $662,908 | 13 |
| Salt Lake City | $378,856 | $6,667 | $7,398 | $6,888 | $399,810 | 3 |
| San Jose | $791,737 | $10,931 | $20,813 | $5,275 | $828,756 | 14 |

**Ranked from lowest to highest.*

*Note: Houston electricity and gas rates are negotiated on a case by case basis under open competition; for purposes of this analysis, they are assigned an electric and gas cost parallel to that of Colorado Springs.*

*Source: estimates based on calculations by Economic Development Research Group, using data on industry profiles from CSU, temperature data from NOAA and rate information compiled from surveys of utilities.*

## Table 12. Comparison of Utility Costs for an Aviation Parts Mfg Plant

***A. With adjustment for temperature differences***

| City | Electric | Gas | Water | Wastewater | Total | Rank* |
|---|---|---|---|---|---|---|
| Albuquerque | $327,218 | $153,308 | $18,660 | $14,191 | $513,377 | 6 |
| Austin | $438,009 | $154,908 | $38,529 | $50,008 | $681,455 | 12 |
| **Colorado Springs** | **$315,124** | **$168,696** | **$13,986** | **$9,896** | **$507,701** | **5** |
| **Col Springs-2010** | **$365,544** | **$187,252** | **$25,034** | **$15,536** | **$593,366** | |
| Denver | $269,717 | $135,257 | $10,094 | $9,864 | $424,933 | 1 |
| Houston* | $312,910 | $166,166 | $37,485 | $26,522 | $543,084 | 10 |
| Huntsville | $313,373 | $167,053 | $25,948 | $18,359 | $524,733 | 9 |
| Las Vegas | $435,864 | $134,605 | $32,123 | $11,504 | $614,096 | 11 |
| Omaha | $315,592 | $168,609 | $20,510 | $14,512 | $519,223 | 7 |
| Phoenix | $288,011 | $136,492 | $43,554 | $25,996 | $494,053 | 3 |
| Portland | $320,673 | $149,953 | $11,185 | $21,980 | $503,790 | 4 |
| Raleigh | $313,420 | $167,157 | $24,532 | $17,357 | $522,466 | 8 |
| Reno | $509,623 | $161,517 | $12,398 | $12,833 | $696,370 | 13 |
| Salt Lake City | $306,857 | $117,144 | $7,443 | $18,252 | $449,695 | 2 |
| San Jose | $634,077 | $190,298 | $12,117 | $8,088 | $844,580 | 14 |

***B. Unadjusted for temperature differences***

| City | Electric | Gas | Water | Wastewater | Total | Rank* |
|---|---|---|---|---|---|---|
| Albuquerque | $328,446 | $154,335 | $11,677 | $8,880 | $503,338 | 7 |
| Austin | $440,850 | $157,207 | $14,088 | $18,285 | $630,429 | 12 |
| **Colorado Springs** | **$315,124** | **$168,696** | **$13,986** | **$9,896** | **$507,701** | **9** |
| **Col Springs-2010** | **$365,544** | **$187,252** | **$25,034** | **$15,536** | **$588,933** | |
| Denver | $269,763 | $135,402 | $8,432 | $8,240 | $421,837 | 1 |
| Houston* | $315,124 | $168,696 | $1,863 | $2,410 | $488,092 | 5 |
| Huntsville | $306,324 | $178,662 | $5,428 | $12,087 | $502,501 | 6 |
| Las Vegas | $437,648 | $136,355 | $11,088 | $3,971 | $589,063 | 11 |
| Omaha | $345,581 | $124,311 | $5,751 | $6,846 | $482,488 | 4 |
| Phoenix | $289,305 | $138,740 | $12,251 | $7,312 | $447,608 | 3 |
| Portland | $322,597 | $150,903 | $11,292 | $22,189 | $506,980 | 8 |
| Raleigh | $348,020 | $170,904 | $7,407 | $5,729 | $532,060 | 10 |
| Reno | $510,774 | $161,948 | $11,695 | $12,106 | $696,522 | 13 |
| Salt Lake City | $307,020 | $117,446 | $5,144 | $12,614 | $442,224 | 2 |
| San Jose | $641,613 | $192,561 | $14,472 | $9,659 | $858,305 | 14 |

**Ranked from lowest to highest.*

*Note: Houston electricity and gas rates are negotiated on a case by case basis under open competition; for purposes of this analysis, they are assigned an electric and gas cost parallel to that of Colorado Springs.*

*Source: estimates based on calculations by Economic Development Research Group, using data on industry profiles from CSU, temperature data from NOAA and rate information compiled from surveys of utilities.*

## 2.3 Comparison of Utility Connection Fees

All utilities have some form of one-time connection fee for new customers. However, the fees vary widely. At a minimum, there are meter or connection fees for setting up a new account and meter. Utilities typically also require customers to pay costs of extending wires or pipes to new customer locations. In addition, though, some (but not all) utilities add a major charge for customer participation (sharing) in costs of the utility system capital facilities. These capital facilities charges have names that vary; they may be referred to as a "System Development Charge," "Facilities Connection Charge," "Participation Fee" or "Tap Fee." These charges may be as large as one to four years of annual utility use bills.

Tables 13-15 summarize the connection fees and policies of (a) water/sewer utilities, (b) electric utilities and (c) natural gas utilities. Key findings are that:

- **Connection Fee Size** - Colorado Springs and Denver both have water and sewer connection charges that are substantially above all of the other comparison cities. Among the next four cities with high connection costs, they are roughly double those of Las Vegas, four times those of Portland and Albuquerque, and six times those of Austin.

  For our four prototypes of target industries (profiled back in Table 5), the water and sewer hookup fees would respectively be:
  - Semiconductor Mfg – water hookup fee $10.2 million *(potentially reduced to $940,000 if rate for three 6" pipes is used in place of rate for one 10" pipe);* sewer hookup fee $3.6 million.
  - Data Center – water hookup fee $92,618; sewer hookup fee $43,000.
  - Admin. Office – water hookup fee $92,618; sewer hookup fee $43,000.
  - Aviation Mfg – water hookup fee $195,000; sewer hookup fee $82,000.

- **Economic Development Concessions** – While Colorado Springs has the ability to finance connection fees over time, some other cities have broader policies to relax, reduce or offset connection charges for desired economic development projects. Austin reduces all water connection charges for development in desired development areas or for attraction of new business from out of state. Huntsville and Omaha have economic development incentives to offset some or all of the electricity connection fees.

- **Payback Reimbursement** – While not present in Colorado Springs, some other cities have policies to treat connection charges as deposits that are eventually reimbursed to customers. San Jose collects an up-front water connection fee but then pays it back to the customer over a period of time. Las Vegas does the same with electric connection costs. Denver treats electric and gas connection charges as a deposit that is eventually refunded

to the customer; Phoenix and Salt Lake City do the same for gas line connections. Reno asks customers to pay a part of the water system capital costs but recovers the rest within its monthly rate structure.

- **Fee tied to Usage Revenues** – While not present in Colorado Springs, some other cities have policies that reduce connection fees to the extent that those customers will be generating substantial monthly revenues. Austin and Portland tie electric connection costs only to the extent to which those costs exceed some multiple of expected monthly revenues to be generated from them.

**Table 13. Comparison of Water and Sewer Connection Fees and Policies**

***(a) Water/Sewer Policies***

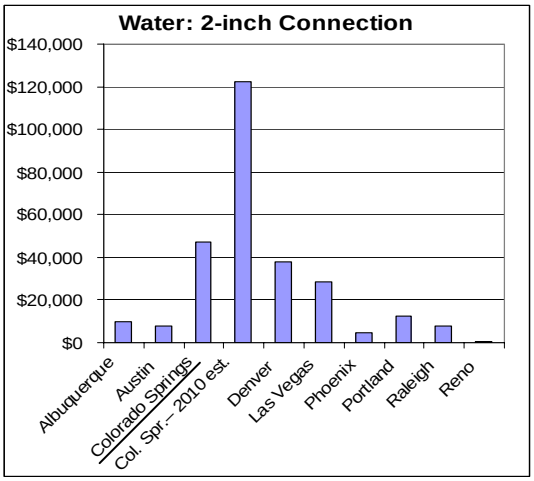
| City | Policy |
|---|---|
| **Albuquerque** | For both water and sewer, customer pays cost of line extension plus a "Utility Extension Charge" for each, as shown in following table. |
| **Austin** | For water and sewer, customer pays cost of line extension plus an Inspection fee. For water, there is a "tap permit fee" as shown in following table. There is also a major "Capital Recovery Fee" for new development. This fee is reduced or partially offset by reimbursement incentives if development is in "Desired Development Zones," or conforms to "Smart Growth" guidelines. The fee has also been fully waived to attract new business. |
| **Colorado Springs** | For water, customer pays a Water Development Charge based on meter pipe size. For wastewater, customer pays a Wastewater Development Charge and Wastewater Recovery charge. The Wastewater Recovery charge differs by location within the city. The total of these charges is shown below. |
| **Denver** | Customer pays for plan review, design, installation and inspection of water and sewer lines. For water system, there is a "Participation Charge" and a "System Development Charge" as shown in the following table. For wastewater, there is a "connection fee" and a "Metro fee" as shown in following table. |
| **Huntsville** | There is a "Water Tap Charge" determined as "actual cost" as determined by the Director of Public Services or his/her designee." |
| **Las Vegas** | Customer pays actual cost of service line extension and connection for water and sewer, plus "Facilities Connection Charge" for water, as shown in following table. |
| **Phoenix** | Customer pays full cost of water and sewer line extension. For water there is a "Water Development Occupation Fee" and for sewer there is a "Wastewater Development Occupational Fee," as shown in the next table. |
| **Portland** | Customer pays full cost of water and sewer line extension. There are also "System Development Charges" for both and for sewer, as shown in next table. |
| **Raleigh** | There is a water/sewer installation "Tap Fee" and an "Acreage Fee" for industrial use based on pipe size and acreage of the property, as shown in next table. |
| **Reno** | For water, customer pays estimated cost of line extension minus refund of an allowance based on estimated annual revenues. Average result is that about 30% of the water extension costs are paid up front by customers and 70% of extension costs recovered in rates. There is also a fixed nominal connection fee. For sewer, customer pays full cost of line extension plus cost of off-site system expansion so that use rates cover only repair and replacement. |
| **San Jose** | Private water company. Customer pays installation cost if no water main is present. Up-front "System Development Charges" for water system are refunded over 40 year period (2.5%/year). Sewer is city-owned; there is no fee for connection unless capital improvements are needed. |

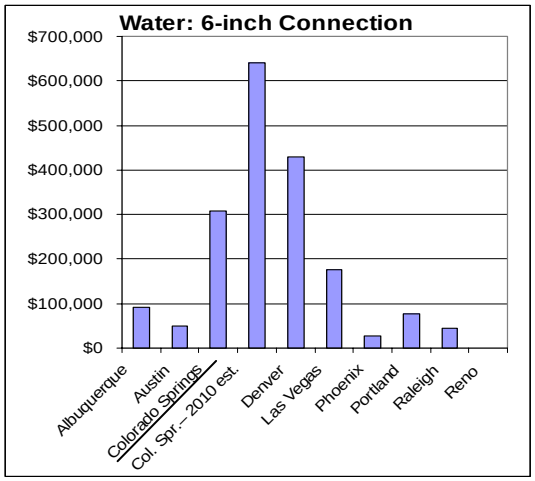
**Table 13 continued**

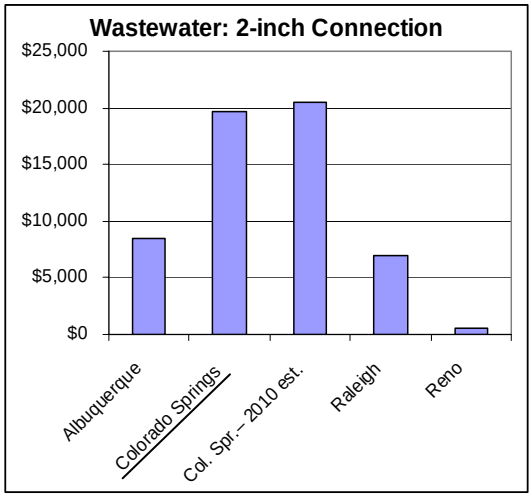
**(b) *Water/Sewer Connection Fees***

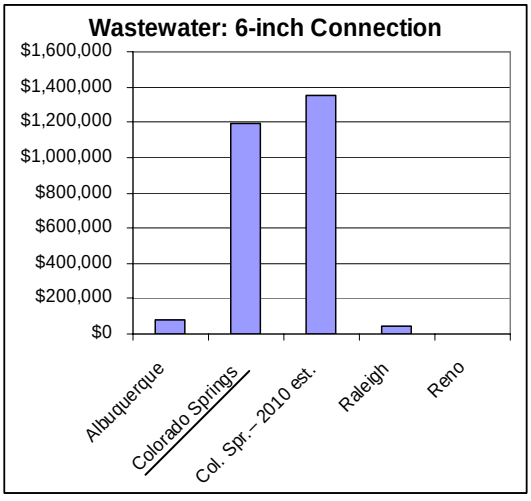
| | *Water* | | | *Wastewater* | | |
|---|---|---|---|---|---|---|
| City | **2 inch** | **4 inch** | **6 inch** | **2 inch** | **4 inch** | **6 inch** |
| Albuquerque | $10,090 | $40,361 | $90,829 | $8,533 | $34,133 | $76,800 |
| Austin | $7,848 | $24,525 | $49,050 | n/a | n/a | n/a |
| **Colorado Springs** | **$47,094** | **$148,440** | **$308,811** | **$18,105** | **$61,388** | **$120,688** |
| ***Col. Spr.– 2010 est.*** | ***$122,398*** | ***$359,420*** | ***$641,157*** | ***$18,847*** | ***$81,785*** | ***$136,278*** |
| Denver | $37,800 | $163,800 | $428,400 | $40,200 | $152,760 | n/a |
| Huntsville | cost | cost | cost | cost | cost | cost |
| Las Vegas | $28,500 | $88,600 | $176,200 | n/a | n/a | n/a |
| Phoenix | $4,500 | n/a | $27,600 | $4,500 | n/a | n/a |
| Portland | $12,453 | $38,916 | $77,832 | n/a | n/a | n/a |
| Raleigh | $7,626 | $20,235 | $45,541 | $7,015 | $18,382 | $42,075 |
| Reno | $500 | $500 | $500 | $500 | $500 | $500 |
| San Jose | cost | cost | cost | cost | cost | cost |

**Figure 2. Water and Wastewater Connection Fees Compared**



## Table 14. Comparison of Electric Connection Fee and Policies

| City | Policy |
|---|---|
| **Albuquerque** | Customer pays construction cost-city may install larger service& provide credit for difference. Fees based on size and type of connection, |
| **Austin** | The required contribution for an extension beyond 300 feet will be the difference between (1) the excess costs for the extension, and (2) 20% of the estimated base revenues collected from the new customer over a three year period. |
| **Colorado Springs** | For electric, customer pays only small commercial design fee. Utility covers other extension costs including primary electrical equipment. |
| **Denver** | Customer pays extension cost as refundable long term deposit, responsible for related operating & maintenance costs |
| **Las Vegas** | Customer advances cost of transmission and distribution, costs are recaptured in bill payments. |
| **Omaha** | Fees may be offset by Economic Development tax credits for job creation. |
| **Phoenix** | Installations follow APS Schedule #3 |
| **Portland** | No customer cost for extension if construction cost does not exceed 2x annual revenues |
| **Reno** | Customer pays 100% of estimated construction costs, with allowances for construction, typically totally about 30% net customer costs |
| **Salt Lake City** | Utility pays if revenues estimated to exceed 2X cost of construction |
| **San Jose** | Customer pays excess of estimated construction cost minus an extension allowance determined by cost of service cost allocation |

## Table 15. Comparison of Gas Utility Connection Fees and Policies

| City | Policy |
|---|---|
| **Albuquerque** | Customer pays construction cost-city may install larger service& provide credit for difference. Fees based on size and type of connection, |
| **Austin** | Economic Development services offered – no detail available |
| **Colorado Springs** | Customer pays initial connection charges, but natural gas refund contracts provide that once a customer is connected, that charge is refunded over time. |
| **Denver** | Customer pays extension cost as refundable long term deposit, responsible for related o&m costs |
| **Las Vegas** | Customer deposits estimated construction cost as 5 year –refundable deposit (confirm 7/1805) |
| **Omaha** | No information |
| **Phoenix** | Utility calculates estimated revenue minus 5 yr net margin to determine if deposit required (deposit assigned mainly to subdivisions) |
| **Portland** | Construction allowance offsets customer cost for extensions, calculated by facility type and other measures |
| **Reno** | Customer pays 100% of estimated construction costs, with allowances for construction, typically totally about 30% net customer costs |
| **Salt Lake City** | Utility calculates estimated revenue minus 4 yr net margin to determine if deposit required (deposit assigned mainly to subdivisions) revised 2004 |
| **San Jose** | Customer pays excess of estimated construction cost minus an extension allowance determined by cost of service cost allocation |

## 2.4 Comparison of Utility Growth Policy

**Growth.** Colorado Springs and all the cities surveyed are growing but the pace of growth varies significantly among them. Las Vegas is perhaps the most rapidly growing major metropolitan area in the nation. In the environment of very rapid growth, new business is welcomed but special accommodations are not. In general, the cities included in the study operate with a philosophy that new development pays its own way, unless there are exceptional circumstances. Phoenix and Austin are growing briskly but have concerns about the location of new development and have developed connection incentives to encourage development in targeted areas. Similarly, some downtowns, like Raleigh, growing at a much slower pace, are providing incentives for business growth in under-used and/or depressed parts of the city to retain business or welcome new business that might otherwise locate in the suburbs.

**Capacity for Growth.** Compared with Colorado Springs, the surveyed cities generally have adequate fresh water and waste water capacity for the next decade at current rates of expansion. However, utility representatives in some of those other communities have concerns for the mid-term and long term future, out to 50 years. The Reno metropolitan area (Truckee Meadows Water District) may experience a near-term water supply issue related to conversion of available agricultural water rights to other uses, though actual supply is not considered to be a problem. Houston is attempting to shift users from ground water sources to surface water to head off growing subsidence problems.

In Colorado Springs as well as many other comparison cities, fresh water supply is being supplemented by growing development of gray water, treated and then recycled in "purple pipe" networks for irrigation and industrial uses. The purple pipe networks can help alleviate summer peak demands for irrigation water used by many office buildings and may also serve to expand industrial use capacity.

On the wastewater side, Phoenix is experiencing a severe problem with Sanitary Sewer Overflows (SSOs) in some parts of its service territory, which already has caused some delays and disruptions in new development. The city utility has undertaken a set of large scale sewer replacement and upgrading projects to deal with the immediate problems and with longer-term sewer and waste water treatment capacity

**Infrastructure.** Colorado Springs is contemplating a major infrastructure project, the Southern Delivery System, which will have a major impact on connection fees. Colorado Springs is not alone in experiencing connection fee impacts. Infrastructure maintenance and development costs are major drivers of rate and fee increases throughout the Southern and Western cities surveyed for this study. Several cities surveyed report the need to implement major capital

programs in water and/or waste water. Austin reports that rates were stable for many years but debt service for waste water capital improvements required by the EPA and required for development reasons now consumes almost 40% of annual income, with accompanying increases in charges across the board for the foreseeable future. Other cities cite political factors in the continuation of artificially low rates over periods as long as a decade. Eventually maintenance and capital needs force rate and fee increases.

## 2.5 Business Support Programs and Policies

**Economic Development and Energy Efficiency Credits Incentives.** Historically, Colorado Springs has had low rates and fees and has not offered discounts or incentives on new connections or expansion of existing facilities. Colorado Springs provides some water and electricity-oriented efficiency services targeted to existing facilities. Some of these services, such as energy audits may be applicable for facility redevelopment. There are no programs targeted specifically to new construction.

The majority of cities surveyed offer no incentives to any new business development with regard to connection fees, rates, or construction cost having the philosophy that new business development must pay its own way. The same basic attitude applies to expansions of existing businesses (the study used chip manufacturers and call-center facilities and avionics manufacturers as typical facilities, using the CSU-developed profiles). There are a few instances of economic development rates offered for electricity but none for water or waste water.

However, in some cities, utilities do offer allowances and incentives for water and waste water connections, as indicated below. Some utilities offer energy efficiency incentives. Incentives and allowances are generally important on the margins. Utility representatives see them as indicators of what the communities will do to assist and accommodate growth and development. Where growth is happening at a rapid pace without any governmental intervention, incentives are less likely to be offered. Where local communities wish to control growth, tailored incentives can be influential in location decisions. Where communities wish to retain or renew growth, more substantial initiatives may be available.

The other set of circumstances that should be noted is that water and waste water infrastructure and supply issues are becoming increasingly important, and costly, as more stringent water treatment is required, as water recycling becomes a more important facet of the water/waste water picture and as planners look further out on the horizon for the results of continued growth. It would be helpful to place CSU along the curve of communities requiring substantial infrastructure

development for reasons other simple expansion, as a means of comparing appropriate types and levels of incentives for growth.

Table 16 shows a sampling of the types of credits, waivers, and incentives that some utilities have found useful to enhance the area's desirability as a new location or relocation site. The incentives have monetary value to help attract new business and support existing business growth, but they also serve as a facet of customer care and attention, which may be an additional positive factor for companies considering sites in the region.

**Table 16. Electric Economic Development Rates and Energy Efficiency Demand Side Management Programs**

***(a) Electric Energy Efficiency Programs***

| City | Programs |
|---|---|
| **Albuquerque** | PSM. 3rd party online energy analysis tool, including benchmarking facilities against comparable buildings. |
| **Austin** | Austin Energy. Green building design and construction incentives; retrofit incentives for lighting, HVAC, Building envelope, motors, drives, custom measures, up to $100,000. Energy audits, solar (pv incentives). |
| **Colorado Springs** | CSU plans to introduce a Business Lighting Rebate program that will provide rebates for energy efficient lighting or any sustained method of demand reduction (e.g. upgrades of air conditioning, motors) with rebates tied to kW of reduction. |
| **Denver** | Xcel Energy. Energy Design Assistance for new construction – provides design assistance, computer modeling and incentives for on-peak demand reductions. Online energy audit for existing commercial buildings. Also pricing options for time of use, real-time, pricing, interruptible service. |
| **Houston** | Reliant Energy. Online energy analysis. Online and customer support efficiency advice |
| **Huntsville** | TVA. Programs in energy audits and installation of energy-efficient measures through allied Energy Services Company |
| **Las Vegas** | Nevada Power. "Sure Bet" 3rd party program for lighting, cooling, motors, vending prescriptive rebates plus custom applications |
| **Omaha** | Omaha Public Power District. Continuous commissioning, energy management systems, HVAC, lighting, motors rebates, 3rd party energy services arranging. |
| **Phoenix** | APS. Energy Survey, online tips |
| **Portland** | PGE. Energy audits. Rebates for new construction,& renovation-design, building shell & equipment. Also rebates for efficient equipment in existing commercial facilities. |
| **Raleigh** | Custom information through large account managers. |
| **Reno** | Sierra Pacific Power. Nevada Power. "Sure Bet" 3rd party program for prescriptive rebates plus custom applications |
| **Salt Lake City** | Pacificorp/Utah Power. Retrocommissioning; Credits for "self-investment" up to 15%; incentives for efficient equipment in new and existing commercial and industrial facilities |
| **San Jose** | Electric/Gas New Construction energy efficiency programs; "Savings by Design" for large C/I customers, administered for all California Investor-Owned Utilities |

### *(b) Electric Economic Development Rates*

| City | Rates |
|---|---|
| **Albuquerque** | PSM provides services to qualify for best ED rates- e.g. Industrial customer rate = $0.0516/kEh. |
| **Austin** | Connection credits for location in targeted development areas. |
| **Huntsville** | TVA. Economic Development electric rates for industrial customers - credits for new manufacturing facilities, $6/kW over four years, or graduated declining option over 8 years. TVA also provides business relocation credits on the electric portion of industrial customer deposits and Large Manufacturing Credit of 50% on demand charge when demands exceed 5,000kW.<br>TVA Economic Development Loan Fund: up to $2 million to assist in financing industrial development projects including new industrial plants, existing industry expansions, infrastructure development and service industries. |
| **Omaha** | Online calculator for ED rates, using maximum kW, est. annual kWh and load factor. Customers >5000kW negotiate ED rates directly with utility. |
| **Portland** | Business energy tax credit for new construction: 30% credit over 5 years, maximum $20,000. |
| **Raleigh** | Various services through Carolina Buildings and Sites, by industry. |
| **Salt Lake City** | Consultation assistance on site development, other new business issues. |

### *(c) Gas Energy Efficiency Programs*

| City | Programs |
|---|---|
| **Albuquerque** | 3rd party online energy analysis tool, including benchmarking facilities against comparable buildings. |
| **Austin** | Texas Gas. Commercial hydronic and water heating, commercial washing machines, food service programs |
| **Denver** | Xcel Energy. Energy Design Assistance for new construction – provides design assistance, computer modeling and incentives for on-peak demand reductions. Online energy audit for existing commercial buildings. Also pricing options for time of use, real-time, pricing, interruptible service. |
| **Las Vegas** | Southwest Gas. Company provides customized advice on energy efficiency strategies, specific equipment purchases. No incentive programs. |
| **Phoenix** | Southwest Gas. Company provides customized advice on energy efficiency strategies, specific equipment purchases. No incentive programs. |
| **Portland** | Northwest Natural Gas. Through Oregon Energy Trust, programs for design construction of new buildings, existing (comprehensive systems), solar heating |
| **Raleigh** | North Carolina Natural Gas. Leasing for new gas equipment purchases. Technical Assistance in energy audits, HVAC design, custom equipment design. |
| **Reno** | Sierra Pacific Power. Nevada Power. "Sure Bet" 3rd party program for prescriptive rebates plus custom applications |
| **San Jose** | Electric/Gas New Construction energy efficiency programs typified by "Savings by Design" for large C/I customers, administered for all California Investor-Owned Utilities |

### *(d) Gas Economic Development Rates*

| City | Rates |
|---|---|
| **Albuquerque** | PSM provides services to qualify for best ED rates- e.g. Industrial customer rate = $0.70/therm. |
| **Austin** | Texas Gas. Provides assistance in packaging new construction & rate packages etc. – all on custom basis. |
| **Portland** | Oregon Business tax credits for investments in energy efficiency. |
| **Raleigh** | Carolina Economic Development Building and Sites program |

## 2.6 Implications for Cost Competitiveness

Overall, the comparison of utility rates, charges and policies shows that:

- **Utility Rates.** Electric and gas costs in Colorado Springs are generally quite competitive with other cities. Water rates are above average but still competitive. Prospective increases in future water rates for Colorado Springs are higher than in other cities and are likely to reduce the relative competitive position of Colorado Springs, though the area still remains highly competitive because its cooler summers lead to less water use than business locations in other competing area.
- **Utility Connection Fees.** Water connections charges are unusually high in Colorado Springs and are projected to get even more out of line with norms in other cities. This is not seen as an impediment for business consideration of Colorado Springs as a potential site, but it can be an impediment to "closing the deal" when consideration focuses on finalist locations.
- **Business Incentives.** Electric & water incentives and support programs lag best practices seen in some competing utilities.

## 2.7 Potential for Energy Efficiency and Other Customer Programs

Many of the cities and states covered by our comparisons have not had long histories of promoting or mandating substantial demand side management or energy efficiency programs in electricity. However, California and Oregon are significant exceptions to the energy efficiency landscape. California in recent years has experienced problems with capacity to generate electricity and gas supply for electricity generation (market manipulation produced some of the distortions but other factors were also at work).

Another circumstance that affects many electric utilities and all the gas utilities is the long term rise in the price of natural gas, a circumstance that seems unlikely to change, and one forcing direct increases in gas prices (Utah Gas will increase gas prices 19% in 2005) and in fuel costs for gas-fired electric generation. Utilities that depend primarily on coal and/or hydropower sources are relatively unaffected by gas price increases.

Oregon and other Pacific Northwest states, though generally low-cost electric environments, have also had strong sets of environmental drivers moving broad-based energy efficiency efforts. California and Oregon cities and their investor-owned gas and electric utilities have promoted their commercial/industrial programs as efforts that make businesses more efficient, hence more profitable.

The City of Austin's municipal utility, Austin Energy, also stands out as a model for its long term promotion and financial support for energy efficiency. Though located in a low-energy-cost state and experiencing substantial sustained growth, Austin Energy has actively pursued energy efficiency for about the last 15 years. Some of that activity arose from environmental concerns, some from the desire to promote itself as a business-friendly utility that also takes energy and environmental issues seriously, and recently, some of the efforts are related to desires to control and direct additional growth. Austin Energy provides economic development incentives to businesses that locate in designated development areas, mainly on the east side of the city.

The Austin model as an approach may have some relevance for Colorado Springs Utilities. Like Colorado Springs, for example, Austin is experiencing increased water and waste water fees and rates. In Austin's case the increases are driven by long term infrastructure improvement needs and the development of gray water systems to supplement fresh water. These circumstances are different from CSU's fee increases but the net effects are not dissimilar: long term significant increases in costs. By providing both advice and incentives for good energy efficiency choices, the Austin approach helps to provide direct, bottom-line savings to businesses.

Omaha Public Power District utilizes economic development staff and its economic development retention and expansion to help to market its customer energy programs.

Programs for CSU to consider include:

- Evaluate fee credits, waivers or rate discounts for highly desirable economic development projects.

- Evaluate credits to new customers with a percentage connection fees for locating in parts of the city where either infrastructure is in place, minimizing disruption and reducing total development costs, or providing incentives for customers who will develop in office or manufacturing parks the city desires.

- Combine information with energy efficiency incentives covering the full range of electric, gas, water and wastewater applications and equipment. There are significant opportunities for cross-benefits and synergies among these services which can reduce business operation costs for locating in Colorado Springs.

- Consider providing water and energy-efficient design assistance accompanied by incentives for constructing energy efficient or "green" buildings. A good example in the region is the National Renewable Energy Laboratory in Golden, CO which provides an efficient environment.

- An accompanying credit may be developed for customers who oversize the infrastructure to be built in anticipation of later expansion. CSU currently contributes the cost of upsizing to customers as it fits into the utility master planning. As a voluntary measure to support business expansion, CSU could provide an incentive that absorbs the charge for larger size pipes plus a percentage of the customer construction cost for that action. As a mandatory requirement, CSU could require oversizing to a designated size in any new targeted development areas.

- Examine the energy and water efficiency efforts offered by other municipal utilities, particularly Austin Energy and Sacramento Municipal Utility District. These utilities have voluntarily initiated programs that are nationally recognized as following best practices for energy and water efficiency. Further, MUDs have comparable structures, financing and operating environments to CSU's own situation.

# 3 BUSINESS LOCATION & EXPANSION DECISIONS

## 3.1 Background: Business Decision Process

Location selection is a systematic process of elimination.

Consultants or corporate management generally go through four distinct steps to identify the places that best meet company needs.

1. Defining Project Strategy Drivers.
2. Data Screening to Refine the Search Area (typically involves cost modeling and data collection on 10-20 communities).
3. Community Fieldwork and Due Diligence (typically involves visits to 3-6 communities).
4. Real Estate and Incentive Negotiation (frequently carried on simultaneously among 3 finalist locations).

### Stage 1. Defining Strategy Drivers

**Define key strategy drivers.** This defines where to search and how to weigh different decision making criteria.

**Define the Facility.** Defining current and future requirements for land, building, capital costs workforce requirements by precise skill, infrastructure, utilities, suppliers, and environmental impact point the company toward places with location strengths that fit particular requirements.

**Weigh Costs.** Decision making involves complex cost modeling of labor, transportation, real estate, utility, tax, and other costs, including incentives. Assumptions about future cost increases are just as important as information about present conditions.

**Set Labor Market Criteria.** The ability to find and retain the right workforce also drives most location strategies, often redefining what makes an effective location. This holds true not just for headquarters and R&D functions, but for any facility that depends upon a high quality front line workforce.

**Prioritize Market Access.** Shifting consumer markets continue to pull more projects south and west within the U.S. Market access also plays an increasing role in corporate international positioning, often as part of complex production, distribution, and acquisition strategies.

**Determine the Search Area.** Once the company defines the facility and the critical factors for its success, it can determine the search area.

## Stage 2. Data Screening to Refine the Search Area

Significant data gathering is essential to develop detailed cost models and to eliminate areas on the basis of critical project criteria.

**Location Factors.** Depending upon project requirements, some factors are critically important—often call knock-out factors. Companies eliminate communities that can not meet key threshold criteria. Other factors may only be part of a general checklist of minimal requirements.

Factors commonly considered include the following (adapted by Ticknor & Associates from a Deloitte Fantus Consulting presentation to D-21: The Global Utility Economic Development Council).

- **Transportation Issues**
  Supplier identification
  Transportation costs

- **Labor Factors**
  Wage and benefit levels
  Workforce availability
  Workforce skills and productivity
  Labor relations
  Regulations
  Higher education/job training resources

- **Sites and Buildings**
  Availability of appropriate buildings & sites
  Costs
  Zoning and permitting

- **Infrastructure**
  Highway, rail, air, and port needs
  Utility cost and service
  Telecommunications

- **Business Climate/Taxes**
  Tax levels
  Workers Compensation and Unemployment Insurance costs
  Abatements, credits, incentives
  Likelihood of future change

- **Regulatory Climate**
  Environmental requirements
  Permitting requirements and speed
  Labor laws
  Industry-specific regulations

- **Living Conditions**
  Cost of living
  Housing costs and supply
  Levels of personal taxation
  Crime and safety
  Local education quality
  Cultural and recreational assets
  Health care

The location process than reduces the search area in stages, focusing first on the most critical factors having the best comparable data over the entire search area. Cost modeling representative test points, for example, avoids a great deal of irrelevant local detail for transportation sensitive projects. Similarly, analyzing wage rates in places with adequate labor market size is the best way to start screening for labor intensive projects.

No place is best in all factors. The most cost-effective location may not be the lowest cost, since the decision rests on qualitative factors, such as labor quality and the ability to recruit or transfer key employs, not just on anticipated costs.

## Stage 3. Community Screening and Due Diligence

If the screening process has been comprehensive, the company can narrow the field to a handful of good choices, each with slightly different location assets.

Even after exhaustive data screening, however, it is nonetheless essential to conduct intensive community screening visits. Refined cost and operating condition comparisons are impossible without this step.

- Detailed interviews with companies engaged in similar processes with similar workforce skill sets are the best way to really learn about labor

availability, quality, cost, productivity, and the labor relations environment.

- Buildings and sites, including surrounding transportation, utility, and other infrastructure characteristics, require careful inspection.

- Issues of zoning, permitting, and regulation are best learned at the local level.

- Visits are the best way to confirm tax exposure and to begin actual incentive negotiations.

The length of time spent in the field depends upon the complexity of the project.

Putting it all together requires insight and judgment assessing both quantitative and qualitative issues. As with any complex decision, trade-offs abound. Companies that weigh factors and risks differently will reach different conclusions.

## Stage 4. Real Estate and Incentive Negotiations

Community competition at the final stages of site location can be exceedingly close. Real estate and incentive negotiations also contain a high degree of uncertainty, including often-unforeseen political risk. Many companies therefore work carefully to negotiate the best deal with their top two final choices.

Real estate negotiations range widely in scope and complexity.

- Smaller office projects with great latitude within a metropolitan area most closely resemble traditional real estate deals.

- Heavy industrial projects that are infrastructure dependent are highly complex, since negotiations over the price and timing of governmental infrastructure investment dominate the land cost issue.

The art of incentive negotiations has two aspects. One is to get jurisdictions to commit to their best offer. The second is to prioritize what types of incentives are most important to the company.

- Some incentives only make an area competitive in terms of sites or labor skills. They are important to make all things equal, but they may not impact the bottom line.

- Other incentives, especially for very high employment projects, can have a strong bottom-line impact.

## 3.2 Site Selection Interviews: Factors Important for Target Industries

We have developed industry information from location consultants because they have experience across industries and were accessible given our professional experience and contact base. This proved to be a cost-effective methodology. All consultants that we contacted responded to our telephone interview. Collectively, they have participated in approximately 1,125 location projects during their careers. The one note of caution is that none of the consultants have had direct experience locating a semiconductor facility—conclusions in this area are based upon their general experience from highly capital intensive projects.

Most companies/location consultants will not even realize high water connection costs (or non-competitive electric utility cooperation) until they do final screening (usually not until they visit to screen final 3-5 places)

This is good and bad news. It allows Colorado Springs to make up for non-competitive water and sewer hook-up costs by promoting advantages in other ways, e.g. labor costs, land and building costs and labor quality. But the issue appears at the end game where finalist places are highly competitive, and the overall state and local incentives are weak

There are two critically important lessons here.

- Decisions will depend upon the region's total competitiveness, both cost and non-cost. Companies and consultants will not screen out Colorado Springs solely on the basis of water costs or water and sewer hook-up fees unless they are very water intensive.
- In terms of cost, a dollar is a dollar. Higher water and sewer hook-up charges and slightly higher rates raise the overall cost of doing business locally, but it is possible to overcome this handicap in other areas.

The importance of utility factors varies by type of project, to be certain. But in general, companies rank utility factors in the following order of importance unless they are highly dependent upon a specific utility service:

1. Capacity to serve
2. Rates
3. Reliability (companies are willing to pay for back up)
4. Customer Service/Account Management
5. Development Charges (in most cases)

### Data Screening Stage of Location Decision-making

Except for semiconductors (and other heavier process activities such as food, pharmaceuticals, or metals), water and sewer hook-up costs are unlikely to come up until Colorado Springs is down to 3-10 finalist locations undergoing close scrutiny.

**Table 17. High Likelihood of Issue as Community Screening Knock-Out Factor**

| Facility Type | Semi-Conductor | Aviation Electronics | Data Center | Admin Office |
|---|---|---|---|---|
| Electric Capacity | ▪ | ▪ | ▪ | |
| Electric Reliability | ▪ | ▪ | ▪ | |
| Electric Cost to Serve | ▪ | | | |
| Water Capacity | ▪ | | | |
| Sewer Capacity | ▪ | | | |
| Electric Rates | ▪ | | | |
| Water Rates | | | | |
| Sewer Rates | | | | |
| Customer Service | ▪ | | | |
| Water Hook Up Cost | | | | |
| Sewer Hook Up Cost | | | | |

### Screening of Finalist Communities

The overall importance of utility factors depends upon the overall business case for each location.

At the finalist community screening stage, water and sewer hook-up charges have only very rarely eliminated or strongly downgraded a finalist location during the location consultants' actual experience. Again, capacity issues are most important, rate issues second, and hook-up charges least important.

**Table 18. Frequency of Projects Where Factor Eliminated or Strongly Downgraded a Finalist Location**

| Factor | % | Comment |
|---|---|---|
| Wastewater capacity | 3.20 | Esp. food, pharmaceuticals, chemicals |
| Electric capacity | 3.02 | Esp. metals, chemicals |
| Water capacity | 2.49 | Esp. food |
| Electric rates | 1.24 | Esp. metals, chemicals |
| Wastewater costs | 1.07 | Esp. food |
| Wastewater hook up costs | .71 | |
| Electric capital costs | .53 | Most customers expect to pay fair share |
| Water rates | .44 | Only food, beverage |
| Gas cost | .44 | Chemical |
| Water hook up charges | .36 | |
| Gas service | .36 | Chemical |

Utility factors play a role in differentiating finalist locations, with their actual weight varying within our target industries. The consultants estimated that the following issues would be important discriminators among closely competing finalist communities approximately the following percentage of the time:

## A. Semiconductor Manufacturing

Semiconductor facilities have exceedingly demanding site requirements—so much so that regions such as metropolitan Albany are building infrastructure and pre-certifying key sites as ready for semiconductor operations. Because these plants can involve $500 million to more than $3 billion of investment, they are major trophies, highly sought after by many US, Canadian, European and Asian technology centers. Combined state, local and utility incentives can easily surpass $500 million. Keeping an existing semiconductor facility or supporting its conversion to new products is one of the most cost-effective forms of economic development available.

Because it generally pays well enough to compete effectively within its regional labor market and it is the most capital intensive target industry utilizing the highest level of utility services, utility factors play a relatively large role in the attraction, retention and potential expansion of semiconductor facilities. Electric reliability, water/sewer capacity, and water/wastewater and electric incentives can all be important differentiators among finalist locations. Hook up fees would be a differentiator because some locations will waive them.

**Table 19. % Cases in Which the Factor Differentiates Finalist Communities**

| | |
|---|---|
| State incentives | 91 |
| **Electric reliability** | 88 |
| **Water/sewer capacity** | 85 |
| Local tax or land incentives | 69 |
| **Local water/wastewater incentives** | 67 |
| Labor cost, quality & availability | 66 |
| **Electric incentives** | 59 |
| **Electric capital cost to provide needed services/reliability** | 59 |
| Real estate cost | 54 |
| **Water/sewer rates** | 53 |
| **Water/sewer hook-up fees** | 52 |

Location consultants had highly mixed opinions regarding degree to which proposed CSU hookup fees are a competitive disadvantage. They admit that the fees are relatively small compared to total capital investment, but they also recognize that most localities and states are offering substantial incentive

packages in the form of free or reduced cost land, subsidized utility rates, tax abatement, job training and/or rebating employee state income tax. They conclude that:

- $10 million water hookup fees and $3.590 million sewer hookup fees would be a moderate competitive disadvantage to Colorado Springs, putting high pressure on the community to make up these charges in its total incentive package.

- Reducing the water hookup fee to $940,000 while maintaining a $3.590 million sewer hookup fee reduces this factor to a slight competitive advantage. It might not be necessary to provide other incentives to offset these costs if other favorable factors are in place in terms of overall business competitiveness.

## B. Aviation Electronics and Aviation Parts Manufacturing

The Colorado Space Coalition lays claim that Colorado is the fourth largest aerospace economy in the nation with 142,000 aerospace-related jobs. The state hosts Lockheed Marin Space Systems, Ball Aerospace, Raytheon, Northrop Grumman and Boeing as well as hundreds of smaller aerospace companies and suppliers along the Front Range from Fort Collins to Pueblo. Colorado Springs therefore faces strong competition from its sister Front Range cities as well as other western technology centers, northern Virginia, and major European technology centers.

Because they are less utility intensive, utility issues much more rarely differentiate finalist communities for aviation electronics or parts facilities compared to labor issues and incentives. Electric reliability is the major utility issue, followed by the capital costs to provide needed reliability.

**Table 20. % Cases in Which the Factor Differentiates Finalist Communities**

| | |
|---|---|
| Labor cost, quality & availability | 71 |
| State incentives | 69 |
| Local tax or land incentives | 68 |
| **Electric reliability** | 52 |
| Real estate cost | 40 |
| **Electric capital cost to provide needed services/reliability** | 34 |
| **Electric incentives** | 29 |
| **Water/sewer capacity** | 14 |
| **Water/sewer rates** | 11 |
| **Water/sewer hook-up fees** | 9 |
| **Local water/wastewater incentives** | 7 |

Water issues do not normally loom large. The location consultants believe that water hookup fees of $195,000 and sewer hookup fees of $82,000 would be a slight competitive disadvantage. Again, incentives are so common that the company would very likely negotiate with local government and CSU to try to waive or reduce these costs or make up them up elsewhere in the incentive package.

## C. Data Centers

Data centers remain an important location target, although data and customer service operations face increasing international competition from Ireland, Eastern Europe, and India. They are often also a target industry for US electric utilities with economic development programs.

Electric reliability is the dominant utility issue for this sector. Capital costs to provide needed redundancy are also important, but companies increasing budget for back up generation expenses.

Water issues do not normally differentiate finalist communities except when there is an issue of matching water capacity to the most desired location in terms of labor market and other factors.

Consultants believe that water hookup fees $92,000 and sewer hookup fees of $43,000 would not be a competitive disadvantage for Colorado Springs. Even though these costs are unusually high, they are not a major expense compared to overall capital and operating costs.

**Table 21. % Cases in Which the Factor Differentiates Finalist Communities**

| | |
|---|---|
| **Electric reliability** | 63 |
| Labor cost, quality & availability | 54 |
| Local tax or land incentives | 48 |
| State incentives | 44 |
| Real estate cost | 39 |
| **Electric capital cost to provide needed services/reliability** | 34 |
| **Water/sewer capacity** | 20 |
| **Water/sewer rates** | 11 |
| **Electric incentives** | 10 |
| **Local water/wastewater incentives** | 4 |
| **Water/sewer hook-up fees** | 4 |

## D. Administrative Offices

Administrative offices and distribution represent the two hottest types of facility location. As with data centers, Ireland, Eastern Europe, India, and for the first time Africa are frequent competitors. Canada also does well in this sector.

Consultants noted that they frequently screen out metropolitan areas, and sometimes central cities, less than 500,000 in population, although most have considered Colorado Springs for administrative centers in the past.

Labor cost, quality and availability are the dominant differentiator in this sector, with incentives also playing a moderately strong role, especially for more sophisticated centers employing more educated workers.

Utility reliability is the most important utility issue, though again companies usually budget for backup generation. Water and sewer hook-up fees very rarely enter the picture—if companies are in leased space they are unaware of this developer cost. For companies building their own facilities, the consultants stated that water hookup fees of $92,000 and sewer hookup fees of $43,000 would be a slight competitive for Colorado Springs.

**Table 22. % Cases in Which the Factor Differentiates Finalist Communities**

| | |
|---|---|
| Labor cost, quality & availability | 88 |
| State incentives | 49 |
| Real estate cost | 48 |
| Local tax or land incentives | 38 |
| **Electric reliability** | 31 |
| **Electric capital cost to provide needed services/reliability** | 17 |
| **Electric incentives** | 9 |
| **Water/sewer capacity** | 2 |
| **Local water/wastewater incentives** | 2 |
| **Water/sewer rates** | 1 |
| **Water/sewer hook-up fees** | 1 |

# 4 OTHER COMPETITIVENESS FACTORS

## 4.1 Business Location Factors

For this project, the study team used the EDR-LEAP tool for evaluating local economic competitiveness. This is a web-based system that portrays competitive strengths and weaknesses of an area that influence the site selection process, including various costs (e.g., utilities, housing, land, labor, taxes), qualities (worker skills, industrial/office attractions), access (to airports, highways, railroads) and supporting infrastructure (broadband, business resources). Through comparison to other cities, this tool can show how utility rates now interact with other factors to more broadly affect the local competitiveness for attracting business investment in target industries. The system generates both ratings of the most viable and attractive industries for business attraction, as well as identification of the factors that have held them back to date.

Table 23 summarizes selected comparisons among areas in terms of (a) labor market factors, (b) tax and building costs, and (c) transportation access. Notable findings are reported below for these three topics.

## 4.2 Labor Market Factors

Labor market factors include labor cost, the presence of skilled workers and labor force participation rates. Key findings are:

- At more than $41,834 per year average compensation in manufacturing, Colorado Springs is not a particularly low-cost location.
- Using percent of the population with a bachelor's degree or higher as an indicator of workforce skill-level, Colorado Springs appears in the top two-thirds with nearly 32 percent of the region's population holding a bachelor's or higher.
- Colorado Springs has the third smallest labor market among comparison cities. The smaller labor market size makes skill availability a more critical issue for some types of businesses.

- Colorado Springs has a labor-force participation rate of 71.9 percent, which is higher than most of the comparison cities. This indicates a somewhat tighter labor-market which may drive labor costs up and employers may have difficulty recruiting new employees.

**Table 23 Comparison of Labor, Tax, Building and Transportation Factors**

| | Cost Factors | | | |
|---|---|---|---|---|
| | **Manufacturing Payroll per Employee** *(Year 2003)* | **Average Total Tax Burden per Person** *($ per year)* | **Housing Cost** *($ for a single family home, Year 2000 Avg)* | **Rental Cost** *($ per month, (Year 2000 Avg)* |
| **Colorado Springs** | **$41,834** | **$695.38** | **$147,670** | **$ 599.07** |
| Albuquerque | $41,436 | $744.05 | $123,843 | $ 502.54 |
| Austin | $54,437 | $761.95 | $128,880 | $ 621.15 |
| Denver | $43,905 | $728.71 | $176,291 | $ 671.21 |
| Houston | $43,110 | $568.97 | $ 90,413 | $ 512.03 |
| Huntsville | $44,615 | $998.80 | $100,058 | $ 388.94 |
| Las Vegas | $36,454 | $460.85 | $139,500 | $ 648.00 |
| Omaha | $35,859 | $957.31 | $ 99,932 | $ 470.91 |
| Phoenix | $41,638 | $459.94 | $127,249 | $ 576.38 |
| Portland | $44,347 | $574.81 | $170,377 | $ 603.14 |
| Raleigh | $43,478 | $778.57 | $150,999 | $ 572.89 |
| Reno | $43,320 | $461.75 | $161,334 | $ 597.53 |
| Salt Lake City | $37,603 | $614.28 | $160,038 | $ 581.59 |
| San Jose | $76,687 | $572.96 | $449,461 | $1,093.23 |

| | Labor Market Factors *(2002)* | | | Transportation (avg. minutes, peak period) | | |
|---|---|---|---|---|---|---|
| | **Labor Market Size** | **Skilled Workers[1]** | **Labor Force Participation Rate** | **Access to Commercial Airport** | **Access to Freight Marine Port** | **Access to Rail Intermodal Loading** |
| **Colorado Springs** | **278,851** | **31.8%** | **71.9%** | **15** | **842** | **89** |
| Albuquerque | 383,727 | 28.0% | 64.5% | 28 | 725 | 23 |
| Austin | 762,072 | 36.7% | 71.3% | 25 | 243 | 101 |
| Denver | 1,212,577 | 34.0% | 71.9% | 45 | 782 | 21 |
| Houston | 2,266,844 | 26.8% | 65.5% | 31 | 24 | 16 |
| Huntsville | 175,540 | 31.0% | 66.3% | 18 | 65 | 18 |
| Las Vegas | 890,364 | 17.3% | 65.1% | 11 | 297 | 23 |
| Omaha | 413,672 | 27.2% | 71.5% | 24 | 220 | 18 |
| Phoenix | 1,789,744 | 25.1% | 63.7% | 20 | 425 | 13 |
| Portland | 283,710 | 28.7% | 69.2% | 32 | 23 | 27 |
| Raleigh | 700,163 | 37.8% | 72.3% | 27 | 149 | 93 |
| Reno | 199,732 | 23.6% | 68.6% | 34 | 229 | 28 |
| Salt Lake City | 737,317 | 27.5% | 71.2% | 24 | 791 | 17 |
| San Jose | 943,578 | 39.6% | 67.0% | 14 | 28 | 46 |

[1]*Percent of the population with a bachelor's degree or higher.*

*Source: EDR-Lea, US Census Metro Business Pattern, HUD State of the Cities Current Labor Force Data (2002 and EDR Group.*

## 4.3 Tax and Building/Land Costs

Other key cost factors relate to tax and building costs. Key findings are:

- Colorado Springs falls near the middle of the comparison areas in terms of average total tax burden per person.
- Colorado Springs does not stand out as having particularly high or low housing costs in terms of the cost of a single family home as well as average rental cost per month.

## 4.4 Transportation Access Factors

From an economic development perspective, transportation conditions fall into two classes: (a) access to markets and intermodal connections, and (b) ease of traffic flow within the region.

**Access.** EDR Group examined four transportation indicators: Access to commercial airports, access to freight marine ports, and access to a rail intermodal loading facilities. Findings were that:

- Only San Jose (14 minutes) and Las Vegas (11 minutes) have population centers closer to a commercial airport than Colorado Springs (15 minutes).
- Colorado Springs is farther away from a water port than any of the comparison areas.
- Colorado Springs is also farther away from major rail intermodal loading facilities. According to the US DOT, the closest major rail intermodal loading facility is in Denver, nearly an hour and a half away. Only Austin and Raleigh are similarly distant from intermodal facilities, and most of the comparison areas are within 20 to 30 minutes of such a facility.

**Traffic Flow.** In terms of traffic congestion, Colorado Springs has risen to be number one among small metro areas (under 500,000 population) in the dubious prize of having the highest average amount of peak traffic delay per traveler. However, Colorado Springs looks to larger metro areas for comparison; 11 of the other 13 comparison areas have larger populations, falling into the class of medium and large metro areas. (Only Reno and Huntsville have smaller populations, and neither is among the 85 metro areas rated for traffic congestion.) So, among the comparison areas, Colorado Springs actually emerges as having the second best peak period traffic flow, as shown in Table 18.

**Table 24. Comparison of Peak Traffic Congestion Delay Ratings**

| *Urban Area* | *Population (000)* | *Delay Hrs per Peak Traveler* | *Delay $ Cost per Peak Traveler* | *Rank* |
|---|---|---|---|---|
| Omaha NE-IA | 635 | 23 | $394 | 1 |
| **Colorado Springs CO** | 480 | 27 | $451 | 2 |
| Raleigh-Durham NC | 785 | 27 | $461 | 3 |
| Albuquerque NM | 580 | 30 | $501 | 4 |
| Las Vegas NV | 1360 | 30 | $511 | 5 |
| Salt Lake City UT | 920 | 31 | $520 | 6 |
| Portland OR-WA | 1670 | 39 | $670 | 7 |
| Phoenix AZ | 3005 | 49 | $831 | 8 |
| Austin TX | 855 | 51 | $851 | 9 |
| Denver-Aurora CO | 2050 | 51 | $865 | 10 |
| San Jose CA | 1675 | 53 | $900 | 11 |
| Houston TX | 3750 | 63 | $1,061 | 12 |

*Source: Texas Transportation Institute, Urban Mobility Report, 2005.*

# 4.6 Business Attraction Diagnostics

Having applied the EDR-LEAP system to compare economic performance and business factors among metropolitan areas, the system generated a list of the most viable industries for business growth and attraction. They were: Computer/ Electronics Manufacturing, Insurance, Administrative Services, Professional & Technical Services and Transportation Equipment Manufacturing. It is notable that this list resembles the list selected by EDC staff.

The system also identified the factors holding back these targets as: (a) business operating and production costs, (b) labor costs and (c) workforce training skills. Since energy and utility costs have not been a barrier in the past, they were not flagged by the system as a problem to date. However, the system shows that factors increasing business operating costs in the future are likely to have an adverse effect on the ability to attract the identified target industries.

One implication of these findings is that businesses view location and operating costs together (i.e., "a dollar is a dollar"). Utility charges and connection fees are seen by prospective businesses as just some of cost components to be added up in determining total cost of doing business. Thus, it is misleading to compare utility use costs and utility connection fees independently of each other or other cost factors. Higher utility fees and charges may not be a problem if an area has low labor costs or other low business operating costs. However, when applied in an area such as Colorado Springs where labor costs are already high, the incremental impact of utility charges on business cost competitiveness can be more problematic.

Another implication of these findings is that solutions to reduce business costs can be viewed broadly. In theory a wide variety of programs, incentives, or flexible policies can be employed – either as part of the utility pricing/fee structure or independently of it – to offset cost increases that could otherwise drive away business.

# 5 POLICY IMPLICATIONS FOR COLORADO SPRINGS

## 5.1 Overall Economic Development Effort

Economic development is a highly competitive arena. Fortunately, Colorado Springs has many strong underlying economic development fundamentals, but the stakes are also high. The community economic development strategy is not simply growth for growth's sake. It is to achieve targeted economic growth that supports the educational and local governmental tax base, increases economic security, and provides greater discretionary income to increase the local quality of life. Targeted development can be part of a "good to great" strategy.

Whether to strengthen CSU's ability to boost economic development is a judgment call that depends in large part upon how much the community and local government value quality development.

The economy is growing and the immediate risk does not appear to be imminent. Staying the course will not bring disaster, but it runs the risk of not realizing the long-term economic potential that is within the city's grasp. Increasing water and wastewater cost, especially increased water and sewer hook fees, do not preclude businesses from locating, remaining and expanding in Colorado Springs. But, all things being equal, they are a slight to moderate competitive disadvantage. This is especially true regarding any expansion in the semiconductor sector, the crown jewel of the local tax base.

Ultimately, the City Council as the Utilities Board faces a political decision about the importance of quality economic development and whether it should direct CSU to play a stronger role in protecting and building the job and tax base. Municipal utilities are predominately providers of municipal services—electric, gas, water and wastewater. But, as a municipal corporation, they are also a part of building the overall city revenue base, not just the utility base.

Rapidly developing economies are almost always very entrepreneurial. Strong civic entrepreneurship is an important prerequisite for building the economy that Colorado Springs citizens and leadership want to achieve. We recommend exploring and closely considering a number of good practice economic development program and policy options to enhance local economic competitiveness.

# 5.2 Policy and Program Implications

## For Overall City Economic Development

1. **The City should reconsider whether the negative impact of current water and wastewater connection fees is in the best interest of the total tax base and best long-term utilization of the ongoing water and wastewater capital investment.**

    - If very high paying basic sector employers create housing and commercial growth with high utility margins, it may be poor public policy to discourage the engine of quality growth rather than to impose user fees at the residential and commercial development levels.

    - Though CSU is investing heavily in water and wastewater capacity, the connection fee structure will discourage the more water intensive industries from locating in the Colorado Springs service area.

    - In most cases, this makes good sense for the community, since most water intensive operations are process-oriented manufacturing that does not fit with the regional labor pool or community aspirations.

    - The connection fees also become a major community disservice if they jeopardize retention or expansion of the semiconductor industry.

2. **Current water and wastewater connection practices place stronger pressure upon municipal and county government to offer other economic development incentives.**

    - Because "a dollar is a dollar," city and county government have the ability to offset water and wastewater connection charges with other incentives.

    - The range of local incentives is limited within Colorado, however, and any expansion of incentives deserves very careful analysis of the city's overall position versus major competitors.

3. **The City should fully explore whether to craft utility incentive rates and discounted hookup fees for high wage, high employment, high tax base anchor industries as a business retention and expansion policy.**

    - Some local employers are too valuable to lose, and if they are already established, most of the secondary infrastructure (for workers and supporting commercial activities) is already in place.

    - In addition, many key employers have been generating a positive overall fiscal impact for the city for a number of years.

## For the Greater Colorado Springs Economic Development Corporation

4. **Current water and sewer hook up fees place an extra burden on the EDC to be exceedingly good in all other areas of economic development.**

   - It must deepen its marketing resources and ability to express offsetting competitive advantages. Better resources to market labor skills and productivity are especially important in this regard.

5. **Current water and sewer hook up fees require the EDC and the City to be very skilled at incentives and client negotiations.**

   - The City must be prepared to offer other incentives. Because local water and sewer hookup fees are unusually high, many companies will ask for offsetting reductions even if Colorado Springs is the low-cost location.

   - We also recommend developing a project benefit/cost model to measure net municipal benefit/cost, including the cost of added services, from business locations and expansions.

## Joint Implications for the EDC/Colorado Springs Utilities

6. **The EDC and CSU should continue to integrate staff and resources to enhance the Business Retention and Expansion Visitation Program (BREV).**

   - This program is a strong opportunity for the EDC/CSU to jointly learn which existing taxpayers/CSU customers are most impacted by the new water/wastewater connection charge policies, to market utility technical services, and to learn in detail about workforce issues that may offset whatever disadvantage exists in water/wastewater charges.

   - It can be used as an opportunity to develop and monitor customer satisfaction ratings about utility services, workforce training, and other governmental services.

7. **The City, CSU and the EDC should continue joint analysis of the economic impact of utility rate and connection policies in the future.**

   - Develop joint recommendations from this assessment about techniques for utilizing outside analysis and the BREV program to monitor these issues. Update this analysis every two to three years.

## Implications for CSU

**8. Develop options for controlling connection charges for larger water and wastewater users.**

- Because connection charges are upfront capital costs with full net present value that may affect financial hurdle or benefit/cost requirements to undertake a project, CSU should consider options for shifting more of the financing burden for system development from connection charges to user fees.

- For the same reasons, CSU should consider the potential use of a program to better finance water and sewer hook-up fees and extension charges. It must analyze why current programs have little utilization. It must make the service as quick, easy and un-bureaucratic as possible in order to mitigate a potential economic development liability.

**9. Develop further energy and water efficiency customer service programs to aid business location, retention and expansion and offset the financial and perceptual impacts of connection charges and water and sewer rate impacts.**

- The image of a progressive, forward-looking city that undertakes active water and energy efficiency programs can become a positive factor in location decisions, offsetting some of the effects of connection fees and rates. The development and implementation of an effective array of efficiency programs may indicate that Colorado Springs Utilities takes care of its customers in very real ways, a perception that can only benefit the city, especially one that seeks to extend its participation in high tech industries.

- Programs to evaluate include fee credits, waivers, or rate discounts, geographical preference programs, combining energy efficiency information audits with energy efficiency actions, commissioning new facilities before they are completed or accepted, providing energy efficiency or water efficiency design assistance and providing partial credits to "green" buildings, and offsetting credits to customers who build oversize new infrastructure, and, over the longer-term "purple pipe" projects for distribution of gray or raw water.

- Evaluate costs versus benefits generated by the new customer, including taxes paid, jobs created, personal income produced, and sales by CSU generated by the customer.

# APPENDIX TABLES

## Employment Growth in Key Industries (1997 – 2002)

| | | 332 - Fabricated Metal Products | 334 - Computer & Electronic Products | 336 - Transportation Equipment | 514 - Internet & Data Process Services | 524 - Insurance Carriers & Related Activities | 920 - Government & non NAICS |
|---|---|---|---|---|---|---|---|
| ***Colorado Springs*** | 2002 Employment | 3,028 | 12,154 | 1,001 | 817 | 6,487 | 70,840 |
| | % Growth | -5.4% | 0.2% | 5.8% | -10.4% | -3.3% | 1.5% |
| ***% Growth Nationwide*** | | -2.5% | -5.3% | -3.9% | 6.1% | -1.2% | 1.0% |
| ***% Growth in Comparison Cities*** | | | | | | | |
| | Albuquerque | -3.3% | -3.1% | -8.4% | 23.2% | 3.4% | 0.5% |
| | Austin | -8.0% | -5.8% | -6.3% | 3.3% | -1.4% | 0.0% |
| | Denver | -1.3% | -4.1% | -2.7% | 2.9% | 0.2% | 3.3% |
| | Houston | -0.9% | -0.1% | -2.2% | 2.3% | -1.0% | 3.9% |
| | Huntsville | 1.5% | -6.0% | 1.4% | -24.7% | -7.3% | 0.1% |
| | Las Vegas | -4.2% | 2.0% | -12.9% | -5.4% | 5.8% | 4.7% |
| | Omaha | -1.6% | -10.4% | -5.0% | 24.2% | 0.1% | 2.4% |
| | Phoenix | 3.5% | -5.7% | -5.5% | 18.2% | 2.1% | 4.6% |
| | Portland | -3.3% | -4.8% | -3.9% | -0.3% | 1.4% | 3.5% |
| | Raleigh | -5.6% | 2.6% | -21.6% | -12.7% | -5.7% | 2.5% |
| | Reno | -1.7% | -8.3% | -10.8% | -20.3% | 1.5% | 1.5% |
| | Salt Lake City | -0.8% | -7.9% | -10.4% | 21.8% | -0.6% | 1.9% |
| | San Jose | -8.2% | -5.2% | -6.1% | -2.6% | -4.8% | 2.9% |

***Source: EDR-LEAP using data from Bureau of Economic Analysis and IMPLAN***

## Utilities Serving Comparison Communities

| City | Electric` | Gas | Water | Sewer |
|---|---|---|---|---|
| Albuquerque | Public Service of New Mexico | Public Service of New Mexico | City of Albuquerque | City of Albuquerque |
| Austin | City of Austin | Texas Gas | Austin Water/ Wastewater | Austin Water/Wastewater |
| Denver | Xcel Energy | Xcel Energy | Denver Water | Denver Water |
| Houston | Reliant Energy | Center Point | City of Houston Public Works | City of Houston Public Works |
| Huntsville | Huntsville Utilities | Huntsville Utilities | Huntsville Utilities | Water Pollution Control Department |
| Las Vegas | Nevada Power | Southwest Gas | Las Vegas Valley Water District | Clark Co. Water Reclamation District |
| Omaha | Omaha Public Power District | MUD Omaha | MUD Omaha | MUD Omaha |
| Phoenix | Salt River Project* | Salt River Project* | Phoenix Water Services Dept. | Phoenix Water Services Dept. |
| Portland | Portland Gen Elec. | Northwest Natural Gas | City of Portland | Bur. Of Environmental Services |
| Raleigh | Progress Energy* | North Carolina Natural Gas | City of Raleigh | City of Raleigh |
| Reno | Sierra Pacific Power | Sierra Pacific Power | Truckee Meadows Water Authority | City of Reno |
| Salt Lake City | Pacificorp. | Questar Gas | SLC Public Utilities | SLC Public Utilities |
| San Jose | Pacific Gas & Electric | Pacific Gas & Electric | San Jose Water | City of San Jose |

** Some parts of Phoenix served by Arizona Public Services*
** Some parts of the Research Triangle served by Duke Power*

## Total Annual Cooling Degree-Days and Heating Degree-Days by City

| | Cooling degree-days | Heating degree- days |
|---|---|---|
| Albuquerque | 1290 | 4281 |
| Austin | 2974 | 1648 |
| **Colorado Springs** | 404 | **6480** |
| Denver | 696 | 6128 |
| Houston | 2893 | 1525 |
| Huntsville | 1671 | 3262 |
| Las Vegas | 3214 | 2239 |
| Omaha | 1095 | 6311 |
| Phoenix | 4189 | 1125 |
| Portland | 390 | 4400 |
| Raleigh | 1521 | 3465 |
| Reno | 493 | 5600 |
| Salt Lake City | 1066 | 5631 |
| San Jose | 163 | 2597 |

**Estimated Water and Sewer Costs Per Employee for Sample Industries With Comparison to Manufacturing Average**

| | Water & Sewer Cost Per Employee ($) | % of Average for Manufacturing Industries |
|---|---|---|
| Other animal food manufacturing | $5.56 | 2.5% |
| Wet corn milling | $135.64 | 59.8% |
| Fats and oils refining and blending | $44.07 | 19.4% |
| Sugar manufacturing | $150.30 | 66.3% |
| Confectionery manufacturing from purchasec | $25.49 | 11.2% |
| Frozen food manufacturing | $31.36 | 13.8% |
| Fruit and vegetable canning and drying | $30.27 | 13.3% |
| Meat processed from carcasses | $17.64 | 7.8% |
| Rendering and meat byproduct processing | $81.23 | 35.8% |
| Bread and bakery product, except frozen, ma | $13.14 | 5.8% |
| Roasted nuts and peanut butter manufacturi | $25.31 | 11.2% |
| Other snack food manufacturing | $41.99 | 18.5% |
| Coffee and tea manufacturing | $12.82 | 5.7% |
| All other food manufacturing | $27.32 | 12.0% |
| Soft drink and ice manufacturing | $494.62 | 218.1% |
| Fiber, yarn, and thread mills | $15.81 | 7.0% |
| Broadwoven fabric mills | $39.27 | 17.3% |
| Nonwoven fabric mills | $23.29 | 10.3% |
| Knit fabric mills | $53.20 | 23.5% |
| Textile and fabric finishing mills | $29.84 | 13.2% |
| Other apparel knitting mills | $20.07 | 8.9% |
| Leather and hide tanning and finishing | $59.62 | 26.3% |
| Sawmills | $40.90 | 18.0% |
| Wood preservation | $67.53 | 29.8% |
| Cut stock, resawing lumber, and planing | $34.66 | 15.3% |
| Other millwork, including flooring | $22.25 | 9.8% |
| Pulp mills | $410.48 | 181.0% |
| Paper and paperboard mills | $258.13 | 113.8% |
| Paperboard container manufacturing | $2.58 | 1.1% |
| Asphalt paving mixture and block manufactu | $102.77 | 45.3% |
| Petrochemical manufacturing | $234.25 | 103.3% |
| Industrial gas manufacturing | $175.50 | 77.4% |
| Other basic inorganic chemical manufacturin | $2,671.61 | 1178.0% |
| Other basic organic chemical manufacturing | $236.98 | 104.5% |
| Plastics material and resin manufacturing | $83.10 | 36.6% |
| Noncellulosic organic fiber manufacturing | $118.51 | 52.3% |
| Nitrogenous fertilizer manufacturing | $373.60 | 164.7% |
| Phosphatic fertilizer manufacturing | $300.18 | 132.4% |

*(continued next page)*

**Estimated Water and Sewer Costs Per Employee for Sample Industries With Comparison to Manufacturing Average**

| | Water & Sewer Cost Per Employee ($) | % of Average for Manufacturing Industries |
|---|---|---|
| Paint and coating manufacturing | $5.45 | 2.4% |
| Adhesive manufacturing | $28.23 | 12.4% |
| Soap and other detergent manufacturing | $18.08 | 8.0% |
| Plastics packaging materials, film and sheet | $4.16 | 1.8% |
| Tire manufacturing | $25.81 | 11.4% |
| Rubber and plastics hose and belting manufa | $25.61 | 11.3% |
| Other rubber product manufacturing | $13.93 | 6.1% |
| Ceramic wall and floor tile manufacturing | $240.72 | 106.1% |
| Glass container manufacturing | $24.34 | 10.7% |
| Cement manufacturing | $142.84 | 63.0% |
| Mineral wool manufacturing | $23.37 | 10.3% |
| Iron and steel mills | $3,526.14 | 1554.8% |
| Iron, steel pipe and tube from purchased ste | $27.12 | 12.0% |
| Rolled steel shape manufacturing | $15.82 | 7.0% |
| Aluminum extruded product manufacturing | $16.35 | 7.2% |
| Other aluminum rolling and drawing | $122.60 | 54.1% |
| Primary smelting and refining of copper | $15.91 | 7.0% |
| Ferrous metal foundaries | $35.15 | 15.5% |
| Ornamental and architectural metal work ma | $51.25 | 22.6% |
| Metal can, box, and other container manufac | $7.18 | 3.2% |
| Electroplating, anodizing, and coloring metal | $16.90 | 7.5% |
| Electronic computer manufacturing | $21.11 | 9.3% |
| Computer storage device manufacturing | $23.84 | 10.5% |
| Other computer peripheral equipment manuf | $13.21 | 5.8% |
| Semiconductors and related device manufact | $10.51 | 4.6% |
| Search, detection, and navigation instrumen | $5.07 | 2.2% |
| Automobile and light truck manufacturing | $4.61 | 2.0% |
| Motor home manufacturing | $40.24 | 17.7% |
| Motor vehicle parts manufacturing | $10.88 | 4.8% |
| Aircraft manufacturing | $83.18 | 36.7% |
| Other aircraft parts and equipment | $23.39 | 10.3% |
| Railroad rolling stock manufacturing | $19.06 | 8.4% |
| Ship building and repairing | $14.94 | 6.6% |
| Information services | $106.70 | 47.0% |
| Data processing services | $162.37 | 71.6% |
| **Average--All Manufacturing Industries** | **$226.79** | 100.0% |

Source: Estimated by EDR Group based on data from US BEA and US Department of Census.

**Estimated Water and Sewer Costs Per Employee for Sample Industries With Comparison to Manufacturing Average *Without Iron and Steel***

| | Water & Sewer Cost Per Employee ($) | % of Average for Manufacturing w/o Iron and Steel |
|---|---|---|
| Other animal food manufacturing | $5.56 | 5.1% |
| Wet corn milling | $135.64 | 125.2% |
| Fats and oils refining and blending | $44.07 | 40.7% |
| Sugar manufacturing | $150.30 | 138.7% |
| Confectionery manufacturing from purchasec | $25.49 | 23.5% |
| Frozen food manufacturing | $31.36 | 28.9% |
| Fruit and vegetable canning and drying | $30.27 | 27.9% |
| Meat processed from carcasses | $17.64 | 16.3% |
| Rendering and meat byproduct processing | $81.23 | 75.0% |
| Bread and bakery product, except frozen, ma | $13.14 | 12.1% |
| Roasted nuts and peanut butter manufacturi | $25.31 | 23.4% |
| Other snack food manufacturing | $41.99 | 38.8% |
| Coffee and tea manufacturing | $12.82 | 11.8% |
| All other food manufacturing | $27.32 | 25.2% |
| Soft drink and ice manufacturing | $494.62 | 456.5% |
| Fiber, yarn, and thread mills | $15.81 | 14.6% |
| Broadwoven fabric mills | $39.27 | 36.2% |
| Nonwoven fabric mills | $23.29 | 21.5% |
| Knit fabric mills | $53.20 | 49.1% |
| Textile and fabric finishing mills | $29.84 | 27.5% |
| Other apparel knitting mills | $20.07 | 18.5% |
| Leather and hide tanning and finishing | $59.62 | 55.0% |
| Sawmills | $40.90 | 37.8% |
| Wood preservation | $67.53 | 62.3% |
| Cut stock, resawing lumber, and planing | $34.66 | 32.0% |
| Other millwork, including flooring | $22.25 | 20.5% |
| Pulp mills | $410.48 | 378.9% |
| Paper and paperboard mills | $258.13 | 238.3% |
| Paperboard container manufacturing | $2.58 | 2.4% |
| Asphalt paving mixture and block manufactu | $102.77 | 94.9% |
| Petrochemical manufacturing | $234.25 | 216.2% |
| Industrial gas manufacturing | $175.50 | 162.0% |
| Other basic inorganic chemical manufacturin | $2,671.61 | 2465.9% |
| Other basic organic chemical manufacturing | $236.98 | 218.7% |
| Plastics material and resin manufacturing | $83.10 | 76.7% |
| Noncellulosic organic fiber manufacturing | $118.51 | 109.4% |
| Nitrogenous fertilizer manufacturing | $373.60 | 344.8% |
| Phosphatic fertilizer manufacturing | $300.18 | 277.1% |

*(continued next page)*

**Estimated Water and Sewer Costs Per Employee for Sample Industries With Comparison to Manufacturing Average *Without Iron and Steel* (cont.)**

| | Water & Sewer Cost Per Employee ($) | % of Average for Manufacturing w/o Iron and Steel |
|---|---|---|
| Paint and coating manufacturing | $5.45 | 5.0% |
| Adhesive manufacturing | $28.23 | 26.1% |
| Soap and other detergent manufacturing | $18.08 | 16.7% |
| Plastics packaging materials, film and sheet | $4.16 | 3.8% |
| Tire manufacturing | $25.81 | 23.8% |
| Rubber and plastics hose and belting manufa | $25.61 | 23.6% |
| Other rubber product manufacturing | $13.93 | 12.9% |
| Ceramic wall and floor tile manufacturing | $240.72 | 222.2% |
| Glass container manufacturing | $24.34 | 22.5% |
| Cement manufacturing | $142.84 | 131.8% |
| Mineral wool manufacturing | $23.37 | 21.6% |
| Iron, steel pipe and tube from purchased ste | $27.12 | 25.0% |
| Rolled steel shape manufacturing | $15.82 | 14.6% |
| Aluminum extruded product manufacturing | $16.35 | 15.1% |
| Other aluminum rolling and drawing | $122.60 | 113.2% |
| Primary smelting and refining of copper | $15.91 | 14.7% |
| Ferrous metal foundaries | $35.15 | 32.4% |
| Ornamental and architectural metal work ma | $51.25 | 47.3% |
| Metal can, box, and other container manufac | $7.18 | 6.6% |
| Electroplating, anodizing, and coloring metal | $16.90 | 15.6% |
| Electronic computer manufacturing | $21.11 | 19.5% |
| Computer storage device manufacturing | $23.84 | 22.0% |
| Other computer peripheral equipment manuf | $13.21 | 12.2% |
| Semiconductors and related device manufact | $10.51 | 9.7% |
| Search, detection, and navigation instrumen | $5.07 | 4.7% |
| Automobile and light truck manufacturing | $4.61 | 4.3% |
| Motor home manufacturing | $40.24 | 37.1% |
| Motor vehicle parts manufacturing | $10.88 | 10.0% |
| Aircraft manufacturing | $83.18 | 76.8% |
| Other aircraft parts and equipment | $23.39 | 21.6% |
| Railroad rolling stock manufacturing | $19.06 | 17.6% |
| Ship building and repairing | $14.94 | 13.8% |
| Information services | $106.70 | 98.5% |
| Data processing services | $162.37 | 149.9% |
| **Average--All Manufacturing Industries** | **$108.34** | 100.0% |

Source: Estimated by EDR Group based on data from US BEA and US Department of Census.

Economic Development
RESEARCH GROUP

2 Oliver Street, 9th Floor, Boston, MA 02109
Telephone 617.338.6775
Fax 617.338.1174
E-mail info@edrgroup.com
Website www.edrgroup.com