OFFICE OF THE CITY AUDITOR
COLORADO SPRINGS, COLORADO

13-08 Proposed Community Solar Garden Program Expansion Tariff

April 2013

Office Of The City Auditor
Colorado Springs, Colorado

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Purpose

The objective of our review was to provide City Council with information about estimated costs and potential customer impacts. Our overall objective was to support City Council in their policy review of the proposed solar garden program expansion and related tariff.

Highlights

In the course of our review we identified three policy considerations for City Council and one observation for Colorado Springs Utilities management: the estimated net present value of the cost of the program may be understated and could vary based upon future rate increases (page 4), the use of an average production credit (blended rate) provides greater benefits to certain customer classes (page 6), and the sales tax implications had not been determined (page 8). We identified an observation regarding rulemaking and proposed improvements as a result of the pilot program (page 10).

The proposed solar garden expansion tariff was submitted under City Code section 12.1.107 D, which does not require a cost of service study. City Council's approval of the tariff will be based on policy rather than program costs. We provided data and analysis for consideration by City Council.

Previously, the City Auditor's Office performed a review of the solar garden pilot program for compliance with the tariff and related program documents. Our report was issued in February 2013. This review identified some transactions that did not appear to comply with program requirements, and offered recommendations for improvements in future gardens.

Key changes to the expanded program include the availability to all customer classes, and monthly Performance Based Incentive payments. Under the pilot program only residential and educational customers could participate, and the incentive payment was a one-time upfront payment.

Management Response

Management generally agrees with the observation noted at page 10 of this report.

Auditor's Comments for City Council Policy Consideration

1. Initial Estimated Program Costs Subsidy depends on future rate increases and may be understated
2. The use of an Average Production Credit (Blended) Rate results in greater benefit for some customer classes
3. Sales tax implications have not been determined.

Observation

1. Colorado Springs Utilities should ensure that recommendations identified in the pilot program audit have been addressed in the program expansion rules.

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Office of the City Auditor
Public Report

Date: April 5, 2013

To: President Hente, President Pro-Tem Martin, and Members of City Council

Re: 13-08 Proposed Community Solar Garden Program Expansion Tariff

We conducted a review of the proposed solar garden expansion tariff submitted to City Council under City Code section 12.1.107D. Under this section of City Code, the tariff does not require a cost of service study to be performed, and City Council's review was based on policy rather than program costs.

The objective of our review was to provide City Council with information about estimated costs and potential customer impacts related to the proposed solar garden expansion tariff. Our overall objective was to support City Council in their policy review of the proposed solar garden program expansion and related tariff.

Our work resulted in three policy considerations:

- Estimated net present value of the program cost presented to Utility Board of $22.5 million on March 20 may have been understated based on recent rate increases. The estimated cost of the program could range from approximately $22 million to $33.2 million, depending on future rate increases.
- Use of an average production credit results in greater benefit for some customer classes.
- Sales tax impacts had not been determined.

Additionally, we had one observation for Colorado Springs Utilities. We noted that rulemaking was not yet complete for the expanded program. We were not able to determine if recommendations from the pilot program were addressed in the proposed expansion tariff.

The observation and policy considerations are listed in the attached report. As always, feel free to contact me if you have any questions.

Sincerely,

Denny Nester, MBA, CPA, CIA, CGFM, CFE, CGAP
City Auditor

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Office of the City Auditor

Proposed Solar Garden Tariff

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REPORT DETAILS

PURPOSE AND SCOPE

The purpose of our review was to provide City Council with information about estimated costs and potential customer impacts related to the proposed Solar Garden Expansion program tariff, and to verify those estimates when appropriate.

The proposed tariff was submitted to the City Council under City Code section 12.1.107 D, which does not require a public hearing or cost of service study. As such, our audit objective was to assist City Council by providing data for policy review. Our specific objectives included validation of the estimated program subsidy cost data provided to the Utilities Board.

BACKGROUND

Significant differences between the pilot program and the proposed expanded program are:

- Use of a Performance Based Incentive (PBI) credit based on generation over the 20 year life of the program rather than a one-time incentive payment.
- All customer classes are eligible to participate. The pilot program participation was limited to residential and educational customers.
- The customer bill credit is to be adjusted with future changes in rates.

Solar Garden Pilot program

On September 27, 2011, City Council approved a Community Solar Garden Bill Credit (Pilot Program) tariff for 2 Megawatts (MW) total. Under that tariff, a third party developer constructed a solar array. Colorado Springs Utilities residential and educational customers bought or leased panels in that array. Individual solar gardens were limited to 500 kW in size, and customers were limited to purchasing panels offsetting up to 120% of their typical monthly usage. The intention of the program was to allow customers who did not own their home or who did not wish to make a significant investment in rooftop panels to participate in the solar energy incentive program.

Under the tariff, customers received a monthly bill credit, attributable to the customer's interest in the energy generated by the solar garden during the previous calendar month. In addition to the bill credit, customers also received a one-time incentive payment. This incentive could be assigned to a third party, typically the solar developer.

The solar garden program was designed to resemble the existing rooftop solar rebate programs in that the customer receives a credit related to solar panel generation. The program differed from the rooftop program in that the panels were not located on the customer's premises. Therefore, generation from the panels owned or leased by the customer had to be transferred into the electric system, incurring distribution and integration costs. Additionally, standby and firming capacity costs, and program

administration costs were incurred. We noted that Colorado Springs Utilities received renewable energy credits for alternative energy generation.

The City Auditor's Office performed a review of compliance with the tariff and program requirements for the pilot program and issued a report in February, 2013. The report provided recommendations for improvements and considerations for future gardens.

Proposed Solar Garden Expansion Tariff

Beginning in September 2012, the Utilities Board discussed the potential for expansion of the Community Solar Garden program. Utilities management met with stakeholders from the community including two Utilities Board members and Solar industry representatives as part of program development. Input and alternatives related to program structure were provided by this group to the Board at the February 13, 2013, meeting to assist Board members with policy development.

Key elements of the expanded solar garden program tariff submitted on February 26 for City Council approval on April 9 were as follows:

- Expansion to 3 megawatts in 2013, 3 megawatts in 2014, and 4 megawatts in 2015.
- Developer to be assigned a performance based incentive (PBI) based on energy generated from the customer's leased or owned panels, which will be in effect for 20 years from the date of operation.
- Combined customer credit and PBI for 2013 will be $0.16 per kilowatt hour. The customer will receive a credit per kilowatt hour generated of $.0793 and the developer will receive the difference of $.0807 per kilowatt hour for 2013.
- Expansion periods 2 and 3 will have a maximum of $0.12 and $0.10 combined PBI and customer credit. Expansion periods 2 and 3, beginning in 2014 and 2015, respectively, are subject to Utilities Board review of capacity, incentive, and a request for proposal (RFP) process.
- Use of a blended rate, which is a composite of all rate classes, and participation is open to all customer classes rather than residential and educational only.
- Customer bill credit will be adjusted as rates change.
- Developer selection based on a qualified, first-come, first-serve selection process for the first expansion period with the developer required to have 80% of subscriptions of requested capacity for approval.
- A single customer may not have more than 40% of each garden's interest and participation is limited to 120% of the customer's previous 12 month kilowatt-hour usage.

Staff provided City Council/Utilities Board with support for the estimated subsidy for the program over the next 20 years. The City Auditor's Office performed a review of this estimate. More details can be found at Policy Consideration 1.

At the time of our review, the proposed tariff had been drafted, but many of the details as to how the program will function were not detailed in the tariff. These requirements will be included in other program documents such as the interconnection agreement. These documents will be produced as part of the rulemaking process, which was not complete at the time of our review.

CONCLUSION

The proposed solar garden expansion program and tariff was intended to promote solar energy within the community. The solar garden program expansion was not based on cost of service. Program expansion will result in subsidy by ratepayers who do not participate in the program.

This report includes three areas for City Council's consideration during policy development, as well as one observation.

POLICY CONSIDERATIONS AND RECOMMENDATIONS

POLICY CONSIDERATION 1 – INITIAL ESTIMATED PROGRAM COST SUBSIDY DEPENDS ON FUTURE RATE INCREASES AND MAY BE UNDERSTATED

Colorado Springs Utilities estimated the net present value (NPV) of the program cost to be approximately $22 million, assuming an annual utility bill increase of 3%; we determined that 3% may not reflect recent rate trends. Solar garden program expansion is based on a policy decision directed by City Council to promote solar energy within the community. The program cost or subsidy will result in increased rates, including rates for customers who do not participate in the program.

Colorado Springs Utilities staff provided an analysis of program costs and identified the net program cost, which is also the amount of estimated subsidy of the program. We analyzed this information to determine if the assumptions appeared reasonable. It appeared that the initial estimated program cost may be understated.

We reviewed the assumptions used by Colorado Springs Utilities to estimate program cost and subsidy. Key assumptions were:

- 4% discount rate to compute net present value
- 3% increase for non-fuel rates

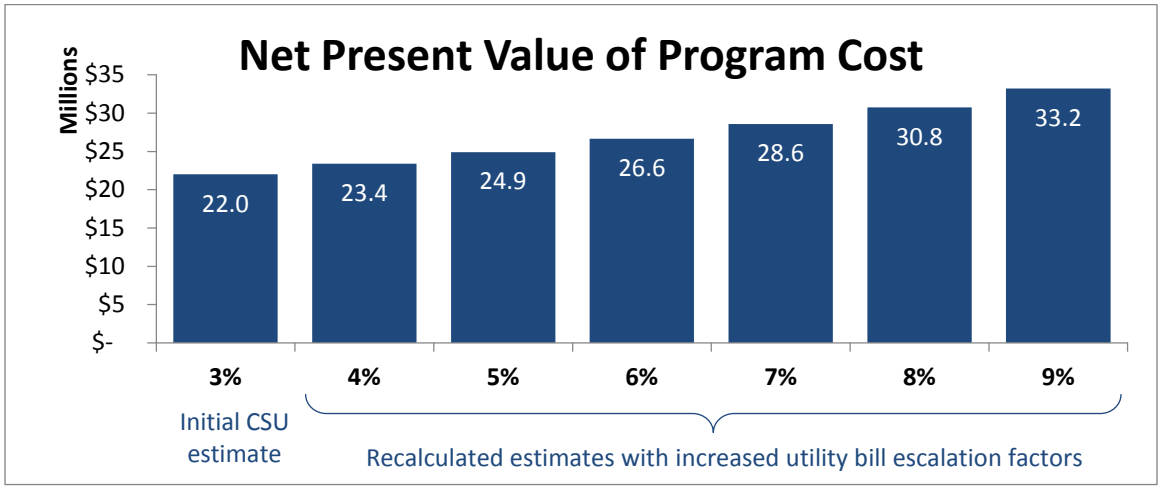
The 4% discount rate is comparable to current borrowing costs and assumes that borrowing costs will not increase significantly over the 20 year life of the program.

We compared the 3% rate increase assumption to rate increases related to electric service for Colorado Springs Utilities customers over the last five years. We noted that electric rate increases over the last 5 years have been greater than 3%. Over the last five years, electric rates have increased as follows:

Typical Bill	Residential	Commercial	Industrial
Compound Annual Growth Rate from 2008 to 2013	6.58%	4.77%	3.26%

Source: Colorado Springs Utilities – Electric Cost of Service Studies for 2008 and 2013, including adjustment to ECA for 2013 figures

Using a range of 3-9% rate increases, the net present value of the estimated subsidy would be as follows:



Source: Colorado Springs Utilities and OCA analysis

Colorado Springs Utilities provided an estimate of the impact of the program cost on customer classes as follows:

Estimated average annual increase in typical bill over life of program due to solar garden project	***Utility bill assumed rate increases***		
	3%	***6%***	***9%***
Residential	$2.91	$3.62	$4.63
Commercial	$29.13	$36.15	$46.29
Industrial	$1,942.16	$2,410.21	$3,085.85
Large Industrial	$10,633.30	$13,195.92	$16,895.03
	CSU estimate	*Recalculated estimates with increased utility bill escalation*	

Source: Colorado Springs Utilities and Office of the City Auditor analysis

AUDITOR'S COMMENT

This additional information is provided for City Council's consideration of the proposed Solar Garden Expansion Tariff.

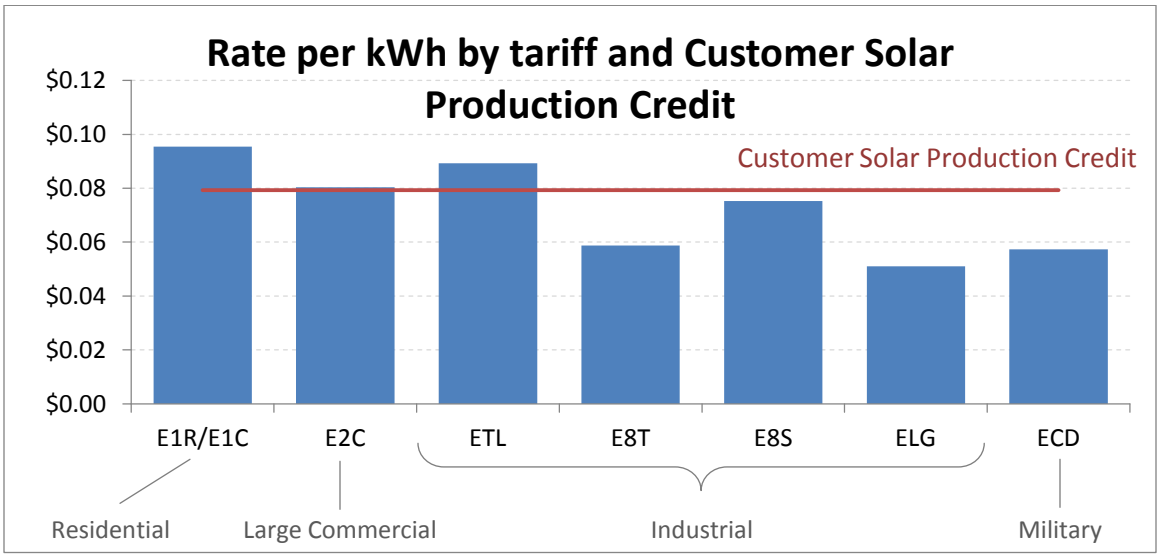
POLICY CONSIDERATION 2 – THE USE OF AN AVERAGE PRODUCTION CREDIT (BLENDED) RATE RESULTS IN GREATER BENEFIT FOR SOME CUSTOMER CLASSES

The proposed tariff would establish the same production credit for all participating customers. Since different customers pay different rates for electric service, the blended production credit would result in some customer classes benefiting more than others. In addition, it is possible for certain customer classes to receive a credit which exceeds their electric bill.

We noted that Xcel Energy has a similar program which utilizes a different rate for each customer class.

The proposed tariff uses a production credit, which is calculated as a weighted average of customer rates, excluding daily charges. The pilot program also used an average rate, but it was only open to residential and educational customers.

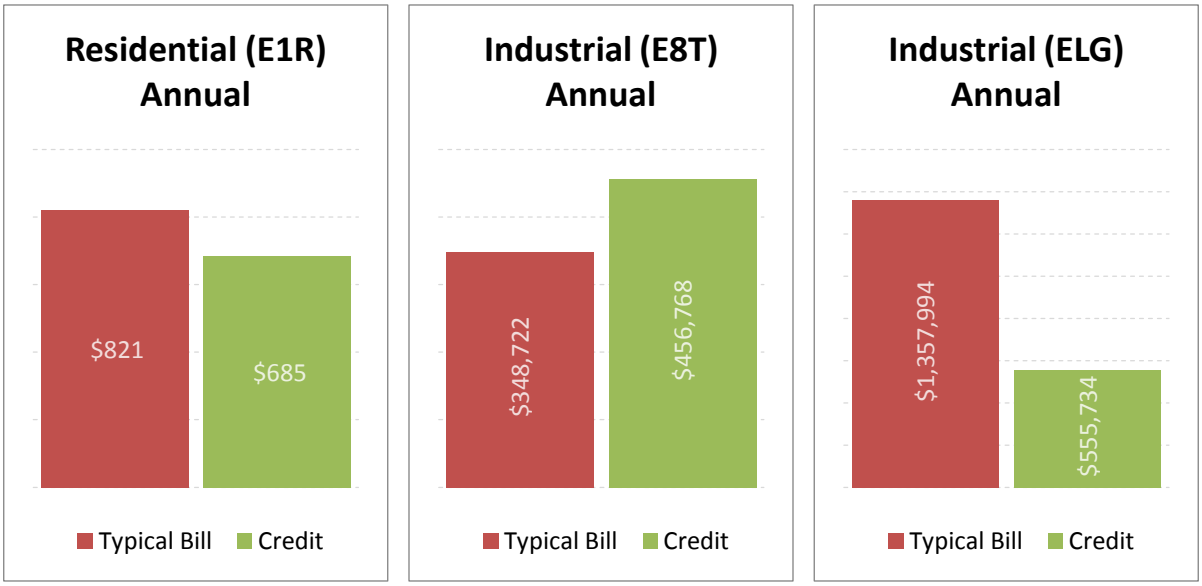
Because customer classes have different rates but all customers receive the same production credit under the proposed tariff, some customer classes will receive a greater benefit from program participation.



Source: Colorado Springs Utilities

In particular, we noted that customers on the Industrial Time-of-Day (E8T) rate tariff would see the greatest benefit compared to other customer classes. Tariffs such as Large Power and Light (ELG) and Contract (ECD) also had an advantageous rate compared to the production credit, but their typical usage is high enough to be restricted by the purchase limitation of 40% of production credits from a solar garden.

Annual typical bills and potential credits excluding potential sales tax impact for residential, industrial E8T, and average industrial customers are as follows:



Credit represents the full kWh production credit available to that typical customer; which is the production credit rate of $0.0793 times the lesser of 120% of their typical usage or 40% of the entire 10MW project. The customer receiving the Performance Based Incentive in addition to the production credit would result in a higher credit.

Source: Colorado Springs Utilities Typical Bill calculation and OCA analysis

The City Auditor's Office did not perform a full benchmarking analysis to determine if use of a blended rate was typical. However, we noted that Xcel Energy has a similar program which utilizes a different rate for each customer class, rather than a blended rate.

AUDITOR'S COMMENT

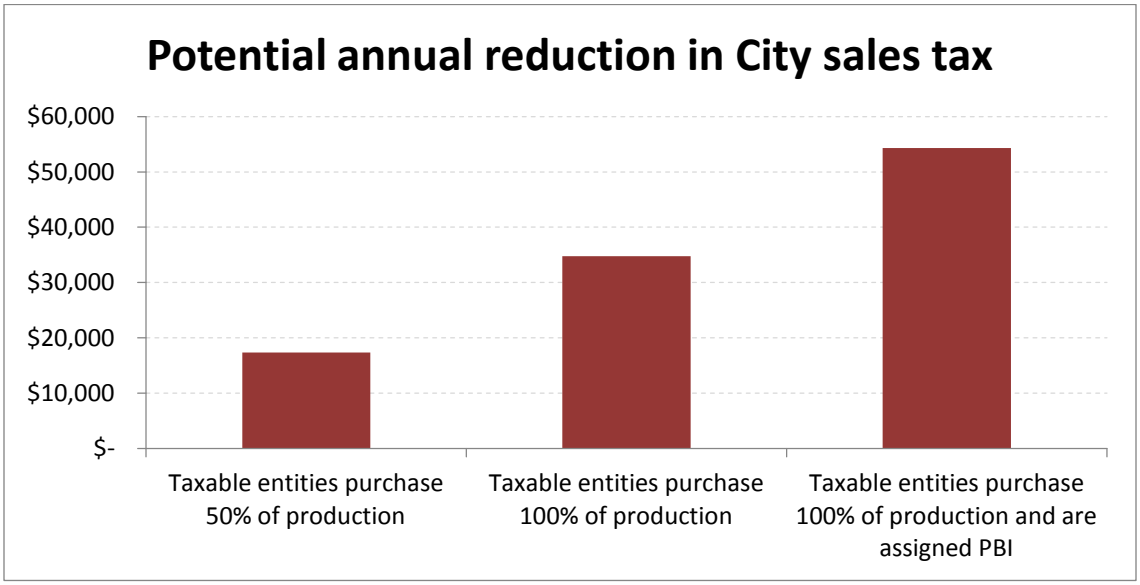
This additional information is provided for City Council's consideration of the proposed Solar Garden Expansion Tariff.

POLICY CONSIDERATION 3 – SALES TAX IMPLICATIONS HAVE NOT BEEN DETERMINED

Subject to current investigation of sales tax treatments, there may be a sales tax benefit to industrial and commercial customers who participate in the program. This could affect City sales tax collections by up to $54,300 each year. This potential benefit to customers is currently being researched by Colorado Springs Utilities and City Finance.

Under the proposed tariff, the customer receives a credit which may reduce the amount subject to sales tax for commercial and industrial customers. If sales tax is paid on the customer's net bill, the impact could result in a reduction in sales tax revenue.

The current total tax rate for commercial and industrial customers is 7.63%, with 2.5% representing the City of Colorado Springs sales tax. The tariff as currently proposed allows for the performance based incentive (PBI) to be credited either to the customer's bill or paid directly to the developer, the potential range of sales tax impact is as follows:



Source: Office of the City Auditor analysis. Assuming production credit of $0.0793, all 10MW having been developed, and a City sales tax rate of 2.5%

While the reduction in sales tax from this program is not likely to be significant to City revenues, we noted that City representatives did not participate in solar garden tariff expansion program development. As similar sustainable programs are developed, the potential for reduced sales tax could increase. We understand the possibility exists that customer credits could be structured in a way that does not reduce sales tax.

AUDITOR'S COMMENT

This additional information is provided for City Council's consideration of the proposed Solar Garden Expansion Tariff.

OBSERVATIONS, RECOMMENDATIONS AND RESPONSES

OBSERVATION 1 – IMPROVEMENTS FROM THE PILOT HAVE NOT YET BEEN IMPLEMENTED FOR THE EXPANDED PROGRAM

As rules that provide guidance to implement the tariff are not yet complete, it is uncertain if improvements and considerations identified in the pilot program have been addressed in the program expansion.

The City Auditor's Office report on the Solar Garden Pilot program issued in February 2013 provided recommendations for consideration in future solar garden programs. Program details were not incorporated into the proposed tariff, but rather guidance is provided through program documents such as the interconnection agreement developed in a process known as 'rulemaking.'

Colorado Springs Utilities staff provided a summary of the audit recommendations in their presentation to Utilities Board on March 20, 2013. As the rulemaking process was not complete at the time of our review, we were unable to determine if improvements and considerations identified in the audit were incorporated into the solar garden program expansion. Key recommendations identified in our review and presented by Colorado Springs Utilities staff to Utilities Board included the following:

- Better define allowable frequency and circumstances under which panel ownership may be transferred to ensure program compliance and reduce administrative costs.
- Include a right to audit clause to program documents that allows Colorado Springs Utilities to verify compliance with program rules.
- Ensure developers have the capacity to fulfill their obligations through means such as a performance bond, surety bond, or escrowed deposit.
- Program documents should clearly state that the customer must provide proof of cash payment to qualify for incentives and before program-related disbursements are made. Additionally, non-cash payments should not be acceptable.

Additionally, rules related to changes in the proposed expanded program such as whether the Performance Based Incentive changes as rates and the production credit change, and definition of a valid customer subscription had not yet been finalized at the time of our review. The City Auditor's Office February 2013 pilot program report noted the need for clarity related to rules to ensure compliance.

AUDITOR'S RECOMMENDATION

Colorado Springs Utilities should ensure that recommendations identified in the pilot program audit have been addressed in the program expansion rules.

Additionally, rules should clearly define requirements related to new provisions in the expanded program.

COLORADO SPRINGS UTILITIES RESPONSE

Colorado Springs Utilities agrees with the recommendation.

EXHIBIT 1 – METHOD OF COST ESTIMATION FOR PROGRAM

Colorado Springs Utilities Staff estimated the net program costs by accumulating:

Add: Estimated performance based incentive payments for each expansion year, for the next 20 years
Add: Estimated customer bill credits for the next 20 years (multiplied by estimated rate increases)

Equals: Estimated Program Cost

The estimated result for each year was then discounted to obtain a net present value ($22 million) which represented program cost and subsidy. Note that costs increase as rates increase over time.

Estimate per Colorado Springs Utilities	First five years of program (2013-2017)	Last fifteen years of program (2018-2032)	Total
Performance Based Incentive	$2,674,920	$9,899,802	$12,574,722
Generation Credit	$3,169,437	$18,064,039	$21,233,476
Program Cost	$5,844,357	$27,963,841	$33,808,198
Net Present Value			*$21,999,481*

Source: Colorado Springs Utilities

City Council's Office Of The City Auditor

Colorado Springs, Colorado

About our Office

The mission of the Office of the City Auditor is to provide City Council with an independent, objective and comprehensive auditing program for operations of the City. Our auditing program includes:

- Evaluating the adequacy of financial controls, records and operations
- Evaluating the effectiveness and efficiency of organizational operations
- Providing Council, management and employees objective analysis, appraisals, and recommendations for improving systems and activities

The Office of the City Auditor is responsible for auditing the systems used by the City of Colorado Springs and its enterprises, including Colorado Springs Utilities. We perform a variety of audits for these entities, including financial audits, performance audits, contract audits, construction audits, and information system audits. We also perform follow-up on a periodic basis to monitor and ensure management actions have been effectively implemented.

Authorization and Organizational Placement

Our audits are conducted under the authority of Chapter 1, Article 2, Part 7 of the Colorado Springs City Code, and more specifically parts 703, 705 and 706 of the Code. The Office of the City Auditor is structured in a manner to provide organizational independence from the entities it audits. This independence is accomplished by the City Auditor being appointed by and reporting directly to the City Council.

Audit Standards

The audit was conducted in a manner that meets or exceeds the International Standards for the Professional Practice of Internal Auditing, a part of the Professional Practices Framework promulgated by the Institute of Internal Auditors, with the exception of the requirements under standards 1312 and 1321 to obtain an external quality assurance review once every five years. We do not believe this non-compliance impacted the quality of our audit.

The audit included interviews with appropriate personnel and such tests of records and other supporting documentation as deemed necessary in the circumstances. We reviewed the internal control structure and compliance tests . Sufficient competent evidential matter was gathered to support our conclusions.

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