IN THE MATTER OF THE APPLICATION OF PUBLIC SERVICE COMPANY OF COLORADO FOR A COMMISSION DECISION (1) APPROVING ITS STEAM RESOURCE PLAN, (2) CONDITIONALLY GRANTING IT A CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY TO CONSTRUCT ONE OF TWO NEW BOILER PROJECTS COMMENCING IN 2016, AND (3) GRANTING SUCH OTHER AND FURTHER AUTHORIZATIONS AND WAIVERS AS THE COMMISSION MAY DEEM NECESSARY

PROCEEDING NO. 14A- ____ST

DIRECT TESTIMONY AND ATTACHMENTS OF STEPHEN P. KUTSKA

BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF COLORADO

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IN THE MATTER OF THE APPLICATION OF PUBLIC SERVICE COMPANY OF COLORADO FOR A COMMISSION DECISION (1) APPROVING ITS STEAM RESOURCE PLAN, (2) CONDITIONALLY GRANTING IT A CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY TO CONSTRUCT ONE OF TWO NEW BOILER PROJECTS COMMENCING IN 2016, AND (3) GRANTING SUCH OTHER AND FURTHER AUTHORIZATIONS AND WAIVERS AS THE COMMISSION MAY DEEM NECESSARY	**)**	**PROCEEDING NO. 14A-_____ST**

DIRECT TESTIMONY AND ATTACHMENTS OF STEPHEN P. KUTSKA

ON

BEHALF OF

PUBLIC SERVICE COMPANY OF COLORADO

December 18, 2014

BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF COLORADO

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IN THE MATTER OF THE APPLICATION OF PUBLIC SERVICE COMPANY OF COLORADO FOR A COMMISSION DECISION (1) APPROVING ITS STEAM RESOURCE PLAN, (2) CONDITIONALLY GRANTING IT A CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY TO CONSTRUCT ONE OF TWO NEW BOILER PROJECTS COMMENCING IN 2016, AND (3) GRANTING SUCH OTHER AND FURTHER AUTHORIZATIONS AND WAIVERS AS THE COMMISSION MAY DEEM NECESSARY	**)**	**PROCEEDING NO. 14A-_____ST**

SUMMARY OF THE DIRECT TESTIMONY OF STEPHEN P. KUTSKA

Mr. Stephen P. Kutska is the Development Manager for Public Service Company of Colorado's ("Public Service" or the "Company") Thermal Energy Department. In this position, Mr. Kutska's role is to provide steam system analysis and data and information regarding thermal operations. In addition, he performs the functions of a key account manager by serving as the technical interface between customers and the Company to resolve any issues and to help customers maximize their benefits as steam customers. Additionally, he also serves as Thermal Energy's Project Leader for the Steam Resource Plan.

In his Direct Testimony, Mr. Kutska provides information regarding the Company's proposal to meet the future operational needs of its steam business in order to continue to provide reliable service. In addition, Mr. Kutska discusses the Company's

methodology to estimate its required long-term production capacity. He will also provide details on how the Operations and Maintenance ("O&M") costs that the Company uses in its financial analysis of the various supply-side options were developed. Finally, Mr. Kutska discusses the Company's interaction with various stakeholders regarding the future of its steam business.

BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF COLORADO

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IN THE MATTER OF THE APPLICATION OF PUBLIC SERVICE COMPANY OF COLORADO FOR A COMMISSION DECISION (1) APPROVING ITS STEAM RESOURCE PLAN, (2) CONDITIONALLY GRANTING IT A CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY TO CONSTRUCT ONE OF TWO NEW BOILER PROJECTS COMMENCING IN 2016, AND (3) GRANTING SUCH OTHER AND FURTHER AUTHORIZATIONS AND WAIVERS AS THE COMMISSION MAY DEEM NECESSARY	**)**	**PROCEEDING NO. 14A-_____ST**

DIRECT TESTIMONY AND ATTACHMENTS OF STEPHEN P. KUTSKA

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GLOSSARY OF ACRONYMS AND DEFINED TERMS

Acronym/Defined Term	Meaning
AHEC	Auraria Higher Education Center
CDOH	Colorado Division of Housing
City	City of Denver
CPCN	Certificate of Public Convenience and Necessity
Design Temperature	Minimum temperature (degrees F) that the steam system is designed to serve our customer's load requirements
DHA	Denver Housing Authority
DSP	Denver Steam Plant
E&C	Engineering and Construction
HVAC	Heating, ventilation and air conditioning
Mlb(s)	Unit of Measurement for Steam Energy. One pound of saturated steam contains 1,000 Btus of heat energy. One Mlb of steam = 1,000 lbs/steam. Therefore one Mlb of steam = 1,000,000 Btus of heat energy
O&M	Operations and Maintenance
pph	Pound per hour
PSA	Plant Specialist "A"
Public Service or Company	Public Service Company of Colorado
SCA	Steam Cost Adjustment

Sendout	The maximum amount of steam that can be sent out from a steam plant to the steam distribution system at the fence of the steam plant
SSP	State Steam Plant

LIST OF ATTACHMENTS

Attachment No. SPK-1	Siting & Land Rights Report
Attachment No. SPK-2	2013 Steam System Sendout Profile

BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF COLORADO

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IN THE MATTER OF THE APPLICATION OF PUBLIC SERVICE COMPANY OF COLORADO FOR A COMMISSION DECISION (1) APPROVING ITS STEAM RESOURCE PLAN, (2) CONDITIONALLY GRANTING IT A CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY TO CONSTRUCT ONE OF TWO NEW BOILER PROJECTS COMMENCING IN 2016, AND (3) GRANTING SUCH OTHER AND FURTHER AUTHORIZATIONS AND WAIVERS AS THE COMMISSION MAY DEEM NECESSARY	**)**	**PROCEEDING NO. 14A-_____ST**

DIRECT TESTIMONY AND ATTACHMENTS OF STEPHEN P. KUTSKA

I. INTRODUCTION, QUALIFICATIONS AND PURPOSE OF TESTIMONY

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is Stephen P. Kutska. My business address is 500 15th Street, Denver, Colorado 80202.

Q. BY WHOM ARE YOU EMPLOYED AND WHAT IS YOUR POSITION?

A. I am employed by Public Service Company of Colorado ("Public Service" or the "Company"). My position is Development Manager for the Thermal Energy Department.

Q. WHOM ARE YOU REPRESENTING IN THIS PROCEEDING?

A. I am testifying on behalf of Public Service.

Q. HAVE YOU INCLUDED A DESCRIPTION OF YOUR QUALIFICATIONS, DUTIES AND RESPONSIBILITIES?

A. Yes. A description of my qualifications, duties and responsibilities is included as Attachment A.

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A. The purpose of my testimony is to address several of the items referenced in Commission Decision No.C13-1549 in Proceeding No. 12A-1264ST, involving the Company's previous request for a Certificate of Public Convenience and Necessity ("CPCN") to construct and operate the proposed Sun Valley Steam Center. In the Commission's decision, the Company was directed to provide a variety of additional information regarding its steam business. I provide some of that required information as outlined below. I also discuss the needs of the Company's steam business as a whole coupled with our need to fully retire Zuni Station from steam production in the next 3-5 years. Specifically, my testimony covers the following:

1) How the Company intends to meet the future operational needs of its steam business in order to continue providing reliable service, both in the short- and long-term. I discuss our short-term plan for continued reliable service to our existing customers as well as the siting and scope of potential new steam generation facilities to meet our changing customer needs in the future,
2) The methodology that the Company will use to determine its required long-term production capacity based on its current maximum customer

demand under certain design hour criteria. In this section I will also discuss how and why customer demand may change as we approach the decision timeframe for determining our required long-term production capacity;

3) Details on how the Operations and Maintenance ("O&M") costs that the Company uses in its financial analysis of the various supply-side options (which is discussed in detail by Mr. Tim Farmer) were developed; and

4) The Company's interaction with various stakeholders regarding the future of its steam business.

My testimony addresses each of these areas in subparts below.

II. FUTURE OPERATIONAL NEEDS OF THE STEAM BUSINESS

Q. PLEASE PROVIDE THE CONTEXT FOR YOUR DISCUSSION OF THE FUTURE OPERATIONAL NEEDS OF THE STEAM BUSINESS?

A. As Mr. Brockett discusses in his Direct Testimony, Public Service is committed to continuing to provide reliable steam service to its customers, which means that we have to plan for long-term operation of the business. As the Development Manager for the Company's thermal energy businesses, my role has been to serve as both an internal and external resource for data and information regarding thermal operations, and interface with our thermal customers. From this perspective, I know that the Company's plans to fully retire its Zuni Plant from electric service will impact the steam business. I also know that the equipment at Zuni is at the end of its physical life, so retaining this plant for continued steam operations has risks. Mr. Farmer sponsors a Zuni assessment report that supports this conclusion in his Direct Testimony. Consequently, planning for the future operational needs of the steam business has become an important part of my job.

Q. WHAT ARE THE PRIMARY OPERATIONAL NEEDS OF THE STEAM BUSINESS?

A. As Mr. Brockett discusses in his Direct Testimony, the Company's goal is to provide District Steam service over the long term to those customers in downtown Denver that are geographically situated within the footprint of our existing district distribution steam lines. These customers value high reliability steam service. To achieve this goal we must have:

1) Sufficient online steam capacity to serve the steam system's peak load requirement at a minimum temperature (degrees F) that the steam system is designed to serve our customer's load requirements ("Design Temperature") of minus 20 Degrees Fahrenheit;
2) A distribution network of steam piping capable of providing steam to each service lateral;
3) At least two steam generating facilities in service simultaneously and situated at opposite ends of the distribution system; and
4) Appropriate staffing with sufficient O&M allocation to operate and maintain the entire steam system for continuous 24 hour per day, 365 days per year service.

Q. WHAT ARE THE SHORT-TERM OPERATIONAL NEEDS OF THE STEAM BUSINESS?

A. To meet our current customers' peak demand under design hour conditions we need to have hourly generation capacity of approximately 620 Mlbs/hour. To continue to meet this peak demand in the short-term, defined as the next three to five years, we will need to continue to operate Zuni Station. As discussed, Zuni is at the end of its physical life, so the Company will need to invest in upgrades at this plant in order for it to continue to run for steam in the short term with some level of reliability. Mr. Farmer discusses the condition of the equipment at Zuni in detail in his Direct Testimony. In addition, we are also proposing to upgrade the distribution system near the State Steam Plant ("SSP") to intermediate pressure. The proposed upgrades

will allow us to provide intermediate pressure and increase the maximum amount of steam that can be sent out from a steam plant to the steam distribution system at the fence of the steam plant ("sendout") capacity at SSP. This will not only provide steam at a pressure that is more in line with the rest of our system, but it will also allow us to reduce the hours of operation at the Zuni Station, thereby extending the remaining life of that station. Mr. Farmer also discusses this SSP upgrade in further detail in his Direct Testimony. Extending the useful life of Zuni Station for steam production for 3-5 years and modifying the sendout pressure at SSP will allow us to bridge the gap to a long-term supply solution.

Q. WHAT ARE THE LONG-TERM OPERATIONAL NEEDS OF THE STEAM BUSINESS?

A. The long-term production capacity requirements are currently uncertain. We will have a better understanding of customer demand within the next 18 months or so as Mr. Scott Brockett discusses in his Direct Testimony. However, the Company is positioning itself to serve the customers that are on the steam system for the long-term.

Q. WHAT ARE THE LONG-TERM OPTIONS TO REPLACE THE ZUNI STATION STEAM GENERATION CAPACITY THAT THE COMPANY IS PROPOSING?

A. As explained above, we are currently not certain what the long-term production capacity requirement ("Required Maximum Product Demand") will be based on long-term customer demand, but we have been able to narrow the options to supply steam based on Engineering's assessment of our supply-side alternatives to three options. Our long-term solution may be to install no new boilers ("No New Boiler Option"), one new boiler ("One New Boiler Option") or two new boilers ("Two New Boiler Option").

Q. IF NEW STEAM GENERATION CAPACITY IS REQUIRED UNDER THE ONE NEW BOILER OR TWO NEW BOILER OPTIONS, WHERE WILL THE NEW BOILER(S) BE LOCATED?

A. Our Siting and Lands Rights Department, along with the Engineering and Construction ("E&C") Department have recommended the locations and arrangements of the new boiler(s) under the One New Boiler Option and Two New Boilers Option. Their recommendations are based on the Company's goals of minimizing the required capital investment and ongoing O&M costs, while maintaining our existing district steam system's high reliability and availability. For purposes of identifying the various equipment and facility options, I requested E&C to consider not only new equipment and facilities, but also refurbishing and/or upgrading existing facilities, as well as the possibility of deploying used or rental equipment. Siting and Land Rights

helped this effort by investigating a variety of locations to site a new boiler or facility as shown in Attachment No. SPK-1, the "Siting & Land Rights Report." Based on this report E&C recommends locating the One New Boiler Option at our existing Denver Steam Plant ("DSP") at 19th Street and Wewatta Street. Their recommendation for the Two New Boilers Option is on the site of the old coal yard at Zuni Station. Specifically, this is the southwest parcel of the Zuni property at the intersection of 13th Avenue and Zuni Street.

Q. WHAT CRITERIA WERE USED TO DETERMINE FEASIBLE LOCATIONS FOR ANY NEW FACILITIES?

A. I directed the Siting and Land Rights Department to use the following criteria: parcel size, proximity to main steam distribution lines, permanence, accessibility to other utility services, and the ability to promote flexible operation of the district steam system.

Q. WHY WERE THESE PARTICULAR CRITERIA USED?

A. Parcel size is a primary driver, because a minimum two-acre area is needed to build a 300,000 pound per hour ("pph") steam center.

Proximity to our main steam distribution lines is important because the average cost of installing a new steam main is $1,500 per foot. The closer the plant is to the existing main steam line, the lower the cost of the interconnection to the steam distribution system, line maintenance expenses and system losses.

Permanence is important because Public Service must purchase the parcel, or at least enter into a long-term lease so that property prices are known well into the future.

Accessibility to other utility services, including gas, electricity, water, sewer and communications, is relevant because of the system needs during operation. Access to the gas department's intermediate pressure system is important due to the large volume of gas that any new steam facility would consume.

Flexible operation of the district steam system is a factor because the physical arrangement of the plants impacts Public Service's ability to maintain system pressure and service to all customers by operating any combination of units, while isolating parts of the distribution system for maintenance. An ideal operating location would be somewhere on the western or southwestern side of the existing steam distribution system.

Q. BASED ON THESE CRITERIA, WHAT DID THE COMPANY DO TO IDENTIFY POTENTIAL, ALTERNATIVE SITES FOR ANY NEW BOILER SYSTEMS?

A. The Company did a great deal of work to identify potential sites. In the Sun Valley CPCN decision, the Commission directed us to investigate a number of alternatives for any required additional generating capacity, including adding capacity at other existing facilities, building lease options, working with other stakeholders or customers to provide space for a new boiler, and other location options. Accordingly, working under my direction, our Siting and

Land Rights Department conducted a comprehensive investigation of potential sites for locating and constructing new boiler systems. The results of these efforts are detailed in the Siting and Land Rights Department report included as Attachment No. SPK-1.

Q. WHAT SITES DID THE COMPANY CONSIDER FOR NEW BOILER FACILITIES?

A. We began by reviewing all of the former sites that had been evaluated as part of the Sun Valley Steam Center Application to determine if anything had changed with respect to the status, availability or applicability of those sites for our steam business. There have been no significant changes. In addition, we investigated whether or not any new sites emerged that could be considered since our last review of the downtown Denver area within the footprint of the steam business. No new feasible locations were identified as a result of this effort. We also investigated a number of private partnering and co-location options that I discuss below.

Q. WHAT COMPANY-OWNED SITES DID YOU CONSIDER FOR NEW BOILER FACILITIES?

A. After our updated review of available sites, we found that, with the exception of Zuni Station and the DSP site, the existing parcels of other Company-owned facilities near the steam system were either too small to accommodate a steam facility or too far away from our existing steam distribution system to be economically feasible.

Q. WHAT BUILDING LEASE, CUSTOMER PLACEMENT OR OTHER CO-LOCATION OPTIONS DID YOU EVALUATE FOR NEW BOILER SITES?

A. The Siting and Land Rights Department and the Community Relations Department approached the Auraria Higher Education Center ("AHEC") and discussed building the Steam Center on the AHEC campus as either a stand-alone facility or by incorporating the Steam Center into an existing structure. This proposal was not achievable for a number of reasons, including scheduling conflicts with AHEC's construction schedules, the time required for Public Service to obtain Commission approval to proceed, and the willingness of AHEC to proceed with the project. AHEC's Board of Directors does not believe that a steam plant would be a good fit for their campus due to added noise, increased traffic, and the need to operate the plant continually.

We also considered the now-closed City of Denver ("City") Cherokee Street Steam Plant, formerly used by the City to provide district steam services to a number of City facilities in the immediate area. The City's plant has not been used in decades, and the original boilers (1930's vintage) are still inside the building. Updating this facility for steam services presented too many challenges to be viable. These challenges include the purchase price of the property, the removal of existing equipment and steam lines, asbestos abatement issues, and the costs associated with maintaining the existing exterior of the facility, since the building has been designated as a historical site.

Q. WHAT OTHER THIRD PARTY LOCATIONS WERE CONSIDERED?

A. We considered a large hotel in downtown Denver as a possible alternative location for distributed generation of district steam. Based on prior knowledge of the facility we were aware that the hotel's steam plant consists of four boilers, three rated at 40,000 pph and one rated at 20,000 pph. After our initial investigation we determined that the hotel did not meet our requirements and that the costs were too uncertain to continue exploring the option of using one or more of their boilers.

Q. WHAT SITES DID YOU DETERMINE ARE THE BEST ALTERNATIVES IN THE EVENT THAT THE COMPANY NEEDS TO CONSTRUCT NEW BOILER FACILITIES?

A. In the end, we determined that the most cost-effective alternative would be to locate any additional capacity at either the DSP or on Public Service's property at the Zuni Station. Attachment No. SPK-1 provides further detail on our analysis, and each of the sites we investigated. Any boilers at the Zuni site would be located at the old coal yard.

I next discuss the method that the Company will use to determine its Required Maximum Production Sendout. This requirement will influence the selection of the capacity option, as well as the site of the facility.

II. MAXIMUM SYSTEM DEMAND ESTIMATES, DESIGN HOUR CRITERIA, AND POTENTIAL CHANGES TO CUSTOMER DEMAND

Q. HOW DO YOU MONITOR THE STEAM SUPPLY REQUIREMENTS OF THE STEAM SYSTEM?

A. There are two components that comprise the steam supply requirements – customer demand and distribution system losses. Customer demand is measured at the customer's meter, and sales are recorded and saved every fifteen minutes for each customer. The distribution losses have to be added to the sales to determine the required sendout at the plant(s). The distribution losses are directly related to the amount (length) of pipe in the street, insulation on the pipe and fixtures, any water infiltration on the pipe and fixtures, and steam leaks that exist from time to time in the distribution system. The two values when combined provide us the required amount of steam sendout from the generation sites to meet customers' loads. In determining the system demand, we combine the measures of peak load at each customer's meter together during the same time measurement to get the system coincident peak load. This is the measure that is important in planning the overall system capacity.

Q. HOW DOES THE COMPANY DETERMINE ITS REQUIRED MAXIMUM PRODUCTION SENDOUT FOR PLANNING?

A. After assessing the system coincident peak load, we determine a maximum design hour demand by estimating the maximum possible customer demand assuming a temperature of minus 20 degrees Fahrenheit, which is the design hour system coincident peak load. Then, on a rolling hour basis, we plot

steam sendout against ambient air temperature at the same time as the sendout value. We then construct a linear trend line through the data points on the graph. Typically, this exercise results in several data points that are above and below the line. To ensure reliability, we construct another line at the upper bound of the data in order to capture the high demand hours observed in the data, ultimately resulting in the required maximum production sendout. The upper bound was 45 Mlbs above the linear trend line based on a full year of 2013 data. Using this design hour system coincident peak load approach, our planning captures the possibility of extremely cold weather in conjunction with higher than average customer demand. Attachment No. SPK–2 shows the 2013 data and the linear trend line used to determine our current required maximum production sendout. The graph shows that our current maximum required production sendout is 628 Mlbs, which is only slightly above our current capacity of 620 Mlbs.

By planning system production capacity based on this approach, we ensure that customer demand would rarely, if ever, exceed our production capabilities.

Q. HOW ARE YOU GOING TO DETERMINE THE FUTURE STEAM RESPONSE MAXIMUM PRODUCTION SENDOUT?

A. We will update our estimate of the maximum design hour system coincident peak load in the spring of 2016 in accordance with the timeline that Mr. Brockett outlines in his testimony. Using the process that I just described, we will plot customer demand data and ambient temperature on a graph,

construct a trendline, apply the minus 20 degree design hour criteria, and then gauge the upper envelope to capture higher-than-average demand levels. The upper bound adjustment will not necessarily be the 45 Mlbs that we currently use, but we expect that it will be similar depending on the data. We will also monitor intended customer exits from, or subscriptions to, the steam system in order to derive the bottom-line Required Maximum Production Sendout.

Q. FROM YOUR EXPERIENCE WORKING WITH STEAM CUSTOMERS, WHAT ARE THE POTENTIAL SOURCES OF SYSTEM LOAD GROWTH AND LOAD EROSION?

A. Not surprisingly, rates and total owning cost are the primary drivers of customer's intentions to exit or join the steam system. The new three-part steam rate structure that Mr. Brockett discusses in more detail in his testimony will likely influence load changes, both in terms of existing customers and potential new steam customers. This new three-part rate structure is the first time that customers will experience a demand charge, which may cause some customers to at least evaluate and potentially modify their steam usage patterns. From the Company's assessment, customers that have relatively high load factor steam loads will benefit. Examples of these types of customers or loads are:

- hotels that use steam for space heating, domestic hot water, laundries and steam tables in their restaurants;
- "process" loads that use steam as part of their manufacturing

process (e.g., micro-breweries that use steam in beer production);

- condominium complexes; and
- multi-use facilities that use steam for both space heating and domestic hot water applications.

We expect to retain these types of customers and loads in the long-run and possibly even attract new customers with similar load profiles. In addition, this new rate structure may lead to new steam service applications, like absorption chillers, for both current and new customers. Absorption chillers use a chemical process to generate chilled water and require steam to complete the chemical cycle. The new steam rate structure may now make it more economically feasible for certain customers to install and operate absorption chillers for air conditioning because the price of steam is now consistent with such applications.

Similarly, current customers with low load factor profiles might choose to modify their usage patterns; or they might even elect to discontinue steam service if their analysis shows a reduced total owning cost. As I discuss below, we have a preliminary idea of how our various customers will react to the new rate design because I have personally spent a significant amount of time educating our customers about the details of this new rate design and discussing how it may impact their bills. Nevertheless, as Mr. Brockett explains, the Company needs more time to incorporate customers' actual response to the new rates into its long-term planning approach. Gathering

this data, as well as other information, is crucial if we are to reach the best possible long-term supply decision.

Q. DO YOU ANTICIPATE ANY MODIFIED CUSTOMER USAGE BEHAVIOR AFTER THE COMPANY IMPLEMENTS THESE NEW RATES?

A. Yes, I believe many of our steam customers are likely to adjust their usage patterns based on the price signal inherent in the new demand charge. Certainly it will take some time for customers to react, and for our steam system to reach a new equilibrium, as customers will likely want to gain some experience with the new three-part rate structure to see how it impacts their bills before deciding how to proceed. With a new demand charge in place, I would expect many customers to develop action plans tailored to the realities of this demand charge. Based on my meetings with various customers, I believe that customers will take the following steps:

- Customers will seek to reduce their peak hour steam flow by preheating at reduced steam flows, reducing nightly setbacks, utilizing thermal storage of hot water, closely monitoring steam peak usage, and/or improving insulation on their properties.
- Customers that lack in-house heating, ventilation and air conditioning ("HVAC") expertise might hire a consultant to evaluate potential steam system improvements.
- If potential savings do not meet the owner's goal, the customer will evaluate leaving the system for an alternate source of heat energy, such as electric or gas service. Factors included in such an evaluation

could include the interconnection costs of alternative resources; finding space within the facility that will be used to house new equipment; the costs associated with removing existing equipment and/or renovating the space that will be used to house the new equipment; the cost of repurposing the space needed for a boiler plant within the building (*e.g.*, converting parking spaces to house boiler equipment would necessarily reduce the facility's overall parking revenues); the cost of additional HVAC equipment (*i.e.*, boilers, running electrical circuits or gas lines, fans, water lines, flues, air permitting, and insurance); and additional O&M including staffing, training, spare parts, and service agreements.

- The customer will need to perform a financial analysis and identify funds that will be used to complete the transition project and establish the level of priority of this project with other projects for this facility or the owner's overall portfolio. Once this work has been completed, the task of implementing the project – formal engineering drawings, permitting, bidding the project, ordering material, demolition and construction, and training - can begin.

Q. HAS THE COMPANY TAKEN ANY ACTION TO HELP CUSTOMERS ASSESS THE IMPACT OF THE NEW RATE STRUCTURE, PARTICULARLY IN LIGHT OF HOW THIS IMPACT COULD INFLUENCE THEIR DECISION WHETHER TO REMAIN ON THE STEAM SYSTEM?

A. Yes. We have met with many of our customers to discuss the changes to our

rate structure and provide them with their facility's load information and resulting bill impacts. We will continue these meetings as needed on a customer-by-customer basis. Additionally, we have offered to provide data from our on-site meters to each customer to incorporate into their building automation systems. This will allow customers real-time access to their steam system usage so they can track and modify their building steam peaks. We are also assessing whether to develop other tools to assist customers in their evaluation process. These tools could include steam system audits and monthly summaries of their rolling hour peaks during the peak winter months.

When customers take the first step of steam conservation, we expect to see our peak hour steam flow begin to drop in the first quarter of 2015. While we expect to see some level of initial customer response based on the new rates, a customer's decision to actually discontinue steam service will be much more complicated, for the reasons I discussed previously. We believe it is likely that it would take an estimated 12-18 months for customers to decide whether they actually want to leave the steam system. Consequently, after the 2015-2016 heating season we will be in a much better position to evaluate reductions to peak hour steam flow as a result of customer migration.

For a limited time, we are also providing customers the option to remain on the current, two-part rate if they commit to discontinuing steam service. They must make this election by the end of January 2015 and then actually exit the steam system by October 2015, as detailed by Mr. Brockett. We do not anticipate many customers electing this path, given my

conversations with them thus far

Mr. Brockett discusses the timeline for our decision in greater detail.

Q. HAS THE COMPANY ENGAGED IN ANY DISCUSSIONS WITH POTENTIAL NEW CUSTOMERS?

A. Yes. We are currently talking with a hotel that is considering joining our steam system. The decision and timing for this facility is driven by its project needs. As we identify potential new loads that appear to be a good match for our system, we will work with the appropriate personnel to determine if district steam can serve their needs and meet their facility goals.

III. OPERATIONS AND MAINTENANCE ("O&M") COST ESTIMATES

Q. DID YOU CONTRIBUTE TO THE DEVELOPMENT OF ANY OF THE COSTS OF THE SUPPLY-SIDE OPTIONS DISCUSSED BY MR. FARMER?

A. Yes. As Thermal Energy's project lead for the Steam Resource Plan, I had a significant role in developing the O&M costs for all of the steam supply-side options that the Company assessed.

Q. HOW WERE THE O&M COST ESTIMATES DEVELOPED FOR ALL OF THE DIFFERENT STEAM SUPPLY OPTIONS?

A. I worked with our Steam Superintendent and our Thermal Energy Director to determine the O&M requirements for each option. That being said, Mr. Farmer sponsors the O&M cost estimate for each of the supply-side options.

Our O&M expenses are divided into two major categories: Labor and Materials. The Labor component is subdivided into job classifications to which costs are assigned by the Company's financial team based on the annual total expense for each class of labor. Labor requirements vary by scenario. For example, the existing Zuni Station equipment requires both a Control Specialist and a Plant Specialist "A" ("PSA") to operate the existing boiler equipment. By contrast, the DSP, the SSP, the One New Boiler Option and the Two New Boilers Option require only one PSA to operate the equipment.

The Materials category of the O&M is subdivided into various identifiable major cost components, including water, chemicals, sewer, house power, vendor required maintenance and miscellaneous items. For instance,

once Zuni Station is retired from electric generation, the existing ponds can be remediated and reclaimed. When the ponds are eliminated, a new sewer line will be required to continue to operate Zuni for steam, resulting in an incremental O&M increase due to higher annual sewer expenses for the steam business.

Q. ARE THERE ANY OTHER O&M RELATED EXPENSES THAT WILL BE IMPACTED BY THE PROPOSED CHANGES IN THE STEAM SYSTEM'S CAPACITY?

A. Yes. We anticipate boiler efficiency improvements after discontinuing use of the Zuni boilers, as well as some overall system efficiency improvements under each of the long term supply-side options that will ultimately benefit the system and our customers.

Q. CAN YOU QUANTIFY THE FUEL EFFICIENCY IMPROVEMENT?

A. Yes we can**.** While the final design of the potential new boilers have not been selected, based on our latest efficiency report on Zuni Boiler 1A and information from boiler manufacturers on current boiler efficiency, we estimate that the new boilers will have approximately 11% higher efficiency than Zuni 1A. We have incorporated this efficiency improvement into the forecasted all-in rates presented by Mr. Brockett.

We can also approximate the benefit of the fuel efficiency improvement by looking at 2013 operations and fuel cost. In 2013 we spent more than $8 million on fuel for the entire system, and Zuni 1A produced roughly 26% of the steam system's total sendout. Multiplying our total fuel cost by Zuni's 26%

and then again by the 11% efficiency improvement we estimate a fuel savings of approximately $236,000.

Q. PLEASE PROVIDE MORE INFORMATION ON THE SAVINGS ASSOCIATED WITH THE ELIMINATION OF ZUNI STATION FROM THE STEAM SYSTEM?

A. Zuni Unit 1A was designed to produce 360 Mlbs/hr for electric generation at maximum efficiency. Due to the size of the steam distribution pipe from Zuni, the steam line can only accept a maximum of 280 Mlbs/hr. Consequently, even at the peak sendout for steam, the balance of plant systems (*i.e.*, the pumps, fans and other equipment) are only operating at approximately 78% of their maximum efficiency. Since we require peak sendout during the coldest weather, Zuni Station only operates at 280 Mlbs/hour for approximately 100 to 200 hours per year. By comparison, over the last three years the Station has averaged approximately 3,600 hours below the maximum steam sendout value each year. We also anticipate modest savings in our electrical energy costs associated with the balance of plant equipment operations.

In addition to the potential electric cost savings, there could be lower costs associated with the use of backup fuel. Zuni Station currently utilizes #6 fuel oil as its backup fuel to natural gas. When the outside air temperature drops below 40 degrees Fahrenheit we use steam to keep the viscosity of the #6 oil at a point that allows the fuel to flow correctly to the boilers. With the elimination of Zuni Station, our existing boilers and the new boilers would use

#2 fuel oil as backup fuel. This type of fuel oil does not require heating to remain viscous at outside air temperatures in Denver.

The estimated annual O&M savings due to weather and load are in the range of $50,000 - $100,000. However, these are only estimates and we will need to gather actual operating data to confirm these O&M cost reductions.

V. STAKEHOLDER OUTREACH

Q. PLEASE DESCRIBE THE EFFORTS THAT THE COMPANY HAS UNDERTAKEN TO ENGAGE STAKEHOLDERS OTHER THAN ITS CUSTOMERS?

A. We have had ongoing conversations and interactions with some of the stakeholders that have pecuniary and other interests in our steam business and this filing, including the City of Denver, the Denver Housing Authority ("DHA") and the Colorado Division of Housing ("CDOH").

Q. PLEASE DESCRIBE THOSE INTERACTIONS.

A. The Company meets regularly with the City's Chief Project Manager, usually twice per month. At these meetings, the Company and City discuss pending matters that impact the two organizations including the district steam system. We have updated the City on the latest developments regarding the Zuni site and the regulatory process. We have also informed the City of the Commission's general timeline and the Company's activities in reaching out to steam customers per the Commission's orders, such as the customer survey. The City is also interested in the Zuni site because it is part of its Sun Valley neighborhood redevelopment plans. As part of those plans, the City put in place a general development plan. The Company provided extensive comments to that plan in order to provide for the continued use of its property for utility purposes.

DHA has expressed interest in redeveloping and constructing new housing in the Sun Valley neighborhood, so its interests are aligned with

Denver's in terms of the redevelopment. The City has a right of first offer/refusal if the Company ever decides to sell any of the Zuni property. However, the City has agreed to waive this right if the Company sells any portion of the property to DHA in the future. The Company explained to DHA and the City that it would not be in a position to make any definitive commitment with respect to any parcels of the Zuni property at present. The Company did discuss the possibility of an option agreement with DHA (that would be contingent upon future regulatory requirements and the Company's operational needs), but this dialogue has not progressed past this point. Mr. Brockett also discusses the disposition possibilities with respect to the Zuni property in his testimony.

Finally, Company representatives met with senior representatives from the State, including the Director of the CDOH, on the latest developments and Commission decisions. We will continue to interact with our customers and stakeholders to solicit prudent information that could help inform the decisions that we make about our steam business.

Q. DOES THAT COMPLETE YOUR TESTIMONY?

A. Yes.

ATTACHMENT A

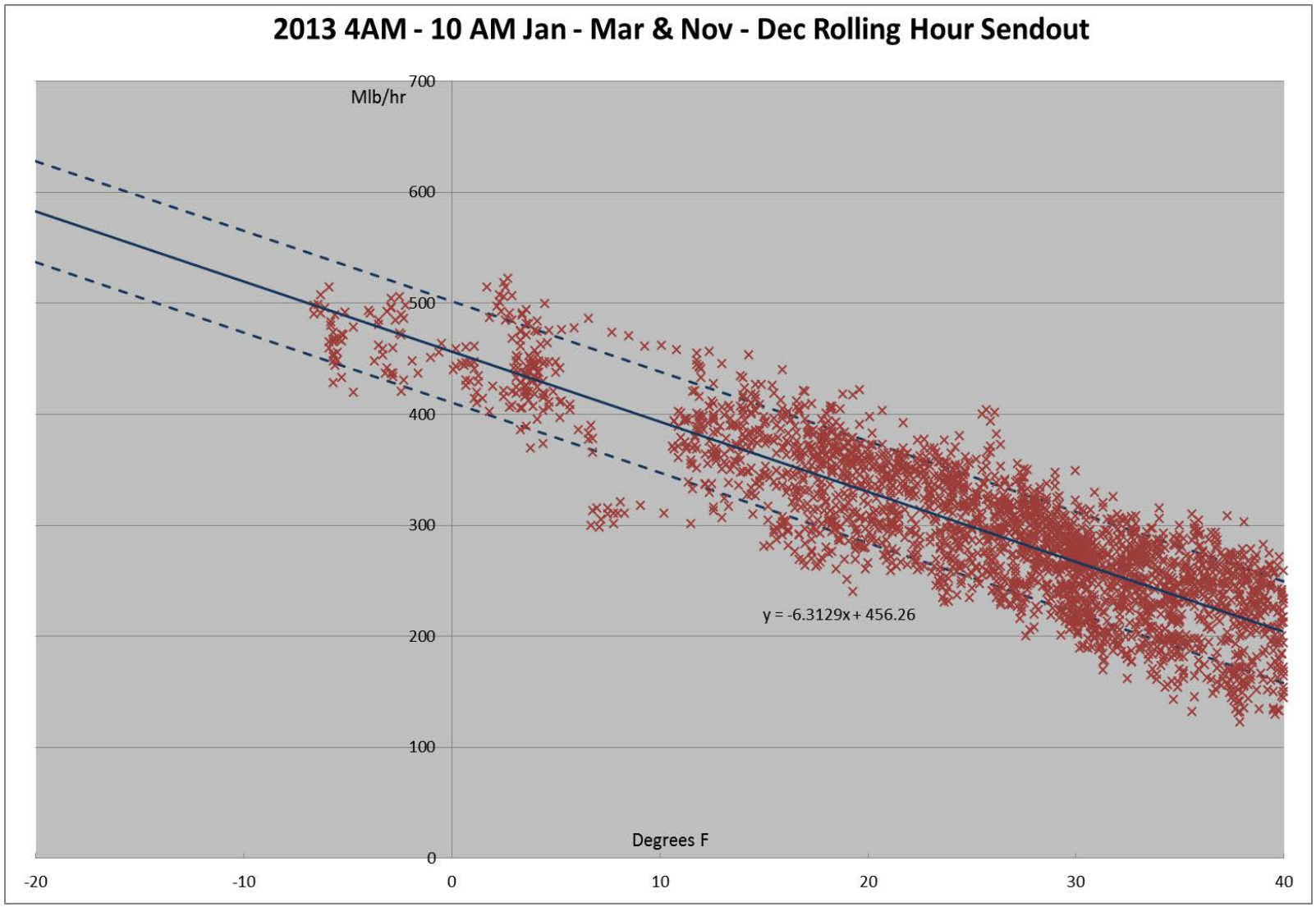
Stephen P. Kutska

Statement of Qualifications

I am currently the Development Manager for Public Service Company's Thermal Energy Department and I have held this position since 2003. I am also Thermal Energy's Project Leader for the Steam Resource Plan. I have a Bachelor of Science in Mechanical Engineering degree from the University of Missouri at Rolla and I am a Certified Energy Manager. I joined Xcel Energy in 2002 as a National Account Manager and transferred to the Thermal Energy business in 2003.

I started my energy career with General Electric as a Technical Sales Engineer for their Industrial Division. I held various positions within GE including Facility and Construction Manager, Market Development Manager, Regional Sales Manager, and National Account Executive.

In total have over thirty five years of experience as an engineer in the energy industry, with General Electric Company and Public Service Company of Colorado.


2013 4AM - 10 AM Jan - Mar & Nov - Dec Rolling Hour Sendout
Mlb/hr
700
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EXECUTIVE SUMMARY

Public Service Company of Colorado (PSCo) thermal requested assistance in siting a new steam plant near downtown Denver, Colorado. Zuni Station will cease electric operations in 2014 based upon an agreement between PSCo and the State of Colorado. The new facility will be located on the existing Zuni Station site. During the siting study, all alternative sites were compared to this location.

The following criteria were used to identify alternative locations:

- At least one acre,
- Within 500 feet of existing steam line under West 13th Avenue and Mariposa Street and Colfax Avenue
- Amount of work to clear and grade the site relative to other sites

Seventeen parcels, some of which were less than one acre but combined to create a site larger than one acre, were identified. (See Figure 1, below.) It was determined that only two parcels were superior to the existing site. The following hierarchical criteria were used to identify one site:

- Willing seller
- Purchase price

Two property owners were contacted after the final list of potential sites was created. Neither property owner was willing to sell their parcel because of imminent development plans.

Both property owners were contacted again in August 2014 as a follow up to the original siting study. The property owners or their representatives stated that neither property was for sale.

The statuses of other properties on the list were updated as well. Several of the properties had undergone development since first contact and it was determined that no further investigation was warranted.

The conclusion is that there are no superior parcels available within the study area.

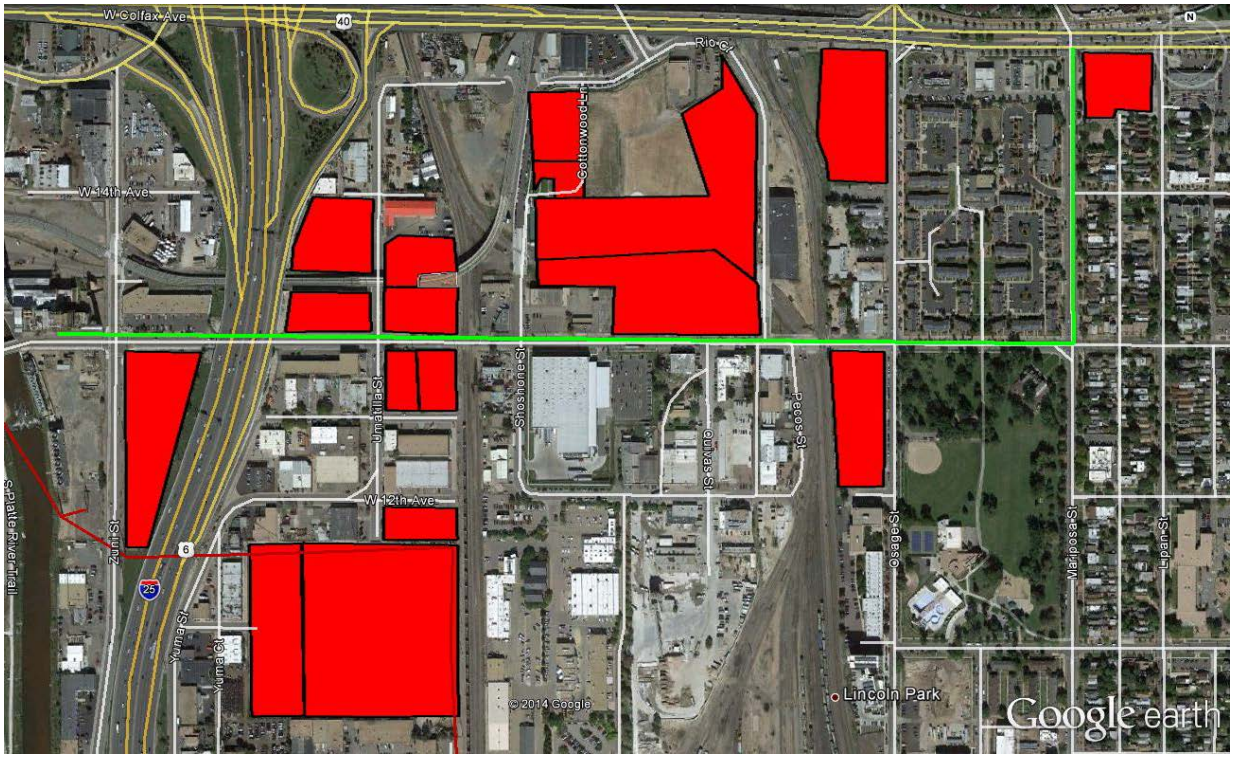


Figure 1 - Locations of parcels that met first criteria set

LEGEND
Parcel
Steam Line
Overhead Electric Line

INTRODUCTION

Zuni Station will cease electric operations in 2014 based upon an agreement between Public Service Company of Colorado and the State of Colorado. The Thermal Energy Department requested the Siting & Land Rights Department to assist in finding a suitable site for a new facility in 2011. Any suitable sites would be compared to the existing sites as part of a cost/benefit analysis.

SITE SELECTION PROCESS

The planning department of the Auraria Higher Education Center (AHEC), north of Colfax, was contacted about the possibility of building the facility on its campus. Meetings were held between Siting & Land Rights staff, Community Affairs staff and AHEC staff to discuss the availability of land to build a stand-alone facility or to incorporate the facility into a new academic or administration building. Although discussions were beneficial, no suitable location was identified, either due to construction schedule, space limitations or relocation of existing infrastructure such as gas or water mains.

Several parcels were identified in 2011 as potential candidates for location of a new steam plant that would replace Zuni steam plant.

The following criteria were used to identify locations:

- At least one acre
- Within 500 feet of existing steam line under West 13th Avenue and Mariposa Street and Colfax Avenue
- Site preparation constraints

The last criterion was not defined by a dollar amount, but rather it was a rough comparison between site preparation of potential sites and the Zuni site.

Seventeen parcels, some of which were less than one acre but combined to create a site larger than one acre, were identified. It was determined that only two parcels were superior to the existing site. The following hierarchical criteria were used to identify one site:

- Willing seller
- Purchase price based on Denver Property Assessment and Taxation System

The City and County of Denver allows public utility facilities in all zone districts, except two, as a Special Exception. This is a context-based permitting process during which the city can place conditions to mitigate certain characteristics of the facility, such as an increase in traffic, noise or odors. Although the underlying zoning was a criterion in the original investigation, it would have been used had two or more parcels been available for purchase. However, no available parcels were superior to the existing parcel so it is not used as a qualifier in this report.

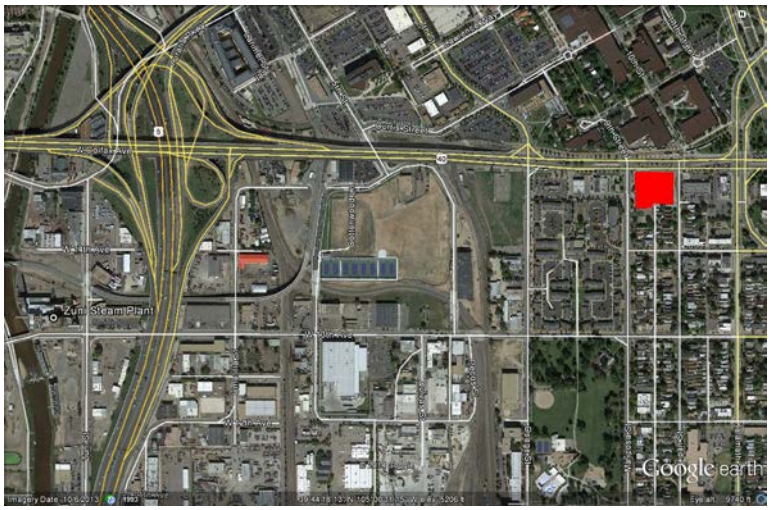
The parcels that were investigated and their current status are identified in the following table:

Suitable but Not For Sale	Site Preparation Constraints	Under Development	No Benefit Above Zuni Site
1408 W. Colfax Ave.	1860 West 12th Ave.	1700 W. Colfax Ave.	1250 Zuni St.
1100 W. Colfax Ave.	2300 West 11th Ave.	1390 Shoshone St.	1881 W. 13th Ave.
--	1100 Umatilla St.	1405 Cottonwood	1945 W. 13th Ave.
--	--	1635 W. 13th Ave.	1385 Umatilla St.
--	--	1205 Osage St.	1340 Umatilla St.
--	--	--	1300 Umatilla St.
--	--	--	1820 W. 13th Ave., 1864 W. 13th Ave.

The following are brief descriptions of each parcel or groups of parcels that were initially investigated. They are listed under the heading of their current status.

Suitable but Not For Sale

1100 West Colfax Avenue – 62,000 square feet. An inquiry was made into this parcel in 2011 because of its proximity to the steam line, its size and its proximity to the first customer on the steam line. The owners were not interested in selling the parcel. The owners were recently contacted and they are still not interested in selling the parcel.



1408 West Colfax Avenue – 144,734 square feet. An inquiry was made into this parcel in 2011 because of its proximity to the steam line, its size and its proximity to the first customer on the steam line. The owners were not interested in selling the parcel. The owners were recently contacted and they are still not interested in selling the parcel.

Site Preparation Constraints

1860 West 12th Avenue – 40,000 square feet. This parcel was not considered beyond initial look because of the existing improvements on the parcel and other parcels are closer to the existing steam line.

2300 West 11th Avenue – 56,000 square feet. This parcel was not considered beyond initial investigation because of the existing improvements on the parcel and other parcels are closer to the existing steam line.

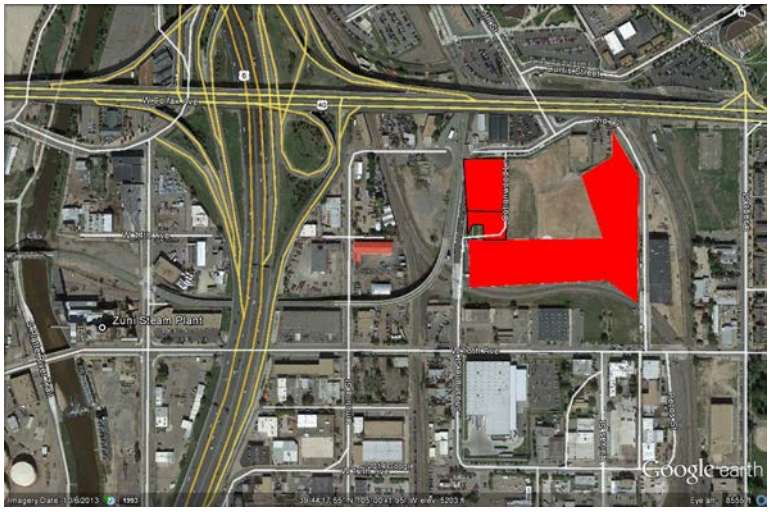
1100 Umatilla Street – 402,601 square feet. This parcel was not considered beyond initial investigation because of the existing improvements on the parcel and other parcels are closer to the existing steam line.

Under Development

1205 Osage Street – 98,693 square feet. An inquiry was made into this parcel in 2011 because of its proximity to the steam line, its size and its proximity to the first customer on the steam line. This parcel is not available. It was recently announced that Emily Griffith Technical College and an office development will occupy the parcel.

1635 West 13th Avenue – 197,793 square feet. This parcel is under development. Research was done on the parcel in 2011, but it was in the process of being subdivided. Part of it is under ownership of Regional Transportation District and used as a railroad track. Other parcels are used for industrial purposes. The larger parcel was not for sale when the initial investigation was conducted. Recent phone calls to the property owner have not been returned.

1700 West Colfax Avenue, 1390 Shoshone Street, 1405 Cottonwood –510,173 square feet. These parcels are not available. They are part of The Regency Athletic Field Complex at Metropolitan State University of Denver.



No Benefit Above Zuni Site

1250 Zuni Street – 112,458 square feet. This parcel was not considered beyond initial investigation because its proximity to Zuni Station offered no benefit above the existing location of the steam plant.

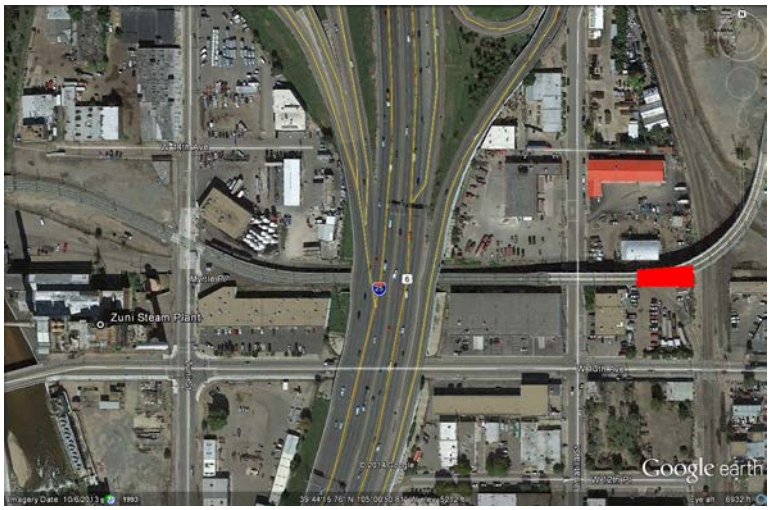
1881 West 13th Avenue – 53,100 square feet. This parcel was not considered beyond initial investigation because its proximity to Zuni Station offered no benefit above the existing location of the steam plant.

1945 West 13th Avenue – 53,000 square feet. This parcel was not considered beyond initial investigation because its proximity to Zuni Station offered no benefit above the existing location of the steam plant.

1385 Umatilla Street – 73,051 square feet. This parcel was not considered beyond initial investigation because its proximity to Zuni Station offered no benefit above the existing location of the steam plant.

1340 Umatilla Street – 36,943 square feet. This parcel was not considered beyond initial investigation because its proximity to Zuni Station offered no benefit above the existing location of the steam plant and its land area was not appropriate.

1300 Umatilla Street – This parcel was initially considered with 1340 Umatilla Street. It is now part of the W Line light rail corridor.



1820 West 13th Avenue, 1864 West 13th Avenue – These parcels would need to be combined to make a one-acre parcel. These parcels were not considered beyond initial investigation because their proximity to Zuni Station offered no benefit above the existing location of the steam plant.

No new properties were identified as part of this exercise.

This concludes the siting report.