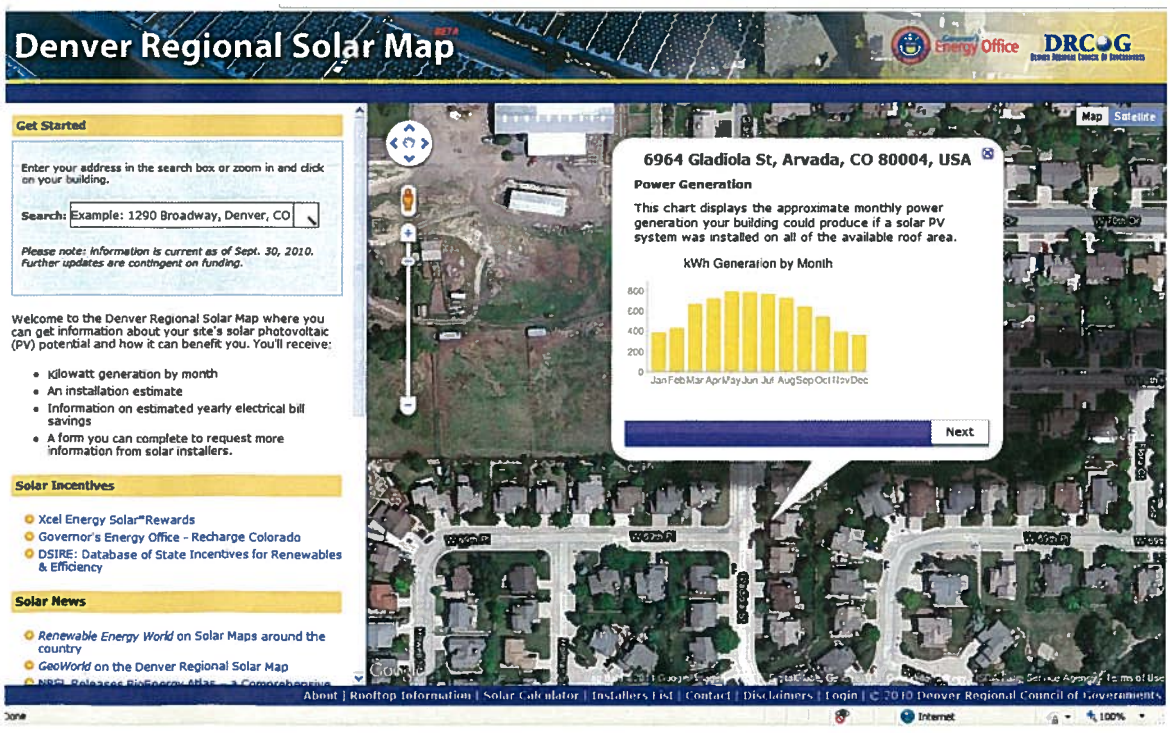
DRCOG submittal to NARC for General Achievement Award

Significance of the Project in Promoting and Exemplifying Regional Cooperation and Coordination:

The Denver Regional Solar Map – http://solarmap.drcog.org – is a new website the Denver Regional Council of Governments (DRCOG) developed with funding from a New Energy Economic Development grant provided through the Colorado Governor's Energy Office. DRCOG began developing the site in March 2010 and officially launched the site in December 2010. The site lets users easily locate their properties and explore the benefits of solar photovoltaic (PV) installation, while allowing solar installers login access to respond to consumer inquiries.

DRCOG has a long and proud 56-year history of collaborative regionalism. The 56 local governments we work with every day on myriad topics from infrastructure to quality of life issues are a testament to our region's commitment to working together to make the Denver metro area a great place to live.

This application to NARC for its General Achievement award represents a recent example of this collaboration. DRCOG respectfully and proudly submits this application for our Denver Regional Solar Map.



Significance of the Project in Promoting and Exemplifying Regional Excellence:

As a result of the Denver Regional Solar Map effort and the use of localized data, DRCOG strengthened existing partnerships and built new alliances with local governments and business partners interested in having solar calculations applicable to their jurisdictions, citizens and business community. Through the cooperation mechanism created, DRCOG's member governments and business partners are now able to increase the accuracy and richness of their building inventory and share that high-quality information throughout our region to improve the solar calculations and outcomes of future projects. The Denver Regional Solar Map builds on the region's cooperative history, while working to spur energy conservation and job creation.

Innovation in Concept or Approach:

The Denver Regional Solar Map project used an object-oriented software program to perform automated feature extraction from LiDAR (detailed terrain) data and regional aerial imagery. The LiDAR data was made available from the United States Geological Survey and was developed in partnership during the 2008 Democratic National Convention hosted in Denver. The aerial imagery was developed in 2008 as part of DRCOG's Denver Regional Aerial Photography Project, a consortium of approximately 50 local, regional, private, State and Federal partners. Every two years, the consortium acquires more than 5,000 square miles of high-resolution, 4-band aerial imagery at a cost of roughly $1 million.

The use of these two specialized datasets – regional LiDAR and aerial imagery - resulted in a detailed spatial database comprised of more than 800,000 building locations. In addition, a complex series of rules and technical processes helped to classify rooftop features and obstructions as impediments to solar installation. From this, usable rooftop square footage for solar installation was determined. Next, a complex solar calculation provides the PV potential for a building's usable roof area. The project team then leveraged a cutting-edge Web 2.0 framework by creating a portal allowing a user to understand the potential annual utility cost-savings and connecting users to local solar installers, who are members of the Colorado Solar Energy Industries Association (COSEIA), with the click of a couple buttons.

This application also provides a number of other services. It raises awareness about the possibilities for implementing renewable energy technology in the region and illustrates the benefits of doing so, thereby spurring energy conservation and job creation in the region. It specifically targets the growing sector of renewable energy solutions to help the Denver metro region reach sustainability goals set in Metro Vision, DRCOG's long-range regional plan.

Through this technology, DRCOG has brought together complex data and localized solar calculations to provide an interactive Web 2.0 portal that anyone, especially private or commercial building owners in the region, can use. Leveraging these Web 2.0 technologies to connect building owners with PV installers allows the tool to provide consumers the ability to quickly identify potential energy cost-savings and move forward to implementation.

DRCOG has created a cutting-edge and innovative Web 2.0 framework for delivery of detailed spatial building information and the ability to process on-the-fly calculations related to solar. The software environment that supports the application did not cost DRCOG a dime, which is important in these tough economic times. It is built on an open source application framework with a Google Maps API Web-based interface – the interface is simple-to-use and the general public is already familiar with using Google Maps so no training is necessary to use the site. The framework is scalable and has already met the demands of future application needs.

DRCOG will continue to build cooperation throughout the region as the LiDAR-derived footprints are being shared with local governments that do not have the capacity to develop this type of dataset individually. This project is the starting point to continue development of this data as well as providing the mechanism to improve the data over time. These aspects have not yet been fully realized.

The project has served as a proof of concept for other regional analysis tools and that DRCOG has the capacity to build and deliver such simple but highly effective public-facing Web-based tools.

Impact of Project on Region:

DRCOG expects the project to not only bolster adoption of renewable energy in the region, but also create jobs by connecting contractors to building owners. Installers are actively using the site to respond to consumer inquiries. Job creation numbers are pending. So far, 248 residential and commercial building owners have asked to be contacted by a local solar installer to learn more about solar potential and cost-savings for their buildings.

Involvement of Private and Civic Sectors:

The Denver Regional Solar Map provides a cost-effective method of establishing a building's solar potential. In the past this would have been achieved by engaging a contractor to perform a site visit and conduct a shadow analysis, or through manual, "heads up digitizing" of aerial imagery. Both the above methods are significantly more expensive and time consuming. Generally they would have been performed on an as-needed basis.

We've provided an easy-to-use tool to every household and business in the region interested in considering solar PV energy production. The tool makes it simple and free for anyone to do the math, get an estimate of the energy cost-savings and choose to be contacted by an expert installer near them. From COSEIA's perspective, this tool has the potential to be a great sales catalyst for their membership and the solar industry as a whole. Additionally, the Denver Regional Solar Map supports a state focus on developing and supporting a New Energy Economy.

Originality, Duplicability and Quality of the Project:

So far, the Denver Regional Solar Mapping application has received more than 30,000 page views and 13,000 unique visits since its inception. In the first month, it consumed over 4.5 Gigabytes of bandwidth to deliver the site's information to the public. The local press has written numerous stories (see attached articles) about the Denver Regional Solar Map and DRCOG was recently awarded the Geospatial Information Technology Association's 2011 Excellence Award in Dallas, Texas. The quality of the technical base has already been re-used in another important DRCOG application for a new Transit-oriented Development Real Estate mapping website creating a significant budget and time-saving effort for this DRCOG program. DRCOG is willing to share this technical base and provide feedback to any regional agencies interested in deploying a similar application to benefit their regions.