



Plains CO<sub>2</sub> Reduction (PCOR) Partnership  
Energy & Environmental Research Center (EERC)

## PUBLIC SITE UPDATES

### Plains CO<sub>2</sub> Reduction (PCOR) Partnership Phase III Task 2 – Deliverable D13

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DOE Cooperative Agreement No. DE-FC26-05NT42592

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## **ACKNOWLEDGMENT**

This material is based upon work supported by DOE NETL under Award Number DE-FC26-05NT42592.

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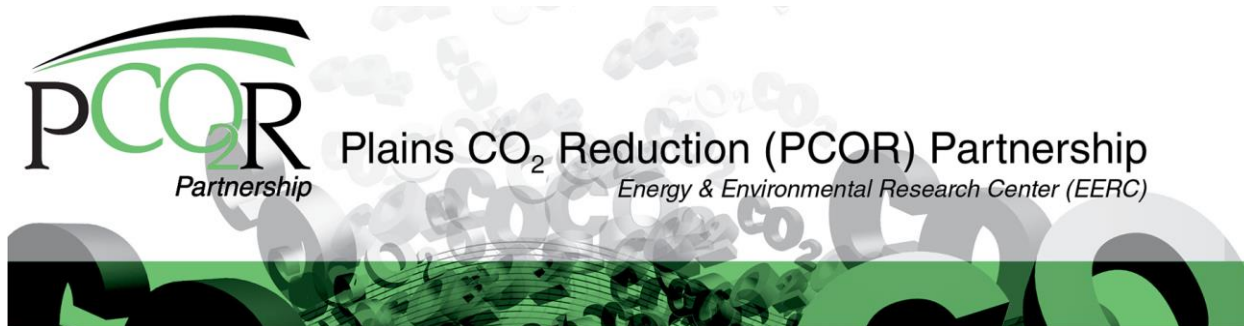
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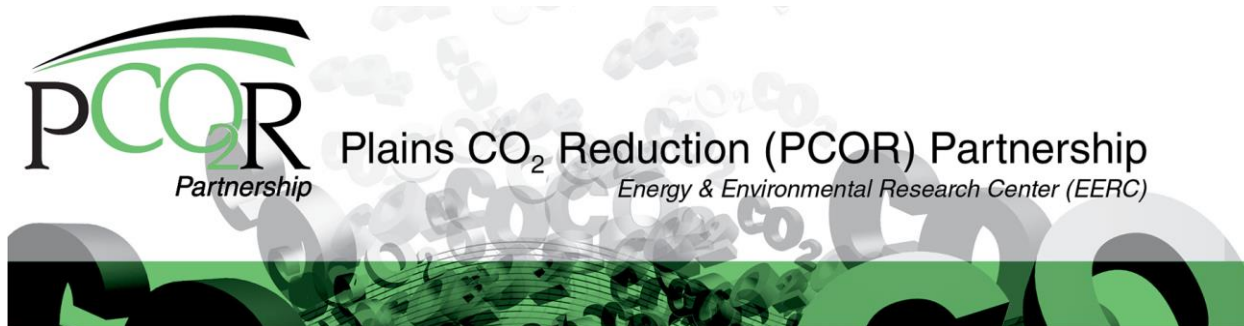
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## **PUBLIC SITE UPDATES**

### **EXECUTIVE SUMMARY**

This report summarizes the 2016 contractual update to the Plains CO<sub>2</sub> Reduction (PCOR) Partnership public Web site for the period of July 1, 2014, through June 30, 2016. The central focus of this D13 consisted of an updated look to the Web site. This work features a black background, larger text, print-friendly pages, and shorter names on the left navigation for a more user-friendly experience. To make the public Web site more search-friendly, search engine optimization techniques were implemented in new and existing PDFs. In addition, several new Web pages were added, including Technical Publications, Technical Posters, Permanent Downhole Monitoring, and Outreach Posters. Significant content and/or appearance modifications were made to nine existing Web pages, the Home page being the most pronounced. Minimal updates were made to eleven other pages. A new section called Household Energy and Carbon Footprint replaced the Reduce Your Carbon Footprint page. All changes were approved piecemeal throughout the reporting period. Thus, this report does not include a request for approval of any draft changes. The PCOR Partnership public Web site has been online since early 2004, and the next contractual update is due in January 2018.



## INTRODUCTION

The U.S. Department of Energy (DOE) Office of Fossil Energy National Energy Technology Laboratory's Regional Carbon Sequestration Partnership (RCSP) Program requires that each regional partnership have a public Web site to inform and educate the general public regarding sequestration in general and regional RCSP activities. The Plains CO<sub>2</sub> Reduction (PCOR) Partnership's public Web site has been live since the second quarter of 2004, and the PCOR Partnership outreach team is continuously striving to keep the public Web site content up to date, characterize the attributes of Web site use, and provide content in a valuable and understandable format to the general public. The PCOR Partnership is led by the Energy & Environmental Research Center (EERC) at the University of North Dakota. The PCOR Partnership public Web site team members include Dan Daly (Outreach and Education task leader), Charlene Crocker, and Janet Crossland. The Web site update was supported by the Programming, Communications, and Graphics groups at the EERC as well as other PCOR Partnership personnel. The most recent Web site update was provided July 31, 2014.

This report comprises activities completed and approved in batches throughout the period of July 1, 2014, through June 30, 2016. Work on the Web site was implemented in four areas as follows:

- Site improvements
- Search engine optimization
- New Web pages
- Content updates for existing Web pages

## SITE IMPROVEMENTS

During the reporting period, Web site improvements comprised both behind the scenes functional improvements and visual changes to the pages. The latter included a new Web site appearance featuring a black background, larger text, print-friendly pages, and revisions to the left navigation menu for a more streamline look. Several new Web pages were added, including Technical Publications, Technical Posters, Permanent Downhole Monitoring, and Outreach Posters. Significant content and/or appearance modifications were made to nine existing Web pages, including the Home page, Meet the PCOR Partnership Team, Greenhouse Effect, Land Resources, Regulations and Permitting, CO<sub>2</sub> Sequestration Projects, Resources, News Archives, Documentaries, and the Site Map page. Eleven additional Web pages received minor updates: About the Partnership; Become a Partner; PCOR Partnership Partners; Climate, CO<sub>2</sub>,

Sequestration; Regional Storage Potential; Fact Sheets; Video Clip Library; Links; Educators; Contact Us; and the Request Information form. All of these changes were approved by the DOE National Energy Technology Laboratory (NETL) program manager piecemeal through the update period in order to keep the site as current as possible. The date when changes were added to the live site are noted in the information that follows.

## SEARCH ENGINE OPTIMIZATION

During the previous D13 reporting period, a major effort was undertaken to develop and maintain a consistent tracking protocol for the public Web site as part of a standard operating procedure (SOP). The SOP was updated during this reporting period and is attached as Appendix A. The implementation of Google Analytics (GA) enables collection of background data for the public Web site and continues to deliver useful information on Web site activity (e.g., number of visitors, content being viewed, how visitors navigate through the Web site, etc.). The next step in fine-tuning the public Web site is applying search engine optimization (SEO) techniques, which create opportunities to increase Web site traffic.

SEO is a broad term used to describe all methods used to ensure a Web site and its contents are visible in search engine results. “SEO encompasses both the technical and creative elements required to improve rankings, drive traffic, and increase awareness in search engines” ([moz.com/beginners-guide-to-seo/growing-popularity-and-links](http://moz.com/beginners-guide-to-seo/growing-popularity-and-links)). As the majority of the PCOR Partnership public Web site traffic originates from search engines (averaging 84% over the last 2 years), it is important to optimize search traffic with properly implemented SEO techniques to assist visitors in finding the content they are seeking. The goal is for our Web site content to rank high (top 10) in search engine results. SEO must be executed correctly in order for the search engines to produce results that include content from the PCOR Partnership public Web site on the first page of search results.

The Task 2 team performed an overall assessment of the public Web site to evaluate where SEO would be the most beneficial. The results indicated that the content performing the poorest (low number of visits) was the Portable Document Format (PDF) files. Several steps were implemented to improve visibility of PCOR Partnership Web PDF documents in search engine results:

- **PDF file names were amended.** All PDFs were renamed to include the key words in the title. These words helped describe the content of the PDF. Because the name changed, so too did the URL. Search engines display the page URL as part of the search results, and this can aid in directing visitors to the Web site. Hyphens were inserted between words so that search engines would recognize and search each word, and file name length was limited to a max of 70 characters.
- **Metadata were added to all PDFs.** Each PDF document contains properties (i.e., searchable elements such keywords) which provide additional information for search engines to catalog.



- **PDF content was converted to text-based.** This procedure allows search engines to index the content and make it searchable.

A section detailing the protocol to add SEO features to public Web site PDFs has been incorporated into the updated SOP in Appendix A.

## NEW WEB PAGES

### Technical Publications

A new section has been added to the Web site. The Technical Publications section provides public access to technical materials on terrestrial and geologic sequestration prepared by the PCOR Partnership. The new landing page shown in Figure 1 provides access to two new Web pages: Permanent Downhole Monitoring and Technical Posters; and one existing Web page: Scientific Topical Reports (renamed Technical Reports). This landing page went live on December 1, 2015.



Figure 1. New Technical Publications page.  
Existing link: [undeerc.org/PCOR/technicalpublications/](http://undeerc.org/PCOR/technicalpublications/).

## Permanent Downhole Monitoring (PDM) Page

The PDM Web page was originally created for the Partners Only Web site published on February 4, 2014. The Web page, shown in Figure 2, was modified and added to the public Web site on October 10, 2014. The page provides a brief description, a link to the 20-minute video short *Installing a Casing-Conveyed Permanent Downhole Monitoring System*, and a link to the Web site request form for requesting a free copy of the PDM video. The video was also added to the Video Clip Library under the Topics tab Oil Production and under the By Clip Title tab. The DVD of the video short was added to the list of items to request on the Request Information page. The page was added to the Technical Publications section on December 1, 2015.



Figure 2. New PDM Web page.  
Existing link: [www.undeerc.org/pcor/Documentary/PDM.aspx](http://www.undeerc.org/pcor/Documentary/PDM.aspx).

## Technical Posters Page

The Technical Posters page shown in Figure 3 offers viewing and downloading access to 68 PCOR Partnership posters presented at scientific conferences and meetings since 2010. Images of the posters are arranged into 18 categories using a collapsible accordion interface, which reveals three posters at a time when a category is selected (single left clicked). Poster titles and conference information are viewable when the cursor hovers over the image. Posters are organized in each slider from newest to oldest. This page went live and was added to the Technical Publications landing page on February 23, 2016.

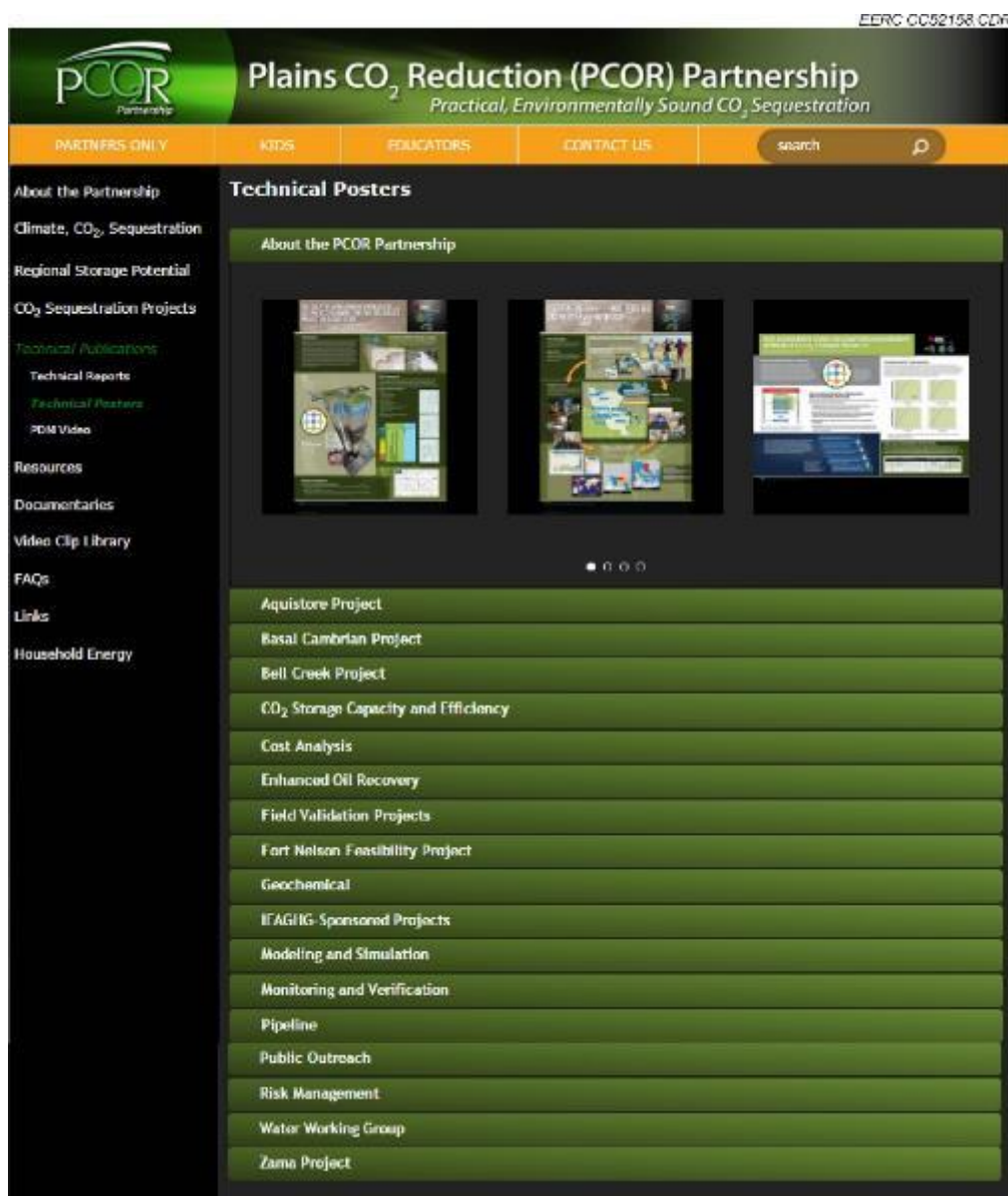


Figure 3. New *Technical Posters* page.  
Existing link: [undeerc.org/pcor/technicalpublications/TechnicalPosters.aspx](http://undeerc.org/pcor/technicalpublications/TechnicalPosters.aspx).



## Outreach Posters Page

The new Outreach Posters Web page shown in Figure 4 provides direct access to the general PCOR Partnership poster developed for public outreach (D24) as well as the three project-specific general audience posters (D25 Bell Creek, D26 Fort Nelson, and D95 Aquistore). The general poster, “Reducing Greenhouse Gas Emissions: Energy with a Smaller Carbon Footprint,” was not previously available on the Web site whereas the project-specific posters are concurrently located on their respective  $CO_2$  Sequestration Project Web pages. All four posters can be viewed online and downloaded from the Outreach Poster page, which is accessed via the left navigation under the Resources landing page. This page went live on December 1, 2015.



Figure 4. New Outreach Posters Web page.  
Existing link: [undeerc.org/pcor/NewsAndPubs/posters.aspx](http://undeerc.org/pcor/NewsAndPubs/posters.aspx).

## Household Energy and Carbon Footprint Section

During this period, the Carbon Footprint page was replaced by a new section of five pages relating energy consumption to household carbon footprint. The section was developed with funding from the North Dakota Department of Commerce (NDDC) Office of Renewable Energy and Energy Efficiency and DOE funding through the NDDC Division of Community Services. A brief description of the new pages is provided below. A print-friendly version of the Web content is included in Appendix B. The Household Energy and Carbon Footprint Web pages went live on December 3, 2015, and were linked to the PCOR Partnership Web site home page on December 11, 2015.

The section comprises a landing page introducing the topic of energy and carbon footprint, three pages focused on household energy (i.e., Household Electricity, Home Fuels, and Gasoline and Diesel), and one page focused on calculating the household carbon footprint from energy. Presented in Figure 5, the landing page contains three video clips from the PCOR Partnership documentary *Global Energy and Carbon – Tracking Our Footprint* as well as links to the other pages of the section. Each page focused on household energy contains text and graphics to move the user along the energy and carbon pathway from energy source, through processing or generation, to transportation, and finally to the household consumption and associated carbon footprint. The calculator page comprises four sections. First, the Example Household tab allows the comparison of a sample footprint and energy use for a sample household. The Estimate Your Carbon Footprint tab allows users to calculate their own household footprint using one or more of three existing calculators. The What You Can Do tab gives suggestions for actions to reduce emissions and provides annotated links for regional sources of additional information. The What Society Can Do tab addresses the fact that households exist within a larger construct of practices, products, and infrastructure that restricts what they can accomplish on their own with respect to carbon stewardship.

Information and data from DOE Energy Information Administration and other resources are cited, with links where appropriate. GA script was embedded within each page, video, and PDF to track visits and other visitor metrics.



Figure 5. Landing page for the new Household Energy and Carbon section of the Web site.  
Existing link: [undeerc.org/pcor/household-energy/](http://undeerc.org/pcor/household-energy/).

## CONTENT UPDATES FOR WEB PAGES

### Home Page

Several elements comprise the changes to the home page (Figure 6). In addition to the new black background, the home page features less text, more images, and more user interactivity. Large photos and buttons have been added to guide users to new Web pages or pages the Outreach Team would like to improve Web traffic.

The PCOR Partnership CO<sub>2</sub> Sequestration Projects map has been updated and now features prominently at the top of the page. Below the left navigation are image-based links to the *PCOR Partnership Atlas*, 4th edition revised and the 2016 PCOR Partnership annual meeting (which is updated yearly). The most recent PCOR Partnership documentary *Global Energy and Carbon: Tracking Our Footprint* is featured immediately below the projects map. Clicking on the image opens an overlaid page containing video playing controls and the documentary. To increase Web traffic to existing Web pages, four shortcut buttons were added at the bottom right of the page. Web pages currently linked to these buttons include: Fact Sheets, Video Clip Library, What Is CO<sub>2</sub> Sequestration? and Technical Publications. Changes implemented on the existing public Web site home page went live on December 1, 2015.





Figure 6. Updated home page.  
Existing link: [www.undeerc.org/PCOR](http://www.undeerc.org/PCOR).

## About the Partnership Page

Updates to About the Partnership page, shown in Figure 7 included updating the Phase III fact sheet under “More on Phase III” and renaming the Press Releases and Articles page to News Archives. Updates were implemented on May 16, 2016, and December 1, 2015, respectively.



Figure 7. Updated About the Partnership page.  
Existing link: [www.undeerc.org/PCOR/About/](http://www.undeerc.org/PCOR/About/).



## Become a Partner Page

Updates to the Become a Partner page shown in Figure 8 included updating the PCOR Partnership Annual Meeting photo and updating job titles. Both updates were implemented on December 1, 2015.

EERC CC52184.CDR

**PCOR Partnership**  
Plains CO<sub>2</sub> Reduction (PCOR) Partnership  
Practical, Environmentally Sound CO<sub>2</sub> Sequestration

**Become a Partner**

The PCOR Partnership is the nexus for carbon dioxide (CO<sub>2</sub>) reduction activities in the North-Central Interior of North America. The PCOR Partnership provides a forum where government agencies, industry, engineering firms, associations and nonprofit organizations, and universities can come together, share knowledge and build the collaborations needed for effective, safe CO<sub>2</sub> sequestration projects. The PCOR Partnership's data management systems and technical reports provide data, information and assessments to partners. The PCOR Partnership's outreach tool kit provides products that can help tell the sequestration story in the classroom, town hall, or boardroom. Annual meetings, monthly updates, and workshops help keep partners informed and up to date regarding technologies, regulations, and projects.

The PCOR Partnership is one of seven regional partnerships under the U.S. Department of Energy's (DOE's) [Regional Carbon Sequestration Partnership \(RCSP\) Program](#), which represents more than 350 organizations in 47 states, 11 new Indian nations, and four Canadian provinces.

"Joining the Plains [CO<sub>2</sub> Reduction] Partnership is an approach that will dovetail nicely with our own carbon management policy and other carbon sequestration projects."  
— Xcel Energy Chairman and CEO Wayne Brundti

Attendees at the PCOR Partnership 2015 Annual Meeting, Chicago, Illinois

**Partner Benefits**

- Timely access to developments and lessons learned at the regional and national level with regard to sequestration and other evolving strategies to reduce CO<sub>2</sub> emissions.
- Access to "Partners Only" data and information on regional CO<sub>2</sub> sources, sequestration options, regulatory assessments, environmental issue assessments, and project modeling.
- Access to the PCOR Partnership Decision Support System (DSS), a Web-based geographic information system that contains detailed information with regard to the major stationary CO<sub>2</sub> sources and sinks in the region.
- Regular contact with others in the region and at the national level who have a stake in developing efficient and environmentally sound options for sequestration.
- Input on improvements to the PCOR Partnership DSS.
- Immediate access to all reports and information generated.
- Information on events, conferences, and workshops.

**Examples of Partner Contributions**

- Sharing data, capabilities, and/or expertise
- Providing matching funds
- Involvement in advisory and outreach activities

**For more information about becoming a partner, contact:**

Charles Goreski Director of Subsurface R&D PCOR Partnership Program Manager (781) 777-5355 <a href="mailto:cgoreski@undeerc.org">cgoreski@undeerc.org</a>	Ed Steadman Vice President for Research (781) 777-5279 <a href="mailto:esteadman@undeerc.org">esteadman@undeerc.org</a>	John Harju Vice President for Strategic Partnerships (781) 777-5157 <a href="mailto:jharju@undeerc.org">jharju@undeerc.org</a>
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Figure 8. Updated Become a Partner page.  
Existing link: [www.undeerc.org/pcor/About/BecomeAPartner.aspx](http://www.undeerc.org/pcor/About/BecomeAPartner.aspx).

## Meet the PCOR Partnership Team Page

Several updates occurred to the Meet the PCOR Partnership Team Web page shown in Figure 9. The entire Validation Projects section was removed because all projects have been completed. Key personnel changes occurred in several sections: Large-Scale Commercial Projects, Permitting and Risk Management, and Partner Relations. These changes were completed and went live on May 26, 2015. Subsequent to organization-wide changes at the EERC, job titles for all personnel on this page were updated on December 1, 2015.

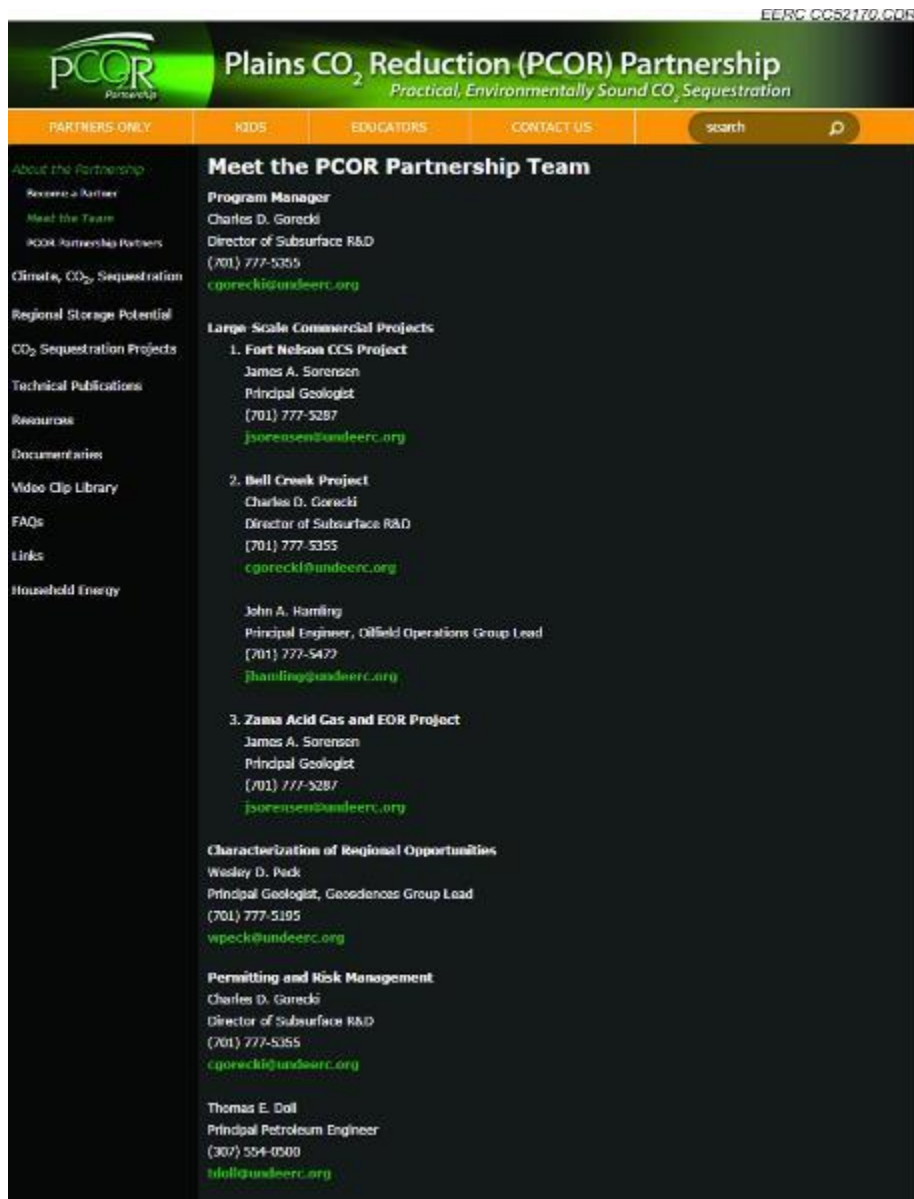


Figure 9. Updated Meet the PCOR Partnership Team page.  
Existing link: <http://undeerc.org/PCOR/About/Team.aspx>.

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Figure 9 (continued). Updated Meet the PCOR Partnership Team page.  
Existing link: <http://undeerc.org/PCOR/About/Team.aspx>.

## PCOR Partnership Partners Page

Since the last D13 update, eight new partners have been added to the partner's page. Listed alphabetically, they are Ballantyne Oil, LLC; BillyJack Consulting Inc.; The CETER Group; GE Global Research; MBI Energy Services; Petro Harvester Oil & Gas, LLC; Red Trail Energy LLC; and Tundra Oil & Gas. These updates are shown in Figure 10 below. This page was last updated on June 1, 2016.

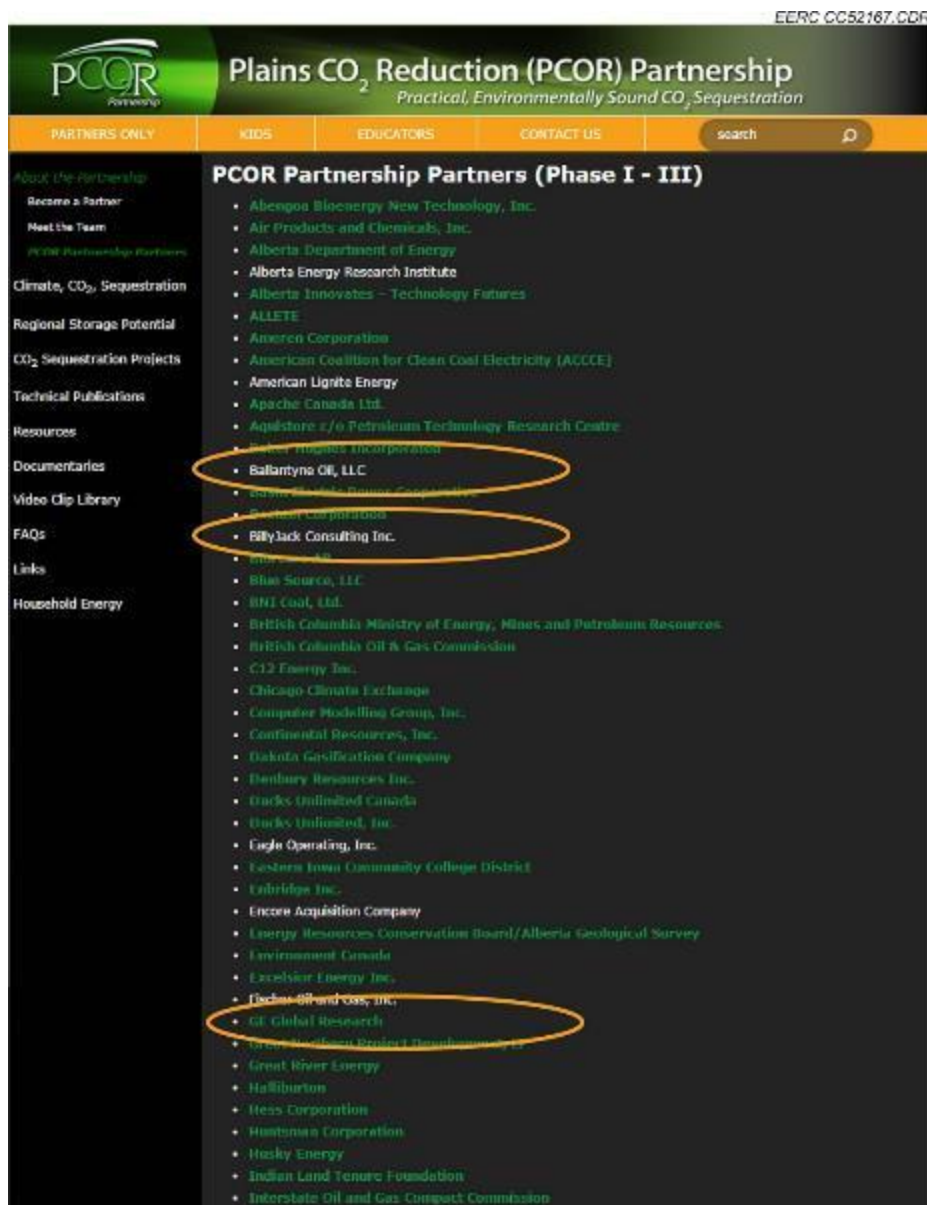


Figure 10. New partners added to the PCOR Partnership Partners page.  
Existing link: [undeerc.org/PCOR/About/Partners.aspx](http://undeerc.org/PCOR/About/Partners.aspx).



- Iowa Department of Natural Resources - Geological Survey
- Idewitt Mining Group
- Lignite Energy Council
- Manitoba Geological Survey
- Manitoba Hydro
- Metathane on Company
- MBI Energy Services
- Metcalf Energy Advisors Inc.
- MEG Energy Corporation
- Melzer Consulting
- Minnesota Pollution Control Agency
- Minnesota Power
- Minnesota Power Cooperative, Inc.
- Missouri Department of Natural Resources
- Missouri River Energy Services
- Montana Department of Environmental Quality
- Montana Public Service Commission
- Montana-Dakota Utilities Co.
- Murco Petroleum Corporation
- Natural Resources Canada
- Nebraska Public Power District
- Nexant, Inc.
- North American Coal Corporation
- North Dakota Department of Commerce Division of Community Services
- North Dakota Department of Health
- North Dakota Geological Survey
- North Dakota Industrial Commission Department of Mineral Resources Oil and Gas Division
- North Dakota Industrial Commission Lignite Research, Development and Marketing Program
- North Dakota Industrial Commission Oil and Gas Research Council
- North Dakota Natural Resources Trust
- North Dakota Petroleum Council
- North Dakota Pipeline Authority
- North Dakota State University
- Omaha Public Power District
- Otter Tail Power Company
- Oxand Risk & Project Management Solutions
- PacifiCorp Energy
- Petro Harvestar Oil & Gas, LLC
- Petroleum Technology Research Center
- Petroleum Technology Transfer Council
- Pinnacle, a Halliburton Service
- Prairie Public Broadcasting
- Pratt & Whitney Rocketdyne, Inc.
- Procalix, Inc.
- Progress Energy Services, Inc.
- Red Trail Energy, LLC
- Resource Canada Ltd. - 608 Petroleum Engineering Inc.
- Saskatchewan Energy and Resources
- SaskPower
- Schlumberger Carbon Services
- Sejong University
- Shell Canada Energy
- Spectra Energy
- Strategic West Energy Ltd.
- Suncor Energy Inc.
- TAQA North Ltd.
- Tesoro Refinery (Minden)
- TFC Geological Products and Services
- The CETER Group, Inc.
- Tundra Oil & Gas Partnership
- U.S. Department of Energy National Energy Technology Laboratory
- U.S. Geological Survey Northern Prairie Wildlife Research Center
- University of Alberta
- University of North Dakota
- University of Regina
- WBI Energy, Inc.
- Weatherford Advanced Geotechnology
- Western Governors' Association
- Westmoreland Coal Co.
- Wisconsin Department of Agriculture, Trade and Consumer Protection
- Wyoming Office of State Lands and Investments
- Xcel Energy

Figure 10 (continued). New partners added to the PCOR Partnership Partners page.  
Existing link: [undeerc.org/PCOR/About/Partners.aspx](http://undeerc.org/PCOR/About/Partners.aspx).

## Climate, CO<sub>2</sub>, Sequestration Page

Originally named Carbon Sequestration, Climate Change, and CO<sub>2</sub>, this landing page was renamed Climate, CO<sub>2</sub>, Sequestration to simplify the navigation menu. Several links were eliminated for the current version of the page, shown in Figure 11. These include an external link to the NETL video short *An Introduction to Carbon Capture and Sequestration* that has been removed from the NETL Web site (removed on May 26, 2015) and pages that are now accessible from the left navigation menu following: Carbon Capture and Storage (CCS) and What Is CO<sub>2</sub> Sequestration? Lastly, the CO<sub>2</sub> Wedges–Cutting Human CO<sub>2</sub> Emissions Down to Size bullet/hyperlink was renamed to Options to Reduce CO<sub>2</sub> for user clarity. These changes went live on December 1, 2015.

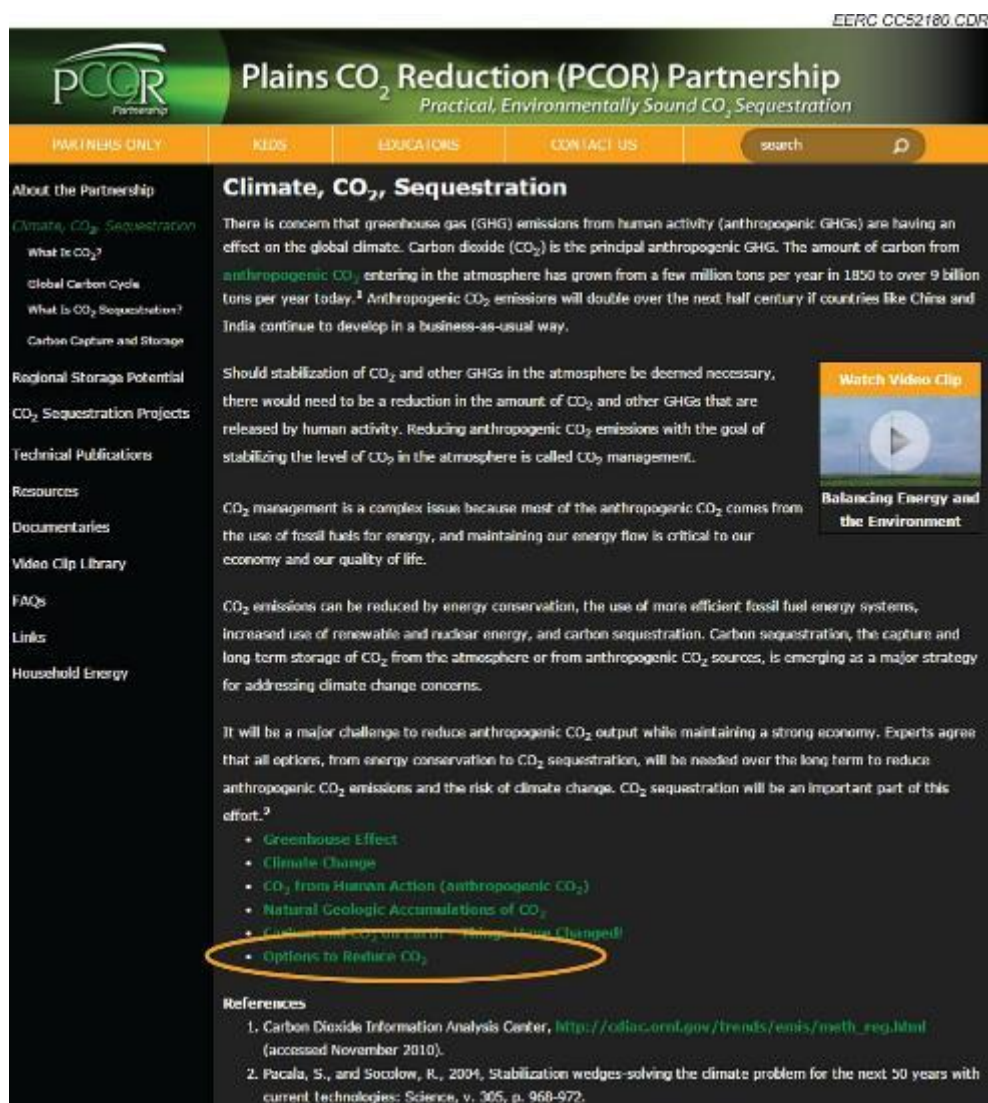


Figure 11. Updated Climate, CO<sub>2</sub>, Sequestration page.  
Existing link: [undeerc.org/PCOR/Sequestration/](http://undeerc.org/PCOR/Sequestration/).



## Greenhouse Effect Page

The Greenhouse Effect page, shown in Figure 12, underwent several changes. Content was updated and simplified for Web users and the reference was updated. Changes went live on December 1, 2015.

EERC CC52175.CDR

**PCOR Partnership**  
**Plains CO<sub>2</sub> Reduction (PCOR) Partnership**  
*Practical, Environmentally Sound CO<sub>2</sub> Sequestration*

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**About the Partnership**  
*Climate, CO<sub>2</sub>, Sequestration*  
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What Is CO<sub>2</sub> Sequestration?  
Carbon Capture and Storage  
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### Greenhouse Effect

Sunlight passes through the atmosphere and warms Earth's surface. As the heat is radiated from Earth's surface into space, greenhouse gases (GHGs), such as water vapor, carbon dioxide, and other gases, trap some of the heat, slowing its departure and sending some heat back to the surface. Molecules of GHG are continuously absorbing and releasing heat, indirectly warming the surrounding atmosphere and Earth's surface as the heat remains on the planet longer.

Currently, the natural greenhouse effect is maintaining an average annual temperature of about 59°F (15°C) at the surface of Earth. Without the greenhouse effect, the average annual temperature at Earth's surface would be around 0°F (-18°C)!<sup>1</sup>

The intensity of the greenhouse effect remains steady as long as the conditions remain about the same. Changes in the amounts and types of GHGs in the atmosphere, conditions at Earth's surface, and the amount of energy reaching Earth from the Sun could increase or decrease the greenhouse effect, rendering Earth warmer or colder, respectively, than today.

**References:**  
1. [www.physicalgeography.net/fundamentals/7h.html](http://www.physicalgeography.net/fundamentals/7h.html) (accessed July 16, 2015).

**Watch Video Clip**  
**CO<sub>2</sub> and the Greenhouse Effect**

Figure 12. Content updated in Greenhouse Effect page.  
Existing link: [undeerc.org/PCOR/Sequestration/greenhouseeffect.aspx](http://undeerc.org/PCOR/Sequestration/greenhouseeffect.aspx).

## Regional Storage Potential Page

The Web page CO<sub>2</sub> and Storage in the Region was renamed Regional Storage Potential to better describe page content. Presented in Figure 13, this change went live on December 1, 2015.

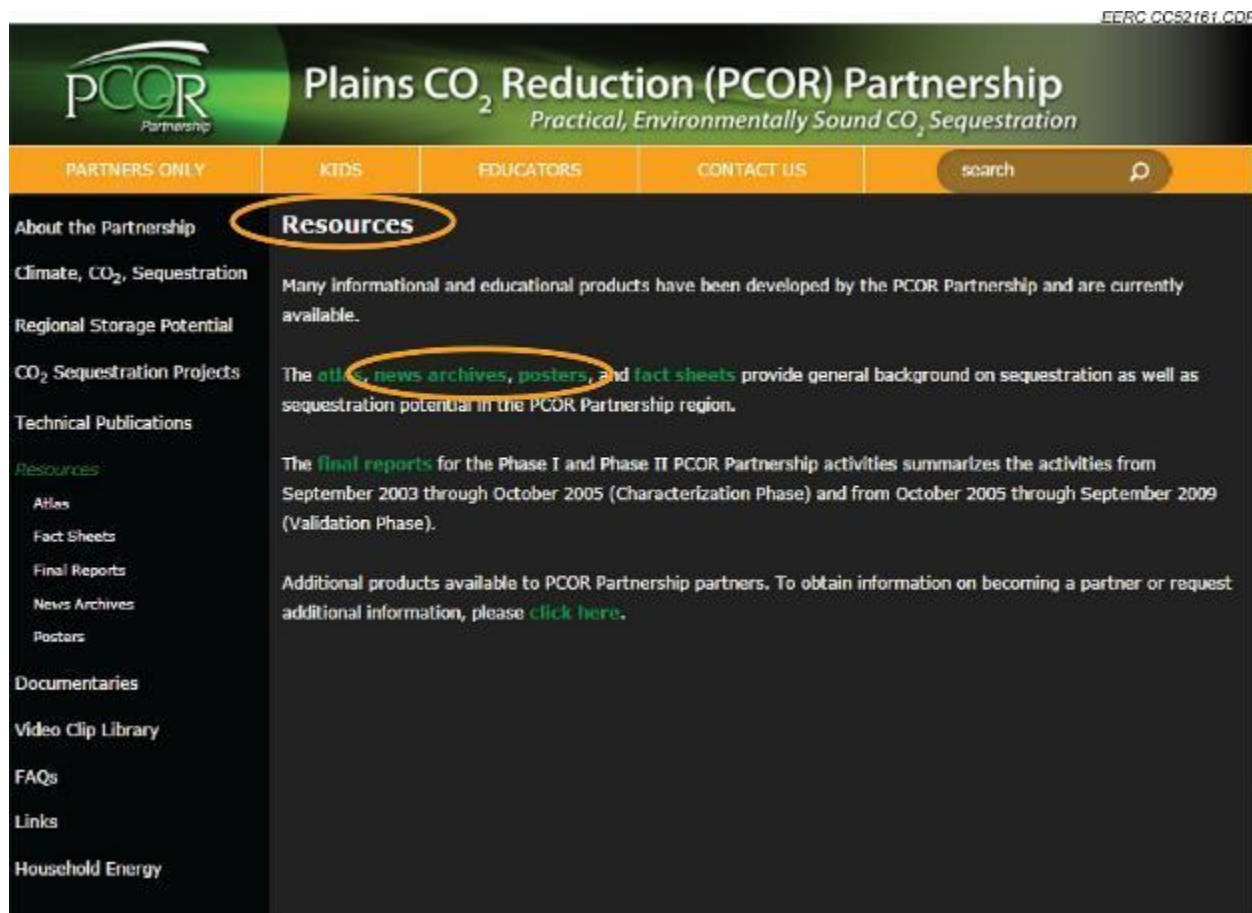


Figure 13. Renamed Regional Storage Potential page.  
Existing link: [undeerc.org/PCOR/Region/](http://undeerc.org/PCOR/Region/).

## Land Resources Page

Content on the Land Resources page, shown in Figure 14, was updated and simplified. The image size was also increased to improve readability and visual interest. The changes went live on December 1, 2015.

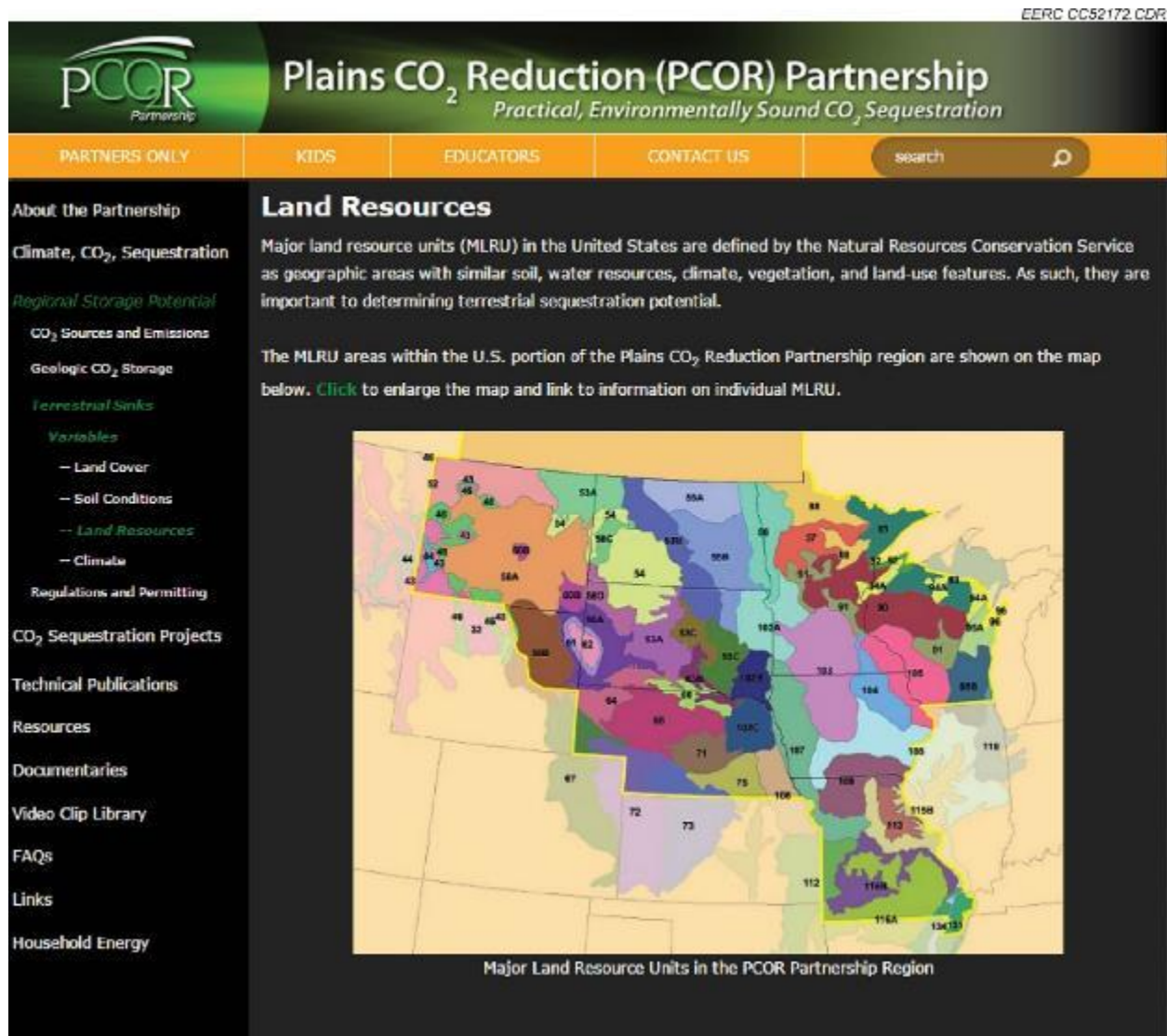


Figure 14. Updated Land Resources page.  
Existing link: [undeerc.org/pcor/Region/Terrestrial/LandResources.aspx](http://undeerc.org/pcor/Region/Terrestrial/LandResources.aspx).

## Regulations and Permitting Page

The Web page Regulating and Permitting was renamed Regulations and Permitting. Presented in Figure 15, the page includes updated text and PDF elements. Under the Federal Regulations section, both the United States and Canada PDFs were updated. A new interactive map (in the same style as the home page project map) allows Web users to hover over a state or province to see current CCS regulations. A PDF of the state and province CCS regulations was created for user convenience. Updates for this page went live on December 1, 2015.

EERC CC52163.GDR

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**CCS Regulations and Permitting**

Carbon capture and storage (CCS) projects<sup>+</sup> are subject to regulation at the source of CO<sub>2</sub>, during transportation to the injection site, and at the site, whether for enhanced oil recovery (EOR) projects or long-term geologic storage of anthropogenic CO<sub>2</sub>. Before any physical work can begin, federal and state/provincial regulatory requirements must be met, the public must have an opportunity to comment, and any necessary permits must have been issued.

**Federal Regulations**

- [United States \(34kb\) pdf](#)
- [Canada \(23kb\) pdf](#)

**State and Provincial Regulations**

Hover over a location below to view information on laws and regulations specifically addressing CCS.

[State and Provincial CCS Regulations \(22kb\) pdf](#)

\*All information is current as of July 20, 2015.

Figure 15. Updated Regulations and Permitting page.  
Existing link: [undeerc.org/pcor/Region/Regulation.aspx](http://undeerc.org/pcor/Region/Regulation.aspx).



## **CO<sub>2</sub> Sequestration Projects Pages**

The CO<sub>2</sub> Sequestration Projects page is the main landing page for all carbon capture, utilization, and storage (CCUS) projects in the PCOR Partnership region. This page has undergone several updates. The most noticeable change is the new, more simplistic map displayed prominently across the page shown in Figure 16. The individual projects are presented in larger font and easier to identify. Text has been scaled back and simplified, allowing the map to become the main focus. The map is still interactive, with 1) hover boxes containing brief descriptions of each project, 2) links to each separate project page for active projects, and 3) links to project fact sheets or Regional Technology Implementation Plan (RTIP) executive summaries for the Phase II validation projects. Figure 17 shows all of the project hover boxes, which open separately on top of the existing page. All text for the hovers has been updated. These updates went live on December 1, 2015.

Two Phase II project fact sheets replaced the project RTIP executive summaries. The updated Lignite Phase II field validation fact sheet, “CO<sub>2</sub> Sequestration Test in a Deep, Unminable Lignite Seam,” replaced the Lignite RTIP executive summary link on the projects map on October 1, 2014. The updated fact sheet for Northwest McGregor “CO<sub>2</sub> Huff ‘n’ Puff Validation Test” replaced the McGregor RTIP executive summary link on the projects map on June 30, 2016.

The pipeline map shown in Figure 18 on the Bell Creek Integrated EOR and CO<sub>2</sub> Storage Project page was updated to reflect CO<sub>2</sub> source additions from the LaBarge Field extending the CO<sub>2</sub> pipeline. The updated “Bell Creek Integrated CO<sub>2</sub> EOR and Storage Project” fact sheet replaced a previous version at the bottom of the Web page (current as of June 2014), and the Bell Creek poster “CO<sub>2</sub> Emissions Go to Work to Produce More Oil” was updated and replaced on May 26, 2015.

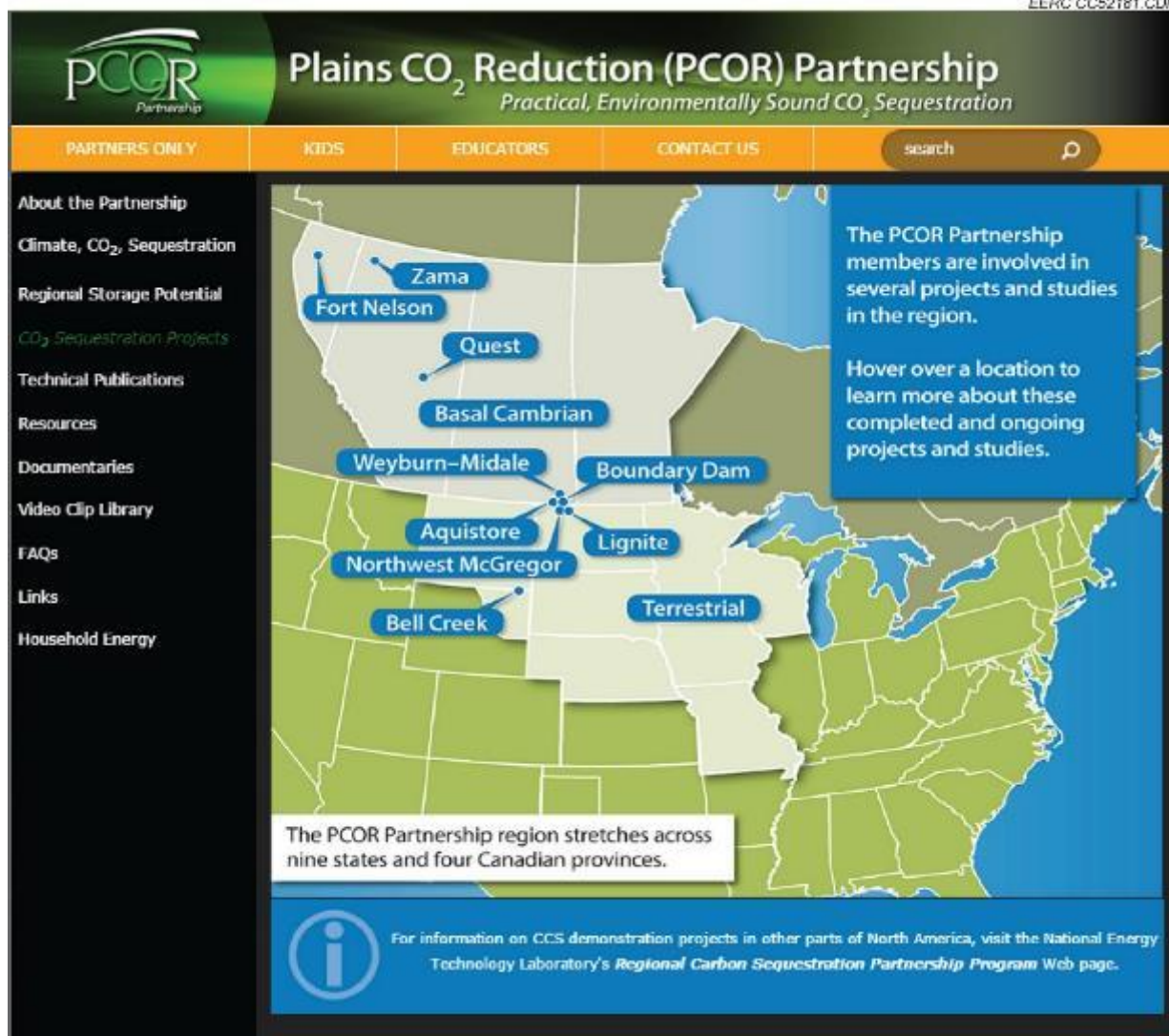


Figure 16. Updated CO<sub>2</sub> Sequestration Projects landing page.  
Existing link: [undeerc.org/PCOR/CO2SequestrationProjects/](http://undeerc.org/PCOR/CO2SequestrationProjects/).



Figure 17. Project information boxes that pop up when the cursor hovers over project titles on the landing page (Figure 19).





Figure 18. Updated map on the Bell Creek Integrated EOR and CO<sub>2</sub> Storage Project Web page.  
Existing link: [undeerc.org/PCOR/CO2SequestrationProjects/BellCreek.aspx](http://undeerc.org/PCOR/CO2SequestrationProjects/BellCreek.aspx).

## Resources Page

The News and Publications page was renamed Resources. Presented in Figure 19, the page content was updated to reflect changes made within this section, such as the renaming of press articles to news archives and the inclusion of posters developed for general audiences (see Outreach Posters page above). Changes to this page went live on December 1, 2015.



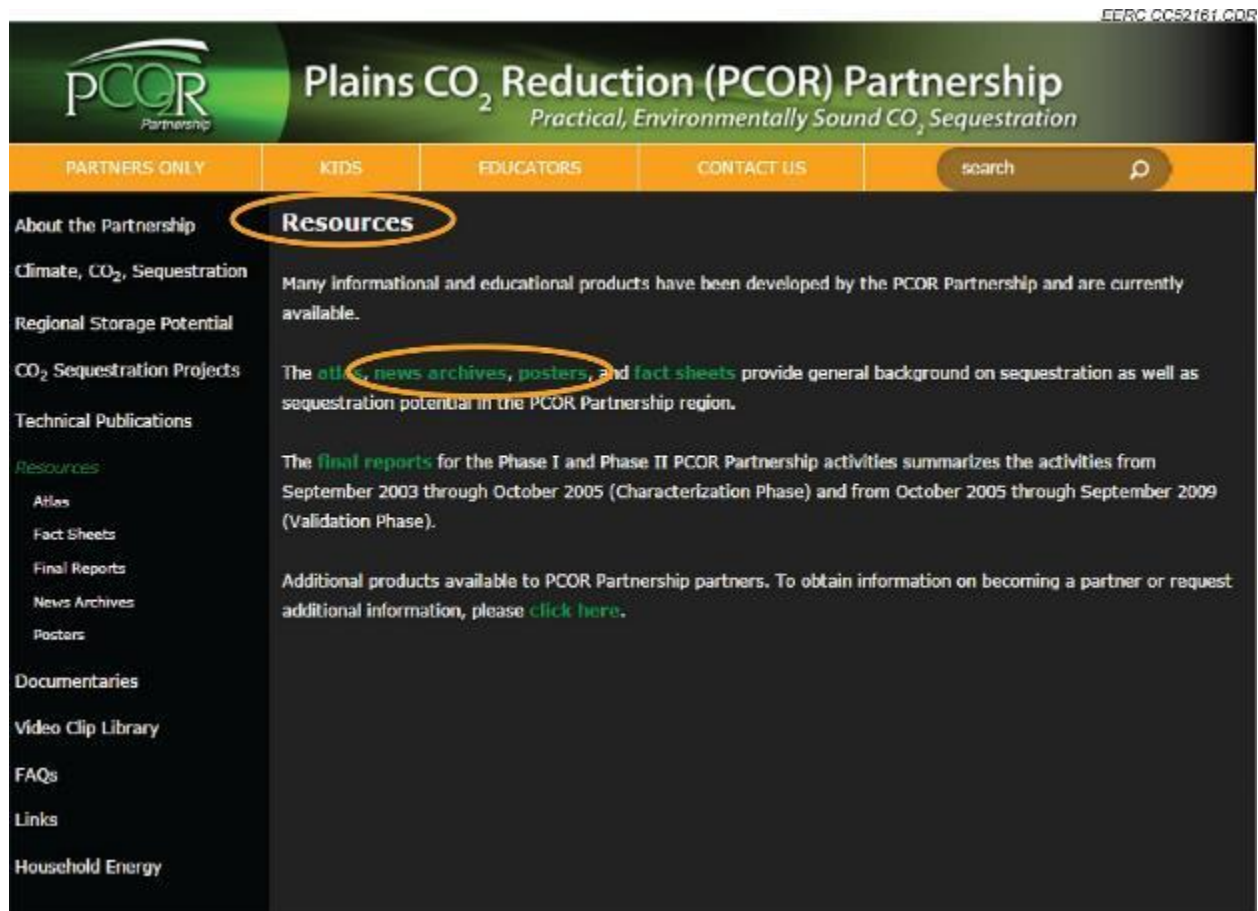


Figure 19. Updated Resources page.  
Existing link: <http://www.undeerc.org/pcor/NewsAndPubs/>.

## **Fact Sheets Page**

The Fact Sheets page, shown in Figure 20, was reorganized chronologically from newest to oldest in each category. Several fact sheets were replaced with more up-to-date information: “CO<sub>2</sub> Huff n Puff Validation Test” (uploaded on June 30, 2016), NETL’s “Plains CO<sub>2</sub> Reduction (PCOR) Partnership – Development Phase Large-Scale Field Projects” (uploaded on June 30, 2016), the PCOR Partnership Phase III general fact sheet “PCOR Partnership Demonstrating CO<sub>2</sub> Storage in the Northern Great Plains” (uploaded on May 16, 2016), the “Bell Creek CO<sub>2</sub> EOR and Storage Project” (uploaded on May 26, 2015), “Long-Term Protection of Freshwater Resources Following CO<sub>2</sub> Storage” (uploaded on May 26, 2015), and “CO<sub>2</sub> Sequestration Test in a Deep, Unminable Lignite Seam” (uploaded on October 1, 2014).

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 Household Energy

**Fact Sheets**

The fact sheets were developed to provide concise background information on CO<sub>2</sub> issues and CO<sub>2</sub> sequestration opportunities in the PCOR Partnership region.

**PCOR Partnership Program**

- PCOR Partnership Phase III - Demonstrating CO<sub>2</sub> Storage in the Northern Great Plains (2016)
- Plains CO<sub>2</sub> Reduction Partnership - Development Phase Large-Scale Field Tests (NETL, 2015)
- Plains CO<sub>2</sub> Reduction Partnership - Validation Phase (NETL, 2012)

**Commercial Demonstration of CO<sub>2</sub> Sequestration**

- Beil Creek Integrated CO<sub>2</sub> EOR and Storage Project (2014)
- PCOR Partnership Role in the Aquistore Project (2014)
- Geologic Storage of Sour CO<sub>2</sub> from a Natural Gas Processing Plant - A Commercial Demonstration (2011)

**Water and CO<sub>2</sub> Sequestration**

- Long-Term Protection of Freshwater Resources Following CO<sub>2</sub> Storage (2014)
- Monitoring, Verification, and Accounting Plans for Protection of Water Resources During the Geologic Storage of Carbon Dioxide (2013)
- Carbon Capture and Storage: Protecting Freshwater Resources (2013)
- Regional Carbon Sequestration Partnership Water Working Group (2011)

**Field Validation - Regional Technology Implementation Plans - Executive Summaries**

- CO<sub>2</sub> Sequestration Validation Test in a Deep, Unminable Lignite Seam in Western North Dakota - Regional Technology Implementation Plan (2009)
- Williston Basin Field Demonstration, Northwest McGregor CO<sub>2</sub> Huff 'N' Puff - Regional Technology Implementation Plan (2009)
- Zama Field Validation Test - Regional Technology Implementation Plan (2009)
- Terrestrial Field Validation Test - Regional Technology Implementation Plan (2009)

**Background on CO<sub>2</sub> Sequestration**

- What is the PCOR Partnership (2012)
- CO<sub>2</sub> Sequestration - Controlling CO<sub>2</sub> Emissions to the Atmosphere Through Capture and Long-Term Storage (2008)
- Identifying CO<sub>2</sub> Sequestration Opportunities (2008)

**Enhanced Oil Recovery (EOR) using CO<sub>2</sub> leading to Permanent CO<sub>2</sub> Storage (Sequestration)**

- CO<sub>2</sub> EOR and CO<sub>2</sub> Sequestration - The Case for Collaboration (2008)
- The Weyburn Oil Field - A Model for Value-Added Direct CO<sub>2</sub> Sequestration (2008)
- CO<sub>2</sub> "Huff 'n' Puff" Validation Test (NW McGregor) (2016)
- Zama Acid Gas EOR, CO<sub>2</sub> Sequestration, and Monitoring Project (2008)

**Terrestrial Sequestration**

- Wetland Carbon Sinks in the Glaciated North American Prairie (Terrestrial) (2008)
- CO<sub>2</sub> Sequestration Through Habitat Restoration-Defining Best Terrestrial Sequestration Practices for Landowners (2008)
- Cobenefits of Terrestrial Carbon Sequestration in the PCOR Partnership Region (2008)
- Best Management Practices for Terrestrial Carbon Sequestration on Private Lands in the Prairie Pothole Region (2008)

**Field Validation of CO<sub>2</sub> Sequestration**

- CO<sub>2</sub> Sequestration Test in a Deep, Unminable Lignite (2014)
- Regional CO<sub>2</sub> Sequestration Potential Field Validation Tests (2008)
- Zama Acid Gas EOR, CO<sub>2</sub> Sequestration, and Monitoring Project (2008)
- CO<sub>2</sub> "Huff 'n' Puff" Validation Test (NW McGregor) (2016)

Figure 20. Updated Fact Sheets page.

Existing link: [www.undeerc.org/pcor/NewsAndPubs/factsheets.aspx](http://www.undeerc.org/pcor/NewsAndPubs/factsheets.aspx).

## News Archives Page

The Press Releases and Articles Web page was renamed in the left navigation to News Archives to more accurately reflect the page's contents. The All Press Releases Web page (which was linked to the News Archives page) and News Archives were consolidated and all information is now on News Archives, as shown in Figure 21. One new press release was added to this page on October 20, 2015. All changes went live on December 1, 2015.

EERC CCS2186.CDR

**Plains CO<sub>2</sub> Reduction (PCOR) Partnership**  
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**Press Releases and Articles**

**Press Releases**

- 2015 Plains CO<sub>2</sub> Reduction Partnership Pioneer Award Winners Announced (October 20, 2015)
- Regional Partnership Documentary Wins "Best of Show" Awards Award (April 30, 2013)
- EERC's PCOR Partnership Demonstrates Ability of Apache's Farnsworth Project to Reduce Greenhouse Gas Emissions (January 18, 2011)
- DOE TECH196: DOE-Sponsored Field Test Finds Potential for Permanent Storage of CO<sub>2</sub> in Lignite Seams (November 9, 2010)
- EERC Documentary on Carbon Sequestration to Premiere on Public Television Program Aired on Prairie Public Broadcasting Monday Night at 9:30 p.m. CDT (October 14, 2010)
- DOE TECH196: "Scar" Gas Shows Safe for Carbon Sequestration (September 24, 2010)
- Fourth EERC Documentary on Carbon Sequestration to Premiere on Public Television (November 9, 2009)
- Carbon Sequestration Documentary Wins Crowded Awards Award (August 26, 2009)
- DOE Techline: Regional Partner's Decision Support System Used in Development of Carbon Management Plan for Industry (August 21, 2009)
- DOE TECH196: Regional Partnership Initiates CO<sub>2</sub> Injection in Lignite Coal Seam (March 16, 2009)
- EERC Releases Third Major Carbon Sequestration Documentary: Program to Air on Prairie Public Broadcasting Friday, September 26, 2008 (September 24, 2008)
- EERC's Plains CO<sub>2</sub> Reduction Partnership and Dukes Industrial Announce Carbon Credit Program (August 8, 2008)
- International Partnership Evaluates Feasibility of Major Carbon Capture and Storage Project in British Columbia, Canada — Project has potential to be among the largest in the world (June 3, 2008)
- The EERC's Second Major Carbon Sequestration Documentary Premieres on Prairie Public Television Thursday, April 17, 2008 (April 14, 2008)
- Informational Meeting on Carbon Sequestration Project Set for April 15, 2008 (April 4, 2008)
- Carbon Capture and Storage Technology Could Transform the Use of Coal (October 10, 2007)
- Delegation Announces \$67 Million Contract for EERC Program to Manage Greenhouse Gases (November 1, 2006)
- EERC on Track to Make Zero-Emissions Coal-Fired Power Generation a Reality (October 28, 2005)
- Responsible TV Premiere of "Balance in the Balance" on Prairie Public Television (May 9, 2005)
- EERC Plains CO<sub>2</sub> Reduction Partnership Expands (May 20, 2004)
- EERC Develops Regional Framework for Tailored Reduction Partnerships (August 20, 2003)

**Articles**

- Article 1 - Controlling Carbon Dioxide Emissions and Still Providing Affordable Energy (May 2005) (134 KB pdf)
- Article 2 - An Introduction to Storage of Carbon Dioxide (May 2005) (125 KB pdf)
- Article 3 - The Capture and Long-Term Storage of Carbon Dioxide (May 2005) (128 KB pdf)
- Article 4 - A Study of the Great Plains of North America: Carbon Dioxide Sequestration Communications Supported by GDS (Winter 2006/2007)
- Article 5 - Farnsworth Gas Project: Plains CO<sub>2</sub> Reduction (PCOR) Partnership (February 2007) (860 KB pdf)

Figure 21. Updated News Archives page.  
Existing link: [undeerc.org/pcor/NewsAndPubs/PressReleases.aspx](http://undeerc.org/pcor/NewsAndPubs/PressReleases.aspx).

## Video Clip Library Page

One new video short called *Installing a Casing-Conveyed Permanent Downhole Monitoring System* was added under the Topics tab entitled Oil Production (see Figure 22). This addition went live on May 16, 2016.

EEERC CC52156.CDR

**PCOR** Partnership  
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Home > Video Clip Library


Welcome to the PCOR Partnership Video Clip Library


By Topic: **By Documentary** By Clip Title


Carbon Footprint   Geologic CO<sub>2</sub> Sequestration   CO<sub>2</sub>, Energy, and Climate Change


Terrestrial Sequestration   Carbon Markets   Oil Production


**Oil Production**


 **Clip Title:** Drilling a Well  
**Description:** The animated short describes the process for drilling wells to obtain oil or natural gas. This is very similar to the process that would be used to drill wells for CO<sub>2</sub> injection and CO<sub>2</sub> monitoring.  
**Length:** 05:58

 **Clip Title:** Horizontal Drilling and Hydraulic Fracturing  
**Description:** This animated primer shows how hydraulic fracturing combined with horizontal drilling can get the oil or natural gas out of rocks like shale (with low permeability). When oil or natural gas is trapped in rocks like shale, oil producers use a technique called hydraulic fracturing (or fracking) to create cracks in the rock layer that oil or natural gas can move through.  
**Length:** 06:30

 **Clip Title:** Installing a Casing-Conveyed Permanent Downhole Monitoring System  
**Description:** This short acquaints a technical audience with the basics of installing a temperature-and-pressure-monitoring system on the outside of a well casing using an example from a CO<sub>2</sub> EOR project in southeastern Montana.  
**Length:** 19:19

 **Clip Title:** Introduction to Well Logs for Oil Production or CO<sub>2</sub> Storage  
**Description:** This animated primer describes the purpose, process, and interpretation of well logging data. How do we know about the layers of rock in a drill hole? Which ones contain water or oil? Which ones are good for CO<sub>2</sub> sequestration? One way is to use a probe to "log" drill holes. As the probe moves up from the bottom to the top of a drill hole, it records different types of information on the rocks.  
**Length:** 08:18

 **Clip Title:** More Oil from West Texas  
**Description:** A brief history of oil production in West Texas. Using pressure, water, and geologic CO<sub>2</sub> to get more oil out of the ground. Primary, secondary, and tertiary oil recovery are described and illustrated.  
**Length:** 04:41

 **Clip Title:** Reservoir Geology 101: Fluid in the Rocks  
**Description:** The basic components of geologic formations are described.  
**Length:** 01:50


 **Clip Title:** The Phases of Oil Recovery - So Far  
**Description:** Primary, secondary, and tertiary oil recovery are described and illustrated (using pressure, water, and CO<sub>2</sub>).  
**Length:** 02:40

Figure 22. New video short added to the Video Clip Library.  
Existing link: [undeerc.org/PCOR/Video-Clip-Library/](http://undeerc.org/PCOR/Video-Clip-Library/).



## Documentaries Page

The Documentaries page shown in Figure 23 was updated with the new background and modified text to yield a more streamlined and consistent look. The left navigation was also added to provide Web consistency and assist users to navigate to other areas of the site. The updated page went live on December 1, 2015.




Figure 23. New look for Documentaries page.  
Existing link: [undeerc.org/pcor/Documentary/](http://undeerc.org/pcor/Documentary/).

## Request Information Page

The list of items on the Request Information page shown in Figure 24 now includes the latest DVD, *Installing a Casing-Conveyed Permanent Downhole Monitoring System* (2013, DVD). This update went live on May 26, 2015.

EERC CC52162.CDR



# Plains CO<sub>2</sub> Reduction (PCOR) Partnership

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## Request Information

Please fill in the form, select the items you would like to receive, and click on "Submit Request". You will receive an e-mail when the materials are sent.

Prefix: ☐ Mr. ☐ Ms. ☐ Dr.

\*Full Name:

Organization:

Title:

\*Street Address:

\*City:

\*State:

\*Zip Code:

\*Country:

Phone:

\*E-mail Address:

**\*Required Field**

### Requests:

I would like to receive the following PCOR Partnership products:

- ☐ PCOR Partnership Regional Atlas, 4th Edition, Revised (2013)
- ☒ Installing a Casing-Conveyed Permanent Downhole Monitoring System (2013, DVD)
- ☐ Global Energy and Carbon: Tracking Our Footprint (2010, DVD)
- ☐ Managing Carbon Dioxide: The Geologic Solution (2009, DVD)
- ☐ Out of the Air – Into the Soil: Land Practices that Reduce Atmospheric Carbon (2008, DVD)
- ☐ Reducing Our Carbon Footprint: The Role of Markets (2008, DVD)
- ☐ Nature in the Balance: CO<sub>2</sub> Sequestration (2005, DVD)

Please send me more information on:

- ☐ Becoming a PCOR Partnership partner


Comments or Additional instructions:

Figure 24. Updated Request Information page.  
Existing link: [undeerc.org/pcor/Documentary/requestinfo.aspx](http://undeerc.org/pcor/Documentary/requestinfo.aspx).

## Links Page

A new link was added to the Regional Carbon Sequestration Partnerships section of the Links page shown in Figure 25. The section, now providing a link to the NETL RCSP Water Working Group, was updated on May 26, 2015.

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#### Links

- Carbon Sequestration - U.S. Department of Energy
- Regional Carbon Sequestration Partnerships
- Select Links for Databases of North American Greenhouse Gas Emissions and Sequestration Projects
- Select Links and Programs Related to Enhanced Oil Recovery and CO<sub>2</sub> Sequestration
- Select Terrestrial Sequestration Links
- United Nations and World Bank
- Select European and International Programs
- Select Programs at Academic Institutions

#### Regional Carbon Sequestration Partnerships

There are seven regional carbon sequestration partnerships under the U.S. Department of Energy (DOE) Regional Carbon Sequestration Partnership (RCSP) program. The RCSP is led by the DOE's National Energy Technology Laboratory, under the DOE Office of Fossil Energy. Active since the fall of 2003, the regional partnerships work with regional stakeholders to develop practical and environmentally sound sequestration initiatives that fit the conditions in their respective regions. Three dozen real-world sequestration validation projects are planned by the partnerships during the period fall 2005 to fall 2009.

Title	Description
Big Sky Carbon Sequestration Partnership	The Big Sky Carbon Sequestration Partnership is led by Montana State University and includes stakeholders in Idaho, Montana, and South Dakota; four validation projects are planned.
Midwest Geological Sequestration Consortium (MGSC)	The Midwest Geological Sequestration Consortium (MGSC) is led by the University of Illinois and the Illinois Geological Survey and includes the Illinois Basin states of Illinois, Indiana, and western Kentucky; four validation projects are planned.
Midwest Regional Carbon Sequestration Partnership (MRCSP)	The Midwest Regional Carbon Sequestration Partnership (MRCSP) is led by Battelle, which is operating this web site on its behalf. The MRCSP is one of seven regional partnerships established by the U.S. Department of Energy's National Energy Technology Laboratory (DOE/NETL) to study carbon sequestration as one option for mitigating climate change.
NETL's Regional Sequestration Partnership (RCSP) Program	The Regional Carbon Sequestration Partnership (RCSP) Program features seven regional carbon sequestration partnerships. These partnerships are funded by DOE and matching contributions from other government and industry partners. The RCSP Program is part of DOE's fossil fuel program and is managed by DOE's National Energy Technology Laboratory.
Plains CO <sub>2</sub> Reduction (PCOR) Partnership	The Plains CO <sub>2</sub> Reduction (PCOR) Partnership is led by the Energy & Environmental Research Center at the University of North Dakota and includes more than 80 stakeholders from all or part of nine states (Iowa, Montana, Minnesota, Nebraska, North Dakota, South Dakota, Wisconsin, and northeastern Wyoming) and four Canadian provinces (British Columbia, Alberta, Manitoba, and Saskatchewan); four validation projects are planned.
Southeast Regional Carbon Sequestration Partnership (Seacarb)	The Southeast Regional Carbon Sequestration Partnership (Seacarb) is led by the Southern States Energy Board and includes stakeholders from 11 states (Arkansas, Louisiana, Mississippi, Alabama, Tennessee, Georgia, Florida, North Carolina, Virginia, Texas, and South Carolina); four validation projects are planned.
Southwest Carbon Sequestration Partnership (CSAP)	The Southwest Regional Partnership was selected by the U.S. Department of Energy and its National Energy Technology Laboratory (NETL) as one of seven regional partnerships charged with evaluating available technologies to capture and to reduce the emissions intensity of greenhouse gases in the southwest region through a process known as carbon sequestration.
Water Working Group	The Water Working Group comprises experts from each of NETL's RCSPs who collaborate to address stakeholder concerns regarding emerging CCS technology and potential interactions with water and their potential impact on local and regional water resources.
West Coast Regional Carbon Sequestration Partnership (Westcarb)	The West Coast Regional Carbon Sequestration Partnership (Westcarb), led by the California Energy Commission, involves stakeholders in six states (Alaska, Arizona, California, Nevada, Oregon, and Washington) and the Canadian Province of British Columbia; four validation projects are planned.


Figure 25. Updated Links page.  
Existing link: [www.undeerc.org/pcor/Links/](http://www.undeerc.org/pcor/Links/).



## Educators Web Page

The Educators Web page shown in Figure 26 is updated as needed to inform educators about events where the PCOR Partnership presents. The page was last updated on June 30, 2016.

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## Educators

The PCOR Partnership is committed to providing classroom resources that address the role of practical and environmentally safe ways to reduce anthropogenic CO<sub>2</sub> emissions and the level of CO<sub>2</sub> in the atmosphere.

Carbon management is a great topic to study because it integrates so many subjects: energy, environment, geography, politics, chemistry, biology, economics, and more. It requires students to use analytical tools to exercise their abilities to research, think, and understand complex issues.



Over 100 PCOR Partnership Outreach Workshops presented during the Roache Energy & Carbon Teacher Training Institute.


**Schedule for 2016–2017 to be announced**

### Previous Educational Events for Teachers

<p><b>Ugale Energy Users' Education Session</b> June 2007–2008 Dakota State College Dismal, North Dakota</p>	<p><b>Longfellow Regional History, Culture, and the Arts, Public Public, Hands-on Teacher Training Institute</b> June 2013–2015 Dakota State College Moorhead, Minnesota</p>
<p><b>International Workshop on Public Education, Training, and Community Outreach for Carbon Capture, Utilization, and Storage</b> July 30–31, 2014 National Renewable Energy Center Decorah, Illinois</p>	<p><b>North Dakota–Minnesota Geographic Alliance Education Seminar</b> June 2014 Concordia College Moorhead, Minnesota</p>
<p><b>North Dakota Petroleum Council Teacher Education Session</b> June 2008–2012 Dakota State College Moorhead, North Dakota</p>	<p><b>The Changing Face of North Dakota</b> North Dakota Geographic Alliance June 4–8, 2012 Dakota State University Bismarck, North Dakota</p>
<p><b>Minnesota Minerals Education Foundation Teacher Workshop</b> July 15–20, 2012 Mineral Area College Park Hills, Missouri</p>	<p><b>Teaching About Energy &amp; Our Carbon Footprint: Regional &amp; Global Issues Public Public Hands-on Teacher Training Institute</b> November 9–10, 2011 Energy &amp; Environmental Research Center Grand Forks, North Dakota</p>

### Recommended Curriculum Sources

- In collaboration with Public Public Broadcasting, the PCOR Partnership participated in three teacher training institutes. Check out the [lesson plans](#) developed during these institutes.



Teachers tour the EERC during the Roache Energy & Carbon Teacher Training Institute.

- The [National Center](#) developed middle and high school [climate lesson plans](#). Each year, several curriculum training workshops are held across the United States. In July 2009, a 2-day training session was held in Omaha, Nebraska, in cooperation with the PCOR Partnership.
- The [Midwestern Renewable Energy Association](#) has K–12 climate lesson plans that cover many options for reducing CO<sub>2</sub> emissions.
- The [Midwest for Climate Partnership](#) developed middle school resources to introduce to provide students in grade levels 7–12 with an understanding of and activities focused on the potential consequences of climate variability and change.
- The [Minnesota Minerals Education Foundation](#) has K–12 climate lesson plans that cover many options for reducing CO<sub>2</sub> emissions.

[Information](#)

Figure 26. Updated Educators Web page.  
Existing link: <http://www.undeerc.org/PCOR/Educators/>.

## Contact Us Page

Updates to the Contact Us Web page shown in Figure 27 included updating key contact personnel and job titles on May 26, 2015.



Figure 27. Updated Contact Us page.  
Existing Link: [undeerc.org/PCOR/ContactUs/](http://undeerc.org/PCOR/ContactUs/).

## Site Map

Throughout this period, updates to the Site Map page reflect changes made to Web page names and/or their order, as well as the addition of new pages and/or new sections to the public Web site. New additions shown in Figure 28 include the Technical Publications section, the Household Energy and Carbon Footprint section, and the Posters (Outreach) Web page under the Resources section.

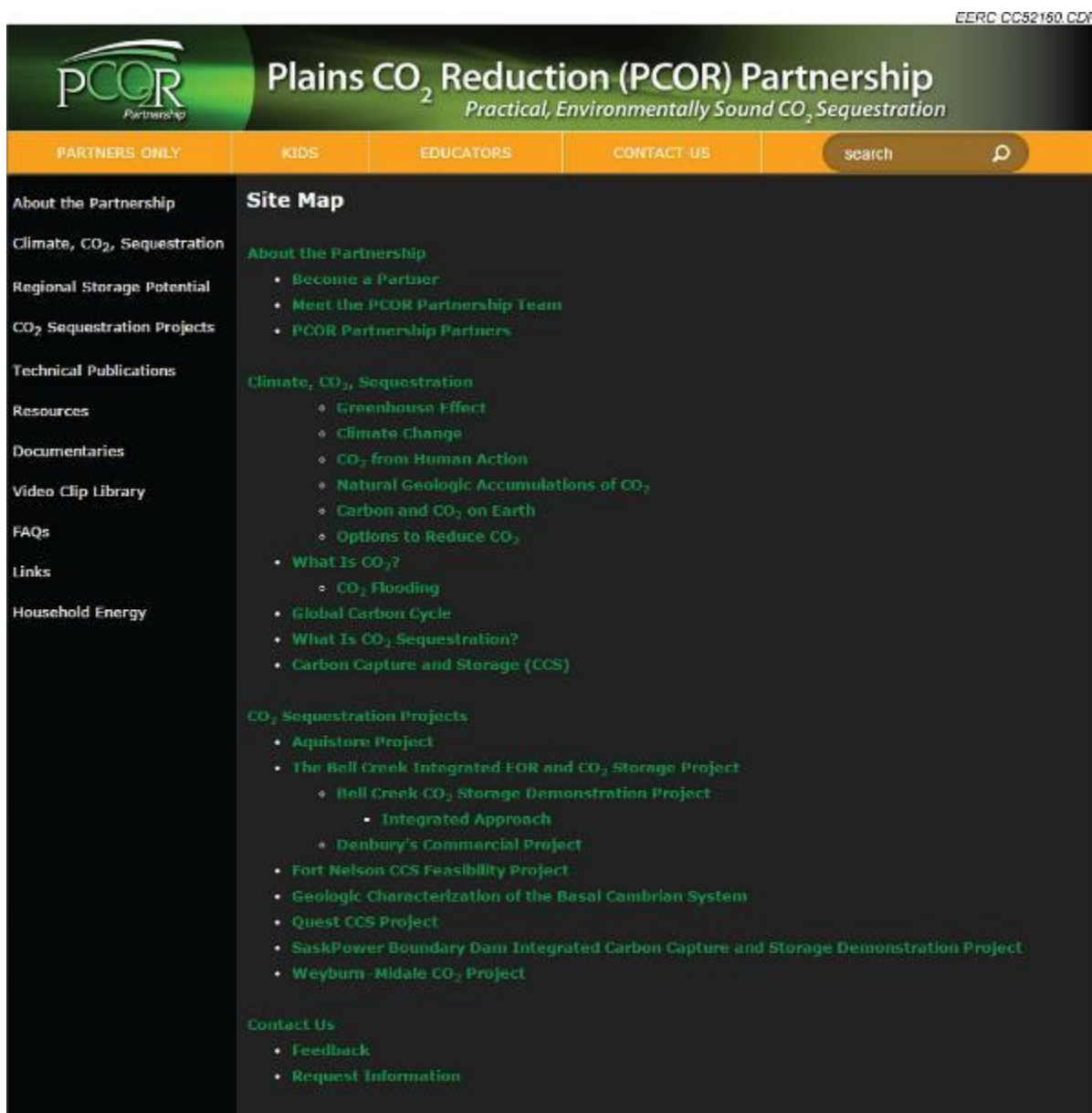


Figure 28. Updated Site Map (continued).  
Existing Link: [undeerc.org/PCOR/SiteMap.aspx](http://undeerc.org/PCOR/SiteMap.aspx).



Figure 28 (continued). Updated Site Map.  
Existing Link: [undeerc.org/PCOR/SiteMap.aspx](http://undeerc.org/PCOR/SiteMap.aspx).

## **FUTURE WORK**

The next Web update is due on January 31, 2018. In the area of Web traffic tracking, future work is expected to include periodic review and refinement of the tracking SOP, configuring the Web site search function to record words visitors search, adjust the session timeout length to accommodate full-length documentary viewing, refine the bounce rate parameters, and set up tracking events to improve data collection for video interactions and PDFs. On the visible components of the Web site, work is expected to include updating several pages to improve interactivity, updated information on active projects, and more materials targeting K–12 education (for teachers and students). These changes will be made as part of the effort to provide products that will serve the needs of key audiences, increase overall traffic to the site, and improve our ability to track and assess Web site use.



## **APPENDIX A**

# **STANDARD OPERATING PROCEDURE (SOP) FOR TRACKING USER ACTIVITY ON THE PCOR PARTNERSHIP PUBLIC WEB SITE**

## **APPENDIX B**

### **PRINT-FRIENDLY PAGES OF THE HOUSEHOLD ENERGY AND CARBON FOOTPRINT SECTION**