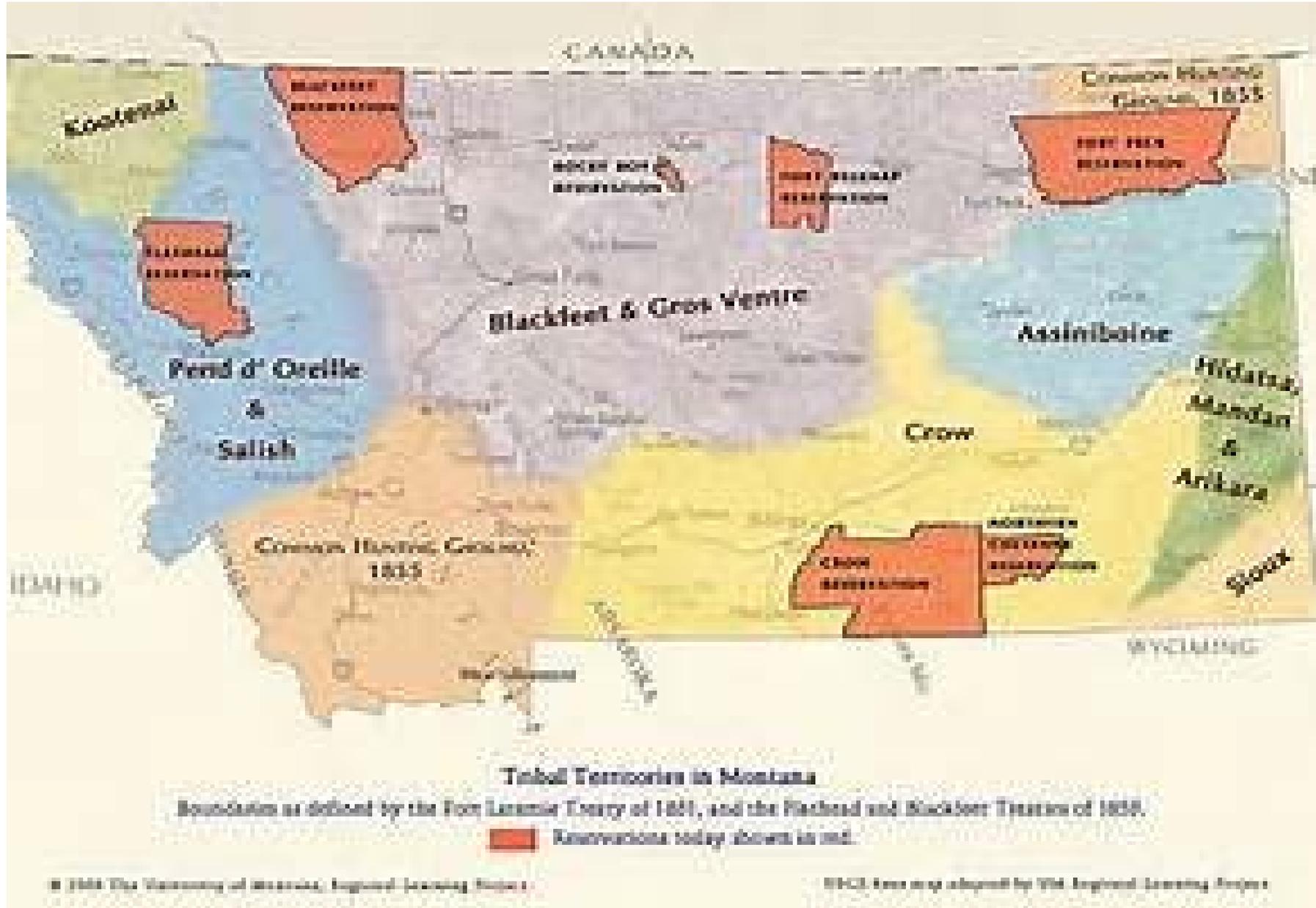


Summary

Crow Tribe of Indians of Montana

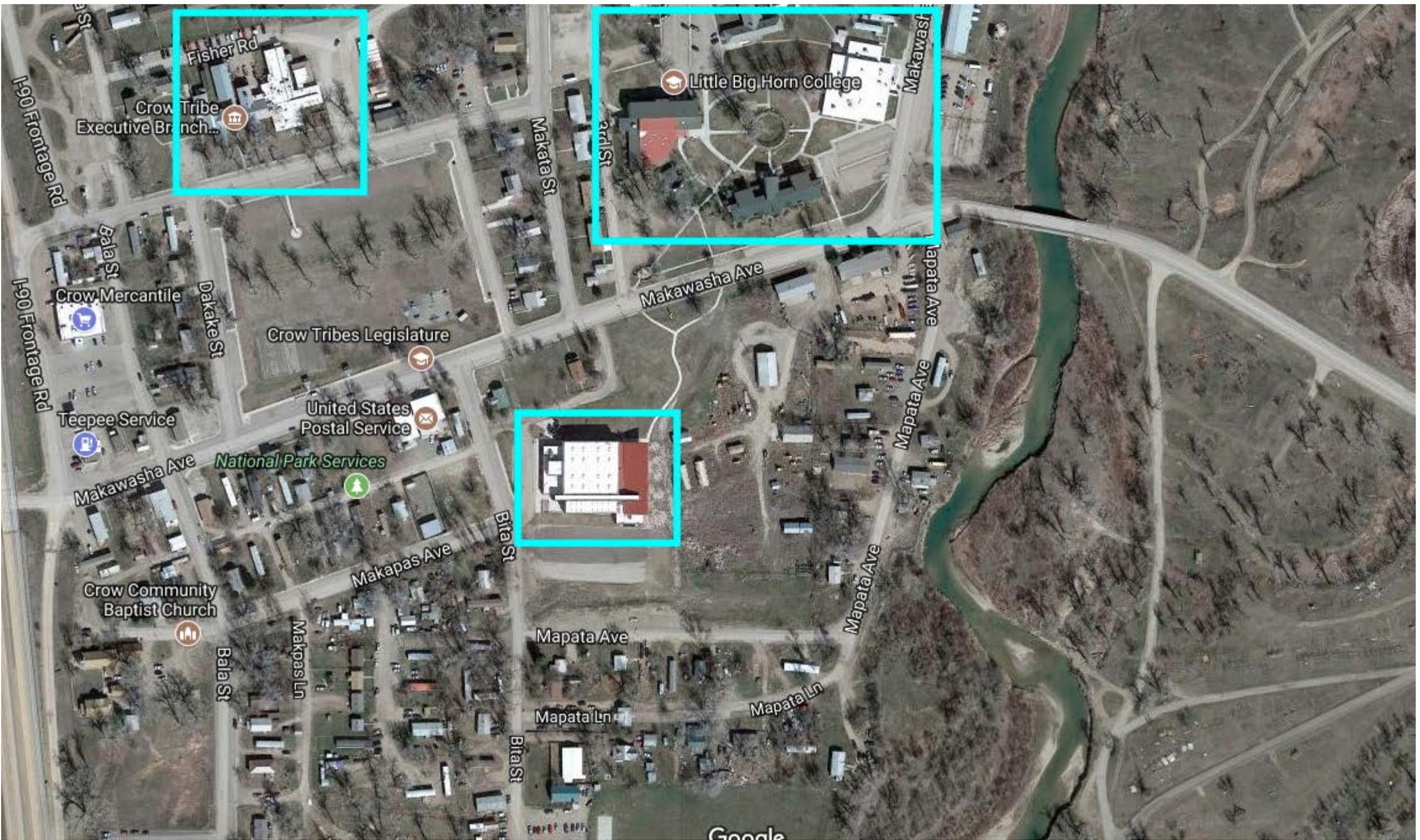


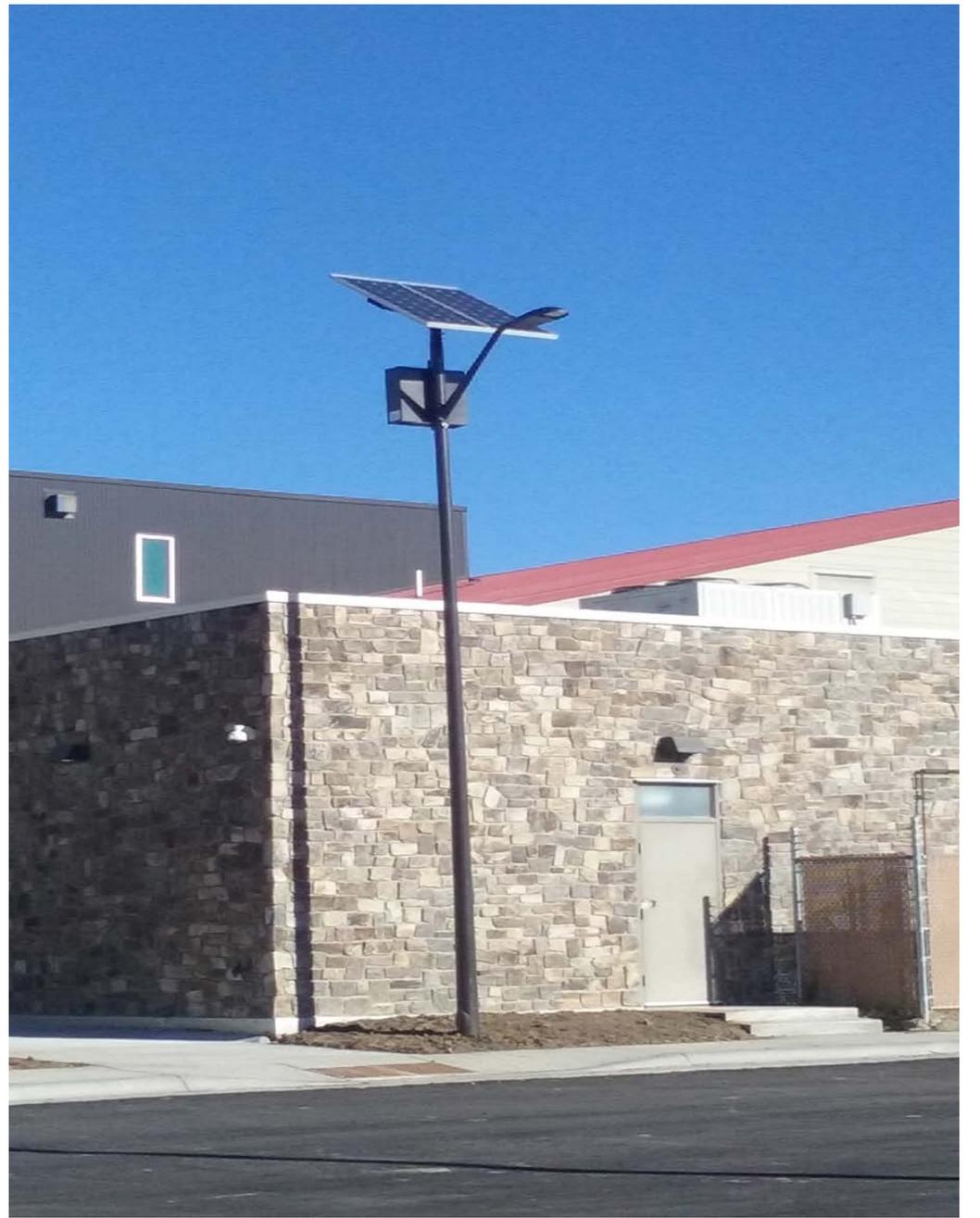
The Crow Tribe Reservation, headquartered in Crow Agency, is the largest reservation in Montana, encompassing approximately 2.2 million acres. The eastern boundary of the Crow Reservation lies within the Ft. Union Coal Field. The Crows own 978 billion tons of high quality, low sulfur coal.

The Crow Tribe, working in partnership with Westmoreland Resources, has been mining coal for the last 50 years. The income from coal development is distributed to Tribal members in quarterly per capita payments.

Project Overview

- Little Big Horn College in Crow Agency is the Crow Tribe's institution of higher education. Chartered in 1980 by the Crow Tribe as a public two year community college, LBHC is also a 1994 land grant institution as designated by the 1994 Land Grant Act. The college is affiliated with the American Indian Higher Education Consortium, a community of 37 tribal colleges working to strengthen tribal nations and make a lasting difference in the lives of Native Americans. LBHC is the major "change agent" on the Crow Reservation and is striving to introduce alternative energy as a major resource of environmental and economic development.





46 kW Solar Array

LBHC Health and Wellness Center

- Little Big Horn College, Crow Agency
- Harvest Solar, Bozeman, Montana
- Thunderbird Development, Bozeman, Montana
- Doug Morley, professional architect
- Big Horn Electric Coop, Hardin, Montana
- Yellowstone Electric, Inc, Billings, Montana
- Crow Tribe of Indians
- Department of Energy, Office of Indian Energy

PROJECT OBJECTIVES

Ultimate Goal: “Zero Net Use” Green Campus - 100% Renewable

Funding for rest of the campus buildings

Curriculum Development - Colstrip Retraining Funds

- AA degree in energy research and development
- Wind technician certification
- Solar technician certification
- Hydro technician certification

Lead planning & development of community energy future.

Relevant Background Information

- 46 kW PV solar installation on the LEED-certified Health and Wellness Center on the campus of Little Big Horn College (68,100 kWh:year)
- 25% of funding from Crow, 75% from Department of Energy
- 20% annual net-metered offset, representing \$1,000-\$1,200 in savings per month (\$12,000-\$14,400 per year)
- 4.5-year Return on Investment with 20+ years of savings
- Big Horn County Co-op and net-metering policy (10 kW)

- Northwest Energy has started several small solar farms in Montana.

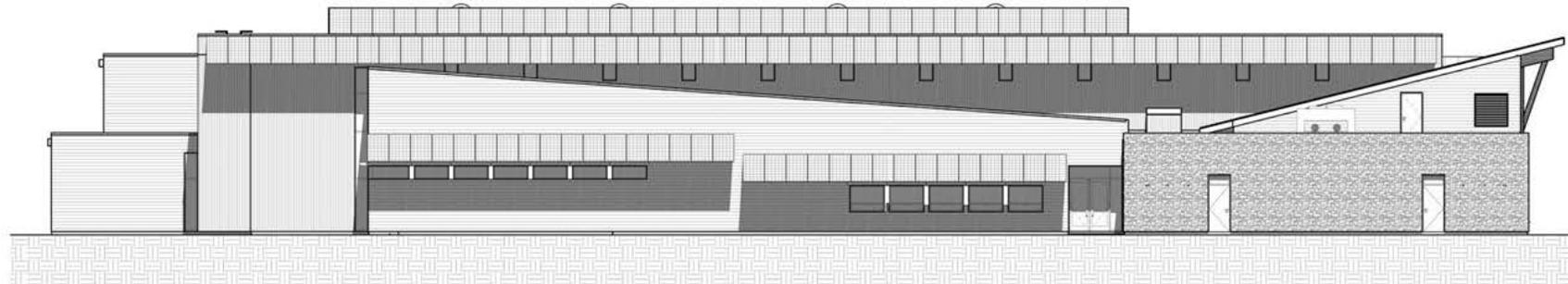
Project Outcomes

The Little Big Horn College Solar Project is 95% completed. Activities to be completed are hooking into the grid, training and maintenance. To be completed Spring, 2018 unless weather permits.

- We accomplished several tasks with this project; we took the first steps toward zero net gain for our campus, we have made the community aware of the feasibility of solar energy, we have saved thousands in energy costs for our campus and we have made some new partners that can assist with moving alternative energy forward on the Crow Reservation and surrounding community
- TERO and on-the-job training

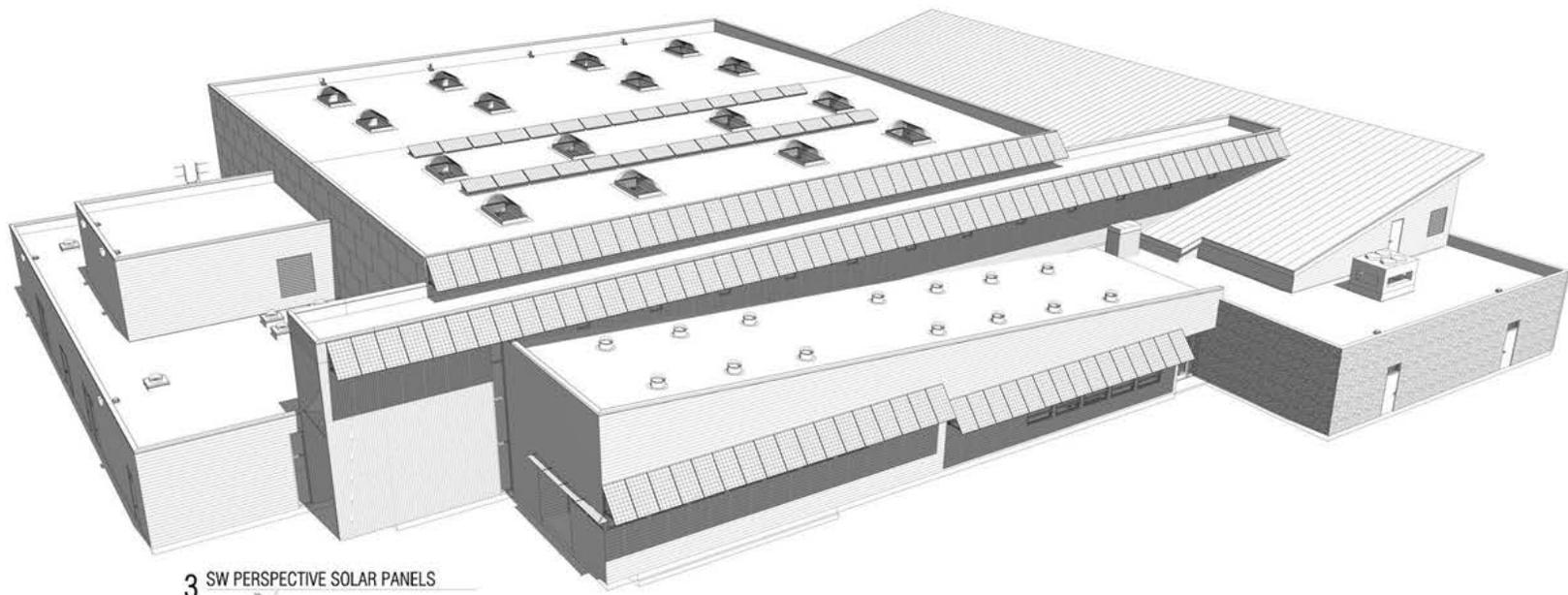
System Specifics

- 158 Solar World 285-kW panels arranged with 122 in landscape awning (35° along multiple south-faces of the building and 36 ballasted (°15) on the upper roof. To increase public awareness of system.
- Fronius 20 kW x2 / Fronius 10 kW inverters
- System complements installation of solar-powered parking lights via USDA funds and LEED Gold status building, LBHC commitment to net-zero campus goal
- 46 kW, 68,100 kWh per year, \$12-14,000 savings annually / 1,466,081 kWh, \$277,115 in total energy production at \$.10/Wh



1 SOUTH ELEVATION
1/8" = 1'-0" RE: A1/100

| SOLAR PANEL SCHEDULE | | |
|----------------------|--------------|--------------|
| Description | Manufacturer | Model |
| Solar World | Solar World | 60 Cell Roof |
| 60 Cell Roof: 30 | | |
| Solar World | Solar World | 60 Cell Wall |
| 60 Cell Wall: 126 | | |
| Grand total: 156 | | |



3 SW PERSPECTIVE SOLAR PANELS



| | |
|------------------|---------------------------|
| DRAWN: | Author |
| CHECKED: | Designer |
| JOB NO.: | 09-025 |
| STATUS: | Implementation Options |
| BY: | |
| DATE: | |
| REVISION HISTORY | |
| DESCRIPTION: | |
| NO. | |

Little Big Horn College -
Health & Wellness Center
25 Bita Street
Crow Agency, MT



11-19-15
E 400
S ELEV SOLAR PANELS











The Future

The main goal of this project is to move the Crow Tribe and members of Big Horn County out of the fossil fuel era toward alternative energy opportunities.

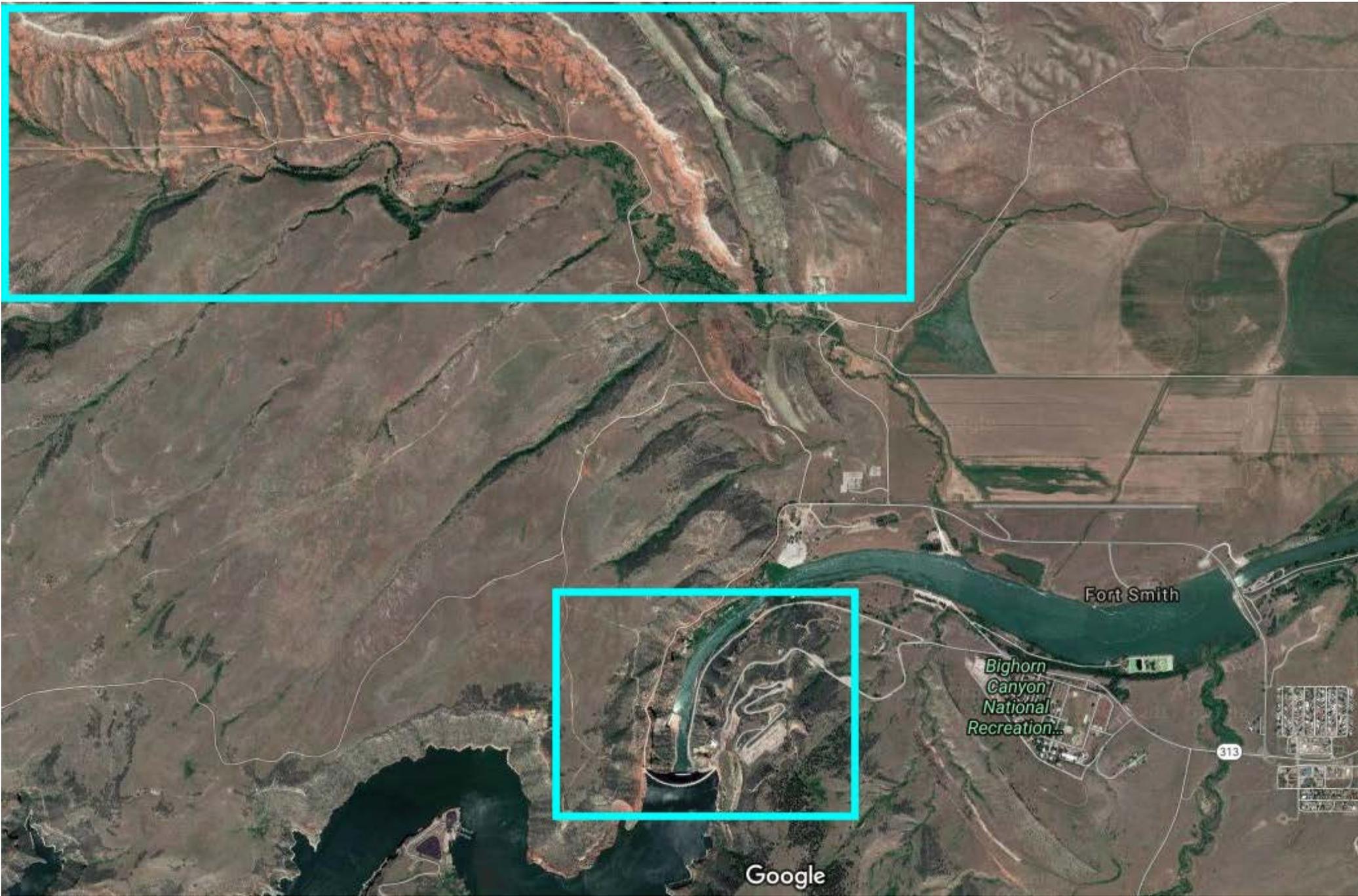
- Solar capacity – build individual home arrays – build commercial solar farms
- Wind capacity – develop our class 7 wind capacity – both commercial and individual applications
- Hydro capacity – assist the tribe in completing this project

Challenges

- Communication
- Social and political change

New Projects

- Afterbay - Tribal hydroelectric (in development)
- Wind - Grapevine 212 MW “shovel ready”
- Little Big Horn College, the Crow Tribe and Thunderbird Development won a 2016 BIA Division of Energy and Mineral Development grant to assess the energy potential of Crow-controlled solar and woody biomass resources. The study will provide the Crow with the data to both replace fossil fuel-generated electricity with solar and/or biomass as well sell solar resources to the local and national electricity grids.



Fort Smith

Bighorn
Canyon
National
Recreation...

313

Google



30 acre, 3-MegaWatt solar farm just outside the boundaries of the Crow Reservation near Hardin. Will provide electricity to approximately 540 homes.

Utilizing Bureau of Indian Affairs Division of Energy and Mineral Development grant, the Crow Tribe is exploring the potential for renewable resource development on the MW and greater scale.

rendering by Cypress Creek Renewables

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