Hutchinson WWTF Solar PV EP4-41

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Project/Environmental/Regulatory Manager

Xcel RDF Advisory Board
April 12, 2016
Site Preparation Panoramic
Ballast Piers 18”H x 30”D - 410 total
NOTES:
1. TEMP LIFT LOOPS TO BE GALVANIZED CABLE RATED FOR LIFT LOADS WITH SAFETY FACTOR = 5.

PLAN AT TOP OF BALLAST PIER (BOTTOM FLANGE OF TENKSOLAR RAIL)
Pier Layout

Layout of piers using nylon line
First rows being installed

Xcel RDF Advisory Board Project Presentation 4/12/16
Ballasted Fence Completed
All Panels Installed
Reflective Panels
Flexible Conduit

Independent Support Rails
e-Gauge Monitoring System

http://www.ci.hutchinson.mn.us/departmentsfacilities/public-works/park-garage/greenstep-cities/
Work Zone Cam w/Time Lapse Video

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City of Hutchinson Solar PV Project History

- **October, 2011:** *Westwood:* Renewable Energy Suitability Study
- **June – Sept, 2012:** Staff and Council discussions regarding Solar PV project
- **October, 2012:** Signed “*Agreement Letter*” to Develop a Solar PV System
- **March 2013:** Xcel Energy RDF Proposal Submitted
- **March 12, 2014:** *Xcel Award Letter received by the City*
- **April 23, 2014:** Planning meeting to move forward
- **May – September:** Updated Xcel Award requirements
  - Further developments per the Term Sheet and site requirements
- **October 14, 2014:** Term Sheet executed with AMERESCO
- **December 23, 2014:** Energy Service Agreement w/AMERESCO
- **June 19, 2015:** Xcel Grant Contract approved
- **October – November 2015:** Construction of System *11/25/15 Commissioned*
Solar PV Project Specifics

- Solar PV size = 400 KW = 470,070 kwh/year guaranteed (80% derated from actual) (Actual = 587,587 kwh/year) ~15% of the WWTP Annual Load
- Utility costs = 0.737/kwh and annual increases = 1.5%
- Solar System Payback = 18 years (~14 years using higher than guaranteed system output)
- At year 30, system has generated $370,000 – after paying for itself
- Pricing = $1,467,000
  - Xcel Grant = $958,360
Solar PV Site Land Use Challenges

- Emergency Services Training Site (Police & Fire)
- Stockpiling Public Works Materials
- State Bonding $ used for improvements 1999
  - Office of M&B approval to proceed
- City Dump Site 1950-1980
  - Phase I Assessment 1999
  - VIC Program April 2002
  - Phase II Assessment June 2002
  - Additional Assessment September 2002
  - Restrictive Covenant July 2007
    - *No disturbance without MPCA approval*
  - RAP November 2007
Solar PV Site Land Use Challenges

- **RAP and Covenant Requirements**
  - Construction Contingency Plan
  - Site Health and Safety Plan
  - Routine inspections of site and LEL monitoring
  - **NO PENETRATIONS!**

- **Design Considerations**
  - Compacted clay fill over existing cover
  - Geotextile
  - Clean granular over Geotextile
  - **DIFFERENTIAL SETTLEMENT**
    - *Undisturbed 10 years (Manufacturer White Paper)*
    - Density Testing
Project Outreach and Awareness

- **Minnesota Brownfields Presentation**
  - Wide variety of brownfields professionals coming together to discuss solar PV development on brownfields
  - Excellent feedback and inquiries
  - Lee Gabler, Xcel Energy's Senior Director of Customer Strategy and Solutions also presented

- **Hutchinson Leader Newspaper** Multiple articles about the project
- **Clean Energy Research Teams** Highlighted project in newsletter
- **LinkedIn Project Post** Over 100 views
- **MPR Interview** Interview 3/29/16, has not aired yet
- **Mn Wastewater Operators Association Central Section Meeting**
  - Presentation this morning 4/12/16 to 30+ Wastewater Professionals

- **Hutchinson City Website with e-Gauge and Workzone Cam**
Solar PV Construction Offsite Challenges

Different Project Adjacent to Solar PV Project
“Project funding provided, in part, by customers of Xcel Energy through a grant from the Renewable Development Fund.”