Brightfields: First Brownfield Solar Project in Minnesota

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#2018CERTs
Transforming a Brownfield to a Brightfield

John Paulson
Project/Regulatory/Environmental Manager
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 wo/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/LEL monitoring
  - **NO PENETRATIONS!**
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 project funding provided, in part, by customers of Xcel Energy through a grant from the Renewable Development Fund.”
It was not a “pretty” site
Until we got done with it!
Ballast Piers 18”H x 30”D - 410 total

BDCPs
Pier Layout

Layout of piers using nylon line
First rows being installed
Ballasted Fencing
Independent Support Rails
Solar PV Construction Offsite Challenges

Different Project Adjacent to Solar PV Project
e-Gauge Monitoring System & Work Zone Cam Time Lapse Video

http://www.ci.hutchinson.mn.us/departmentsfacilities/public-works/park-garage/greenstep-cities/
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*