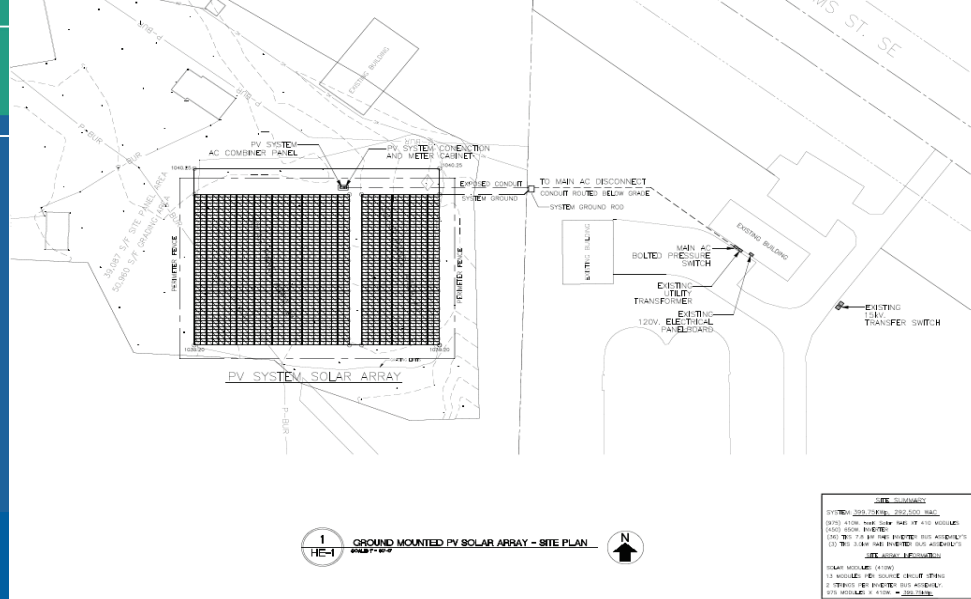
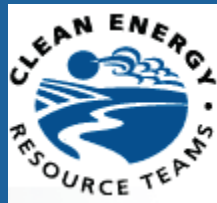


Transforming a Brownfield to a Brightfield



John Paulson
Project/Regulatory/
Environmental Manager

Renewable Energy
Procurement Boot
Camp



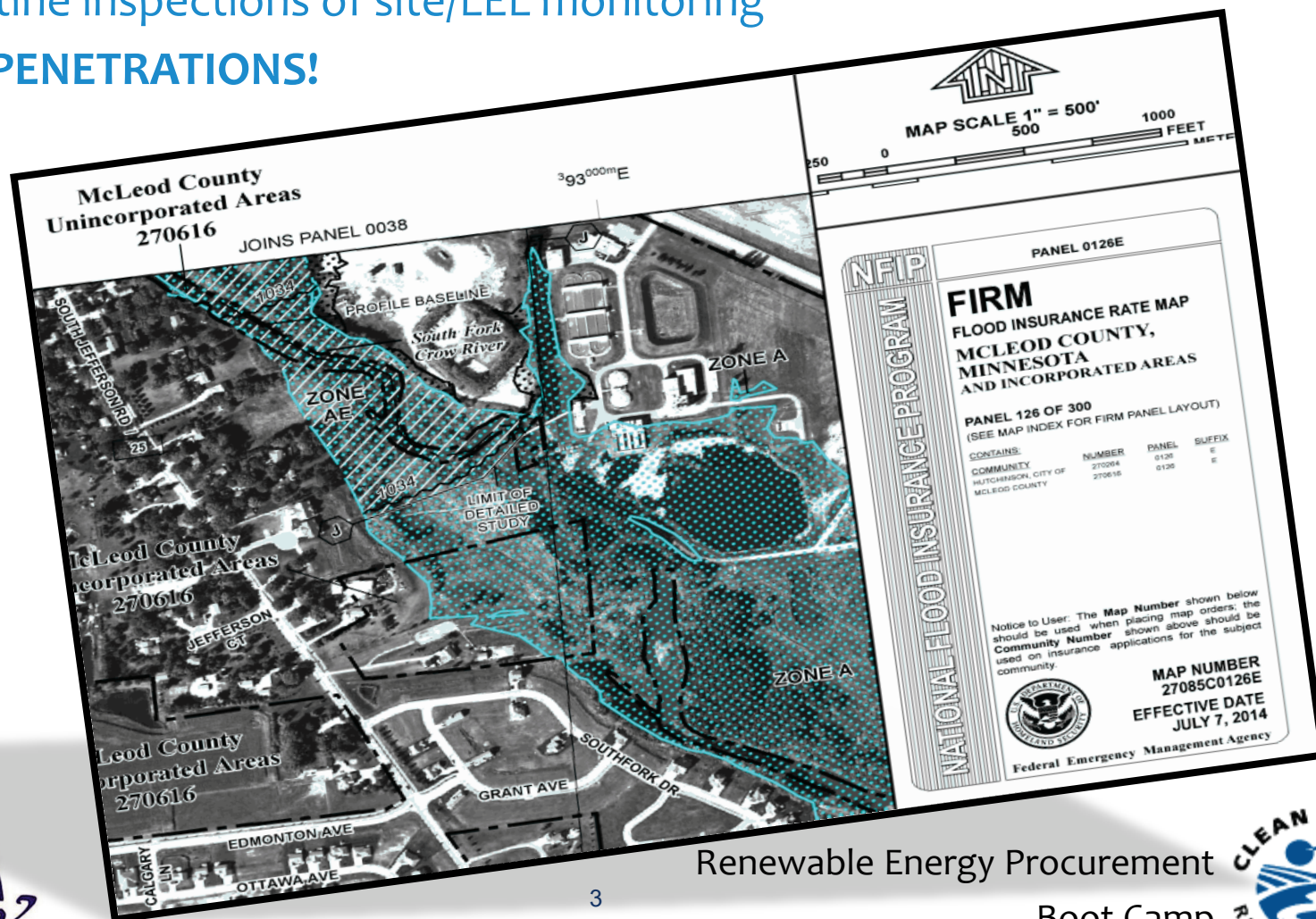
Solar PV Site Land Use Challenges

- 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

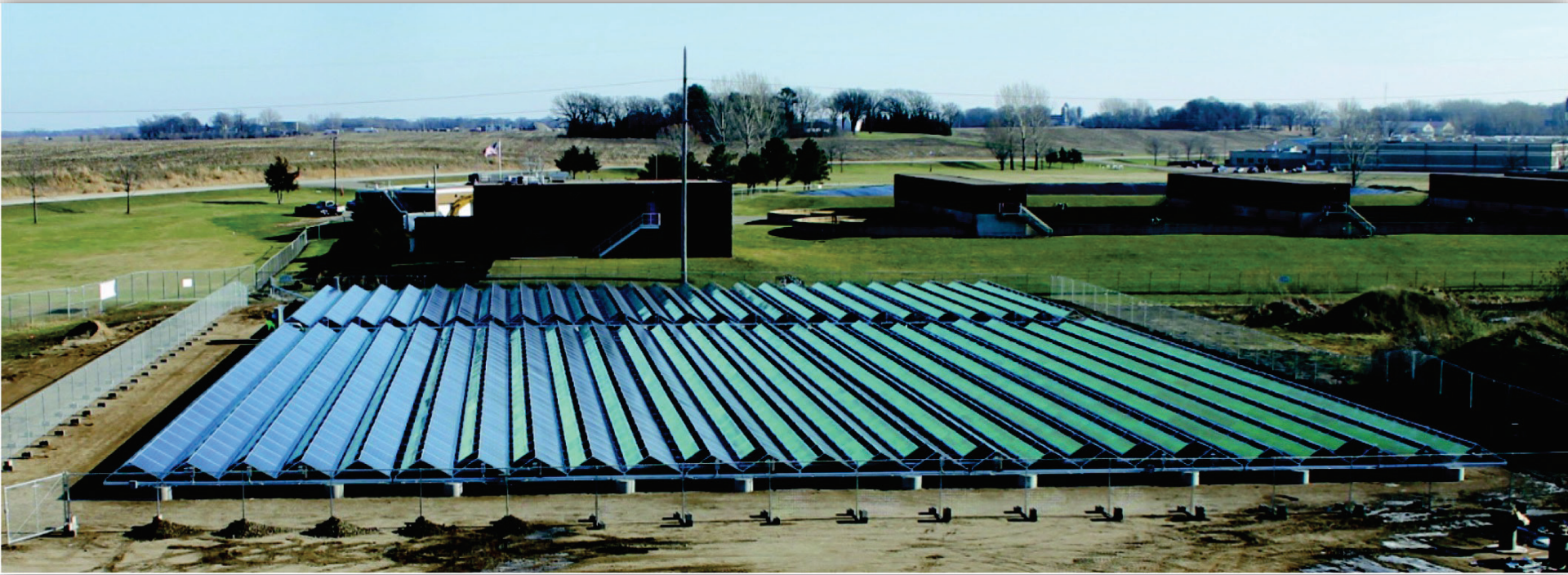
“Solar project funding provided, in part, by customers of Xcel Energy through a grant from the Renewable Development Fund.”



It was not a “pretty” site



Until we got done with it!

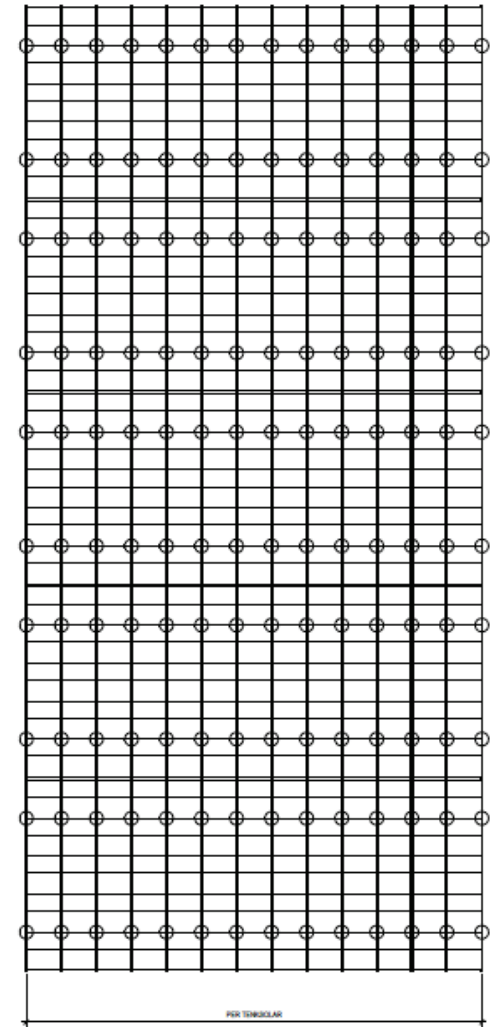
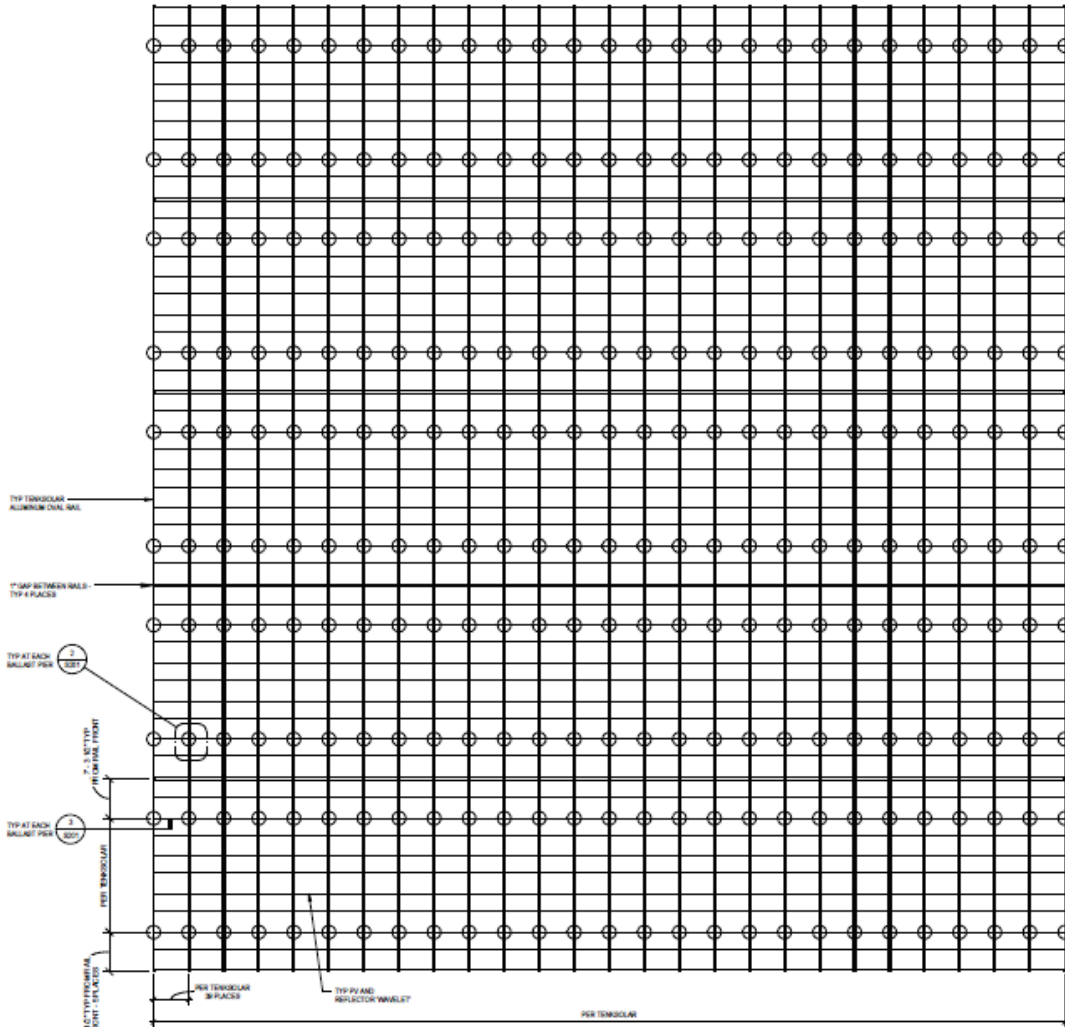


BFCPs



Ballast Piers 18”H x 30”D - 410 total





PLAN NOTES UNLESS NOTED OTHERWISE:

1. GEOTECHNICAL RECOMMENDATIONS HAVE BEEN PROVIDED FOR THE PROJECT SITE. WEI CANNOT TAKE ON ANY LIABILITY RELATED TO GROUND MOVEMENTS OR SETTLEMENTS. WEAR OWNER SHALL ENGAGE SPECIALTY GEOTECHNICAL CONSULTANT AS REQUIRED TO VERIFY THE NEW WEAR SURFACE ON THESE DOCUMENTS WILL NOT BE ESTIMATORIALLY IMPACTED BY SUBGRADE GEOTECHNICAL/BIOMECHANICAL CONDITIONS OVER THE SERVICE LIFE OF THIS SYSTEM AND INSTALLED. OWNER SHALL MAINTAIN PLANS FOR REGULAR ASSESSMENTS OF CONCRETE PAVEMENT AND SHALL AT BEARING POINTS TO MAINTAIN PROPERLY WEARING SYSTEM.



NORTH

FOUNDATION PLAN
2024-11-17



Renewable Energy Procurement Boot Camp





Pier Layout



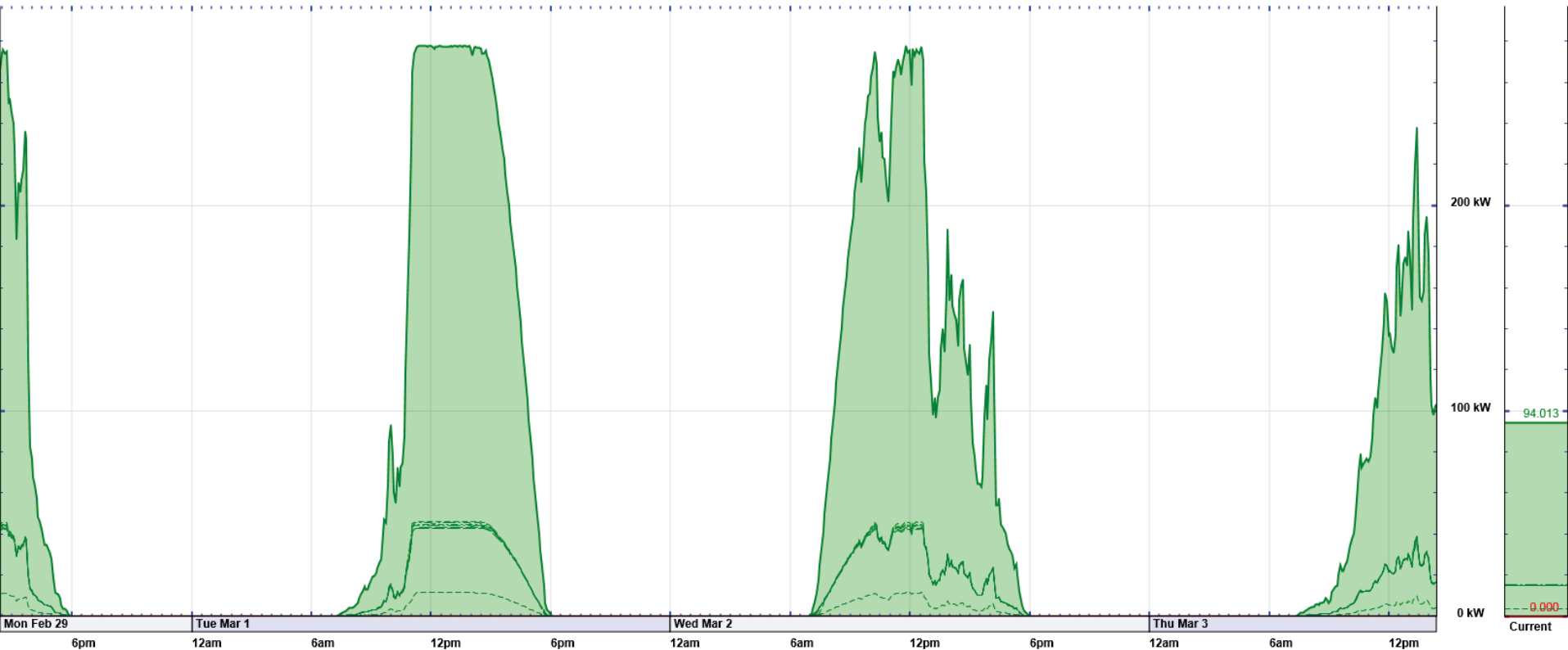
First rows being installed



Ballasted Fencing



Independent Support Rails



e-Gauge Monitoring System & Work Zone Cam Time Lapse Video

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





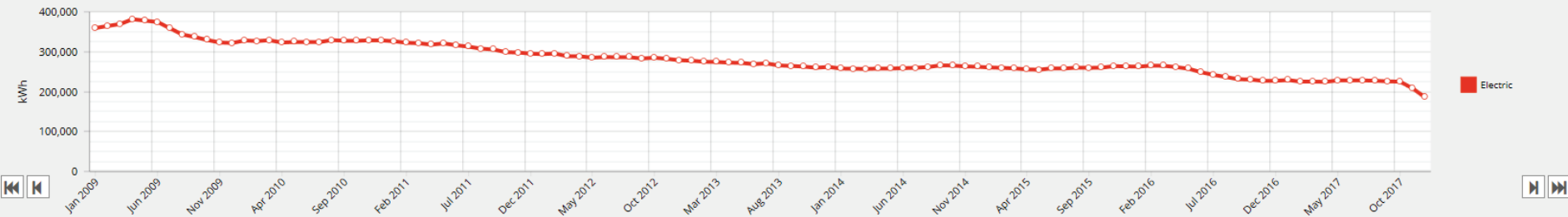
City of Hutchinson
WWTP
 1300 Adams St SE
 Hutchinson, MN 55350

- SUMMARY
- BENCHMARK
- PEER COMPARISON
- ENERGY STAR
- BASELINE
- REPORTS
- IMPROVEMENTS

Report: Custom Report

Chart Type	Meters & Units	Duration	Options	Comparison
<input type="radio"/> Monthly Continuous <input type="radio"/> Monthly Year Over Year <input checked="" type="radio"/> Rolling 12 Month Avg <input type="radio"/> Annual	Electric Units: Native Units	Jan 2009 -- TO -- Dec 2017	(No Normalization) <input type="checkbox"/> Show Events <input type="checkbox"/> Show Completeness <input type="checkbox"/> Plot Air Temperature	<input checked="" type="radio"/> None <input type="radio"/> Benchmark <input type="radio"/> Baseline <input type="radio"/> Target <input type="radio"/> Event

Rolling 12 Month Average
 Electric



Consumption Summary By Year

Period	Days	Complete	SF	Actual kWh	Total Cost	Cost Rate \$/kWh
Jan 2009-Dec 2009	365	100%	0	3,864,000	\$331,718.74	\$0.086
Jan 2010-Dec 2010	365	100%	0	3,941,145	\$332,303.17	\$0.084
Jan 2011-Dec 2011	365	100%	0	3,542,455	\$306,389.31	\$0.086
Jan 2012-Dec 2012	366	100%	0	3,346,000	\$287,946.11	\$0.086
Jan 2013-Dec 2013	365	100%	0	3,145,800	\$267,137.46	\$0.085
Jan 2014-Dec 2014	365	100%	0	3,148,200	\$268,384.49	\$0.085
Jan 2015-Dec 2015	365	100%	0	3,159,000	\$271,011.17	\$0.086



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**

