Business Item SW-2015-54
Approval of Agreements to Expand Solar at Blue Lake to Include Community Solar Gardens

Jason Willett, Director, MCES Finance and Energy
Mike McCabe, Oak Leaf Energy Partners

Environment Committee: March 10, 2015

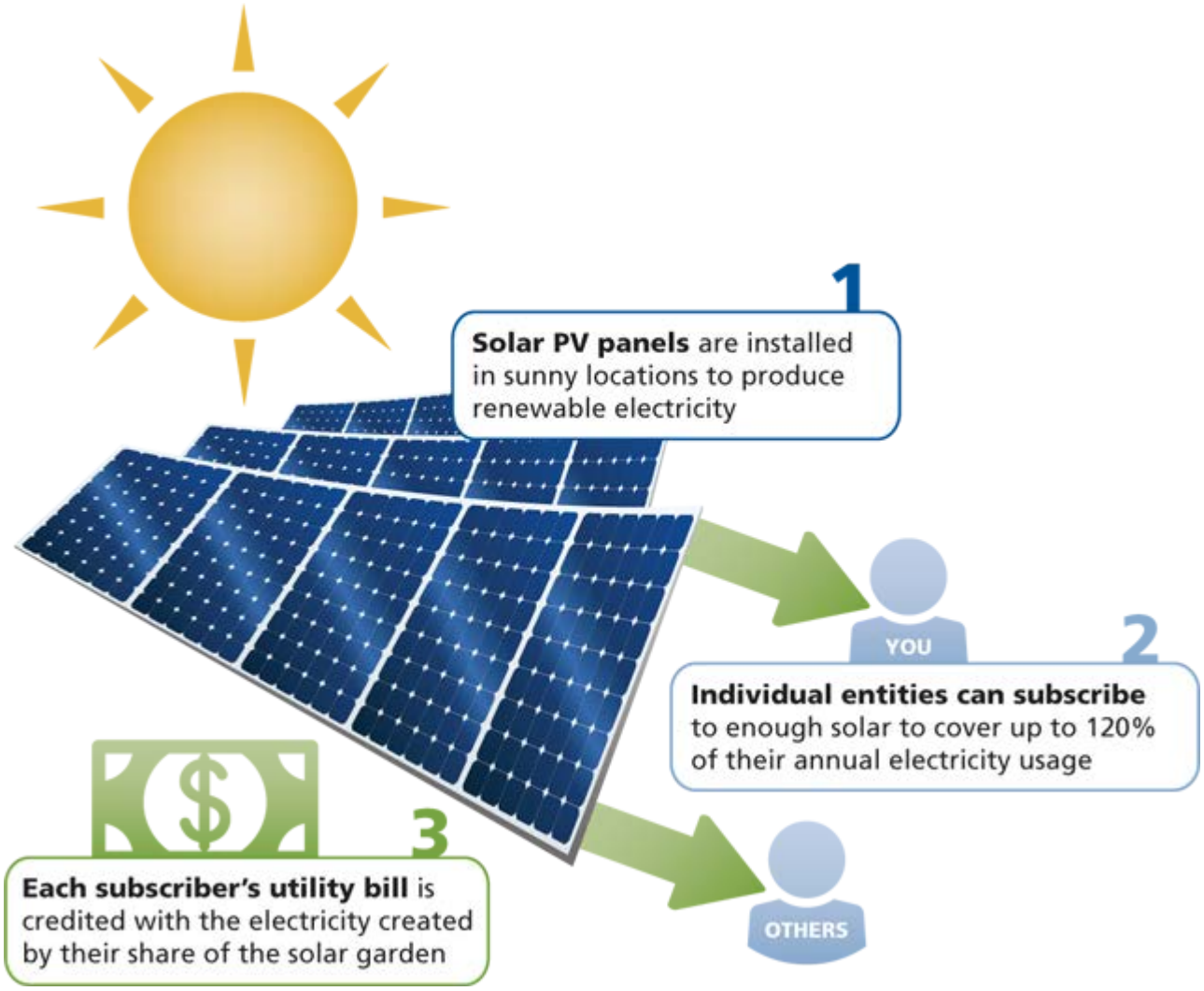
METROPOLITAN COUNCIL

Proposed Action

Authorization to sign land lease and community solar agreement with Oak Leaf Energy Partners.

METROPOLITAN COUNCIL

Community Solar Garden Program



METROPOLITAN COUNCIL

Council Opportunity

- As a leader in Renewable Energy, solar energy
  - Has lesser climate, air, water impacts than grid power
  - Conserves fossil fuels
  - Improves energy independence & security
  - Supports state goals and jobs
  - Supports local communities

METROPOLITAN COUNCIL

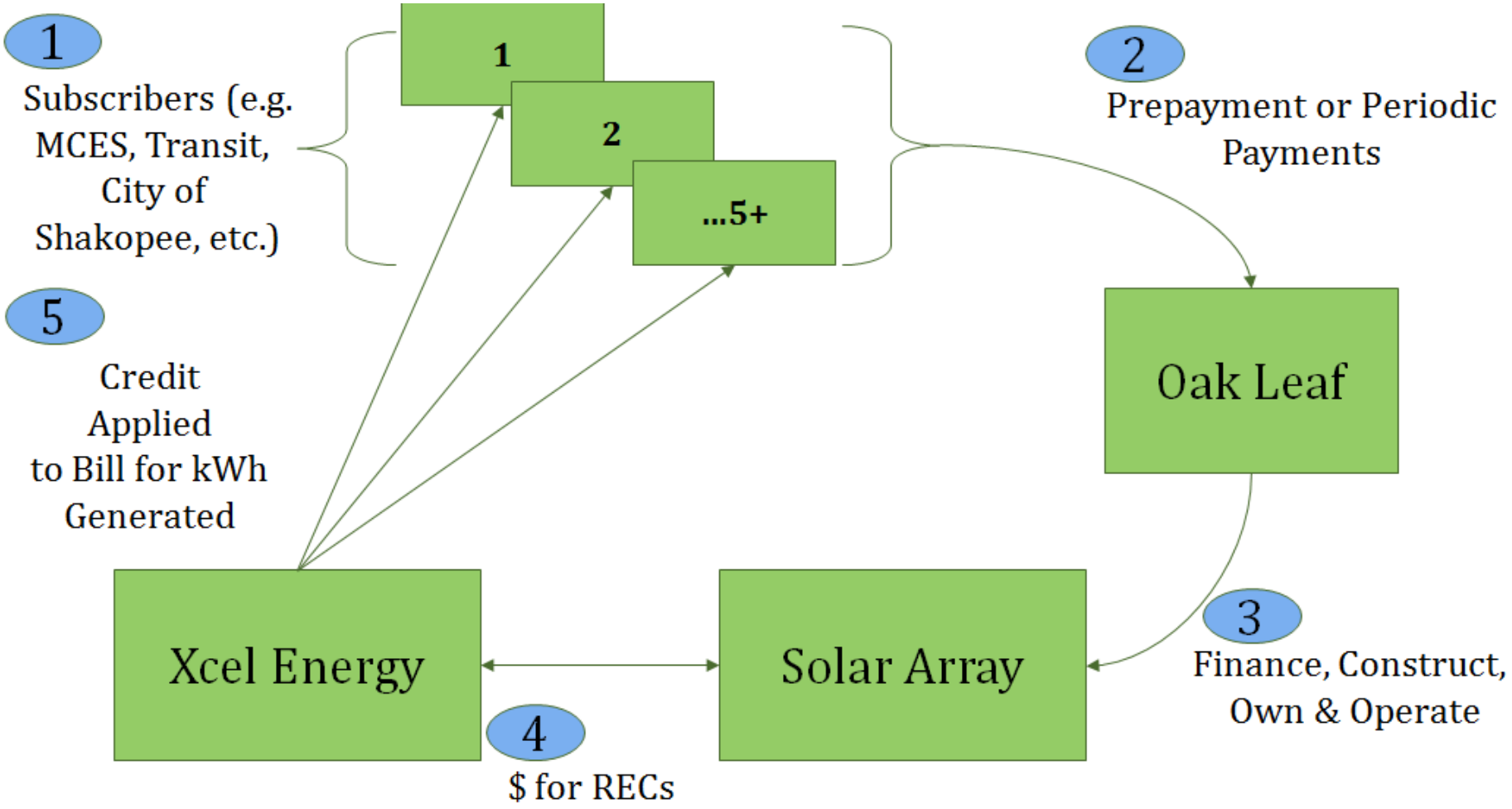
Project Background

- Oak Leaf
  - One of nation's largest solar developers
  - Works with municipalities with special focus on water and wastewater facilities
  - Proposes to build 4 solar gardens at Blue Lake Wastewater Treatment Plant

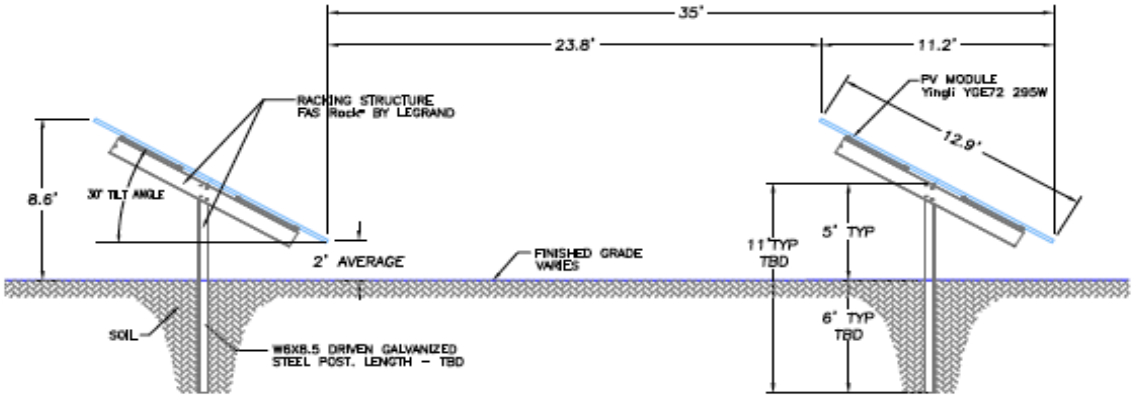
Project Details

- Four solar gardens totaling 4MW AC
  - 15,152 solar panels; ~20 acres
- Generates ~6.5MM kWh annually
  - Met Council will receive 80% or 5.2MM kWh
  - Remaining 20% goes to cities and counties
- Resides on Met Council land
- System's useful life up to 40 years
- Low profile system; No noise; No water use
- Uses native grasses
- Goal is to start construction Q4 2015

Solar Garden Economics



Solar Farm Structure



TYPICAL PV ARRAY N - S ELEVATION

NOTES:

DESIGN CRITERIA: IBC 2006/ 2009 ASCE-7 WITH LOCAL AMENDMENTS.

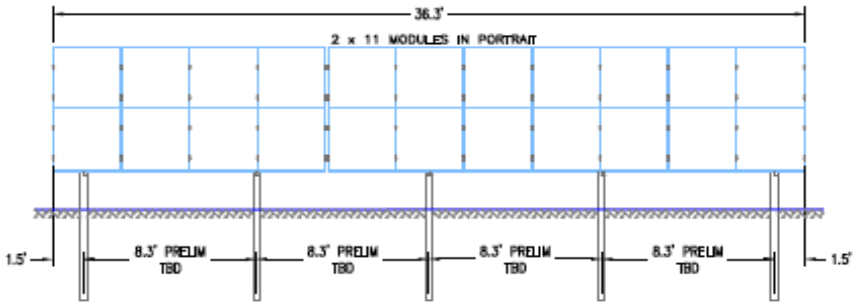
MODULE DEAD LOAD = 2.91 PSF,
SNOW LOAD = 30 PSF,
WIND DESIGN: BASIC WIND SPEED = 90
(3 SECOND GUST) ; EXPOSURE: C

RACKING SYSTEM DESIGNED FOR MODULE SIZE:
1570mm x 800 mm x 50 mm

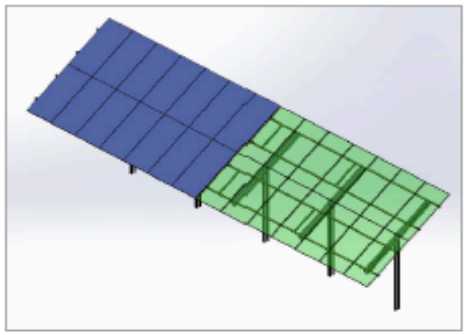
THE STRUCTURAL DETAILS COMPILED IN THIS DRAWING ARE SUPPLIED BY LEGRAND® FOR THEIR PROPRIETARY FAS Rack™ GROUND MOUNT SYSTEM. ALL FINAL DRAWINGS SHALL BE SUPPLIED BY THE MANUFACTURER AND STAMPED FOR THE STATE OF COLORADO. THE STRUCTURAL DETAILS IN THIS DRAWING DO NOT DEPICT THE FINALIZED CONSTRUCTION DETAILS OF THE FINISHED STRUCTURE. DETAILED DESIGN IS REQUIRED PRIOR TO ISSUING FINALIZED STAMPED DRAWINGS FOR CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE INSTALLATION PER THE MANUFACTURER'S INSTALLATION GUIDE AND PROVIDE MEANS NECESSARY TO PROTECT THE STRUCTURE DURING CONSTRUCTION. THE STRUCTURAL ENGINEER OF RECORD SHALL BE RESPONSIBLE FOR ALL STRUCTURAL CALCULATIONS. TYPE AND SIZE OF ALL COMPONENTS OF THE RACKING STRUCTURE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE IMPLEMENTATION OF SPECIFICATIONS SEALED BY THE STRUCTURAL ENGINEER.

FOUNDATION DESIGNS SHALL BE BASED UPON GEOTECHNICAL REPORT/TESTING BY OTHERS. ALL CONSTRUCTION SHALL CONFORM TO THE REQUIREMENTS OF THE GEOTECHNICAL REPORT.

THE POST EMBEDMENT DEPTH IS PRELIMINARY AND SHALL BE VERIFIED BY THE STRUCTURAL ENGINEER OF RECORD PRIOR TO CONSTRUCTION, BASED UPON ON SITE TESTING BY THE GEOTECHNICAL ENGINEER.



TYPICAL RACK - FRON VIEW



TYPICAL RACK - ISOMETIC VIEW

REV	DESCRIPTION	DATE	BY	CHK

DATE:
PREPARED:
CHECKED:
CHECKED:
APPROVED:
CLIENT APPROVAL BY:

PROJECT: Funplex Solar LLC

PROJECT REFERENCE:

CLIENT: oakleaf ENERGY PARTNERS

ENGINEER OF RECORD:

THIS DRAWINGS SHALL NOT BE USED FOR CONSTRUCTION UNTIL SIGNED AND SEALED BY A LICENSED ENGINEER.

ISSUED: CONCEPTUAL

DRAWING NAME:
TYPICAL RACK DETAIL
PV SUPPORT STRUCTURES

oakleaf ENERGY PARTNERS

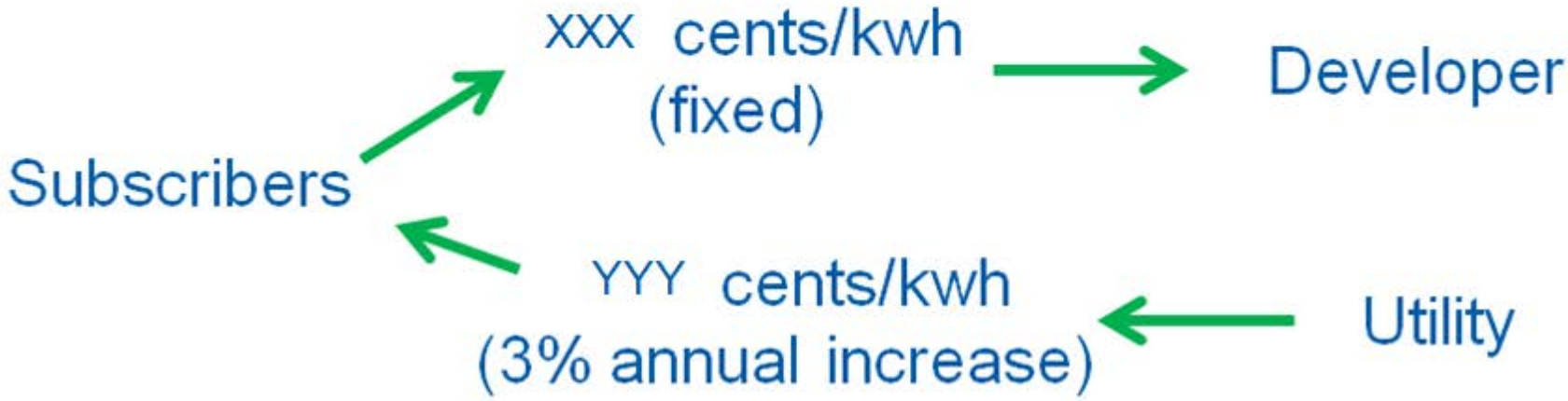
Solar Farm Inverter & Native Grasses

Solar Farm Draft Layout

oakleaf ENERGY PARTNERS

Financial Benefit: Example

4 (1-MW) gardens produces about 5 million kwh/year



METROPOLITAN COUNCIL

Solar Garden Advantages

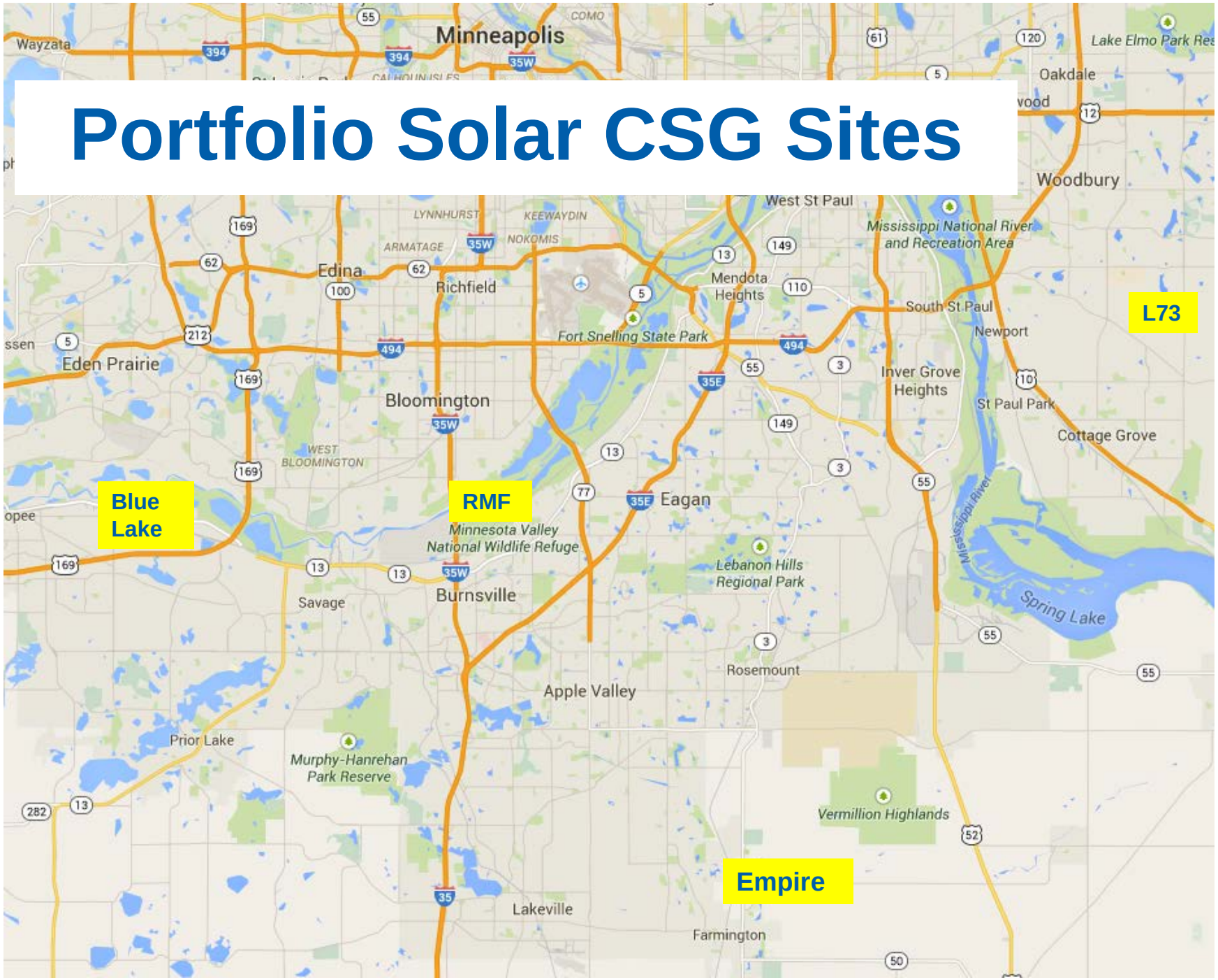
- No loss of interruptible credit
- No solar size limitations based on loading
- No plant infrastructure connection issues
- $ utility credit is independent of what we pay

METROPOLITAN COUNCIL

Oak Leaf Advantage

- Benefit of one solar producer:
  - Lower cost due to economies of scale for O&M.
  - Less operation disruption.
  - Better aesthetics with one large continuous array versus separate fenced areas.
  - Better security (only 1 vendor authorized).
- Low fixed price with low price guarantee
- Economies through the permitting process

Portfolio Solar CSG Sites



Current Request for Proposal (RFP) Timeline

- Feb 20th publish RFP
- March 5th Pre-proposal meeting
- March 10th Site visits for all ES sites
- April 7th Proposal deadline
- April/May Council review proposals
- May/June Select vendor

METROPOLITAN COUNCIL

Proposed Action

That the Metropolitan Council approves a land lease and community solar subscription agreement with Oak Leaf Energy Partners.

METROPOLITAN COUNCIL