



Xcel Energy's Hosting Capacity Map

A Guide to Navigating the Map Online

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Contents

- Introduction 1
- Terms & Acronyms 2
- Navigation & Menus 3
 - Main Screen 3
 - Legend Menu 3
 - Layer List..... 3
 - Popup Box..... 4
 - Attribute Table 4
 - Menu..... 4
 - Popup Tab 5
 - Voltage Regulators Tab 5
 - Substations Tab..... 5
- How-To 6
 - Place a Marker 6
 - Remove a Marker 6

Introduction

This guide has been created to assist with navigation of the hosting capacity map made available to the public on the Xcel Energy website. The hosting capacity map displays a high level estimate of the available hosting capacity for adding distributed generation. Hosting capacity is defined as the amount of generation that can be accommodated at a point on the distribution system without requiring upgrades. This map is one tool which may be used to help assess the available hosting capacity in a given general location.

The determination of the amount of generation that can be accommodated at a point in the distribution system includes several steps, with more specific and more accurate information becoming available as the effort and expense to provide that information increases. A detailed engineering design cost study determines the exact amount of generation that can be accommodated at a given location as well as the mitigations required to interconnect the generation capacity under review. The hosting capacity map is offered free of charge and correspondingly may not be as accurate as the next steps for obtaining more specific information. Also, the map is taken from data as of a given moment in time (which can be viewed on the map), and may not reflect current conditions in a given area. The map is being provided for information purposes only and is not intended to be a substitute for the established interconnection process.

Terms & Acronyms

DG (Distributed Generation): Generation sources which deliver power to the distribution system.

DML (Daytime Minimum Loading): The smallest load on a feeder/transformer during the time period of 10AM to 4PM.

Existing DG: Active DG on the feeder/sub producing power presently.

FDR (Feeder): An array of conductors which distribute power from a substation to customers. There is often more than one feeder per substation and transformer.

FID (Field Identification): Identifies the location of a voltage regulator.

Hosting Capacity: The capacity of a feeder on the distribution circuit to host solar (or other DG) before upgrades are needed.

Limiting Violation: The first factor that exceeds regulatory standards if too much DG is added. This is what limits the hosting capacity.

OH (Overhead Conductor): Conductor which is above ground and strung on a series of poles.

Phase: Refers to how many phases (1, 2, or 3) are present on a section of the feeder.

Queued DG: DG in the process of being interconnected to the feeder/sub, potentially producing power in the near future.

Sub: A transformer in a substation.

Substation: Location where voltage is stepped down from high voltage transmission to a distribution voltage. The conductor system reaching from a substation to the customer is the distribution grid.

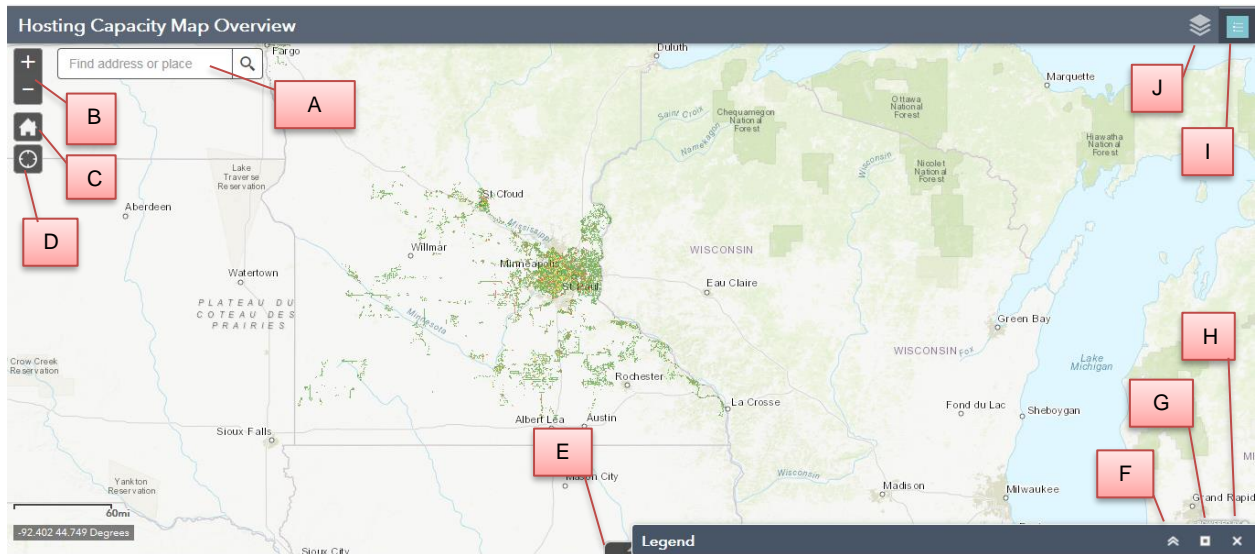
Type: The conductor type at the respective location on a feeder.

UG (Underground Conductor): Conductor which is buried underground.

Voltage Regulator: A device on a feeder that regulates the voltage automatically.

Navigation & Menus

Main Screen



A. Search bar: Allows user to search for a specific location

B. Zoom buttons: Plus allows user to zoom in. Minus allows user to zoom out.

C. Zooms out to the main extension.

D. Zooms into the location of the user.

E. Attribute Table: This is a popup menu displaying map data points.

F. Maximizes or minimizes the menu.

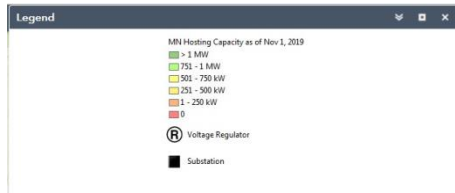
G. Toggle between half and full screen menu views.

H. Closes menu

I. Opens/closes Legend Menu.

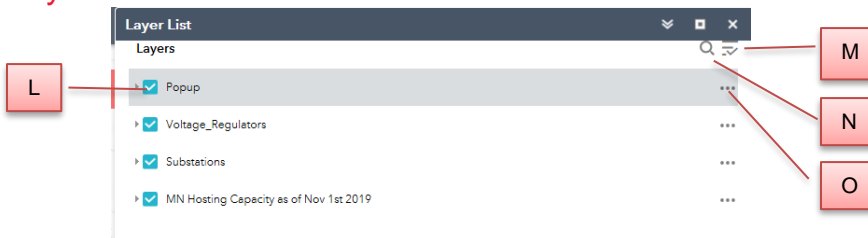
J. Opens/closes Layers Menu.

Legend Menu



This menu displays the key of how much hosting capacity is available at that section on the feeder. Green refers to good availability, yellow to moderate availability, and orange and red to limited availability. It also gives the key for voltage regulators and substations.

Layer List



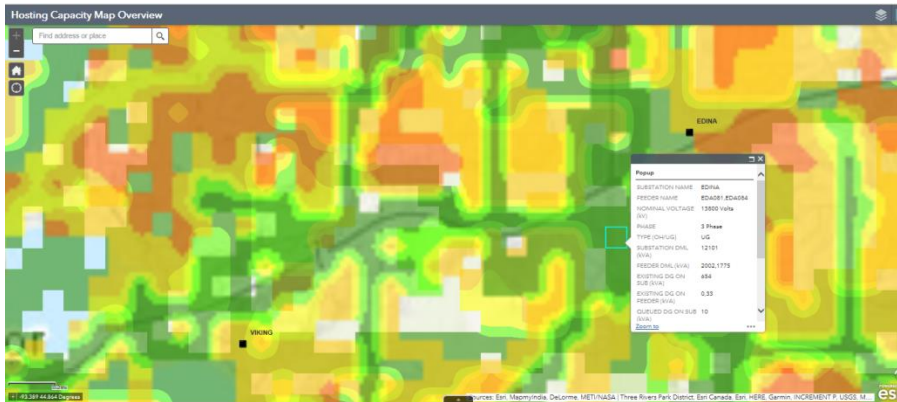
L. Check the box to view selected layer.

M. Menu options

N. Search button. Click and a search box appears.

O. Reveals an option menu for the selected layers.

Popup Box

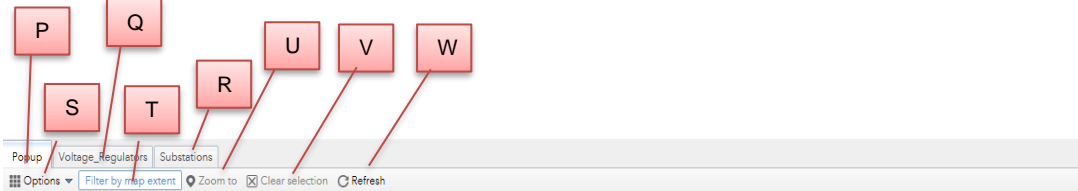


Popup	
SUBSTATION NAME	EDINA
FEEDER NAME	EDA081_EDA084
NOMINAL VOLTAGE (kV)	15800 Volts
PHASE	3 Phase
TYPE (OH/UG)	UG
SUBSTATION DML (kVA)	12101
FEEDER DML (kVA)	2002,1775
EXISTING DG ON SUB (kVA)	654
EXISTING DG ON FEEDER (kVA)	0.53
QUEUED DG ON SUB (kVA)	10
QUEUED DG ON FEEDER (kVA)	0
DATE DG STATUS UPDATED	10/30/2019
HOSTING CAPACITY (kW)	0.87,1.5
LIMITING VIOLATION	ReversePowerFlow
DATE HOSTING CAPACITY UPDATED	10/30/2019

Once a desired location is displayed, double click the area and a blue highlight popup box appears. This box contains details regarding the selection (for acronym explanations see [Terms & Acronyms](#)). Selecting the “Zoom To” link at the bottom of the box centers the screen on the selection. Clicking the three dots on the bottom right of the popup box drops a menu giving choices to: Pan to, Add a Marker, and View in Attribute Table.

Attribute Table

Menu



P. Brings Popup Menu to front

R. Brings Substation Menu to front

T. Filters displayed information to only what is viewable in the current map screen

V. Clears selection

Q. Brings Voltage Regulators Menu to front

S. Reveals Options Menu

U. Zooms to selection

W. Refreshes the list

Popup Tab

SUB	FEEDER	VOLTAGE	PHASE	TYPE	SUB_DML	FDR_DML	SUB_DG	FDR_DG	SUB_Q_DG	FDR_Q_DG	DG_DATE	HOST_CAP	LIMITING	HOST_DATE
BECKER	BEK021	7200 Volts	1 Phase	OH	316	316	126	126	0	0	10/30/2019	0.03	PrimaryOverVolts	10/30/2019
BECKER	BEK021	7200 Volts	1 Phase	OH	316	316	126	126	0	0	10/30/2019	0.03	PrimaryOverVolts	10/30/2019
BECKER	BEK021	7200 Volts	1 Phase	OH	316	316	126	126	0	0	10/30/2019	0.03	PrimaryOverVolts	10/30/2019
FIRST LAKE	FSL311	12470 Volts, 7200 Volts	3 Phase, 1 Phase	OH	13320	6003	11119	11050	51	20	10/30/2019	0	PrimaryOverVolts	10/30/2019
FIRST LAKE	FSL311	7200 Volts	1 Phase	OH	13320	6003	11119	11050	51	20	10/30/2019	0	PrimaryOverVolts	10/30/2019
FIRST LAKE	FSL311	7200 Volts	1 Phase	OH	13320	6003	11119	11050	51	20	10/30/2019	0	PrimaryOverVolts	10/30/2019

This tab gives a variety of information (for acronym explanations see [Terms & Acronyms](#)) regarding the area displayed. Clicking the box to the left of the SUB column highlights the selected section on the Feeder and double-clicking will navigate the map to the selection. The selection will be shown with a highlighted blue box and another popup will appear.

Voltage Regulators Tab

FID
4
5
6
20
21
22
23

52 features 0 selected

Double-click on the box to the left of the number to navigate to this voltage regulator which is then shown by a blue highlight. A single click will also highlight the voltage regulator. Voltage regulators populate the list only when they are within the confines of the area that is being shown.

Substations Tab

NAME
AVERILL
LAKE PARK (MPC)
OSAKIS
DOUGLAS COUNTY
WEST UNION (STEARNS)
WESTPORT
VII I ARD

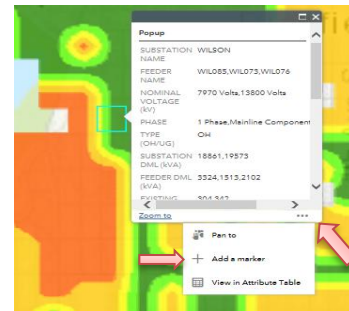
70 features 0 selected

Select a substation by clicking on the box to the left of the desired substation. A blue circle will appear at the substation's location. To navigate to the substation, double-click the box to the left of the substation. The menu populates only the substations that appear within the confines of the area on the screen.

How-To

Place a Marker

To place a marker, first click on the desired location. A popup box appears. On the bottom right side of the box are three dots. Click the dots. From the menu that appears, select “Add a Marker”. An icon marker will appear at the location.



Remove a Marker

To remove a marker, click on the marker and a menu will appear. Click the three dots. From the menu that appears, select “Remove Marker.”

