CATALYST COMMUNITIES

EGLE

Streamlining Solar Permitting and Benefits of SolSmart for Michigan's Local Governments

Housekeeping

All lines are muted during the meeting

Use the "**Q/A**" box in at the bottom of your screen

We are recording this meeting

EGLE CATALYST COMMUNITIES

MICHIGAN DEPARTMENT OF
ENVIRONMENT, GREAT LAKES, AND ENERGY

CATALYST COMMUNITIES

Lisa Thomas, Environmental Engineer Specialist

ThomasL17@michigan.gov | 517-282-6646

Catalyst Communities

Resources to aid communities
with their decarbonization efforts

EGLE CATALYST COMMUNITIES

EGLE SolSmart Advisor

LISA THOMAS

Engineer, EGLE

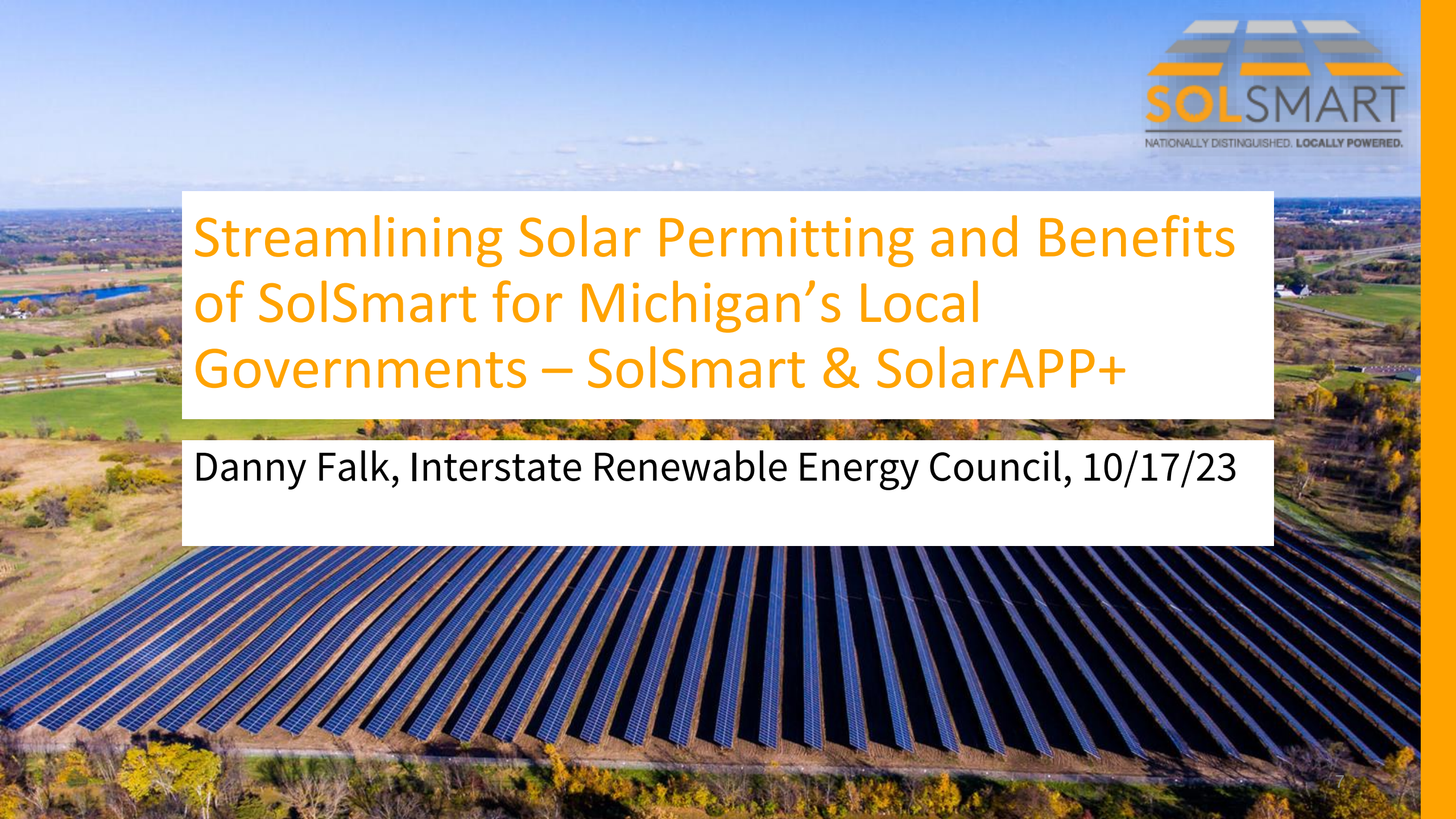
Email: thomasl17@michigan.gov

Phone: (517) 282-6646

Today's Speakers

- Danny Falk, Program Manager, IREC
- John Freeman, Executive Director, GLREA
- Patrick Pitman, Pima County, Arizona/Chief Building Inspector

EGLE CATALYST COMMUNITIES



Streamlining Solar Permitting and Benefits of SolSmart for Michigan's Local Governments – SolSmart & SolarAPP+

Danny Falk, Interstate Renewable Energy Council, 10/17/23

Local Government Action is Important

- 65% of the cost of a solar PV system is not related to hardware. These “soft costs” can be reduced action at the local level, including:
  - Streamlining permitting and inspection;
  - Supporting consumer education;
  - Leading by example;
  - Facilitating group purchasing;
  - Filling gaps in financing; and more!

Introduction to SolSmart

What is it?

SolSmart is a national designation and technical assistance program that has helped over 450 local governments make it faster, easier, and more affordable for residents and businesses to go solar.

A SolSmart designation:

- Recognizes communities that have taken key steps to address local barriers to solar energy and foster the growth of mature local solar markets.
- Demonstrates that a community is “open for solar business,” making it attractive to solar companies and other business development.

Michigan SolSmart Communities

5 communities in Michigan have been designated under SolSmart

- 3 Silver: Grand Rapids, Ann Arbor, Lansing
- 2 Gold: Ypsilanti, East Lansing

What is SolSmart's Role in Solar Development?

- SolSmart helps local governments take action to remove barriers to solar energy growth and make it easier for residents and businesses to go solar
- The program offers **no-cost technical assistance and resources** that help communities become national solar energy leaders
- SolSmart is committed to meeting the goals of the federal **Justice40** program to provide equitable opportunities for underserved communities
- SolSmart helps communities reduce "soft costs" — the costs of solar development that are unrelated to hardware

Criteria and Designation

- Criteria Categories Include:
  - Permitting and Inspection
  - Planning and Zoning
  - Community Engagement
  - Market Development
  - And More!

"The SolSmart program created a national benchmark for communities to reach and provided the guidance and resources to support adoption of best practices in solar policy."– Maurice Jones, City Manager, Charlottesville, Virginia

Designation Structure

There are four levels of designation: Bronze, Silver, Gold, and (new in 2023) Platinum. Communities achieve designation by meeting prerequisites (listed below for each level) as well as meeting other elective criteria.

Permitting Best Practices

Best Practices

1. Post an online checklist detailing the required permit(s), submittals, and steps of your community's permitting process for residential rooftop solar PV. (PI-1)
2. Post an online statement confirming a three-business day turnaround time for residential rooftop solar PV. (Required for Gold) (PI-4)
3. Demonstrate pathway for instant/automatic approval of residential rooftop solar PV systems (e.g., using SolarAPP+) (PI-5)

Permitting Best Practices

Best Practices

1. Post an online checklist detailing the required permit(s), submittals, and steps of your community's permitting process for residential rooftop solar PV. (PI-1)
2. Post an online statement confirming a three-business day turnaround time for residential rooftop solar PV. (Required for Gold) (PI-4)
3. Demonstrate pathway for instant/automatic approval of residential rooftop solar PV systems (e.g., using SolarAPP+) (PI-5)

Community Spotlight: Ypsilanti

- Designated SolSmart Gold in 2017
- Low-income housing, fire station, and other solar installations
- City expectations were $6,000 annually in savings for solar fire station installation and a 5-year payback period

Introduction to SolarApp+

What is it?

SolarApp+ is a standardized plan review software that can run compliance checks and process building permit approvals for eligible rooftop solar systems

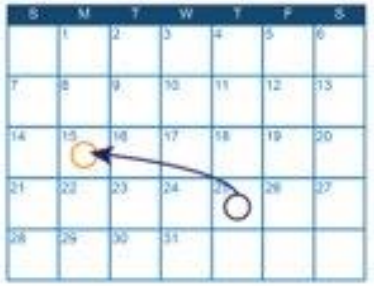
SolarApp+ was developed to..

- Accelerate rooftop solar adoption
- Make it easier for local governments to quickly and safely approve rooftop PV projects for installation

Summary Performance in 2022

- 31 jurisdictions in Arizona, California, Texas, and Virginia had implemented SolarApp+
- These jurisdictions issued a total of 11,092 permits

Shorter project timelines



A typical SolarAPP+ project is permitted, installed, and inspected around 13 business days sooner than traditional projects

Based on differences in median durations

Staff time savings

NREL estimates SolarAPP+ saved around 9,900 hours of jurisdiction staff time through automated permit reviews in 2022

Potential inspection benefits

(further research required)

SolarAPP+ projects have been about 29% less likely to fail inspections than traditional projects

Based on data from 12 jurisdictions

EGLE

SolarAPP+

SOLSMART

NATIONALLY DISTINGUISHED. LOCALLY POWERED.

SolarAPP+ Flow

Installer submits an application with design specifications through SolarAPP

1

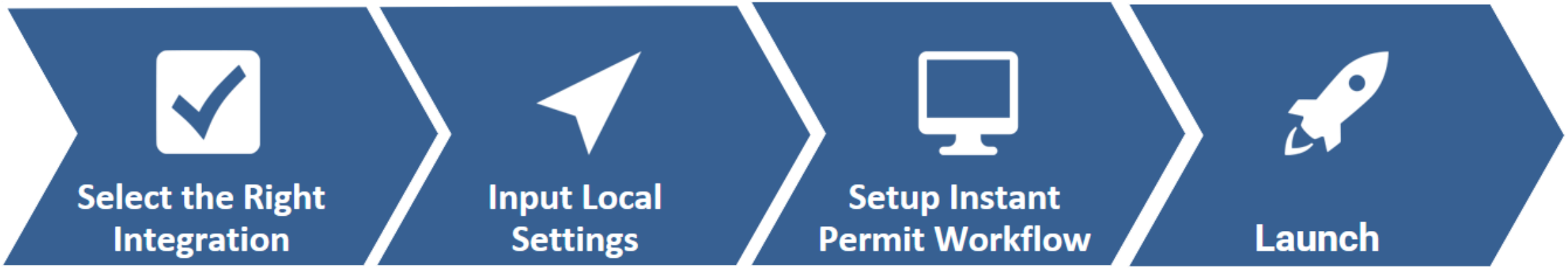
2

SolarAPP checks the application to ensure the system design is code compliant

3

Code compliant applications are issued a permit instantly after fee payment

Four Steps to Adopting SolarAPP=



SolarAPP can be set up to:

- ***integrate*** *with your existing online permitting software*
- **stand alone** as a complete online permitting solution

These include:

- Permitting contacts
- AHJ boundaries
- Local wind and snow variables
- Model code years
- Terms and conditions

Depending on your integration, either:

- Set up an instant permit application in your software
- Set up permit payments in SolarAPP

This involves:

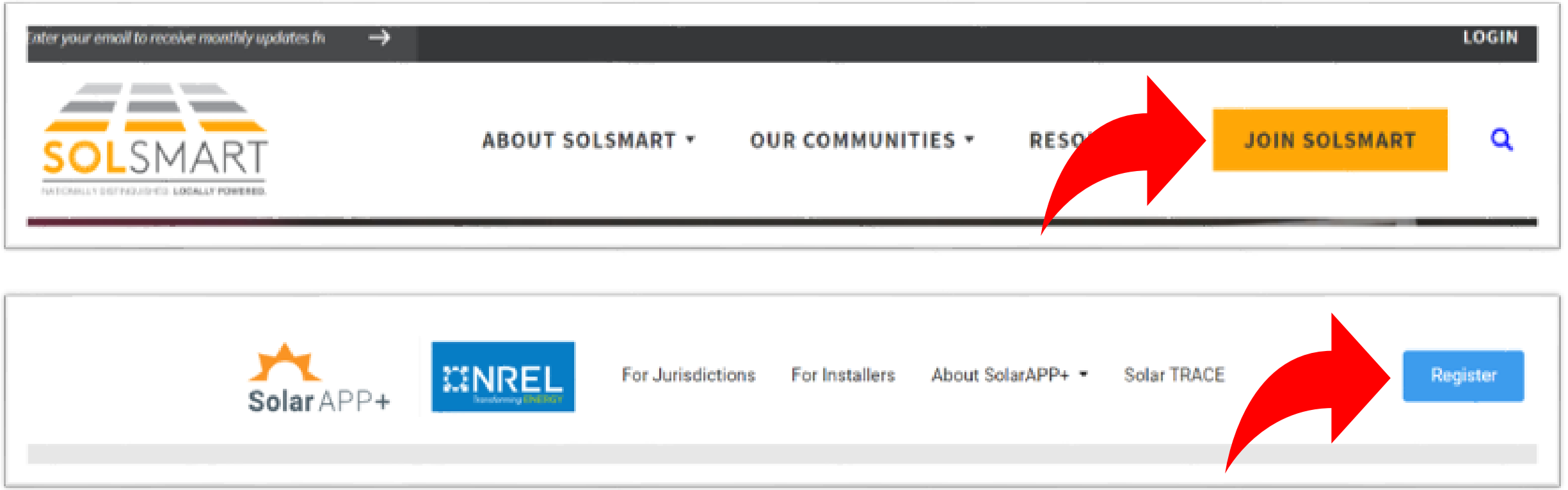
- Inviting 1-3 installers to use your SolarAPP permitting process
- Opening up SolarAPP+ permitting to all installers

EGLE

SolarAPP+

SOLSMART
NATIONALLY DISTINGUISHED. LOCALLY POWERED.

How Can Communities Enroll?



GLREA Solarize, SolSmart, SolarApp+ and Guidebook

John Freeman, Executive Director
October 17, 2023

GLREA
GREAT LAKES RENEWABLE ENERGY ASSOCIATION

GLREA

The Great Lakes Renewable Energy Association (GLREA) is a non-profit organization of solar energy advocates who support the expansion and adoption of renewable energy in Michigan.

- GLREA's mission is to educate and enable homeowners, farmers, and businesses to save money and protect our environment by installing a renewable energy system and to establish policies that support the expansion of renewable energy in Michigan.
- Become a member or learn more by visiting GLREA.org

What is Solarize?

How It Works:

- Community based group-buy program that reduces the cost of buying solar.
- Host/Organizer brings together interested people for a meeting
- At the Meeting, GLREA works with installer/s to educate about the program and the benefits of solar

Interested people can get a free estimate!

GLREA
GREAT LAKES RENEWABLE ENERGY ASSOCIATION

Group Buy Example

Group Buy discounts are based on numbers:

- 5% discount if 3+ new arrays
- 10% discount if 7+ new arrays
- 15% discount if 10+ new arrays

Group Buy reduces Price per Watt Average: PPW:$2.50-$2.70/watt with some outliers above and below

- Individuals are free to get other bids!
- Vetting Installers

GLREA
GREAT LAKES RENEWABLE ENERGY ASSOCIATION

As of March 2022

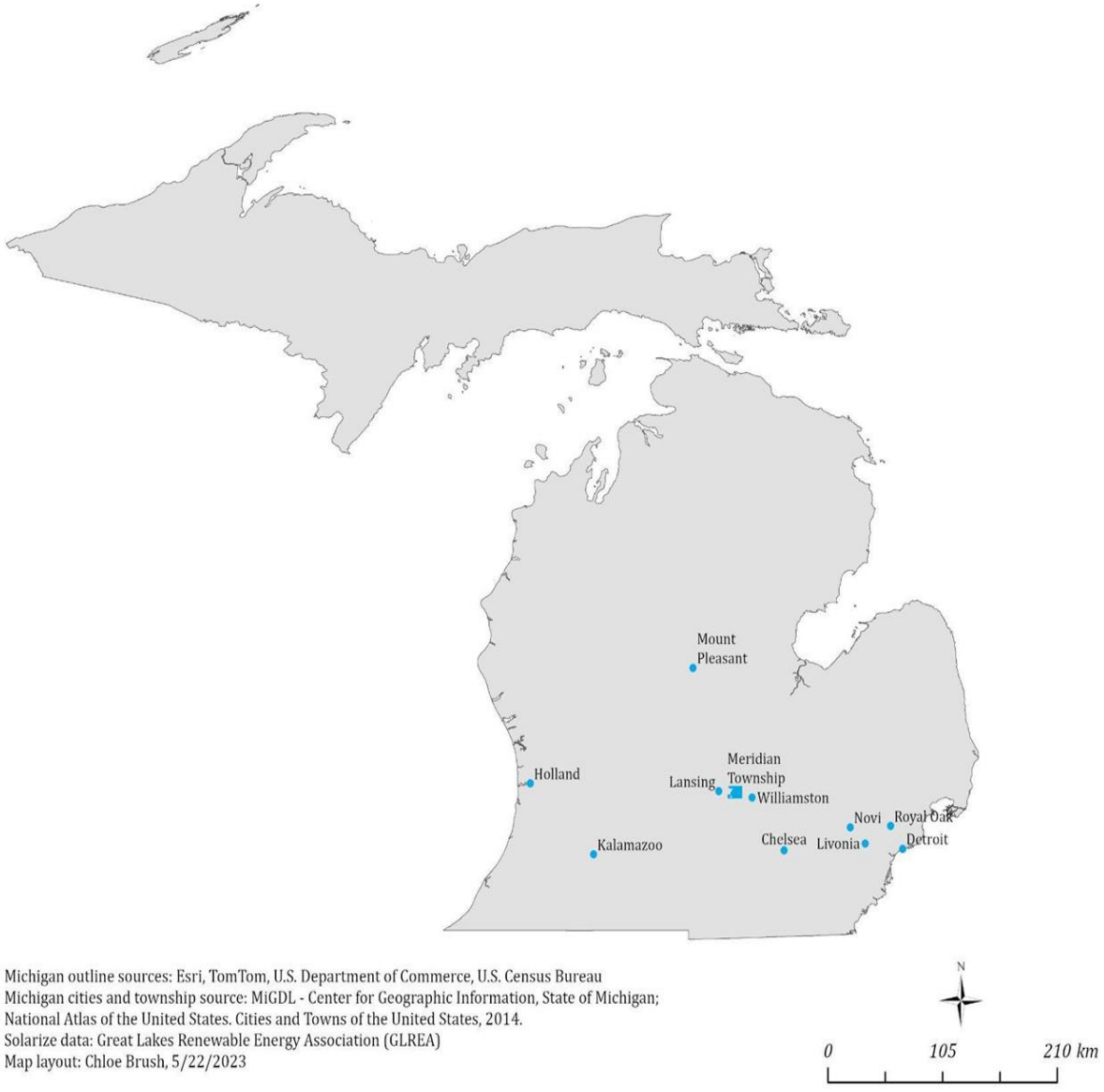
29 Solarize Meetings

410 Participants

50+ Sales

370+ Kw’s of New Sola

GLREA Solarize Locations



Michigan outline sources: Esri, TomTom, U.S. Department of Commerce, U.S. Census Bureau
Michigan cities and township source: MiGDL - Center for Geographic Information, State of Michigan; National Atlas of the United States. Cities and Towns of the United States, 2014.
Solarize data: Great Lakes Renewable Energy Association (GLREA)
Map layout: Chloe Brush, 5/22/2023

SolSmart and SolarAPP+

SolSmart

- Program that:
  - Provides jurisdictions free technical assistance on implementing solar infrastructure
  - Speeds up the approval process to build new solar projects
  - Gives communities a nationally recognized designation (Bronze, Silver, Gold, Platinum)

ICMA

IREC Interstate Renewable Energy Council

U.S. DEPARTMENT OF ENERGY

SOLSMART NATIONALLY DISTINGUISHED. LOCALLY POWERED.

GLREA GREAT LAKES RENEWABLE ENERGY ASSOCIATION

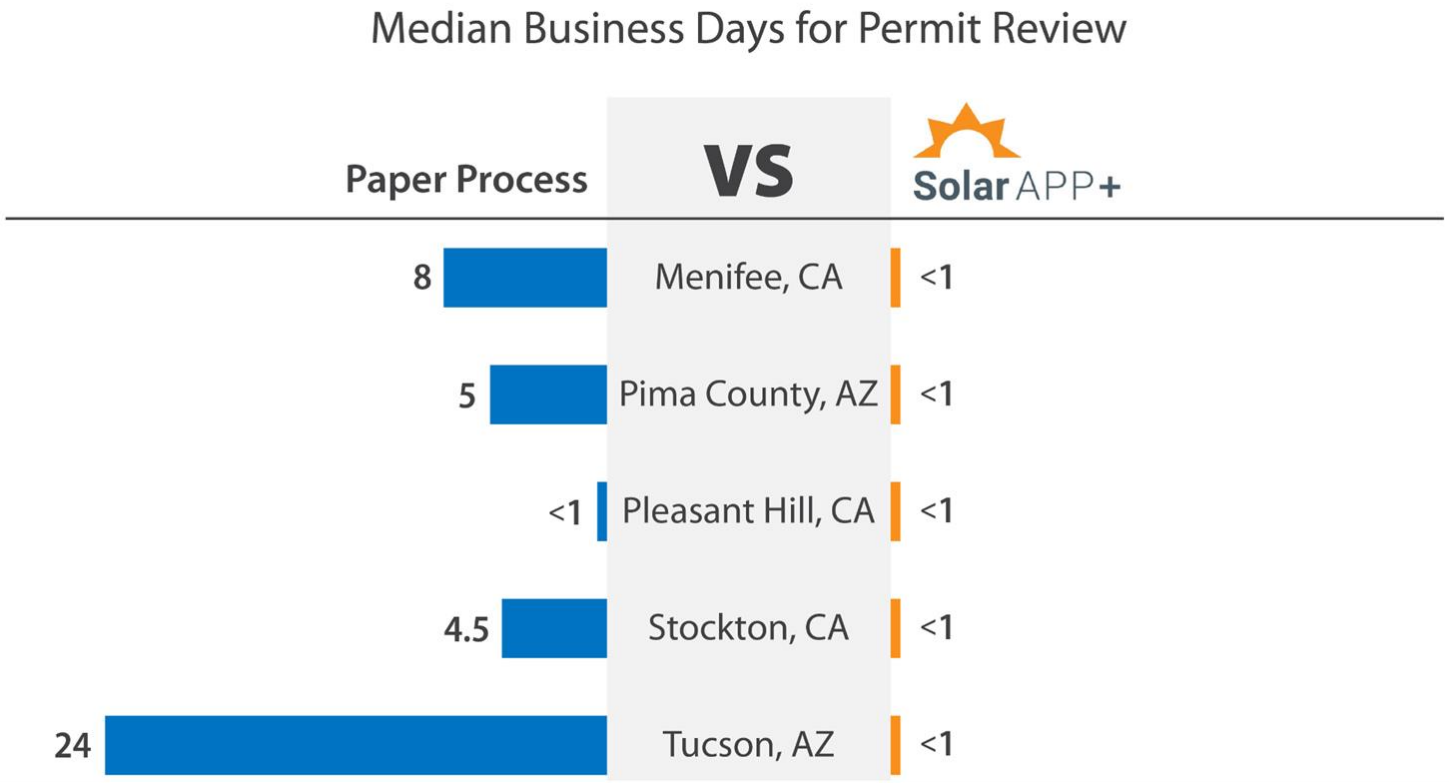
SolSmart Cities in Michigan

Base layer: GTC Equalization/GIS, Esri, HERE, Garmin, FAO, NOAA, USGS, EPA, NPS
Cities layer: National Atlas of the United States. (2013). Cities and Towns of the United States, 2014.
SolSmart Data: https://solsmart.org/our-communities
Map layout: Chloe Brush, 5/17/2023

GLREA
GREAT LAKES
RENEWABLE ENERGY
ASSOCIATION

SolarAPP+

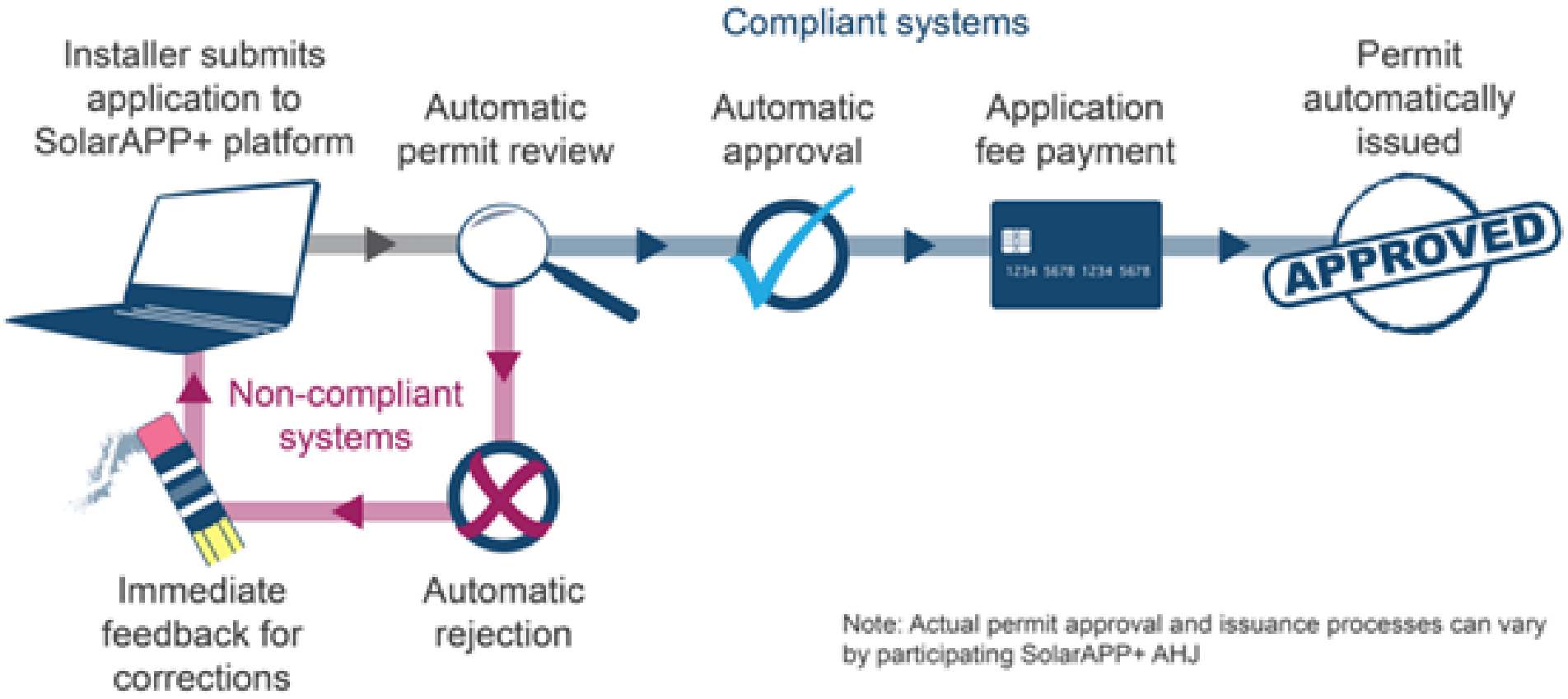
- Online web portal that automates the solar permit approval process
- Reduces the cost and decreases the time for solar installation



Source: https://www.seia.org/events/solarapp-pilot-results-are-ahjs-homeowners-and-contractors-save

NREL
NATIONAL RENEWABLE ENERGY LABORATORY

GLREA
GREAT LAKES RENEWABLE ENERGY ASSOCIATION

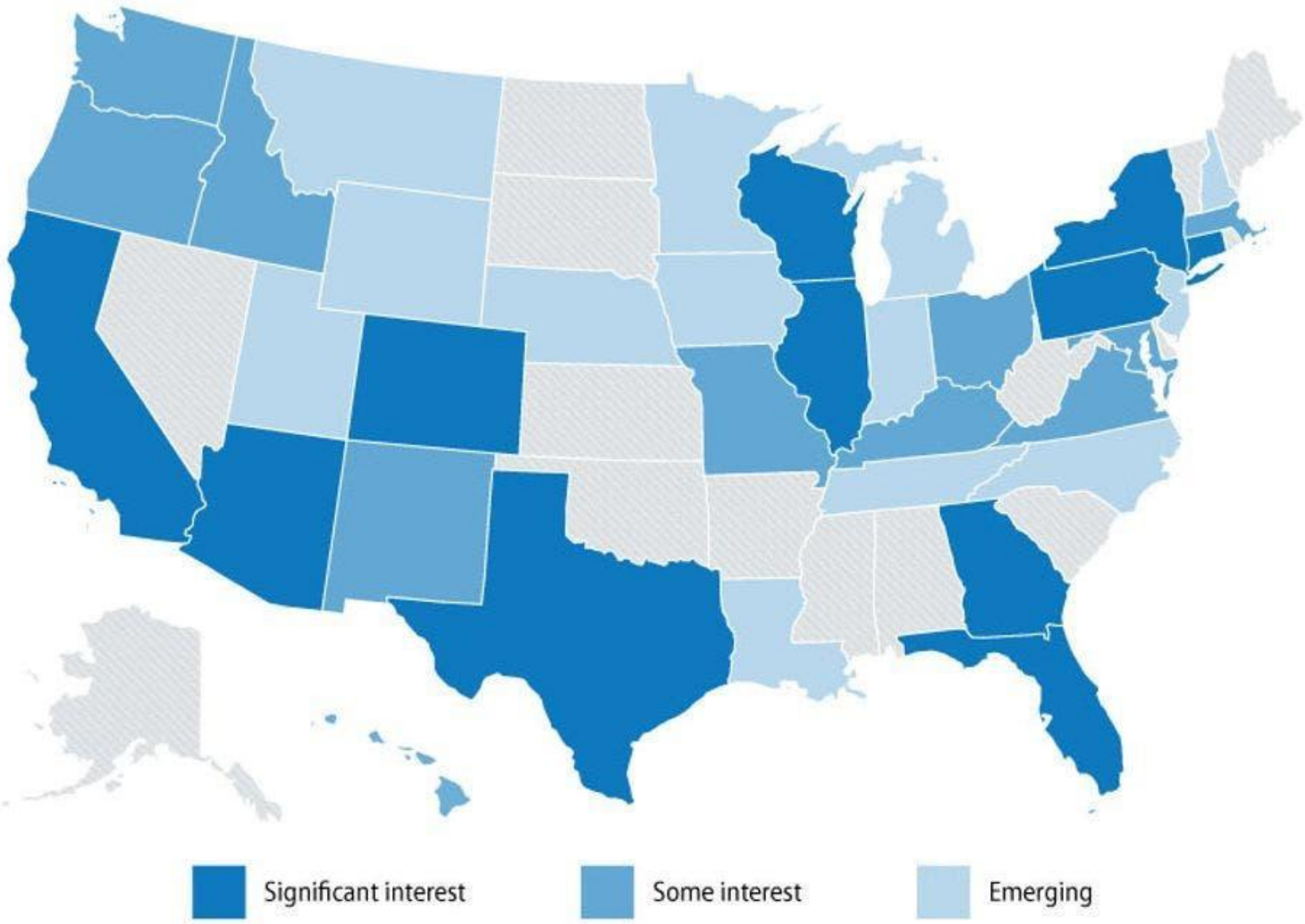


Source: https://www.energy.gov/eere/articles/eere-success-story-solarapp-rips-red-tape-approval-process-rooftop-solar-panels

GLREA
GREAT LAKES RENEWABLE ENERGY ASSOCIATION

2022 Statistics

- Eliminated **134,000 days** of delays for solar adoption
- 2021-2022: communities utilizing SolarAPP+ grew from **13 to 31**
    - 90 communities testing the app
- Shortens project timelines by **13 business days**
- Projects were **29% less likely to fail inspections** than traditionally permitted projects
- Processed **11,000 permits** in 2022
    - 300% increase from 2021
    - **10,000 hours** of staff time saved



GLREA
GREAT LAKES RENEWABLE ENERGY ASSOCIATION

Source: https://cleantechnica.com/2022/07/01/california-energy-commission-to-give-grants-to-cities-counties-that-adopt-solarapp/

How SolSmart and SolarAPP+ Work Together

- SolarAPP+ streamlines and accelerates a jurisdiction's SolSmart designation process
- SolarAPP+ gives jurisdictions a significant number of required credits for SolSmart
    - Platinum designation requires a system for instant approval of residential rooftop solar
    - Governments receive 5 SolSmart credit points for simply receiving a SolarAPP+ demonstration

GLREA
GREAT LAKES RENEWABLE ENERGY ASSOCIATION

Michigan Solar Communities Guidebook

- A Practical Guide for Solar Energy Advocates and Local Units of Government
  - Purpose: To help Local Units of Government, Organizations and Individuals learn about solar and geothermal energy, and be able to support the deployment of it.
- Made original graphics and maps
- Examples of Chapters:
  - The Deployment of Renewable Energy in Michigan
  - Community Solar in Michigan
  - Community Solar Case Studies
  - GLREA Solarize Michigan
  - Solar Energy – Return on Investment

GLREA
GREAT LAKES RENEWABLE ENERGY ASSOCIATION

Questions?

For more info contact:

Megan Husted
mhusted@umich.edu

John Freeman
Jfreeman13@comcast.net

GLREA
GREAT LAKES RENEWABLE ENERGY ASSOCIATION

PIMA COUNTY

DEVELOPMENT SERVICES

ADOPTING SOLARAPP+: USING TECHNOLOGY TO STREAMLINE CLEAN ENERGY DEPLOYMENT

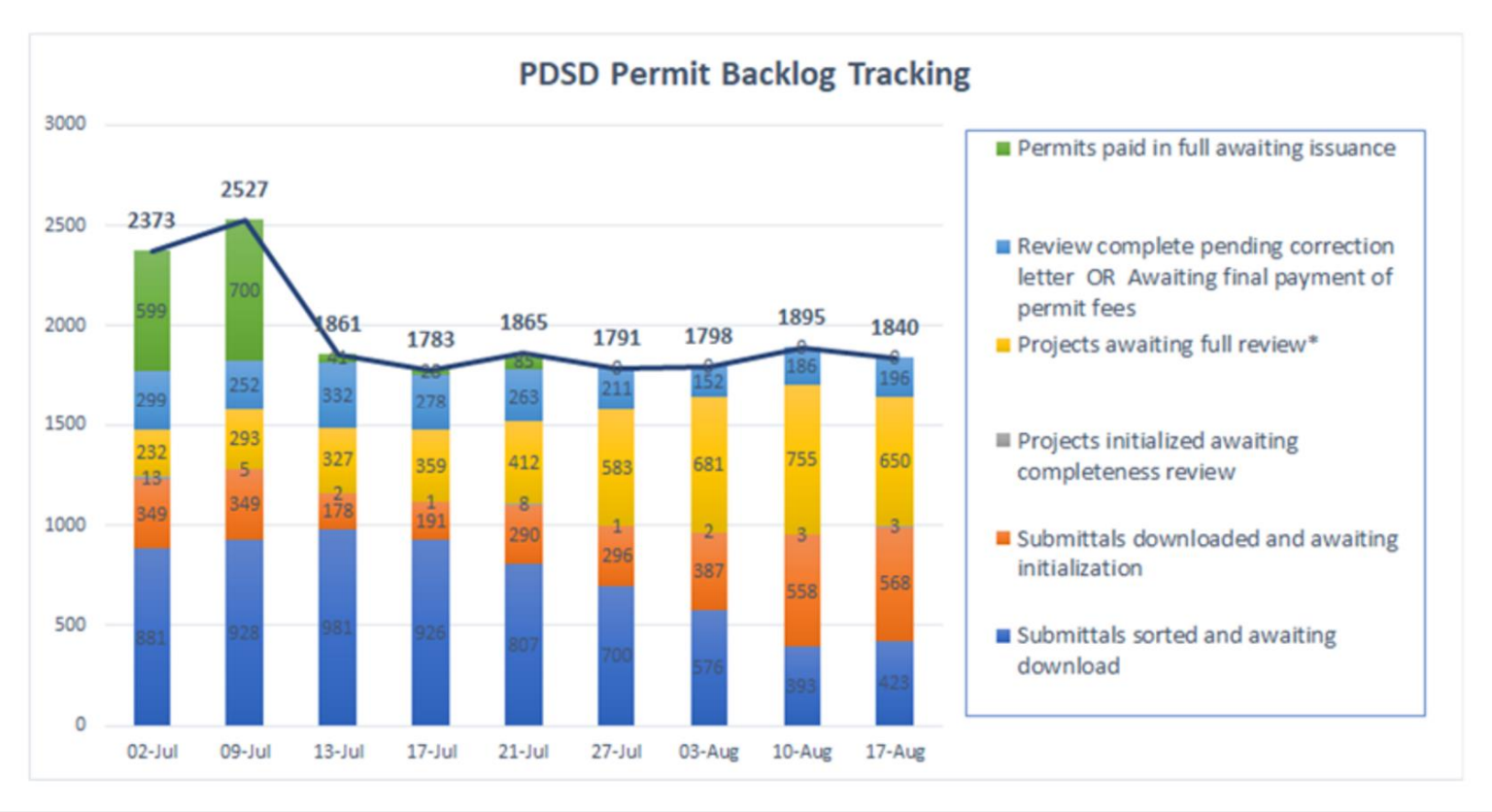
By Pima County

Building and Site Development.

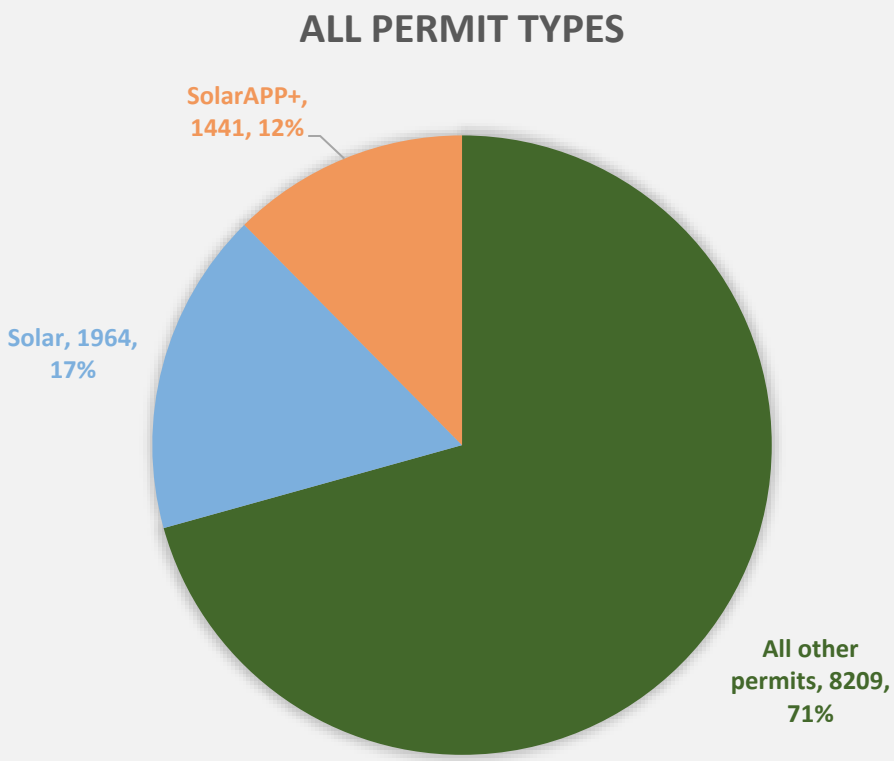
STATISITICS

with Vuspex

2000 BACKLOGGED PERMITS



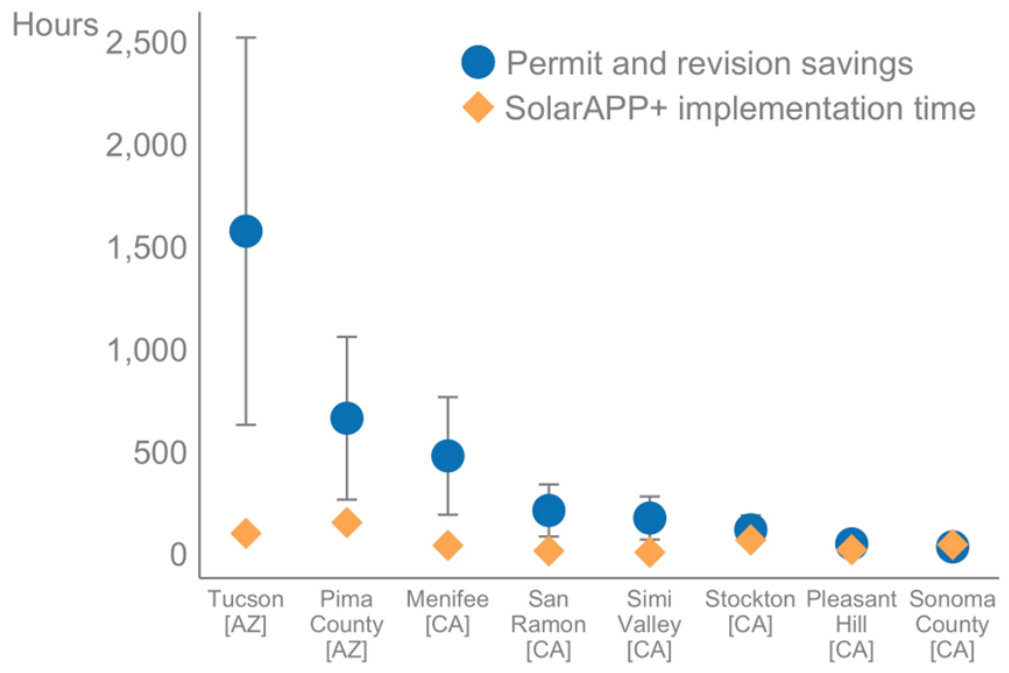
SOLARAPP+ BENEFITS IN PIMA COUNTY



- 2,906 Permit review hours saved
- Saving 1.5 FTE

PIMA COUNTY
DEVELOPMENT SERVICES

TIME SAVINGS = LOWER COSTS



- Lower Fees
- Staff Resources
- Consistency of Reviews

Estimated AHJ staff review time savings from SolarAPP+ permit processing

PIMA COUNTY
DEVELOPMENT SERVICES

PROCESS

with Vuspex

SOLARAPP+ PROCESS SUMMARY

Installer submits an application with design specifications through SolarAPP+

1

2

SolarAPP checks the application to ensure the system design is code compliant

3

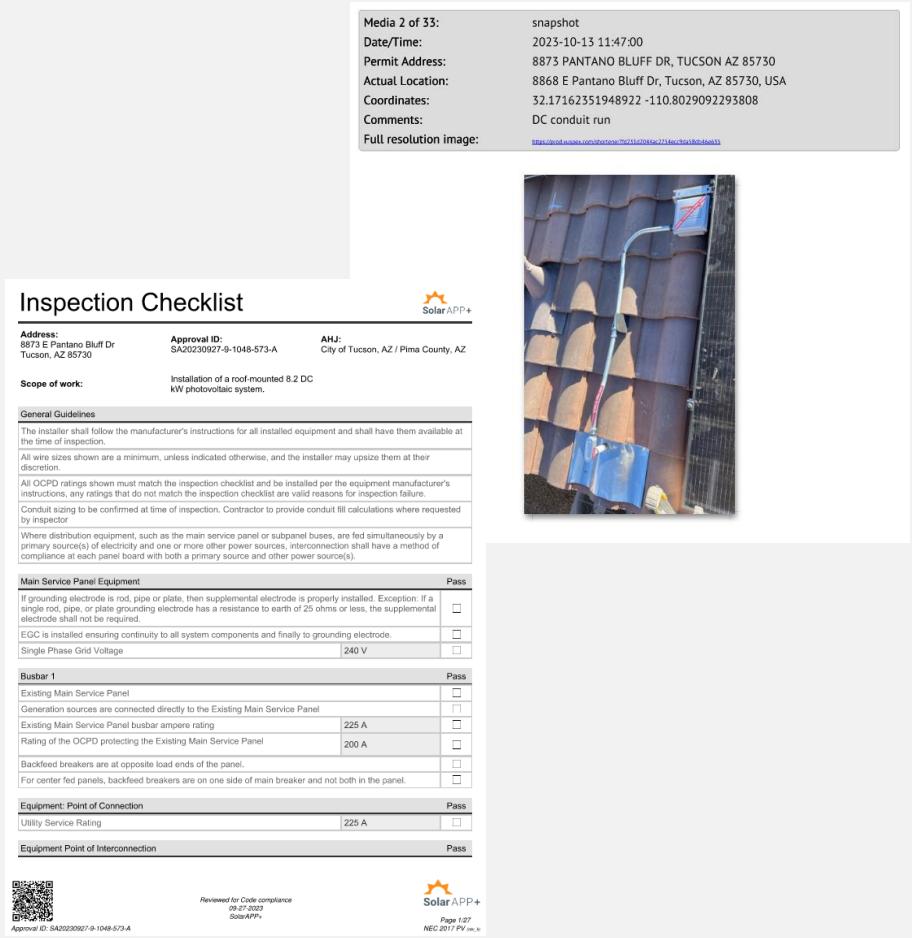
Code compliant applications are issued a permit instantly after fee payment

INSPECTIONS

with Vuspex

REMOTE INSPECTION

- 10 point inspection list
- *Offline Field Reports (OFR) Required*
- *Makes an installation, quick and efficient process*



Media 2 of 33:	snapshot
Date/Time:	2023-10-13 11:47:00
Permit Address:	8873 PANTANO BLUFF DR, TUCSON AZ 85730
Actual Location:	8868 E Pantano Bluff Dr, Tucson, AZ 85730, USA
Coordinates:	32.17162351948922 -110.8029092293808
Comments:	DC conduit run
Full resolution image:	

Inspection Checklist

SolarAPP+

Address: 8873 E Pantano Bluff Dr Tucson, AZ 85730

Approval ID: SA20230927-9-1048-573-A

AHJ: City of Tucson, AZ / Pima County, AZ

Scope of work: Installation of a roof-mounted 8.2 DC kW photovoltaic system.

General Guidelines
The installer shall follow the manufacturer's instructions for all installed equipment and shall have them available at the time of inspection.
All wire sizes shown are a minimum, unless indicated otherwise, and the installer may upsize them at their discretion.
All OCPD ratings shown must match the inspection checklist and be installed per the equipment manufacturer's instructions, any ratings that do not match the inspection checklist are valid reasons for inspection failure.
Conduit sizing to be confirmed at time of inspection. Contractor to provide conduit fill calculations where requested by inspector
Where distribution equipment, such as the main service panel or subpanel buses, are fed simultaneously by a primary source(s) of electricity and one or more other power sources, interconnection shall have a method of compliance at each panel board with both a primary source and other power source(s).

Main Service Panel Equipment		Pass
If grounding electrode is rod, pipe or plate, then supplemental electrode is properly installed. Exception: If a single rod, pipe, or plate grounding electrode has a resistance to earth of 25 ohms or less, the supplemental electrode shall not be required.		☐
EGC is installed ensuring continuity to all system components and finally to grounding electrode.		☐
Single Phase Grid Voltage	240 V	☐

Busbar 1		Pass
Existing Main Service Panel		☐
Generation sources are connected directly to the Existing Main Service Panel		☐
Existing Main Service Panel busbar ampere rating	225 A	☐
Rating of the OCPD protecting the Existing Main Service Panel	200 A	☐
Backfeed breakers are at opposite load ends of the panel.		☐
For center fed panels, backfeed breakers are on one side of main breaker and not both in the panel.		☐

Equipment: Point of Connection		Pass
Utility Service Rating	225 A	☐

Equipment Point of Interconnection	Pass

Approval ID: SA20230927-9-1048-573-A

Reviewed for Code compliance 09-27-2023 SolarAPP+

SolarAPP+

Page 1/27 NEC 2017 PV

Pima County / City of Tucson

Automated PV Permits

For Residential Rooftop Solar Only

Start

- Prepare your submittal and ensure it meets the automated review requirements
- Go to the SOLAR One Stop web page
- Select the link for the SolarAPP Website

SolarAPP

- Fill out the application, submit documents and plans, and verify contractors license
- SolarAPP reviews design requirements
- SolarAPP will collect a small processing fee
- Approval ID number issued
- Stamped approved plans can then be downloaded

Permitting

- Apply for a electrical/mechanical building permit using Accela ACA
- Fill out application with Approval ID number
- Upload stamped approved plans and documents

Issuance

- Upon payment of the automated permit fee, the permit is issued
- Remote inspections are required for automated solar permits

Inspection

- Contractor will schedule a remote inspection of completed installation
- Upon completion of the inspection, Results will be posted for your retrieval.

PIMA COUNTY
DEVELOPMENT SERVICES

2020.12.03 sr

THANK YOU

Patrick Pitman

(520) 419-6411

Patrick.Pitman@pima.gov

www.pima.gov/developmentservices

PIMA COUNTY
DEVELOPMENT SERVICES

QUESTIONS?

Upcoming Webinars

- November 1, 1-2 PM
  MI Solar Communities: How to Finance and Develop a Community Solar Project
- November 14, 11-12 PM
  Tools and Resources to Help Communities Navigate Materials Management

EGLE CATALYST COMMUNITIES