Rooftop Solar Permits & Inspections

January 10, 2018

Concern

Consumers may not know the condition of their roof prior to installing a rooftop solar system, leading to additional costs when roof replacement and/or repairs are needed.

Project Purpose

Research current solar installation standards and processes and provide options for increased consumer protection for Reno City Council consideration
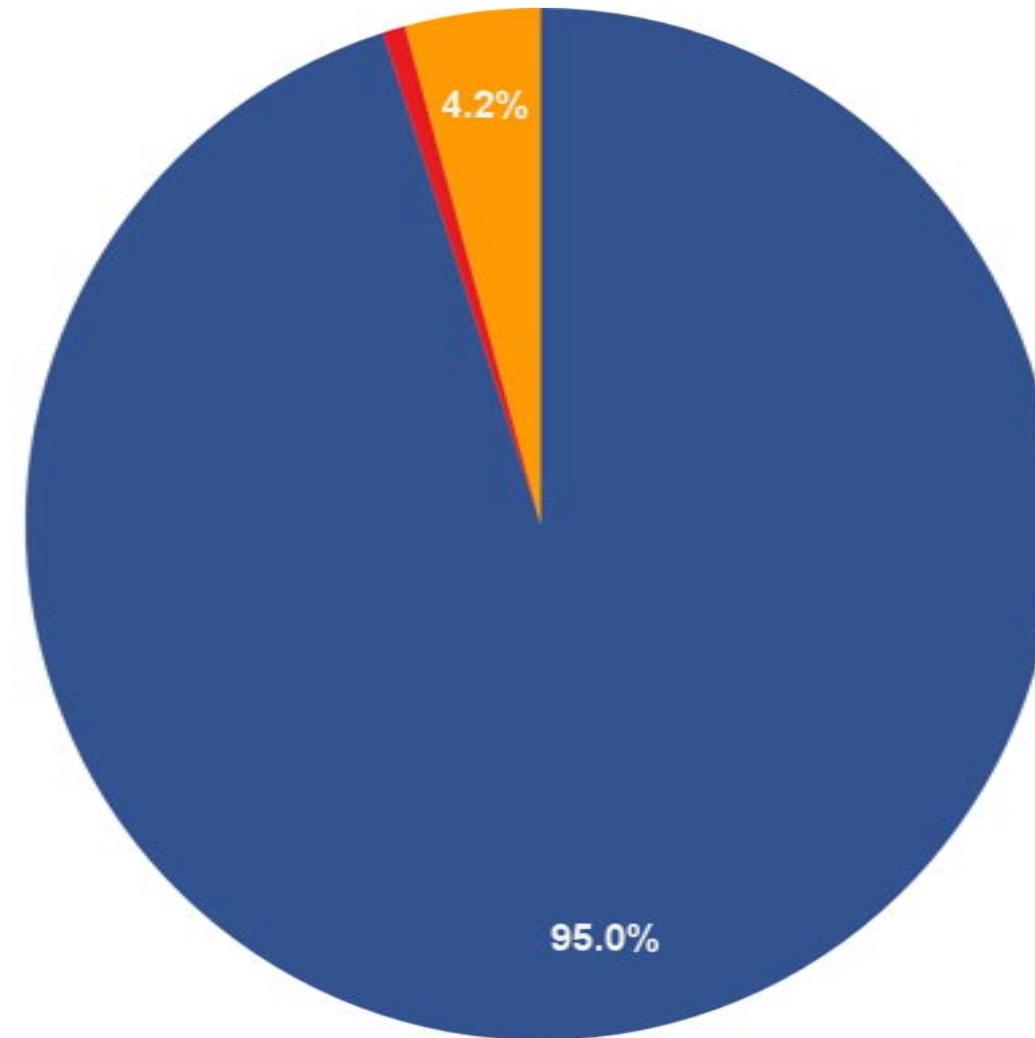
Today's Presentation

- Solar Installation Activity
- Current Permit & Inspection Process
- Local Rooftop Solar Research
- Options for Council Consideration

Solar Installation Activity

July 1, 2015 to October 12, 2017
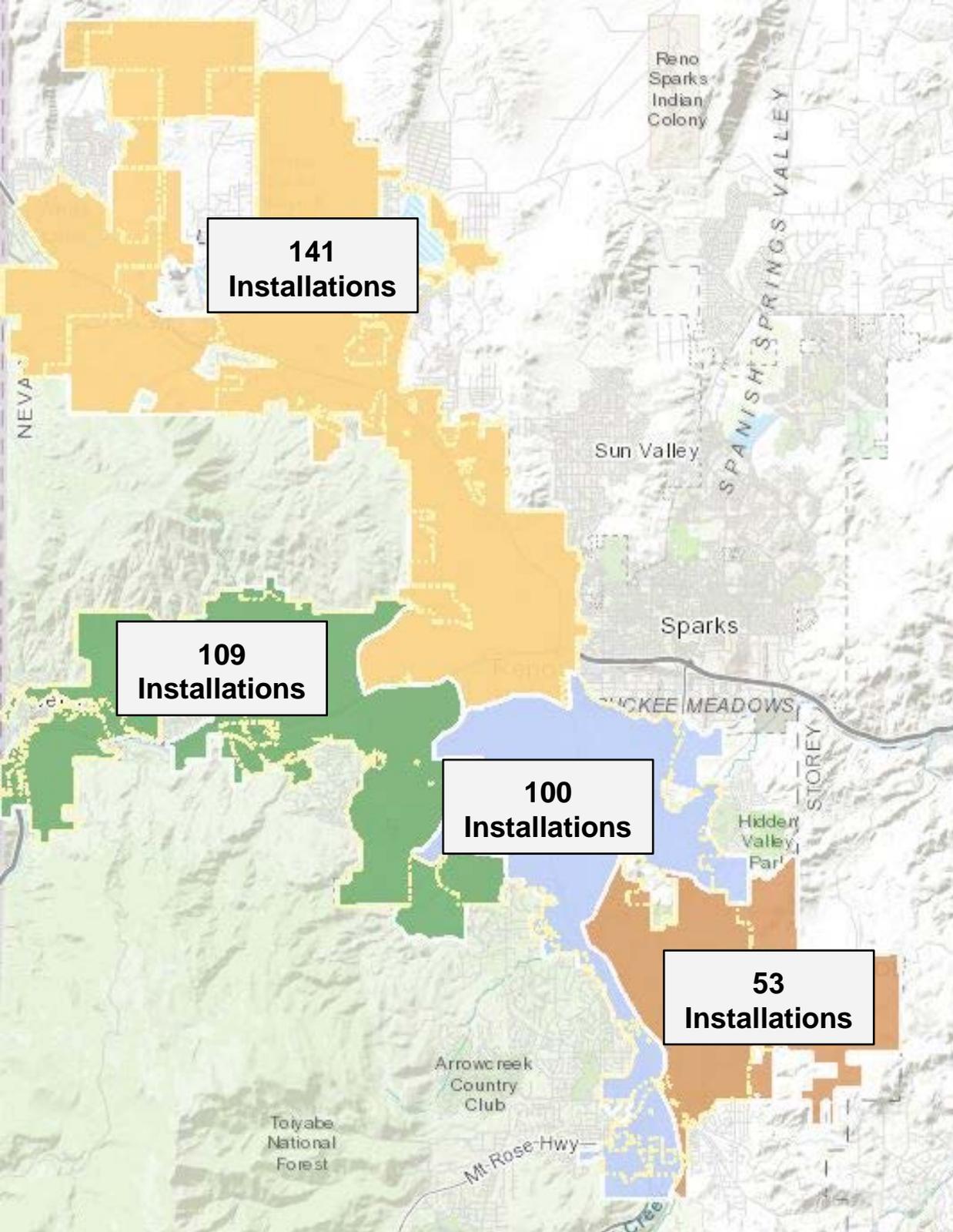
Key Takeaways

- **424 permits** issued between July 1, 2015 and October 12, 2017 for solar installations at residential locations.

- This represents approximately **2%** of total building permits issued during that time frame.

- **Roof-mounted** installations are by far the most common.

4.2%

95.0%

● Roof Mounted   ● Ground Mounted   ● Work Not Performed

RENO

A Closer Look at Solar Rooftop Installations

- **403** total rooftop solar installations occurred between July 1, 2015 and October 12, 2017.

- Installations are occurring **throughout the city**.

- Types of roofs where installations are occurring:
  - **Composite roofs (66 percent)**
  - Tile roofs (31.5 percent)
  - Shake roofs (0 percent)
  - Metal roofs (1.5 percent)
  - Other (1 percent)

Current Permit & Inspection Process

Plan Submitted	Plan Reviewed	Permit Issued	Inspection Completed	Project Approved

Plan Submitted

Includes:
➔ Installation location details
➔ Structural Roof analysis
➔ Electrical plans

Plan Reviewed

➔ Verify structural roof analysis
➔ Review electrical plans to National Electrical Code

Permit Issued

➔ Issued after any required revisions and plans receive approval

Inspection Completed

➔ Ensure solar system is installed as approved in the plans

Project Approved

➔ City of Reno signs off on project

Rooftop Solar Permit Roof Analysis

What aspects of the roof are reviewed and/or inspected during the current process?

- Review roof structure
- Verify load capacity (how much weight can the roof hold, including average snow for the area)
- Look at wind thresholds
- Inspect installation of solar panels and electrical connections to ensure they are attached properly

What aspects of the roof are NOT reviewed and/or inspected during the current process?

- Determination of roof life expectancy
- Inspection of integrity of roof covering

Roof Information Availability to Homeowners

- **Home Inspections when Purchasing Property**
  - Home inspectors provide detailed report of deficiencies

- **Requests by Homeowners**
  - Inspectors and engineers can be hired to provide detailed deficiency reports
  - Roofing contractors can identify deficiencies and prepare a bid to repair and/or replace roof

Source: Clarion Associates

Local Rooftop Solar Research

- **Rooftop Solar Installation Contract Language**
  - Solar installation companies consult with the customer and address the current roof conditions.
  - If necessary and desired, a roofing contractor can be hired to repair any deficiency prior to the installation of the solar equipment.
  - Common contract language provides warranty for workmanship, attachment, and penetration of all existing roofing membranes.

- **Complaints**
  - No complaints made to the Building Department through Reno Direct between July 13, 2015 and January 25, 2017 related to rooftop solar.

- **Roof Condition**
  - Staff surveyed 403 roofs with solar installed between July 1, 2015 and October 12, 2017
    - Excellent Condition = 210 (52.1 percent)
    - Good Condition = 187 (46.4 percent)
    - Poor Condition = 6 (1.5 percent)

Source: Clarion Associates

Discussion of Options

Option A	Option B	Option C
Create ordinance to require roof inspection prior to rooftop solar panel installation.	Develop/implement a City policy that involves informing homeowners of possible risks prior to installation and requires a signed acknowledgement form prior to issuance of permit.	Keep current permit and inspection process in place

Thank You!