

Submittal Requirements Solar Photovoltaic Installations 10 kW or Less in One- and Two-Family Dwellings

This information is intended to guide applicants through a streamlined permitting process for solar photovoltaic (PV) projects 10 kW in size or smaller. This handout provides information about submittal requirements for plan review, required fees and inspections.

Approval Requirements

The following permits are required to install a solar PV system with a maximum power output of 10 kW or less:

- Electrical Permit
- Building Permit if structural alterations or modifications are required to the roof.

Submittal Requirements

- Completed permit application form. This permit application form is available at City Hall or can be downloaded at riodellcity.com.
- Demonstrate compliance with the eligibility checklist for expedited permitting. The checklist is available at City Hall or can be downloaded at riodellcity.com.
- A completed Electrical Plan. The Electrical Plan must include the following:
 - ◆ *Locations of main service or utility disconnect; and*
 - ◆ *Total number of modules, number of modules per string and the total number of string; and*
 - ◆ *Make and model of inverter(s) and/or combiner box if used; and*
 - ◆ *One-line diagram of system; and*
 - ◆ *Specify grounding/bonding, conductor type and size, conduit type and size and number of conductors in each section of conduit; and*
 - ◆ *If batteries are to be installed, include them in the diagram and show their locations and venting; and*
 - ◆ *Equipment cut sheets including inverters, modules, AC and DC disconnects, combiners and wind generators; and*
 - ◆ *Labeling of equipment as required by CEC, Sections 690 and 705; and*
 - ◆ *Plot Plan showing the arrangement of panels on the roof or ground, north*

arrow, lot dimensions and the distance from property lines to adjacent buildings/structures (existing and proposed).

- A roof plan showing roof layout, PV panels and the following fire safety items: approximate location of roof access point, location of code-compliant access pathways, PV system fire classification and the locations of all required labels and markings. Examples of clear path access pathways are available in the State Fire Marshal Solar PV Installation Guide.
<http://osfm.fire.ca.gov/pdf/reports/solarphotovoltaicguideline.pdf>.
- Structural Information: If the existing roofing material is **not** tile or there is **not** more than one layer of composition shingles, plans shall be provided that are of sufficient detail and scope to demonstrate the required load path to ground. (Roof framing plan, cross-sections and details as necessary). In addition, the following information must be provided:
 - ♦ *Weight of panels, support locations and method of attachment*

If the existing roofing material is tile or there is more than one layer of composition shingles, alterations may be required to the existing roof structure to support the additional loads imposed from the module system. Structural designs and drawings require a licensed Architect or Engineer to prepare plans and calculations and properly certify in conformance with section 5537(b) of the California Business and Professions Code.

If the existing roofing material is tile or there is more than one layer of composition shingles, provide structural drawings and calculations stamped and signed by a California-licensed Civil or Structural Engineer, along with the following information:

- ♦ *The type of roof covering and the number of roof coverings installed*
- ♦ *Type of roof framing, size of members and spacing*
- ♦ *Weight of panels, support locations and method of attachment*
- ♦ *Framing plan and details for any work necessary to strengthen the existing roof structure*
- ♦ *Site-specific structural calculations*
- ♦ *Where an approved racking system is used, provide documentation showing manufacturer of the rack system, maximum allowable weight the system can support, attachment method to the roof or ground and product evaluation information or structural design for the rack system.*

Plan Review

Permit applications can be submitted to the Building Division in person at 675 Wildwood Avenue and/or electronically to Karen Dunham at dunhamk@cityofriodel.com or Kevin Caldwell at caldwellk@cityofriodel.com. Complete applications are typically reviewed and approved or

denied within three (3) working days.

Fees

Below is a copy of the permit fees pursuant to the City's current adopted fee schedule for a solar PV system valued at \$7,000.00. Note that the Valuation only applies to the State Seismic fee.

Rio Dell Fees	
Permit Issuance	\$24.00
Photovoltaic (PV) Systems	\$95.50
Plan Check (65% of Permit Fee)	\$62.07
Subtotal	\$181.57
Administrative Fee (66%)	\$119.50
State Seismic Fee (.00012 of Valuation)	\$.70
Senate Bill 1473 (CBSC) \$1.00 per \$25,000	\$1.00
Continuing Education Fee (\$.04)	\$1.20
Technology Fee (\$.09)	\$2.71
Total:	\$306.68

A \$100.00 deposit is required at the time the application is submitted. The balance is due and payable at the time the permit is issued. The City's Permit Fees for solar PV systems are in compliance with Section 66015 of the Government Code.

Inspections

Once all permits to construct the solar installation have been issued and the system has been installed, it must be inspected before final approval is granted for the solar system. On-site inspections can be scheduled by contacting the Building Division by telephone at (707) 764-3532 or electronically to Karen Dunham at dunhamk@cityofriodell.ca.gov or Kevin Caldwell at caldwellk@cityofriodell.ca.gov. Inspection requests received within business hours are typically scheduled for the next business day.

Permit holders must be prepared to show conformance with all technical requirements in the field at the time of inspection. The inspector will verify that the installation is in conformance with applicable code requirements and with the approved plans.

The following inspection checklist provides an overview of common points of inspection that the applicant should be prepared to show compliance.

- *Number of PV modules and model number match plans and specification sheets number match plans and specification sheets.*
- *Array conductors and components are installed in a neat and workman-like manner.*
- *PV array is properly grounded.*
- *Electrical boxes are accessible and connections are suitable for environment.*

- *Array is fastened and sealed according to attachment detail.*
- *Conductors ratings and sizes match plans.*
- *Appropriate signs are properly constructed, installed and displayed, including the following.*
 - ◆ *Sign identifying PV power source system attributes at DC disconnect*
 - ◆ *Sign identifying AC point of connection*
 - ◆ *Sign identifying switch for alternative power system*
- *Equipment ratings are consistent with application and installed signs on the installation, including the following.*
 - ◆ *Inverter has a rating as high as max voltage on PV power source sign.*
 - ◆ *DC-side overcurrent circuit protection devices (OCPDs) are DC rated at least as high as **max** voltage on sign.*
 - ◆ *Switches and OCPDs are installed according to the manufacturer's specifications (i.e., many*
 - ◆ *600VDC switches require passing through the switch poles twice in a specific way).*
 - ◆ *Inverter is rated for the site AC voltage supplied and shown on the AC point of connection sign. OCPD connected to the AC output of the inverter is rated at least 125% of maximum current on sign and is no larger than the maximum OCPD on the inverter listing label.*
 - ◆ *Sum of the main OCPD and the inverter OCPD is rated for not more than 120% of the bus bar rating.*

Departmental Contact Information

For additional information regarding this permit process, please consult the City website at riodellcity.com or by contacting the Building Division by telephone at (707) 764-3532 or electronically to Karen Dunham at dunhamk@cityofriodell.ca.gov or Kevin Caldwell at caldwellk@cityofriodell.ca.gov.