ADMINISTRATIVE REPORT

TO: Planning & Development Committee

FROM: B. Newell, Chief Administrative Officer

DATE: October 1, 2020

RE: Zoning Bylaw Amendment – Electoral Area 'A', 'C', 'D', 'E', 'F', 'G', 'H' & 'I'
Regulation of "Solar Energy Systems"

Administrative Recommendation:

THAT Amendment Bylaw No. 2911 (Solar Energy Systems Amendment Bylaw) be drafted to include:

1. ground mounted systems, when limited to the height of accessory buildings and structures allowed under the applicable zone, be required to comply with the minimum setbacks for accessory buildings and structures outlined in that zone.
2. if the height of ground mounted systems exceed the height of accessory building and structures allowed under the applicable zone, such systems be set back at least twice the height of the solar energy systems installed in that zone.
3. that a maximum of 1.0 m height for roof-mounted systems be allowed above the maximum building height allowed under that zone
4. that the height and setbacks for ground-mounted systems be required to meet the maximum permitted height requirements for a given zone, as well as setback requirements.

Purpose:

To determine zoning regulations for the use and placement of solar energy systems in the Okanagan Electoral Area zoning bylaws.

Background:

At its meeting of May 21, 2020, a Notice of Motion was carried requesting "staff bring forward options for zoning regulations to govern the placement of solar energy devices (e.g. solar panels, solar trees, etc.)."

It is understood that this motion was in response to a number of solar energy devices being erected in Electoral Area "E", and that have raised concerns from the neighbouring property owners regarding visual impressions (blocked views, glare, shadowing etc.).

Solar Energy Systems:

A solar energy system is a form of renewable energy that converts sunlight into means of energy that can be used to generate electricity, space heating, space cooling or water heating. Such systems can take the form of being either roof or building-mounted, or ground-mounted or freestanding.

Single or multiple panels can be mounted on individual or multiple poles when space, structural, shade, or other constraints inhibit roof-mounted systems (see Attachment No. 1).

Zoning Bylaws:

At present, the Electoral Area Zoning Bylaws are all silent on the use, size, erection and placement of solar energy systems. This is seen to be reflection of solar energy systems not being a viable source of on-site power generation at the time the bylaws were drafted.

Analysis:

The regulation of solar energy systems presents a challenge; on the one hand is the desire to encourage the use of renewable energy without create disincentives to its uptake and expansion through new regulation and potential permitting requirements.

On the other hand is an understandable desire of residents and property owners to ensure that the installation of such systems on adjacent or nearby properties does not occur to the detriment of their use and enjoyment of their own property.

The intent of any regulation for "the establishment of renewable energy projects that use water, wind, sunlight, biomass or geothermal energy to generate electricity", should help to mitigate the potential for conflict in residential neighbourhoods.

Based upon a review of solar energy system zoning regulations implemented by Summerland, along with other local government approaches, a number of options are available to the Board should it wish to introduce regulations. This includes:

- introducing a new definition for "solar energy device";
- allowing solar energy systems to project 1.0 meter above the height of a building;
- ensuring that solar energy systems do not extend beyond the roofline;
- establishing a minimum parcel size of 1.0 ha in order to install a ground mounted system, except in the Industrial (I) and Administrative and Institutional (AI) zones;
- requiring that ground mounted systems not be sited within a setback area;

Minimum Parcel Size Requirement:

The recommendation for a 1.0 ha minimum parcel size for ground mounted systems is to ensure that there is an adequate land area to facilitate the separation of uses (i.e. towers vs. neighbouring dwelling units).

Ground mounted systems can range between 3.0 metres to 7.0 metres in height and potentially obstruct access to sunlight, block views for neighbouring properties and impede in fire safety depending on the size and number of panels.

A minimum parcel size requirement is not seen to be applicable to roof mounted devices as they are built into the design of the dwelling and can be less obtrusive yet still generate similar energy output as a ground mounted system.

Such a parcel size requirement is seen as a way to encourage property owners in residential neighbourhoods to pursue roof mounted systems and avoid creating conflicts with neighbouring properties.

The proposed exemptions for Industrial (I) and Administrative and Institutional (AI) zones is a reflection that the placement of ground mounted systems in these areas is unlikely to adversely impact on the use and enjoyment of adjacent properties.

Conversely, restricting such devices on lots smaller than 1.0 ha may discourage property owners wanting to install alternative renewable forms of energy.

Setback Requirement:

Studies from different municipalities generally concluded that the height of ground-mounted systems play a vital role in determining setback requirements for such systems.

Staff is therefore recommending that ground mounted systems, when limited to height of accessory building and structures allowed under the applicable zone, comply with the minimum setbacks for accessory building and structures outlined in that zone.

However, if the height of such systems exceed height of accessory building and structures allowed under the applicable zone, it is recommended that such systems be setback at least twice the height of the solar energy systems installed in that zone.

This is to ensure that a physical separation is maintained between neighbouring properties in order to protect privacy and prevent the appearance of overcrowding.

Height Exemption:

According to studies, roof mounted solar systems when tilted on roof optimizes the amount of energy derived from the sun. A building with a flat roof at the maximum permitted height would impose a constraint under this scenario.

It is therefore recommended that a maximum of 1.0 m height for roof-mounted systems be allowed above the maximum building height allowed under that zone, to allow property owners enjoy the use of such systems and optimize the maximum amount of energy from the sun, while not compromising the building height.

The height and setbacks for ground-mounted systems are interlinked and for this reason, it is recommended that such systems meet the maximum permitted height requirements for a given zone, as well as setback requirements.

Variances:

If implemented, anyone seeking to vary from these proposed regulations when installing a solar energy system would be required to seek a Development Variance Permit approval from the Board.

This would allow adjacent property owners the opportunity to review a proposal and submit their concerns to the Board for consideration.

Alternatives:

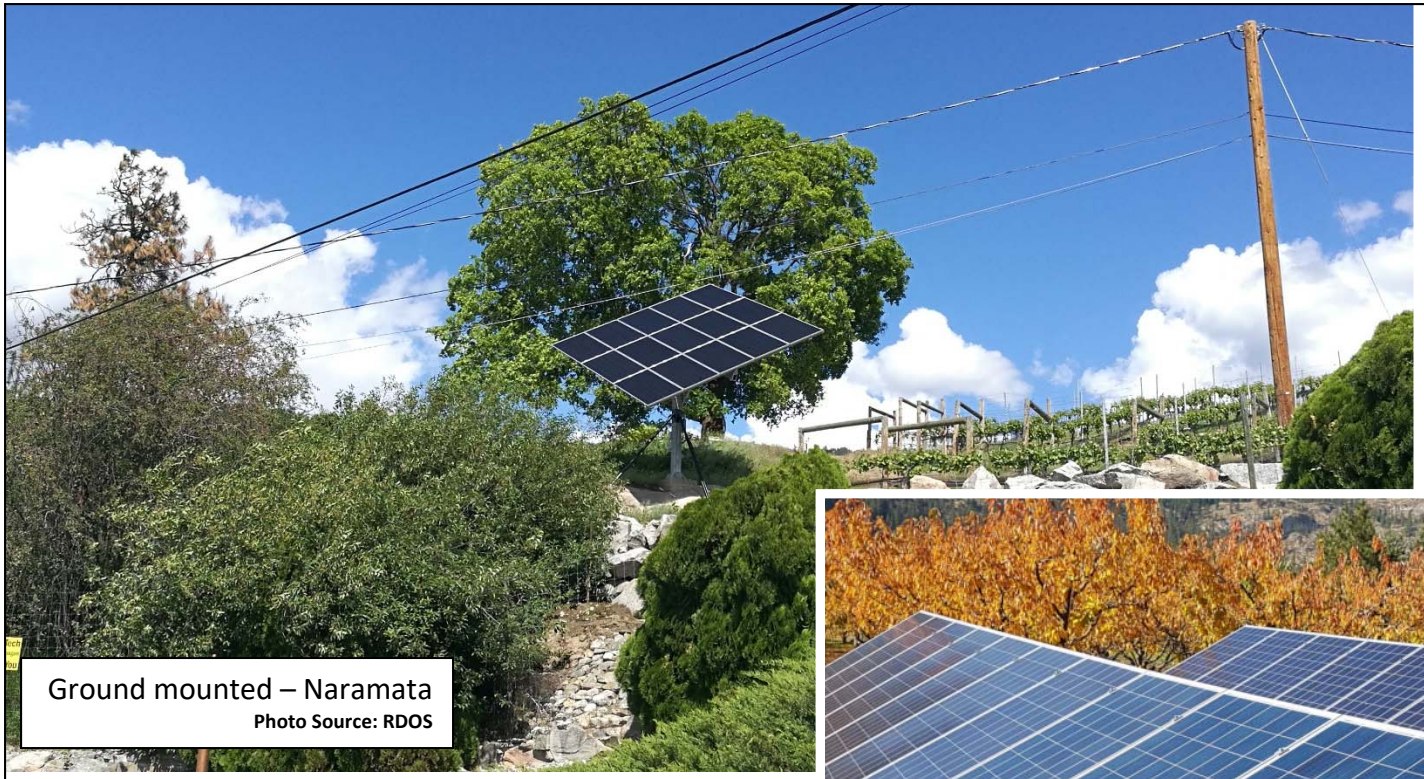
1. THAT Amendment Bylaw No. 2911 not be initiated; or
2. THAT consideration of Amendment Bylaw No. 2911 be deferred for the following reasons:
   i) TBD

Respectfully submitted: **Endorsed By:**

Rushi Gadoya, Planning Technician C. Garrish, Planning Manager

Attachments: No. 1 – Photos of Solar Energy Devices
No. 2 – Photos of Solar Energy Devices
No. 3 – Photos of Solar Energy Devices

Attachment No. 1 – Photos of Solar Energy Devices



Ground mounted – Naramata
Photo Source: RDOS

Ground mounted – Oliver
Photo Source: Swiss Solar Tech

Attachment No. 2 – Photos of Solar Energy Devices

Ground mounted – Naramata
Photo Source: Swiss Solar Tech

Roof mounted – Naramata
Photo Source: Swiss Solar Tech

Roof mounted (patio) – Willowbrook
Photo Source: Swiss Solar Tech