THE CORPORATION OF THE
DISTRICT OF SUMMERLAND
MEMO

DATE: May 17, 2019

SUBJECT: Solar+Storage Project – Site Selection Detailed Discussion Documents

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On February 27, 2019, staff provided council with the following documents related to the site selection process for the Summerland Solar+Storage Project:

1. Council Report "Solar+Storage Project – Site Selection Detailed Discussion"
2. Spreadsheet showing results of site evaluation process
3. PDF copies of PowerPoint presentation
4. Planning statement with respect to Solar Array selection site

As part of the community engagement process regarding the preferred site and the project overall, and to ensure transparency regarding council's decision-making process, these documents are being shared with the community (attached below).

As project development is ongoing and documents are regularly reviewed for clarity and accuracy, some updates have been made to subsequent documents published by the District on this topic. Those are:

I. References to "Morrow Street" have been corrected to "Morrow Avenue"
II. References to "the District's former asphalt mixing site" have been changed to "the District's former Public Works yard & storage area" to more accurately reflect historical and current uses on the site
III. References to "formalizing trail use in surrounding areas" has been clarified to explain the Solar+Storage Project may be leveraged in order to formalize the trail use, but that work will not be completed as part of the project directly

Council remains committed to good governance practices and information sharing with the community, and encourages anyone with questions or feedback related to the Project to visit www.summerland.ca/solar for more information, or to contact staff directly at 250.404.4068 or climate.action@summerland.ca

THE CORPORATION OF THE
DISTRICT OF SUMMERLAND
REQUEST FOR DECISION
CLOSED SESSION

DATE: February 27, 2019 FILE: 0540-24

TO: Mayor and Council

FROM: Staff

SUBJECT: Solar+Storage Project – Site Selection Detailed Discussion

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STAFF RECOMMENDATION:
That council pass the following resolutions:

> *THAT the site at 13500 Prairie Valley Road/12591 Morrow Street/Denike Street be identified as the prime potential location of the Summerland Solar+Storage Project;*
>
> *AND THAT that community engagement regarding the preferred site be initiated;*
>
> *AND FURTHER THAT staff be requested to proceed with detailed analysis and design of the site at 13500 Prairie Valley Road/12591 Morrow Street/Denike Street for the Summerland Solar+Storage Project.*

PURPOSE:
To consider the prime potential location for Summerland's Solar+Storage Project as identified through the comprehensive site review process; to provide direction to proceed with detailed analysis and design for the selected site; and to instruct staff to engage with the community regarding the site.

BACKGROUND and DISCUSSION:
In 2016 and 2017, council resolved that a Solar and Battery Storage project would be a priority initiative for the community.

Rural Dividend Fund

In 2016, the District was successful in obtaining grant funding through the provincial Rural Dividend Fund ($100,000) to undertake an initial investigation into the feasibility of the project.

Funding from this program allowed the District to hire industry experts to assist with a review of possible locations and to provide analysis of the technical and financial feasibility of a local solar energy generation project.

The Rural Dividend Funding also allowed the District to engage the community early in the process to better understand their support and vision for a renewable energy generation project in Summerland. These conversations showed that there was very strong support from the community and local stakeholders for the District to pursue such a project: over 100 community

members attended the initial community conversation regarding solar energy, and 100% of surveyed participants agreed or strongly agreed that developing local renewable energy generation resources is important to them.

Subsequently, council directed staff to undertake a thorough review of District-owned properties to gauge their suitability for siting of a solar energy generation project. Given the time and financial constraints of the project funding, the added complexity and costs associated with examining all of the potential locations, and anticipated subsequent acquisition costs, private properties were not included in the review.

Strategic Priorities Fund - Gas Tax Program

In early 2018, the District of Summerland was conditionally awarded $6M in grant funding for the engineering, procurement, and construction phases of the Solar+Storage project through the Strategic Priorities Fund of the Gas Tax Program. Funding conditions include a requirement to provide more details on the financial aspects of the proposed battery storage system and confirmation that all funding sources required to complete the project have been secured.

These initial conditions were met in December 2018. Following confirmation of acceptance of these items, the Gas Tax Management Committee requested an update on the site selection process. Confirmation of the site being selected is a critical aspect to securing the grant funding.

Once a preferred site has been selected, the next steps will include bringing a staff report and accompanying presentation to an open meeting of council and initiation of a community conversation through which the selected site will be presented to the community. Staff will also begin detailed analysis of the site, including a geotechnical analysis, installation of a solar monitoring station, and a detailed costing study. As well, staff will notify the Gas Tax Management Committee that a site has been selected and request the award conditions be lifted so that the $6M funding can be secured.

Site Studies and Evaluations

The pre-feasibility study conducted in 2017 included a desktop analysis of the available properties. This initial study highlighted two locations determined by the consultant to be the most desirable for the project: 13500 Prairie Valley Road and 17400 Highway 40. The pre-feasibility study also confirmed that a large-scale project is financially feasible in Summerland given the solar resources (annual hours of sunshine) available.

Following the conditional approval of $6M in funding from the Strategic Priorities Fund, a detailed System Impact and Interconnection Study (SIIS) was commissioned to provide a technical analysis of the most suitable sites for the project. This study was focused solely on the technical aspects of the sites and did not include analysis of land use suitability, social/environmental considerations, etc. The study also evaluated system capacity and impacts across the electric grid, and **scored all District-owned properties over 0.5 acres** (1/10 of the estimated area required) **based on their slope, on-site shading, and proximity to 3-phase power.**

Utilizing the results of the SIIS, staff completed a review of all sites that met both the slope and shading requirements for further considerations, including: zoning; OCP designation; and Environmentally Sensitive, High Hazard, and Wildfire Interface Development Permit Areas.

Sites excluded from further consideration included: sites designated as parks (such as beaches and sports fields); sites within the monitoring area for the perpetual slide; sites designated for Agriculture in the OCP; the Adams Bird Sanctuary; the active landfill area; sites at the north end of Garnet Valley; reservoirs; and KVR and Highway 97 rights-of-way.

Site Categorization

Follow completion of the site studies and evaluations, and exclusion of the aforementioned property types, the remaining sites were grouped and categorized as:

Category 1: individual buildings in the Arena Complex area
Category 2: lands surrounding the landfill
Category 3: the Dunn Street properties currently held as rental houses
Category 4: the District's former asphalt mixing site

Each of the site categories was further reviewed by the project staff and senior management team and were considered for their suitability. **The District's former asphalt mixing site located at 13500 Prairie Valley Road/12591 Morrow Street/Denike Street (Category 4) was found to offer the best balance of appropriate zoning and long-term land use, environmental protection, fit within project timelines and budget, and available co-benefits**. These items are discussed at length below.

A brief summary of the rationale for not recommending the other sites for this project is included after the "Category 4" discussion.

Detailed Review of Category 4 Sites (Former asphalt mixing site) - Recommended

Following an initial determination that the area of the District's former asphalt mixing site offered strong potential as the project site, the area was examined in further detail through a number of lenses, including Land Use and Environmental Planning, Recreation, and the Electric Utility.

LAND USE PLANNING
The Official Community Plan (OCP) designates the site as part of the Urban Growth Area (UGA) suitable for "Administrative" land uses and as within both the Environmentally Sensitive and Wildfire Interface Development Permit Areas. The current zoning is "Institutional." Both the OCP and zoning designations support the proposed development of the solar array and battery storage facilities.

The primary objective of the Urban Growth Area is to direct residential and commercial growth to central areas serviced by existing infrastructure or planned for future infrastructure development. OCP Section 6.2, Growth Management Strategy, seeks to reduce rural sprawl and associated environmental and financial costs of growth. The area is not currently serviced by sanitary infrastructure. The site is not considered an ideal location for future residential or commercial development due to distance from the downtown, schools, walkable amenities and similar community infrastructure. Based on the objectives of the UGA, it is not apparent why the subject has been included in the UGA. Further, residential development in a form similar to that in adjacent areas yields a limited number of lots and as a result a high cost-per-capita for the infrastructure required to service them. As such, there **does not seem to be a conflict in utilizing it for the purposes of the Solar+Storage project**.

The site could have potential future uses such as university/research centre or other uses within the Administrative designation/Institutional Zone should sanitary services be extended to the area. It would also be well suited for other recreational amenities (such as a pump or BMX track - an informal one already exists at the site); however, the Solar+Storage project may offer a higher-value opportunity whose wide-reaching benefits can be realized in the immediate future.

ENVIRONMENTAL PLANNING

District staff has undertaken comprehensive discussions with Alison Peatt, the District's Shared Environmental Planner, regarding the proposed site. From her perspective**, the development of a solar array does not carry with it the same impacts as some alternative uses for the site such as a residential subdivision with large numbers of pets, people, vehicles, and overall increased use of surrounding environmentally sensitive lands.**

Further, according to the Shared Environmental Planner, unlike conventional development, this land use would have limited impacts on drainage and water use, potentially reducing the risk of unintended flooding to lower elevation agricultural and residential properties. As the proposed section of the property is already disturbed, it is likely to be consistent with the terms of reference for environmental reports, because disturbed areas normally have lower environmental sensitivity. Although Critical Habitat on the site includes snakes, Tiger Salamander, and Lewis's Woodpecker, overview information suggests that impacts mitigation would be possible on the disturbed footprint; however, an environmental assessment would be needed to confirm this.

CURRENT RECREATIONAL USE

The site examination found that the property is currently being used informally as a park by a broad range of users including cyclists accessing the Test of Humanity trail, hikers/runners, equestrians, and naturalists. Formalized access is provided from Morrow Road connected to a section of trail dedicated as park.

The trail connections from Prairie Valley Road and Morrow Road, as well as trails within the development area are identified as District of Summerland Trails on the draft Cycling Trails Master Plan. In addition, on-street cycling infrastructure to connect cyclists to the site are identified and recommended on the draft map.

This area has high social and recreational value that would not be negatively impacted by the solar array installation; in fact, the project will offer opportunities to formalize trail use, improve the area's recreational amenities (e.g., parking, garbage/recycling cans, signage, maps, etc.), and mitigate some risks and impacts of the current, unmanaged trail use in the area.

Many of the existing, unsanctioned trails in the area cross from District property onto private or crown land, and as such those landowners would also potentially benefit from a formalization of the trail network; however, the District will need to discuss these plans with them as part of the community engagement process.

ELECTRICAL UTIILITY

The site is optimal from the Summerland Electrical Utility's perspective as it is in close proximity to a three-phase power line, is on a feeder to the Prairie Valley substation (better technical capacity for this size of project), and it offers a short and direct feed from the substation which results in higher system resiliency and efficiency.

The proposed site is also ideal operationally as it: is in close proximity to the fibre network extension planned for the Water Treatment Plant; has sufficient space for large service vehicles to turn around and for the batteries to be co-located on site; is located between the utility shop and the utility pole yard (utility employees travel between these two locations frequently throughout the work day, reducing travel time and fuel for inspections, maintenance, etc.). The proximity to critical loads within the downtown area, such as police, fire, and the health centre, means these facilities could be connected to the array in such as way as to ensure they are able to stay powered in case of an emergency.

VISIBILITY, SECURITY, MODULE SOILING

Although the site is somewhat central to the community and thereby accessible for visitors and other interested parties, due to its raised elevation above the surrounding topography, the proposed site is generally not visible from the lower elevation residential and rural areas which surround the site and the **visual impacts are considered minor**. Glare from the solar panels towards homes will be easily mitigated (if present at all), and the majority of residents will likely not know the site exists (although this may also be seen as a negative should the community feel a very visible site is important).

The broad range of trail/park users provide **natural surveillance and security of the site**, and the relative proximity to downtown means that the response time of any required security or service personnel would be minimal should the site's formal security be triggered. There is also **no obvious source of dust or other module soiling issues** at this location.

OTHER FUNDING OPPORTUNITIES

This proposed site is considered a "brownfield" development (previously disturbed and used for industrial purposes); therefore, **there may be additional funding opportunities available to put the site into productive use and to remediate the environmental impacts of the historic activities on the site**. This project would provide an opportunity to clean up and secure the storage area that currently exists on site for pipes and other Works-related materials. There may also be funding available for the formalization of the trail network and accompanying amenities, particularly if coupled with an education component regarding the solar+storage site.

Overview of Discussion Regarding Other Site Categories - Not Recommended

The Category 1 sites (individual buildings in the Arena complex area) were determined to be less desirable for this project due to the age and condition of the majority of the buildings, the current utilization of the parcels, each building having insufficient roof space, and the added complexity of spreading the array over several facilities. There may be a long-term opportunity to redevelop this area and include a similar solar and battery storage system; however, the time constraints of the current funding mean this area is not recommended for this project.

The Category 2 sites (lands surrounding the landfill) were determined to be undesirable for the project due to concerns regarding security, dust from the landfill operations, wildfire dangers, and the environmental values of the area. The isolated nature of this area leaves the solar array particularly at risk to vandalism and theft (as confirmed by current challenges with ongoing theft from the landfill), and surrounding lands are undisturbed natural spaces within the Environmentally Sensitive Development Permit Area. These factors will inevitably drive up the project costs (both capital and operating) and timelines. Further, the removal of green space may not be well received by the Summerland residents and surrounding communities. Although not a primary consideration, the prominence and visibility of this site was also determined to be poor.

Although the Category 3 sites (Dunn Street properties currently held as rental houses) are zoned as Country Residential (CR1) and are currently utilized as rental housing, the properties are within the Agricultural Land Reserve (ALR) and were thus determined to be unavailable for the project. While these sites present an interesting opportunity for the District to make a visible statement about its commitment to renewable energy generation, staff recognized the difficulty faced in considering lands within the ALR. Preliminary discussions with the Agricultural Land Commission about sanctioning ground-mounted solar arrays as a permitted use indicated that they would be unlikely to allow the project to proceed.

Next Steps

Should council decide to proceed with the site at the former asphalt mixing area (13500 Prairie Valley Road/12591 Morrow Street/Denike Street), it will be necessary to bring a report and presentation to an open meeting of council and to initiate a community conversation with residents and stakeholders about the suggested site.

Detailed analysis of the site, including a geotechnical analysis, installation of a solar monitoring station, and completion of a detailed costing study would also begin. As well, staff will notify the Gas Tax Management Committee that a site has been selected and request the conditions of the funding be lifted.

Should council not decide to move forward with the recommended site, staff would be seeking direction on how to proceed. Council may choose to examine the feasibility of sites that were filtered out in the original review. For example, some of the filters used to reach the current recommendation could be revisited (e.g., including Categories 1-3 or sites zoned as Parks).

Staff will deliver a comprehensive presentation to council at the Closed session on February 27, 2019. Details of the District-owned properties identified by the SIIS study will be presented including a discussion of why each of these properties were eliminated from further consideration.

It is recognized that site selection is the most sensitive issue to resolve for a project such as this. It will be critical that staff is provided with clear direction for next steps to continue providing assurance to the Gas Tax Management Committee that the project is moving forward.

LEGISLATION and POLICY:
The proposed use of the property fits within the current OCP designation and zoning.

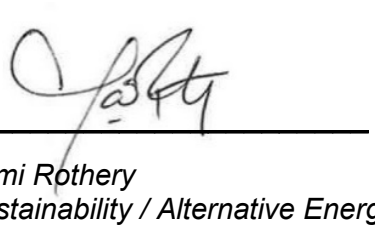
FINANCIAL IMPLICATIONS:
A detailed financial review of the site-specific costs will be completed following a direction from council to proceed.

SUPPORTING DOCUMENTS:
A PowerPoint presentation will be provided at the meeting, along with PDF copies of the slides and accompanying notes.

CONCLUSION:
Staff have provided Council with their recommended site for the Summerland Solar+Storage Project and are seeking direction to proceed with detailed analysis and design at that location.

OPTIONS:
1. Move the motion as recommended by staff.
2. Refer back to staff for other options.

Respectfully Submitted,



Tami Rothery
Sustainability / Alternative Energy Coordinator

Linda Tynan
Chief Administrative Officer

Report ID	Address	Street	PID	Topography: Minimal 10AM & 2PM	Topography: Most of Property	Property Adjacent to 3 Phase Power	Score	Parcel Size (Acres)	Notes	OCP Designation	Zoning Bylaw Designation	ALR?	Environmentally Sensitive DPA?	High Hazard DPA?	Wildfire Interface?	OCP UGA?
5	16700	Doherty Ave	11340002	1	1	1	3	125.35	Landfill is south half of parcel	Resource Industrial	FG	No	Yes	No	Yes	No
6	18707	Bathville Rd	11532084, 11532157	1	1	1	3	73.76	Rodeo grounds & parcel south of KVR	Parks	PR1	No	Yes - aquatic	No	No	No
7	18001	Bathville Rd	6839541	1	1	1	3	53.40	Landfill on east side of parcel	Resource Industrial	M4	No	Yes	No	No	No
13	10501	Dale Meadows Rd	25132113	1	1	1	3	14.26	Baseball field	Parks	PR1	Yes	Yes - partial aquatic only	No	No	No
14	17000	Snow Ave	3900240	1	1	1	3	12.75	Baseball field	Parks	PR1	No	Yes - env on north slope	No	No	No
1	10325	Canyon View Rd	12407143	1	1	1	3	12.12	Far West portion of canyon view rd	Agricultural	PP	Yes - northern portion	Yes - w/partial aquatic	Yes	No	No
19	10316	Canyon View Rd	7721803	1	1	1	3	7.70	Cemetary	Parks	PR1	Yes	No	No	No	No
20	6411	Powell Beach Rd	3215041	1	1	1	3	7.01	Beach	Parks	PR1	No	Yes - aquatic	No	No	Yes
21	pending	Peach Orchard Rd	10056688	1	1	1	3	6.23	Snow storage. High slope.	Agricultural	A1	No	Yes	No	No	No
2	pending	Canyon View Rd	12406694	1	1	1	3	5.00	Far West portion of canyon view rd	Agricultural	A1	Yes	Partial - on slope (E quar	No	No	No
3	3631	Paradise Rd	12406830	1	1	1	3	4.75	Far West portion of canyon view rd	Agricultural	A1	Yes	Yes - almost all	No	No	No
22	17202	Bathville Rd	11336234	1	1	1	3	4.72	Landfill	Resource Industrial	M4	No	No	No	No	No
23	8820	Jubilee Rd E	2256410	1	1	1	3	3.78	Arena	Administrative	I (Institutional)	No	No	No	No	Yes
35	13827	Lakeshore Dr S	12684546	1	1	1	3	3.75	Beach	Parks	PR1/WZ3	No	Yes - aquatic	No	No	Yes
24	7630	Dunn St	23568399	1	1	1	3	3.58	WWTP Property	Agricultural	A1	Yes - Easte	No	No	No	No
25	6311	Switchback Rd	23711124	1	1	1	3	3.48	Adams Bird Sanctuary	Agricultural	PP	No	Yes	No	No	Yes
34	14877	Lakeshore Dr S	3403939F	1	1	1	3	3.44	Peach Orchard Beach	Parks	PR1	No	Yes - aquatic	Yes	No	Yes
4	12000	Doherty Ave	11340002	1	1	1	3	2.20	Landfill - south half	Resource Industrial	FG	No	Yes	No	Yes	No
90	pending	Bathville Rd	N/A	1	1	1	3	1.93	Portion of DL 2886 for KVR							
91	9111	Peach Orchard Rd	18422420	1	1	1	3	1.57	Harold Simpson	Administrative	I (Institutional)	No	Yes - town centre on nor	No	No	Yes
28	9101	Pineo Court	28583493	1	1	1	3	1.05	RCMP	Administrative	I (Institutional)	No	Yes - town centre DPA	No	No	Yes
108	pending	Vanderburgh Ave	10056688	1	1	1	3	1.00	Snow storage. High slope.	Agricultural	A1	No	Yes	No	No	No
29	6705	MacDonald Place	4628195	1	1	1	3	0.99	Paved/slope area on Macdonald	Parks	PR1	No	Yes - south half	No (but sh	No	Yes
92	2900	Landry Rd	Park	1	1	1	3	0.71	Lakeside park area	Parks (TBC)	PR1 (TBC)	No	Yes - aquatic	No	No	Yes
31	pending	Garnett Valley Rd	10175881	1	1	1	3	0.61	Portion is road	Agricultural	A2	Yes	No	No	No	No
32	10005	Giants Head Rd	6055516	1	1	1	3	0.50	Cemetary - fully used	Parks	PR1	No	No	No	No	No
36	14919	Prairie Valley Cr	4752171	1	1	1	3	0.06	Too small. Used for simulation only	-	-	-	-	-	-	-
75	3801	Paradise Rd	12406881	1	1	1	3	5.00	Far West portion of canyon view rd	Agricultural	A1	Yes	Partial - on slope (large p	No	No	No
100	33000	Hwy 97	12686514	1	1	0	2	1 acre (approx)	RoW along Hwy 97	N/A - Roadway	N/A?	No	No	No	No	Yes
38	2405	Mountain Ave	3779297	1	1	0	2	184.27	Golf course	Parks	PR1	Yes	Yes - partial	No	Partial	No
107	pending	Doherty Ave	29308101	1	1	0	2	123.79	North of landfill	Agricultural	FG	No	Yes	No	Yes	No
45	33000	Garnett Valley Rd	11340193, 11340321	1	1	0	2	90.65	Top of GVR	Open	FG/PP	Yes - north	Yes - incl aquatic	No	No	No
93	pending	pending	12634336	0	1	1	2	75.31		-	-	-	-	-	-	-
8	10900	Fyffe Rd	1764888	1	0	1	2	51.84		-	-	-	-	-	-	-
9	18800	Meadow Valley Rd	25211137	1	1	0	2	50.41	West of landfill	North portion - Agricultural; South Portion - Resource Industrial	North - FG; South M4	No	Yes	No	Yes	No
39	17409	Bathville Rd	12634000, 12634085	0	1	1	2	42.69	Old mine area & reservoir	Open	PP	No	Yes - incl large water boc	No	No	-
10	Lot B	Denike St	12646601	1	1	0	2	30.50	NE of college lands	Administrative	Institutional	No	Yes	No	Yes	Yes
40	pending	Denike St	12072842	1	1	0	2	24.50	North of landfill	Agricultural	A1	No	Yes	No	Yes	No
11	14900	Denike St	12072869	1	1	0	2	18.70	North of landfill	Agricultural	FG	No	Yes	No	Yes	No
12	8909	Canyon View Rd	10232168	1	1	0	2	14.70	Top half ok. Bottom half sloped area at ravine.	Agricultural	A1/PP	No	Yes	Yes	Yes	No

15	3600	Angove Ave	12407119	1	0	1	2	11.00	Far West portion of canyon view rd	-	-	-	-	-	-	-
16	pending	Denike St	12646717	1	1	0	2	10.51	NE of college lands	Administrative	Institutional	No	Yes	No	Yes	Yes
48	10502	Dale Meadows Rd	5752973	1	1	0	2	10.01	Sports fields	Parks	PR1	No	Yes - partial aquatic on n	No	No	-
17	pending	Denike St	12646709	1	1	0	2	10.00	North of college lands	Administrative	Institutional	No	Yes	No	Yes	Yes
53	6321	Peach Orchard Rd	12683655, 12683701	0	1	1	2	9.55		-	-	-	-	-	-	-
18	13500	Prairie Valley Rd	9833722	1	0	1	2	9.25	College lands	Administrative	Institutional	No	Yes	No	Yes	Yes
51	6300	Ramsay St	12682896	1	0	1	2	6.19		-	-	-	-	-	-	-
54	9999	Wharton Ave	2508005	0	1	1	2	4.92		-	-	-	-	-	-	-
57	9215	Cedar Ave	3466388	1	0	1	2	4.00		-	-	-	-	-	-	-
58	pending	Peach Orchard Rd	12671151	0	1	1	2	3.10		-	-	-	-	-	-	-
94	pending	Stonor St	N/A	1	1	0	2	2.47	Park area	Parks	PR1	No	Yes, incl partial aquatic	No	No	Yes
27	9999	Happy Valley Rd	12638153	1	1	0	2	1.88		Agricultural	A1	Yes	Yes	No	No	No
59	6300	Ramsay St	11345349	0	1	1	2	1.83		-	-	-	-	-	-	-
68	7650	Dunn St	12078085	1	1	0	2	1.14	Rental house	Rural Residential	CR1	No	No	Yes	No	No
61	9525	Wharton Ave	2190192	0	1	1	2	0.98		-	-	-	-	-	-	-
62	7646	Dunn St	12499901	1	1	0	2	0.98		Rural Residential	CR1	Yes	No	No	No	No
63	7642	Dunn St	7846983	1	1	0	2	0.98		Rural Residential	CR1	Yes	No	No	No	No
64	12817	Kelly Ave	28926013	0	1	1	2	0.92		-	-	-	-	-	-	-
65	7636	Dunn St	12499897	1	1	0	2	0.92		Rural Residential	CR1	Yes	No	No	No	No
30	7632	Dunn St	17536847	1	1	0	2	0.91		Rural Residential	CR1	Yes	No	No	No	No
66	12801	Kelly Ave	14428024	0	1	1	2	0.84		-	-	-	-	-	-	-
95	pending	Dale Meadows Rd	12565661	1	1	0	2	0.84	RoW along prairie creek - undefined in GIS	-	-	-	-	-	-	-
67	15500	Lakeshore Dr N	12553697	1	1	0	2	0.77	Partially paved/developed	Low Density Reside	RSD1	No	Yes - treed section north	No	No	Yes
96	pending	Dale Meadows Rd	12648116	0	1	1	2	0.70	Adjacent to road along Dale Meadows	-	-	-	-	-	-	-
97	pending	Hwy 97	9028358	1	1	0	2	0.68	RoW along Hwy 97	N/A - Roadway	N/A?	No (borders & parcel lines not clear so might be partially)	No	No	No	No
109	12001	Loomer Rd	12597856	0	1	1	2	0.68		-	-	-	-	-	-	-
98	9015	Prairie Valley Rd	25402021	0	1	1	2	0.68		-	-	-	-	-	-	-
99	pending	Hwy 97	9408207	1	1	0	2	0.64	RoW along Hwy 97							
69	pending	Loomer Rd	53092F	0	1	1	2	0.50		-	-	-	-	-	-	-
33	18021	Bentley Rd	11764929	1	0	1	2	0.44		-	-	-	-	-	-	-
72	11317	Giants Head Rd	11402318	0	0	1	1	94.79		-	-	-	-	-	-	
73	8400	Cedar Ave	11336218	1	0	0	1	94.47		-	-	-	-	-	-	
76	pending	pending	11397471	0	1	0	1	27.43		-	-	-	-	-	-	
41	pending	Fenwick Rd	12597775	1	0	0	1	25.00		-	-	-	-	-	-	
42	15300	Denike St	12072851	1	0	0	1	20.00		Agricultural	FG	No	Yes	No	Yes	No
43	9999	Victoria Rd S	12596744	1	0	0	1	17.50		-	-	-	-	-	-	
44	pending	Angove Ave	12407097	0	1	0	1	15.00	Far West portion of canyon view rd	-	-	-	-	-	-	
46	11809	Fenwick Rd	12597724	1	0	0	1	12.40		-	-	-	-	-	-	
47	pending	Canyon View Rd	12407186	1	0	0	1	12.09	Far West portion of canyon view rd	-	-	-	-	-	-	
49	Lot 3	Sage Ave	10553207	1	0	0	1	8.06		-	-	-	-	-	-	
50	6712	Sage Ave	10553185	1	0	0	1	6.58		-	-	-	-	-	-	
70	9116	Bland St	12598101	0	0	1	1	6.58		-	-	-	-	-	-	
101	pending	Cartwright Ave	N/A	1	0	0	1	5.68		-	-	-	-	-	-	

52	9111	Bland St	12598089	0	0	1	1	5.49		-	-	-	-	-	-		
56	12591	Morrow St	12646695	1	0	0	1	4.55		Administrative	Institutional	No	Yes		No	Yes	Yes
77	11317	Giants Head Rd	11402296	0	0	1	1	3.69		-	-	-	-	-	-		
60	Lot 17	Milne Rd	12326534	0	1	0	1	1.75		-	-	-	-	-	-		
81	9117	Prairie Valley Rd	11023481	0	0	1	1	1.64		-	-	-	-	-	-		
26	pending	Morrow St	25589024	1	0	0	1	1.47		-	-	-	-	-	-	-	
102	pending	Blewett Rd	Park	0	1	0	1	0.90		-	-	-	-	-	-		
84	14000	Fenwick Rd	11530634	0	0	0	0	268.48		-	-	-	-	-	-		
85	9296	Milne Rd	11343125, 11343273	0	0	0	0	218.39	Far West portion of canyon view rd	-	-	-	-	-	-		
71	33000	Garnett Valley Rd	11342676	0	0	0	0	176.65		-	-	-	-	-	-		
87	12915	Haddrell Ave	3820106	0	0	0	0	15.80		-	-	-	-	-	-		
74	8701	Canyon View Rd	10232184	0	0	0	0	15.60		-	-	-	-	-	-		
103	pending	Garnett Valley Rd	N/A	0	0	0	0	15.37		-	-	-	-	-	-		
104	33000	Garnett Valley Rd	11531495	0	0	0	0	13.09		-	-	-	-	-	-		
86	pending	Loomer Rd	12648159	0	0	0	0	11.00		-	-	-	-	-	-		
105	33000	Garnett Valley Rd	11340363, 11531533	0	0	0	0	9.15		-	-	-	-	-	-		
78	9220	Shale Ave	27440419	0	0	0	0	3.69		-	-	-	-	-	-		
79	pending	Milley Ave	10939059	0	0	0	0	3.58		-	-	-	-	-	-		
88	13205	Borton Cr	4490762	0	0	0	0	3.45		-	-	-	-	-	-		
80	Lot 18	Milne Rd	12326542	0	0	0	0	2.75		-	-	-	-	-	-		
82	Lot 19	Milne Rd	12326585	0	0	0	0	1.50		-	-	-	-	-	-		
55	33000	Garnett Valley Rd	11531461	0	0	0	0	1.49		-	-	-	-	-	-		
83	19295	Lakeshore Dr N	3215067	0	0	0	0	0.61		-	-	-	-	-	-		
89	8710	Milne Rd	11343320	0	0	0	0	0.61		-	-	-	-	-	-		
106	pending	Mcdougal Rd	12405990	0	0	0	0	0.61		-	-	-	-	-	-		

Summerland Integrated Solar Project

Solar+Storage Site Selection

Detailed Discussion

Project History

Pre-2016

- 2011 Community Climate Action Plan calls for investigation into / dissemination of renewable energy generation technologies
- 2013 Resource Options Study completed to review electrical generation options
- 2015 Official Community Plan includes encouragement of renewable energy technologies and generation
- Council prioritizes investigating renewable energy generation opportunities in their 2015-2019 Strategic Plan

2016

- SAEC hired with mandate to coordinate development of solar energy project

So Many Alternatives

Renewable Heat:

- Biomass
- Biogas
  - Renewable Natural Gas
- Solar Thermal
  - Active
  - Passive
- Heat Pumps
  - Air Source
  - Ground Source

Renewable Electricity:

- Wind
- Micro-hydro
- Geothermal
- Biogas
  - Renewable Natural Gas
- Solar
  - CSP - Concentrating Solar Power
  - PV Panels – Photovoltaic Panels
    - Rooftop
    - Ground Mounted

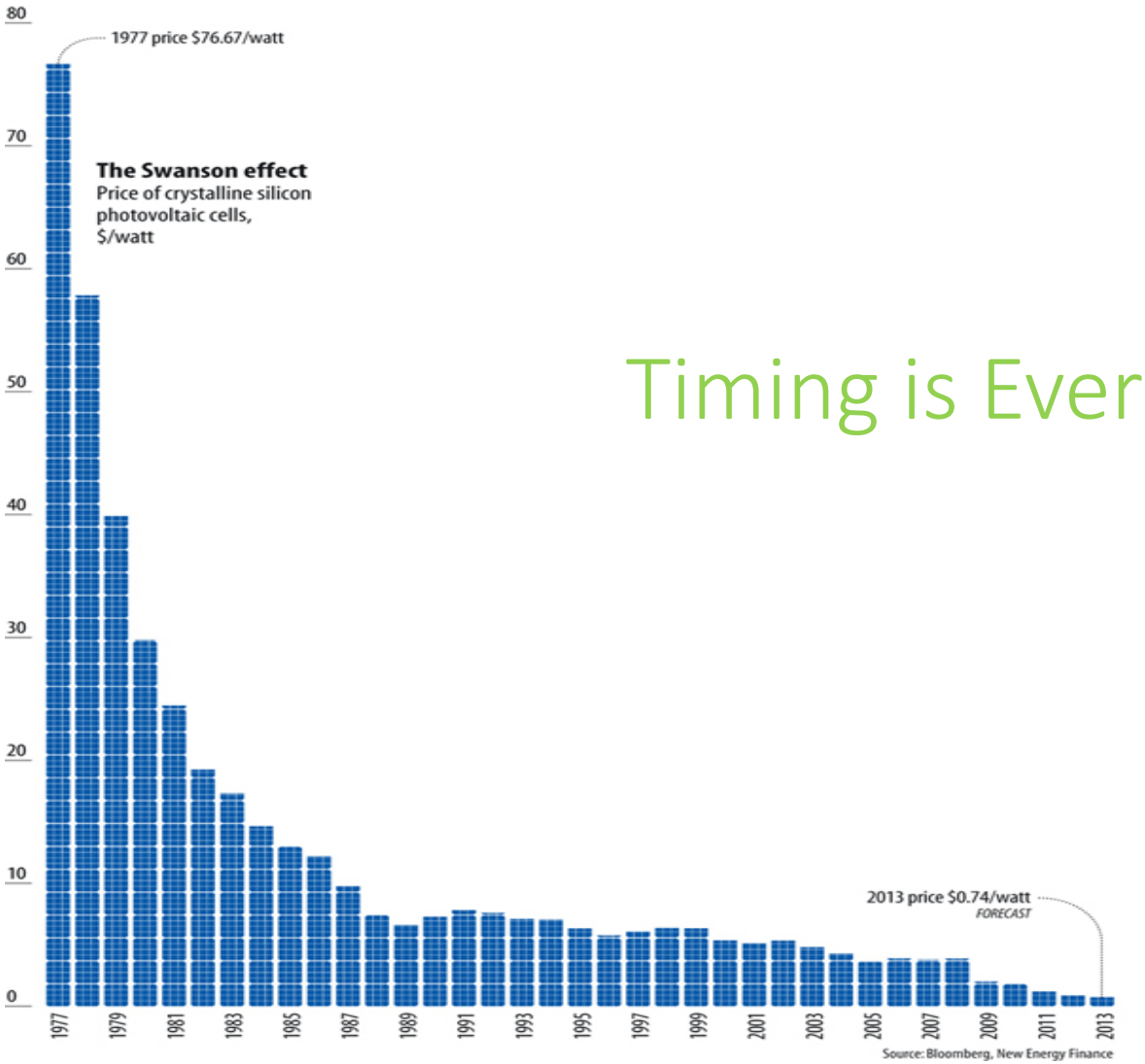
And Don't Forget:

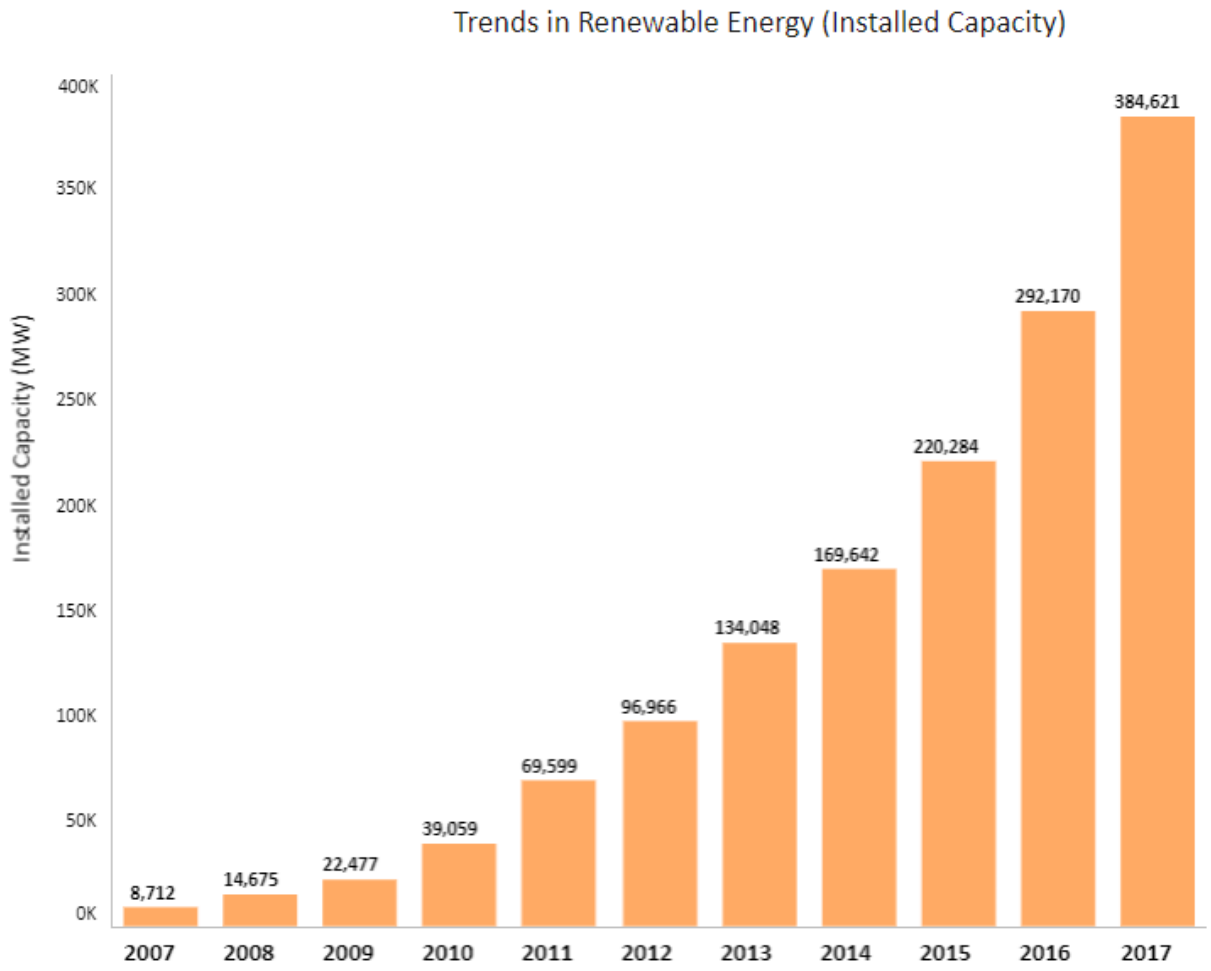
- Combined Heat & Power (Co-generation)
- Combined Heat, Cooling, Power (Tri-generation)

So…Why Begin with Solar?

- Proven technology
- LOTS of examples to draw on
- Emissions-free generation
- Low operating costs
- Scalable
- Opportunity for community investors
- Easily sited
- Well understood
  - But not that well – still a draw
- Fits trend towards distributed generation
- Strong public support
- Many possible co-benefits

Timing is Everything





Source: International Renewable Energy Agency

Benefits

For Utility:

- Get experience with generating & selling early on
  - Positioned to better adapt to changes to business model (DES)
  - Easier to capitalize on new opportunities
- Peak shaving potential
- Predictable costs
- Customer relations
- Good corporate citizenry
- Continue building on history

For Community:

- Energy independence & resiliency
- Reduce GHGs* & address climate change
- Living in a community supporting & leading development of renewables
- Educational opportunities for local schools & researchers
- Increased interest in visiting & working in Summerland
- Economic diversification
- Investment opportunity
- Brownfield improvements potential

Project History Continued

2017

- District hosts Solar Community Conversation to gauge support
  - >100 attendees
  - 100% of surveyed participants agreed/strongly agreed developing local renewable energy generation resources is important to them
- RDG grant application completed & awarded
- Pre-feasibility study completed
  - Examined overarching project economics and technical feasibility
  - Preliminary review of vacant DoS-owned properties 5+ acres
- GTF grant application submitted
  - Maximum size allowed under Fortis agreement without additional costs
  - Focus on economic and environmental co-benefits to community

Above, a typical PV support structure with penetrating foundations

Driven Pile

Earth Screw

Helical Pile

Below, a typical PV support structure with ballasted foundations

Ballasted

Foundations for Ground-Mounted Solar

Project History Continued

2018

- GTF grant conditionally awarded
- Detailed site review begins

2019 (to date)

- System Impact & Interconnection Study completed
- Financial Analysis completed
- Preliminary and detailed site reviews completed
- Staff prepare site recommendation

System Impact & Interconnection Study

- All District-owned properties greater than 0.5 acres were examined as potential sites
- No major impacts identified - any DoS-owned location acceptable from a grid impact/capacity perspective

System Impact & Interconnection Study

Site Selection Considerations:

1. Solar resource
2. Topography
3. Distribution system proximity
4. Distribution system capacity
5. Distribution system impacts
6. Available area

Solar + Storage: Site Selection

Further considered:

- Zoning & land use planning
- Social impacts
- Environmental considerations*
- Geotechnical conditions*
- Accessibility
- Module soiling

Solar + Storage: Site Selection

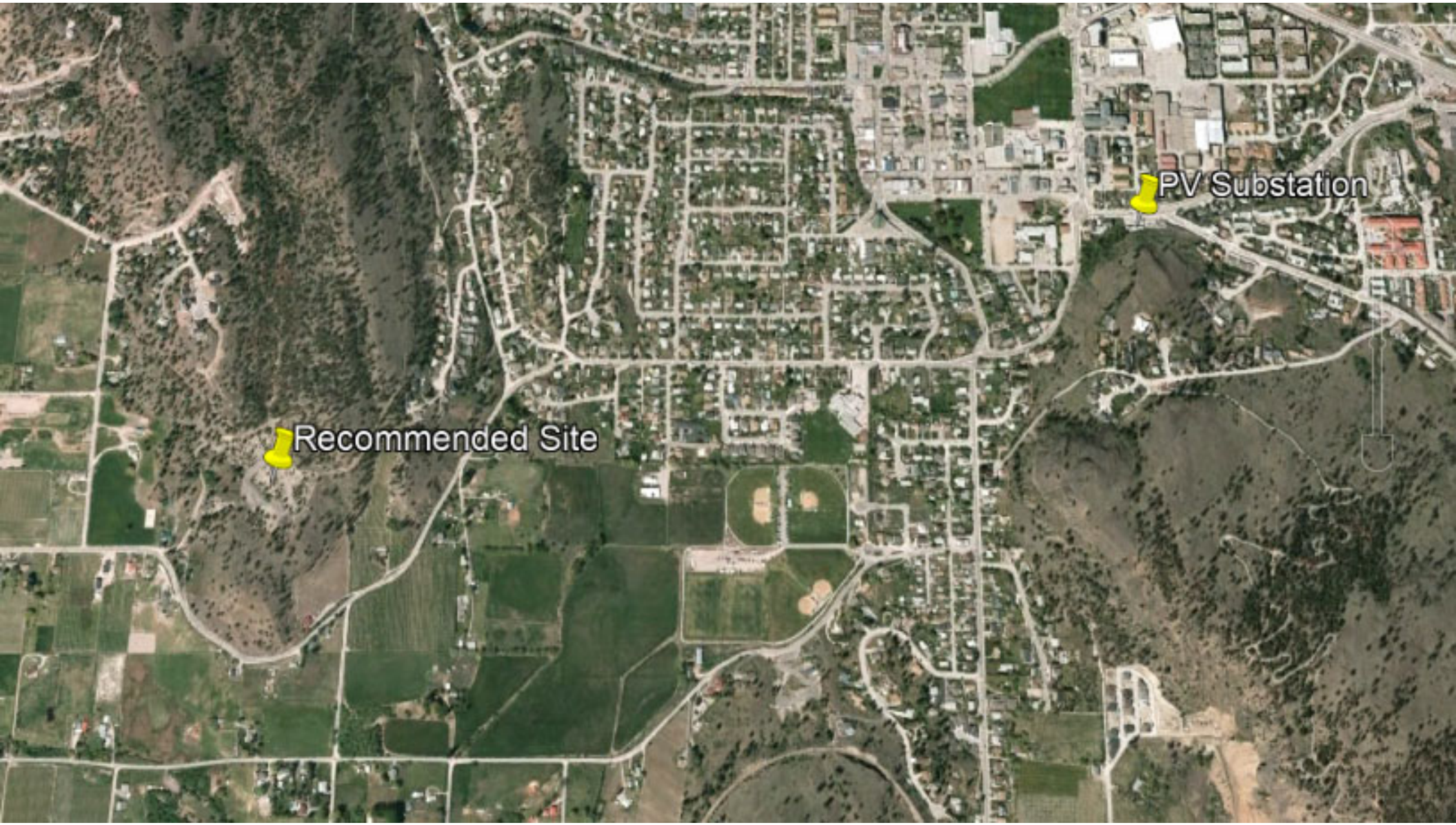
Further narrowed sites to those **not**:

- designated as Parks
- in perpetual slide monitoring area
- designated for Agriculture
- Adams Bird Sanctuary
- in active landfill area
- at north end of Garnet Valley
- reservoir
- KVR or Highway 97 right-of-way

Solar + Storage: Site Selection

The remaining sites were grouped and categorized as:

1. Individual buildings in the arena complex area
2. Lands surrounding the landfill
3. The Dunn St. properties currently held as rental houses
4. The District's former asphalt mixing site


PV Substation
Recommended Site


Recommended Site


Recommended Site

Overview of Recommended Site

OCP Designation: Administrative

Zoning Bylaw: Institutional

Historical Use: Asphalt mixing; industrial storage

Previously Disturbed Area: ~9.5 acres

Within ALR: No

Wildfire Interface: Yes (mitigation efforts previously completed)

High Hazard DPA: No

Environmentally Sensitive DPA: Yes

Urban Growth Area: Yes*

Detailed Review of Recommended Site

High social and recreational value: currently used as a park by wide range of users

Opportunities:

-formalize trail use in surrounding areas; mitigate risk and impacts of current use

-add amenities for recreational users (parking, signage, maps, garbage/recycling)

-number of passersby provides natural surveillance and security

Risks:

-loss of area for pump or BMX track (an informal one already exists)

-relatively easy access may promote vandalism

Detailed Review of Recommended Site

Development potential of site limited by costs of service and environmental attributes

Opportunities:

-productive use of brownfield site with minimal infrastructure investment

-limit risk of drainage issues and flooding on lower elevation properties

-protect adjacent green spaces by formalizing access and educating public

Risks:

-within Critical Habitat polygon for several species; mitigation may be required

-loss of area for university or research centre (no current proposals)

Detailed Review of Recommended Site

Electrical Infrastructure in Close Proximity

Opportunities:

-distance from PV Substation offers resiliency and efficiency benefits

-sufficient on-site space for batteries, related equipment, and service access

-short distance to fiber network and electric utility shop

-close to critical loads, enabling emergency power supply

Risks:

-some re-routing of three-phase power required as site not currently serviced

Detailed Review of Recommended Site

Surrounding Area is Compatible with Proposed Use

Opportunities:

-raised elevation above surrounding topography provides limited visual impacts

-no obvious source of significant dust or other module soiling issues

-”brownfield” status of site may provide additional funding opportunities

Risks:

-some community members may desire a more highly visible project

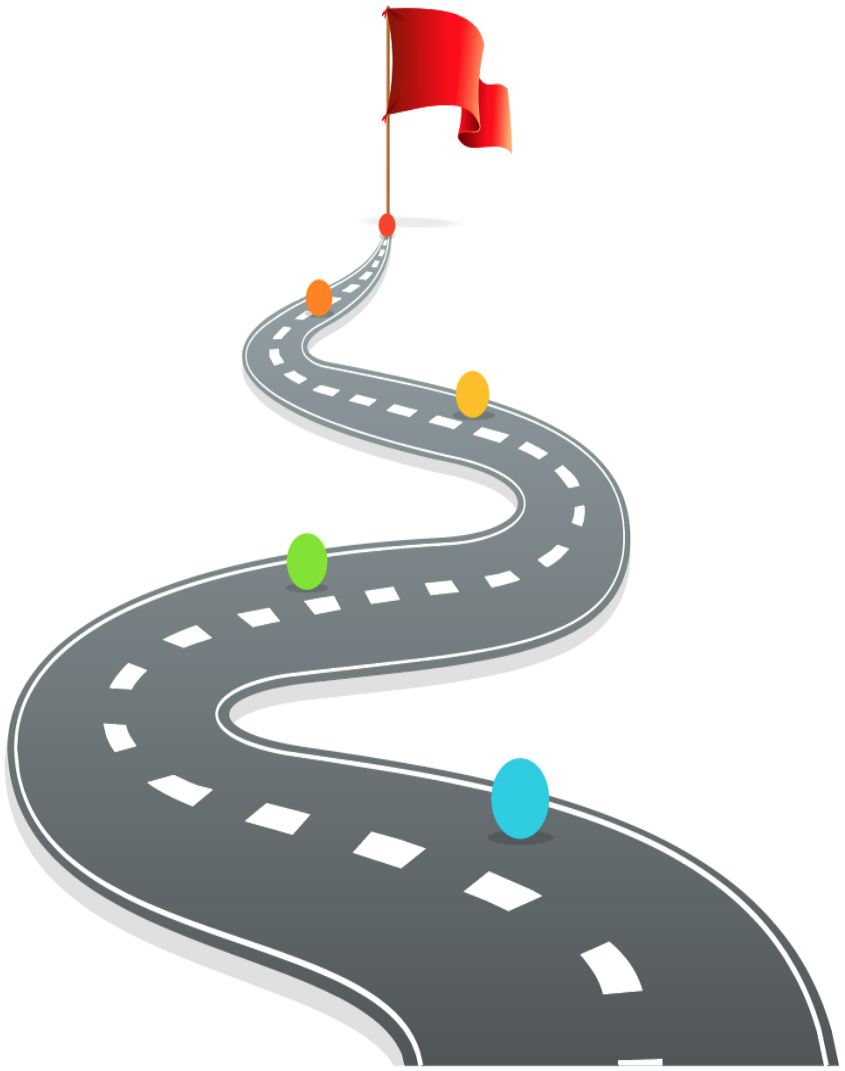
Summary of Recommended Site

- ✓ **OCP Designation and Zoning are compatible with proposed use**
- ✓ **Surrounding area has high social and recreational value**
- ✓ **Adjacent areas have high-value environmental attributes**
- ✓ **Residential and commercial development potential is limited**
- ✓ **Opportunities exist to improve recreational amenities & reduce risk and impacts**
- ✓ **Development of solar array would limit pressures on environmentally sensitive lands**
- ✓ **Proximity to electrical infrastructure and critical loads offers system benefits**
- ✓ **Minimal infrastructure requirements due to historical uses**
- ✓ **Offers best balance of technical, environmental, social, and financial factors of all considered sites**

Next Steps

- Confirm top choice
- Engage community
- Proceed to detailed analyses:
  - install monitoring station
  - geotechnical & environmental studies
  - confirm business case

- Detailed design
- Procurement
- Construction



Topics for Discussion

- Questions on history/process
- Location details
- Community engagement process

Planning statement with respect to Solar Array selection site:

On February 27th, in a Closed Council meeting planning staff presented professional opinion based on good planning practice as well as after considerable review of the District's Official Community Plan. Staff stated, that despite there not being a land or housing needs assessment, that significant development opportunity exists within the Urban Growth Area of Summerland to meet housing demands for the foreseeable future. The OCP contains objectives and policy for growth that, combined with a critical planning lens, leads to, and supports the statement.

The following OCP statements, objectives, policies and guidelines were taken into consideration:

Excerpts from Regional Growth Strategy.

- Carefully Direct Human Settlement. "The main focus of this policy is to direct the majority of growth in the region to existing urban centres (Primary Growth Areas).".
- Maximize the Efficient Use of Infrastructure.
- The RGS stresses directing development to primary growth areas that are already serviced. Regarding this discouragement, "Summerland's OCP is essentially silent, however, the consideration of alternative renewable energy sources that reduce greenhouse gas emissions are encouraged in the OCP. The efficient use of infrastructure includes reducing automobile dependency and increasing alternative transportation options.
- Summerland's OCP recognizes the affordable housing challenge that exists and recommends the preparation of an Affordable Housing Strategy.

Summerland's Visions and Goals:

- Provide long-term urban growth opportunities through intensification, infill and development within the Urban Growth Area, avoiding net loss of agricultural land and preserving ecologically significant areas.
- Provide for a range of housing types, densities and affordability levels within the designated Urban Growth Area to address the needs of current and future residents.
- Provide an integrated transportation network that links all components and modes of the community.
- Minimize urban sprawl and promote compact, energy-efficient development with access to amenities within walking and cycling distance.
- Improve transportation efficiency.
- Identify and support effective greenhouse gas reduction initiatives.
- Promote energy conservation and dissemination of renewable energy technologies.
- Demonstrate Municipal Leadership.

Further to the foregoing, the full review of the OCP, with particular focus on Section 6.2 Growth Management Strategy, identified that the priorities of growth must be balanced against affordable and diverse housing opportunities, existing infrastructure, environmental/ecological preservation/protection, limiting urban sprawl, etc. Summerland, like most other regions in the province is currently experiencing a housing crisis. Continuing to add more single family to the inventory, while still necessary, does little to address the concerns of housing alternatives and affordability.

Development in accordance with the direction of the OCP can take many forms well beyond low-density single-family subdivisions, including brown/greyfield development, hidden density, and multi-family development.

With walkability/active transportation, affordability and diversity of housing choices as OCP priority in mind there are a significant number of opportunities that will widen the aperture of discussion as part of the Zoning Bylaw rewrite project such as:

- Small lot infill subdivision in all serviced residential.
- Expansion of secondary suites and carriage houses on a greater number and variety of lots and on some lots the opportunity to do both.
- Possibility of strata-titling carriage houses to bring an affordable option that doesn't currently exist anywhere in the province. We could be first to market on this issue.
- High lot averaging (30%) to enable flexible subdivision on irregularly-shaped remainder parcels.
- Duplexes or additional units on corner lots that may not have subdivision potential but large enough in area to contain two units.
- Rowhouses on narrow lots, particularly those with lane access.
- Reduced lot depths where a lane is proposed to promote rear lane access to improve uninterrupted sidewalks, improved neighbourhood character, improved use of the narrow road right of ways in the District, and improved snow management.
- Re-development of underdeveloped lots or where existing buildings are old stock prime for redevelopment (which is the biggest form of development currently occurring in Kelowna). The downtown alone has a very large number of lots prime for removal of buildings and replacement with mixed use or medium density residential developments.

These are some of the ideas that will be investigated further as part of the Zoning Bylaw rewrite. In addition, a review of designations in the OCP will be reviewed, and potentially amended for clarification, to ensure implementation is consistent and efforts will be taken to reduce development barriers as much as possible.

From an OCP perspective, utilizing the site for a solar array meets a far broader range of OCP policies and objectives that does using the site as a residential development site. While the District may lose a low-density residential development opportunity for the next 20-30 years, it will gain a high value $6 million+ solar array site to better position Summerland for sustainable growth moving forward.

Engineering considerations: need something here. In discussion with Eng, there are possibly other easier options for sanitary connections to Cartright. This would have been excellent information to provide at the council session. I understand a servicing study has never been done for the property but perhaps this is something that Council could pursue further?