District of Summerland

Eco-Village Concept Plan

April 2022

SUMMERLAND
ECO-VILLAGE
concept

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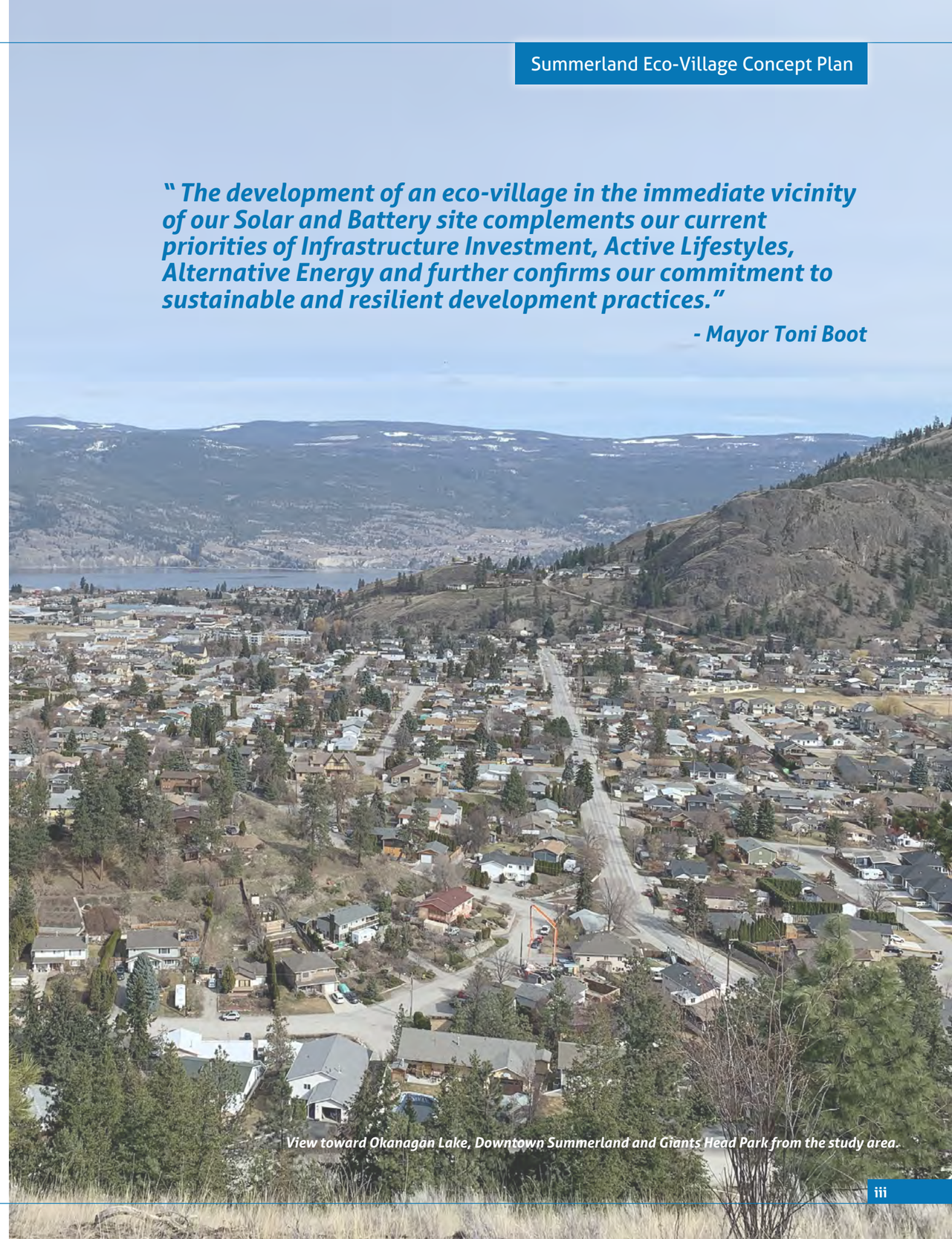
" The development of an eco-village in the immediate vicinity of our Solar and Battery site complements our current priorities of Infrastructure Investment, Active Lifestyles, Alternative Energy and further confirms our commitment to sustainable and resilient development practices."

- Mayor Toni Boot



View toward Okanagan Lake, Downtown Summerland and Giants Head Park from the study area.

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I. PROJECT BACKGROUND & SITE CONTEXT

Project Overview & Values
Eco-Design Program & Elements
Site Observations

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1 | Project Overview & Values

Project Overview

The District of Summerland convened a multi-disciplinary team of planners, engineers, architects, landscape architects and illustrators to explore the concept of an "Eco-village" for Summerland. Their aim was to create a concept for a low-impact, environmentally sensitive development that accommodates the planned construction of the solar array generation facility and promotes active transportation to Downtown Summerland. This project report and its concept plan is informed by engineering, environmental and urban design expertise, best practices in sustainable design, discussion with the Penticton Indian Band, and engagement with neighbours and community stakeholders, as well as a range of supporting documents and studies.

WHAT IS AN ECO-VILLAGE?

" A community whose inhabitants seek to live in a way that has minimal impact on the environment"

- Oxford English Dictionary

Project Values

WORK WITH FIRST NATIONS & INTEGRATE INDIGENOUS PERSPECTIVES

- engage with the Syilx Okanagan Nation to discuss their views, priorities and perspectives with regards to this land.
- incorporate their principles of stewardship in site planning.
- discuss partnership opportunities, including co-management of park areas.

LANDSCAPE INTEGRATION & NATURAL ASSET MANAGEMENT

- manage impacts of development: protect, enhance and restore natural features.
- retain forest and trees where possible and accommodate wildlife corridors.
- celebrate views: valley views, distant views.

COMMUNITY GATHERING SPACES & A COMMUNITY HUB

- provide places to gather and support socialization.
- emphasize the sustainable and cultural significance of the site.
- create a strong sense of community.

ENHANCED RECREATION & ACTIVE TRANSPORTATION

- include existing trail users in future plans and offer additional trail user facilities (e.g. parking, bike repair, washrooms).
- build pleasant and convenient active transportation connections to downtown / services.
- provide connectivity between buildings and trails.

GROUND ORIENTATION & FAMILY FRIENDLINESS

- accommodate density that builds on the opportunity offered by extending services.
- provide a mix of housing options (size, tenure and prices) with ground orientation and infrastructure that supports community integration.
- provide for and welcome a diverse community of people.

PLANNING FOR A LOW CARBON & RESILIENT FUTURE

- plan for safety, including interface considerations such as protection from fire and floods.
- integrate value innovation, including: building design best management practices; ground exchange system; water and energy conservation; renewable energy; compact housing with solar orientation; small electric vehicle accommodation and sharing.

2 | Eco-Design Program & Elements

The Eco-village concept encourages the integration of the following program opportunities and eco-design elements:

'HUB' STRUCTURE

As an existing destination for trail users, the Eco-Village can build on the site's use as a recreational destination by accommodating a 'hub' structure that fulfills multiple purposes and services for a range of visitors: sustainability education, First Nations cultural use and cross-cultural learning, public washrooms, and bike repair.

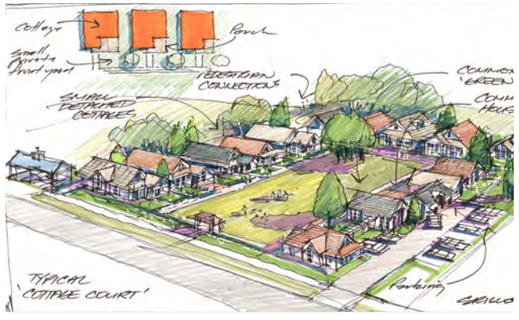
Educational facilities

Public washrooms

Trail head facilities

LOW IMPACT DEVELOPMENT

The sustainability of the overall project includes low impact development approaches such as the reduction of building footprints, the application of xeriscaping principles and the protection of existing significant trees. Location and protection of culturally significant trees will be a part of the detailed design process through an archaeological impact assessment.



Flexible building types and scales

Preserve Existing Tree Locations

Use Alternate Groundcover For Open Spaces

COTTAGE COURTS + POCKET NEIGHBOURHOOD

In response to landform constraints, environmental sensitivity, the need for varied forms of housing and a desire for shared spaces, the cottage court configuration of homes is a compelling and flexible arrangement. In this configuration, buildings share access and orient toward a common space.

Common Outdoor Space

More Efficient Use of Site

Reduce Visual Impact of Cars

BUILDING SITING, MASSING + ORIENTATION

The way buildings and homes relate to each other and their context can have an impact on their 'fit' within a neighbourhood or setting and can create spaces that feel inviting, pleasant and supportive of community.

Common amenity spaces

Appropriate densities and height

Communal spaces

ARCHITECTURAL + LANDSCAPE EXPRESSION

Thoughtful design presents a significant opportunity to embody project values through landscape integration, minimizing impacts and use of natural materials such as wood and stone.

Working with the land & slope

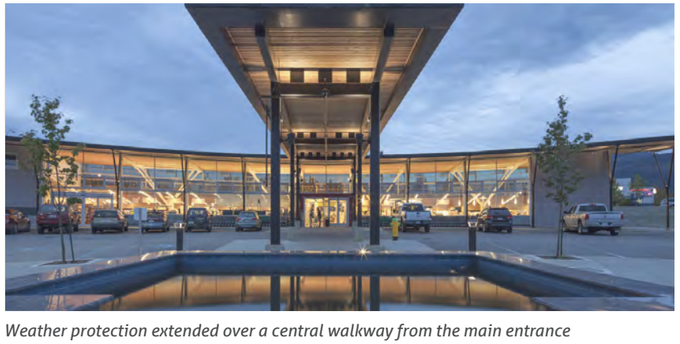
Landscape retention and integration

Shared driveways

WEATHER PROTECTION

Indoor-outdoor relationships and transitions can be enhanced through architecture by providing shelter from the elements (whether sun or snow) while celebrating Summerland's changing seasons.

Protection from sun and precipitation



Weather protection extended over a central walkway from the main entrance

Passive energy: protection from sun

3 | Site Observations

The site ("study area") is 3km away, a 5 minute drive and a 20 minute bike ride from Downtown.

CULTURAL IMPORTANCE

Syilx Okanagan Traditional Knowledge Keepers describe this place as a known Syilx harvesting ground, processing area, camping area and travel corridor. This area is socially, culturally, environmentally and economically significant to the Syilx people. The Cultural Heritage Resource Assessment highlights cultural and environmental significance and identifies archaeological potential within the proposed project area.

PROXIMITY AND CONNECTIONS

The project offers opportunity to more directly connect active users (pedestrians, cyclists) to the Downtown from the site. Other destinations along the way include the Dale Meadows Ball Park and Giant's Head Elementary school. Existing homes to the east and west are separated by hillsides, forest and sensitive ecosystems. Presently, there is a lack of nearby bus routes. There may be future opportunity to encourage and extend transit to the neighbourhood once developed.

TRAILS, SERVICING & ENVIRONMENTALLY SENSITIVE AREAS

Sanitary servicing will be extended to the site through existing rights-of-way and along the historic flume alignment (shown in blue dashed line at right). Servicing may extend beyond into Deer Ridge, with the opportunity for trail networks to run along them to the south and west of the site. Future plans for the neighbourhood will formalize existing trail networks, directing residents and visitors around or elevated over areas of high sensitivity and natural habitat. Development will occur in areas of lesser sensitivity. The aim will be to protect and preserve the areas of the highest environmental sensitivity (ESA 1) and areas of cultural value.

II. CONCEPT STRUCTURE + ILLUSTRATION

Landscape Rooms + Concept Structure
Eco-Village Concept
Concept Options
hillside residences
valley neighbour'wood' clusters
upland + parkside residences
community hub
ridgeline park & trailhead

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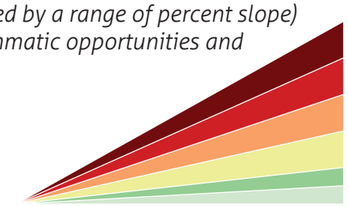
4| Landscape Rooms + Concept Structure

Landform analysis provides insight to the physical condition, challenges and opportunities of the land based on existing topography (see "A Closer Look at Landform"). This informs design responses to significant elevational changes across the site that affect building form, accessibility, and open space design. It is important to pair the geographical data presented below with the findings from other supporting studies such as the Cultural Heritage Assessment that outlines the environmental and cultural relationship of the Syilx people to these lands.

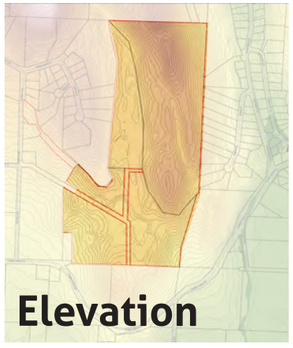
A Closer Look at Landform

The slope map depicts terrain steepness and informs design to minimize physical impacts and design universally-accessible public spaces.

Slope classes (defined by a range of percent slope) correlate to programmatic opportunities and constraints.

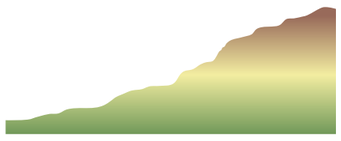


EXTREME (+40%)
STEEP (30-40%)
MODERATE (20-30%)
HILLSIDE (10-20%)
FLAT / GENTLE (0-10%)



The elevation colors and contours represent 3 metre invervals of elevational change (e.g. one storey).

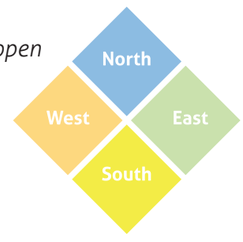
Accordingly, prospect, solar gain and shadowing plays a significant role in considering program configuration within the site.



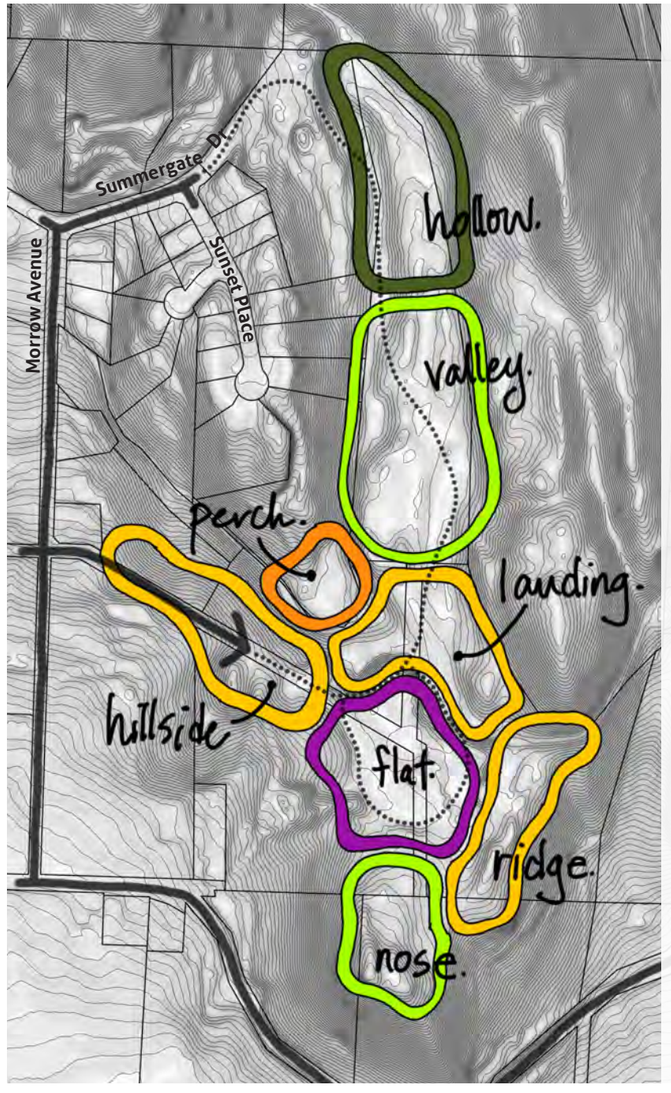
HIGHER
LOWER

The aspect map represents the direction in which the land faces and provides insight on the sun exposure/solar gain of the site.

This understanding informs building and open space design and orientation, to optimize pedestrian comfort and energy efficiency.



Concept Structure



Hillside
Access into the site climbs steadily from Morrow Avenue.

Landing
The climb comes around the nose of Sunset Place hill to arrive at a level area with interesting elevational relationships to 'landscape rooms' set above, below and opening up into the valley north.

Perch
As one enters the landing, a small bench or "perch" overlooks the area facing south toward the site of the future solar project.

Flat
Level and benefiting from southern exposure, this former District operations brownfield site is the location of the solar and storage project.

Nose
The nose sits at the top of steeps slopes, overlooking vinyards and rural lands.

Ridge
Breathtaking views of summerland are revealed amongst grasses and brush that serve as habitat to snakes and other critters.

Valley
Nestled between ridges, the wooded south-facing valley offers a lovely, gentle landscape in a serene natural environment.

Hollow
The valley ends where a sensitive wetland ecosystem begins in the 'hollow'.

5 | Eco-Village Concept

The following presents the primary land use areas of the proposed Eco-Village concept and their defining features or character. As represented in the concept plan below, parking for access to parks and open space is incorporated within small, discrete "pods" and along streets to avoid the impacts of large, contiguous surface parking. Additionally, roads are walkable, with slow design speeds and accommodate sidewalks in their cross sections or permit street sharing (i.e. pedestrians, cyclists and vehicles share the same road space). Acknowledging the forested nature of the Eco-Village setting, architectural and landscape designs will generally conform to FireSmart principles, as outlined in the guidelines (Section III). Areas of highest environmental sensitivity are avoided and on-site stormwater management will mimic pre-development conditions.

LEGEND:

- *Study Area Boundary (27.6 ha)*
- *Existing ESA 1 areas (of highest environmental sensitivity)*
- *Existing wetland*
- *Inferred wildlift movement*
- *Cottage (2.38)*
- *Townhouse (1.47 ha)*
- *Multi-unit (1.08 ha)*
- *Solar program (1.05ha)*
- *Neighbourhood Park (3.31 ha)*
- *Nature Park (19.43 ha)*
- *Road*
- *Road with Street Parking*
- *Emergency Road*
- *Recreational Trail (hiking, mountain biking, and horseback riding)*

METRICS:

- **A** 1.47 ha | 22 units
- **B** 2.38 ha | 28 units
- **C** 0.42 ha | 32 units*
- **D** 0.41 ha | 32 units
- **E** 0.25 ha | 32 units

** this parcel is outside the study area under private ownership.*

A | Hillside & Solar residences

Arrival into the heart of the Eco-Village and along the edges of the solar project is framed with homes.

B | Valley Neighbour'wood' clusters

Space in this gentle yet narrow area is optimized as homes are arranged in cottage courts that share access, enjoy a serene wooded character and shared central green spaces for community gardening.

C+D | Upland residences

Overlooking the community hub, these areas offer potential for more dense forms of housing. Site C is currently under private ownership.

E | Parkside residences

Located at the nose of the solar program plateau, a portion of land is set aside for more dense forms of housing that take advantage of sun exposure.

F | Solar program

This area is part of the District's ongoing Solar + Storage project, currently conceived of as a standalone utility.

G | Community hub

A community hub at the heart of the Eco-Village serves as a gathering space offering information on the solar+ storage project, environmental habitat values and indigenous cultural heritage in the area, as well as facilities such as public washrooms, bicycle repair and pop-up recycling stations. Green space presents additional opportunity to encourage on-site food production.

H | Ridgeline park & trailhead

The ridge offers incredible views to Summerland, Okanagan Lake and Giants Head. This swath includes ecosystem sensitivities that serve as wildlife habitat. A light touch on the land and interpretive signage will allow visitors to respectfully enjoy the view and habitat values. This signage can point to vantage points with potential archaeological significance adjacent to potential hunting spots and wildlife corridors.

I | Wetland Habitat + Nature Park

Residential development ends where highly sensitive wetland ecosystems begin. These are proposed as dedicated nature park, presenting an opportunity for collaborative management with the Penticton Indian Band. Beyond the homes, trail connectivity is maintained through interventions such as, foot bridges and boardwalks spanning over sensitive wetland habitat.

6| Concept Options

Concept 1 | medium density townhomes

Metrics:

- A 1.72 ha | 25 units
- B 2.38 ha | 28 units
- C 0.42 ha | 10 units
- D 0.41 ha | 22 units

total: 85 units

- *Cottage*
- *Townhouse*
- *Multi-unit apartment*
- *Solar program*
- *Neighbourhood Park*
- *Nature Park*
- *Road*
- *Road with Street Parking*
- *Emergency Road*
- *Trail*

This concept presents a less dense, more dispersed townhouse model. While the scale of buildings is more modest, more building footprints are distributed across the land.

Concept 2 | higher density apartments

Metrics:

- A 1.47 ha | 22 units
- B 2.38 ha | 28 units
- C 0.42 ha | 32 units
- D 0.41 ha | 32 units
- E 0.25 ha | 32 units

total: 146 units

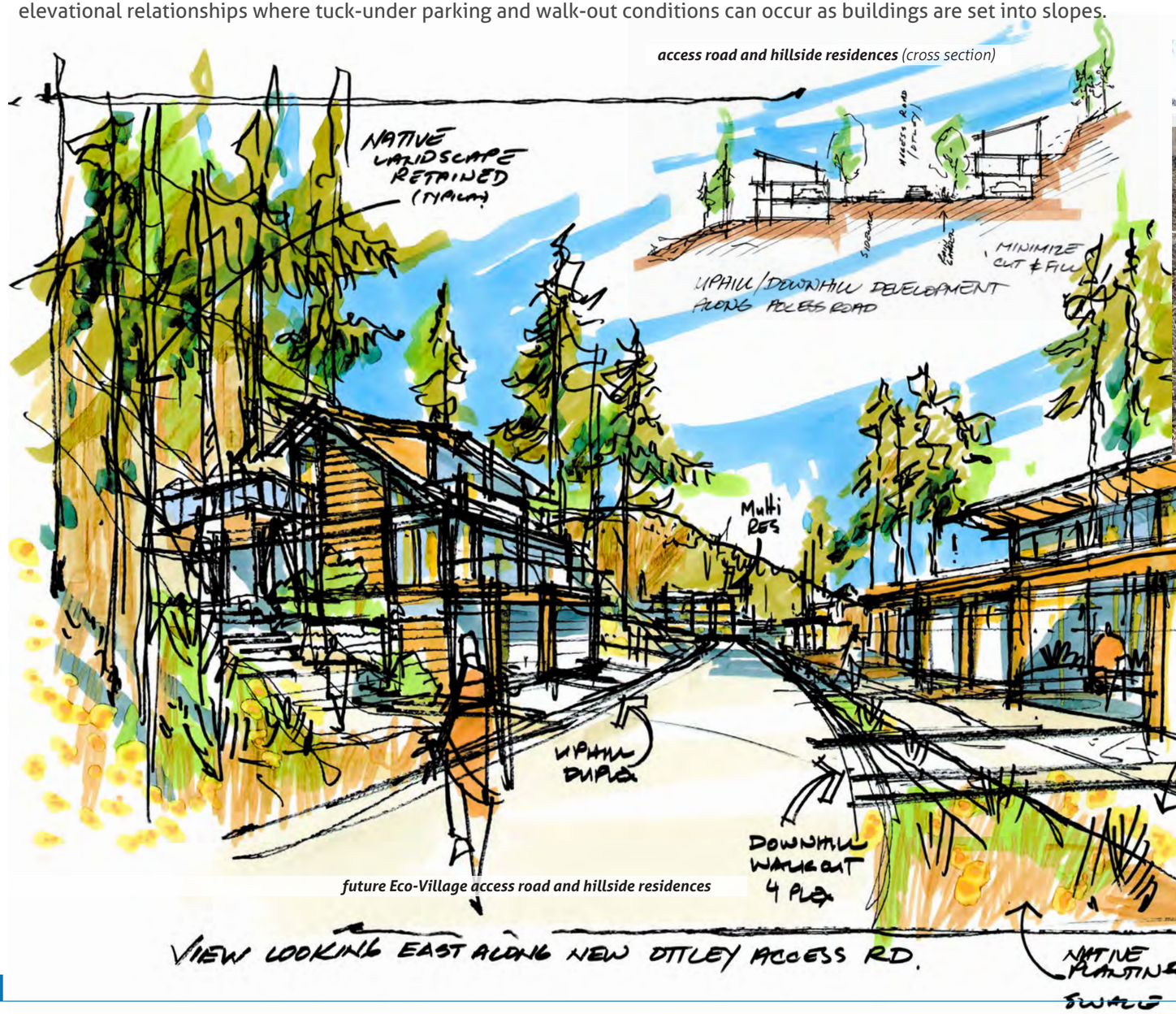
- *Cottage*
- *Townhouse*
- *Multi-unit apartment*
- *Solar program*
- *Neighbourhood Park*
- *Nature Park*
- *Road*
- *Road with Street Parking*
- *Emergency Road*
- *Trail*

This concept presents a denser, more concentrated apartment model. While the scale of buildings is larger, fewer building footprints are distributed across the land and forest landscapes and habitats are more generously accommodated. Introducing apartment forms also further diversifies the range of units and price points offered at the Eco-Village.

hillside residences

With access into the site climbing steadily from Morrow Avenue there is opportunity to frame arrival into the heart of the Eco-Village with hillside homes. These homes will have interesting elevational relationships where tuck-under parking and walk-out conditions can occur as buildings are set into slopes.

access road and hillside residences *(cross section)*



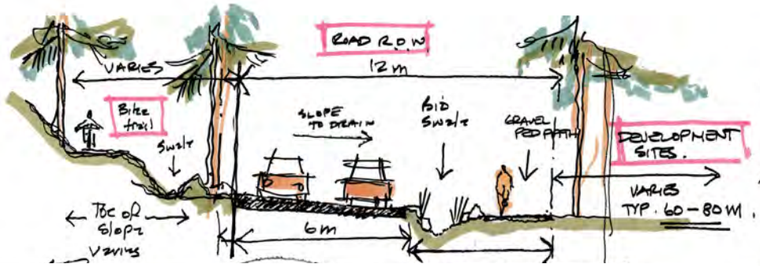
future Eco-Village access road and hillside residences

hillside trail - future Eco-Village access road and hillside residences

valley neighbour'wood' clusters

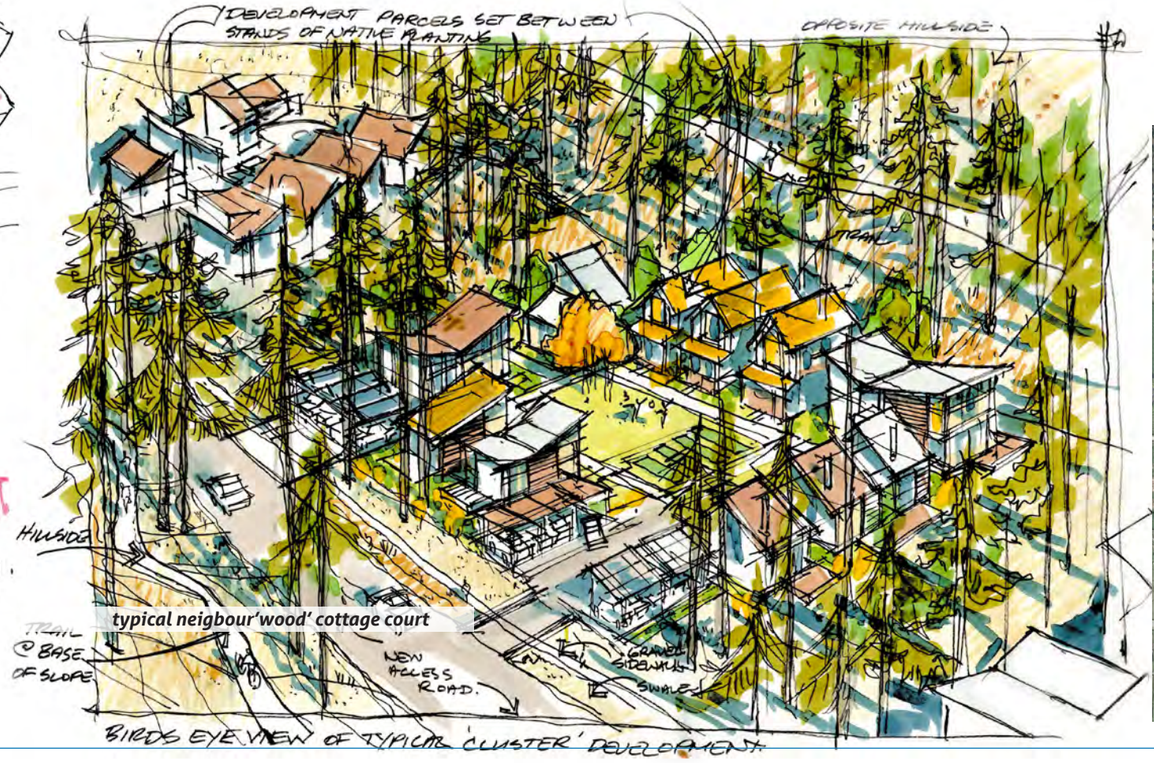
The west-facing valley is nestled between hillsides and bathed in warm light between late morning and early afternoon. A gentle swath of land roughly 100m across offers an opportunity to pull community into the valley. Space can be optimised through use of the cottage court arrangements that share access with homes arranged around shared central community gardens and green spaces.

typical neigbour'wood' cottage court (plan view)



cross section of neigbour'wood' access

the valley today - site of the future neigbour'wood' area



typical neigbour'wood' cottage court

upland + parkside residences

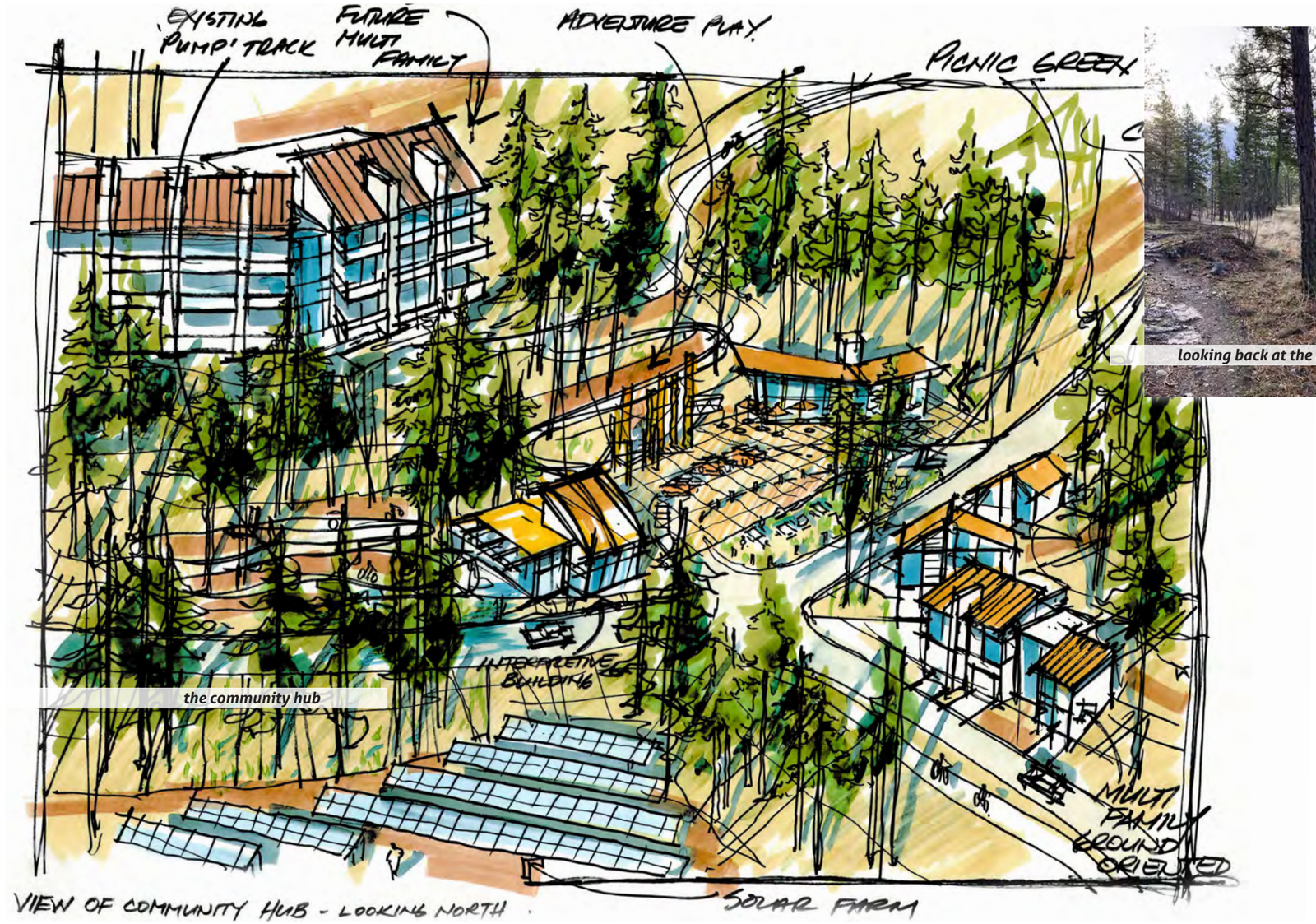
There is potential and interest for these areas to hold the Eco-Village's denser development forms. This allows for housing to occupy a smaller footprint and for more existing landscape to be retained.

▲ potential for denser apartments forms that fit ▲

the perch today - site of future upland residences

community hub

A community hub is proposed at the heart of the Eco-Village - nestled between homes, overlooking the solar program and at the foot of the valley neighbour'wood'. This place would serve as a community gathering space, offer education and interpretation tied to the solar program, cross-cultural learning opportunities, as well as public washrooms, bicycle repair and pop-up recycling stations. Green space presents additional opportunity to encourage on-site food production.



the community hub

VIEW OF COMMUNITY HUB - LOOKING NORTH

looking back at the landing today - future community hub site

ridgeline park & trailhead

Trail users indicated this location as a significant existing trailhead and destination for recreational trail users. This place offers incredible views to Summerland and Okanagan Lake. Here, there is opportunity to offer shelter and a place to eat. A light touch on the land and interpretive signage will communicate the sensitivity of native grass and brush that offer habitat to wildlife. Additionally, signage offer wayfinding to neighbourhood connections and vantage points, as well as potential cultural and archaeological significance of potential hunting areas and wildlife corridors.

▲ *facilities and interpretive signage* ▼

views of Summerland from the ridge

III. IMPLEMENTATION & GUIDELINES

Implementation
Envision Guidelines
Architectural Guidelines
Landscape Architectural Guidelines

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7 | Implementation

The information on this page presents the most likely course of action for project implementation.

Levers

Comprehensive Development (CD) Zone with Guidelines

A CD Zone based on the concept presented here will outline approximate areas, allowable uses, and include the Envision, Architecture and Landscape Architecture Guidelines.
The CD Zone should permit the following:

- a variety of uses, including residential, commercial and office;
- a variety of building and housing forms, including single detached, clustered and multi-storey; and,
- a 12 metre height limit to allow for 3-storey multi-unit buildings.

Restrictive Covenant

A restrictive covenant will protect environmentally sensitive areas and ensure implementation is executed according to project values.

Request for proposals (RFP) through land sale

An RFP process for land sale will filter applicants to those committed to realizing the vision of the Eco-Village. The RFP will outline certification requirements for infrastructure development (Envision) and architecture (Step Code).

Certification

Certification may or may not be a requirement of this project's implementation. Factors will include additional costs to the proponent and level of trust in the project's sustainable implementation.

Envision

At its core, the Envision Guidelines are about supporting higher performance through more sustainable choices in infrastructure development. This framework aims to foster dramatic and necessary improvements in the sustainable performance of infrastructure by helping owners, planners, communities, and others to implement resource-effective investments.

Step Code

The BC Energy Step Code is an optional compliance path in the BC Building Code that local governments may use, if they wish, to incentivize or require a level of energy efficiency in new construction that goes above and beyond the requirements of the BC Building Code. Builders may voluntarily use the BC Energy Step Code as a new compliance path for meeting the energy-efficiency requirements of the BC Building Code. The District has decided to proceed with the Step Code and has approved Step 1 with future steps to be adopted in late 2022.

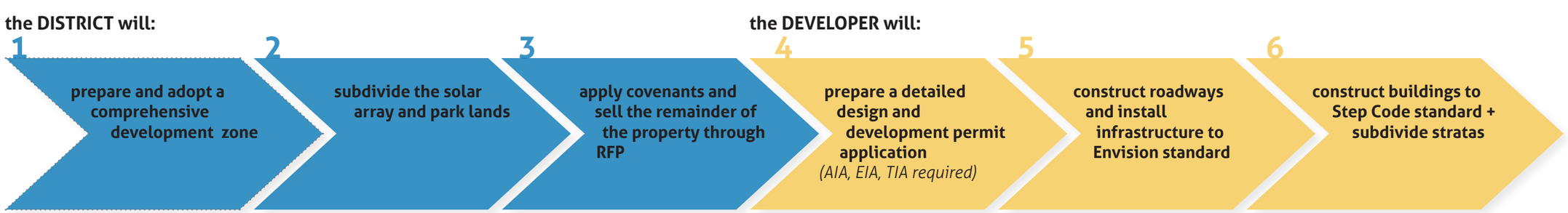
Additional studies

Additional studies will be required at the detailed design and development permit stages, including:

- Archaeological Impact Assessment (EIA)
- Environmental Impact Assessment (EIA)
- Traffic Impact Assessment (TIA) accounting for mitigation strategies such as electric vehicle share programs and active transportation routes.

Proposed Project Delivery

The diagram below outlines roles and proposed project implementation sequence.



8 | Envision Guidelines

These guidelines have been informed by and follow the fundamentals of the Envision Sustainable Infrastructure framework.

8.1 Overview

Envision is a framework that provides the guidance needed to initiate a systemic change in the planning, design and delivery of sustainable and resilient infrastructure. It aims to foster dramatic and necessary improvements in the sustainable performance of infrastructure by helping owners, planners and communities to implement resource-effective investments. At its core, the Envision Guidelines are about supporting higher performance through more sustainable choices in infrastructure development.

8.2 Wellbeing

Improve community quality of life

Improve the net quality of life of all communities affected by the project and mitigate negative impacts to communities.

- Sanitary sewer connection
- Additional park space, protect natural areas
- Community feel of subdivision
- Access to area for all

Enhance public health and safety

Protect and enhance community health and safety during operation.

- Encourages sanitary sewer connection
- Additional access for fire
- Improved parking/access to trails
- Community facilities at trailhead
- Trail maintenance and management by the District of Summerland

Improve construction safety

Enhance public and worker safety during construction.

Minimize Noise and Vibration

Minimize noise and vibrations during operations to maintain and improve community livability.

Minimize Light Pollution

Reduce backlight, uplight, and glare without jeopardizing safety during operations.

- Minimize full street lighting
- Bollard pighting to keep lighting low
- Night sky effect

Minimize Construction Impacts

Minimize or eliminate the temporary inconveniences associated with construction.

- Maintain dust control
- Limit impact areas
- Maintain access to trails during construction

Improve Community Mobility and Access

Plan the project as part of a connected network that supports all transportation modes for the efficient movement of people, goods, and services.

- Improve trail access and access to the community from Deer Ridge and the Eco-Village

Encourage Sustainable Transportation

Expand accessibility to sustainable transportation choices including active, shared, and/or mass transportation.

- Encourages walking/active connections and other active connections to town
- EV stations

Improved Access and Wayfinding

Design the project to provide safe and appropriate access in and/or around the project in a way that integrates the project with the surrounding community.

- Add wayfinding maps for the trails

Advanced Equity and Social Justice

Ensure that equity and social justice are fundamental considerations within project processes and decision making.

Envision Guidelines

Preserve Historic and Cultural Resources

Preserve or restore significant historical and cultural sites and related resources.

- PIB involvement
- PIB culture incorporation into trails and plans

Enhanced Views and Local Character

Preserve or enhance the physical, natural, and/or community character of the project site and its surroundings.

- Preserve remnants of the Flume and establish interpretive signage
- PIB cultural incorporation

Enhance Public Space and Amenities

Improve amenities and publicly accessible spaces to enhance community livability.

- Trail access points to views
- Buildings to match design character

8.3 Leadership

Provide Effective Leadership & Commitment

Provide effective leadership and commitment to achieve project sustainability goals.

- Project goals for a sustainable community, being driven by staff, and Council throughout the project

Foster Collaboration & Teamwork

Enhance project sustainability through interdisciplinary collaboration and teamwork.

- Robust stakeholder involvement throughout the project.

Provide for Stakeholder Involvement

Early and sustained stakeholder engagement and involvement in project decision making.

- Ongoing and early stakeholder input

Pursue Byproduct Synergies

Critically reconsider whether traditional waste streams can be beneficially reused.

Establish a Sustainability Management Plan

Create a project sustainability management plan that can manage the scope, scale, and complexity of a project seeking to improve sustainable performance.

Plan for Sustainable Communities

Incorporate sustainability principles into project selection/identification in order to develop the most sustainable project for the community.

- Project goals for a sustainable community

Plan for Long-Term Monitoring & Maintenance

Put in place plans, processes, and personnel sufficient to ensure that long-term sustainable protection, mitigation, and enhancement measures are incorporated into the project.

Plan for End-of-Life

Ensure that the project team is informed by an understanding of the full impacts and costs of the project's end-of-life.

Stimulate Economic Prosperity & Development

Support economic prosperity and sustainable development, including job growth, capacity building, productivity, business attractiveness, and livability.

- Promote community

Develop Local Skills & Capabilities

Expand the knowledge, skills, and capacity of the community workforce to improve their ability to grow and develop.

- Engagement with local educational instutitions.

Conduct a Life-Cycle Economic Evaluation

Utilize economic analyses to identify the full economic implications and the broader social and environmental benefits of the project.

Envision Guidelines

8.4 Resource Allocation

Support Sustainable Procurement Practices

Develop sustainable procurement policies and programs to source materials and equipment from manufacturers and suppliers that implement sustainable practices.

Use Recycled Materials

Reduce the use of virgin natural resources and avoid sending useful materials to landfills by specifying reused materials, including structures, and material with recycled content.

Reduce Operational Waste

Reduce operational waste and divert waste streams from disposal to recycling and reuse.

Reduce Construction Waste

Divert construction and demolition waste streams from disposal to recycling and reuse.

Balance Earthwork On Site

Minimize the movement of soils and other excavated materials off site to reduce transportation and environmental impacts.

- Cut and fill balance on site, potentially produce/crush materials on site for subbase/base

Reduce Operational Energy Consumption

Conserve energy by reducing overall operational energy consumption throughout the project life.

- Step Code
- Net Zero

Reduce Construction Energy Consumption

Conserve resources and reduce greenhouse gases and air pollutant emissions by reducing energy consumption during construction.

- Construction management plan requiring equipment shut down

Use Renewable Energy

Meet operational energy needs through renewable energy sources.

- Eooftop Solar where applicable
- Solar lights for street lighting

Commission & Monitor Energy Systems

Ensure efficient functioning and extend useful life by specifying commissioning and monitoring of energy systems.

Preserve Water Resources

Assess and reduce the negative net impact on fresh water availability, quantity, and quality at a watershed scale to positively impact the region's water resources.

Reduce Operational Water Consumption

Reduce overall water consumption while encouraging the use of greywater, recycled water, and stormwater to meet water needs.

- Low flow faucets, small water service, no underground irrigation, use of storm water for watering

Reduce Construction Water Consumption

Reduce potable water consumption during construction.

Monitor Water Systems

Improve operational performance by including monitoring capabilities.

Envision Guidelines

8.5 Natural World

Preserve Sites of High Ecological Value

Avoid placing the project and temporary works on a site that has been identified as being of high ecological value.

- Avoid ESA 1

NW1.2 Provide Wetland & Surface Water Buffers

Protect, buffer, enhance, and restore wetlands, shorelines, and waterbodies by providing natural buffer zones, vegetation, and soil-protection zones.

- Avoid ESA 1

NW1.3 Preserve Prime Farmland

Identify and protect soils designated as prime farmland, unique farmland, or farmland of importance.

NW1.4 Preserve Undeveloped Land

Conserve undeveloped land by locating projects on previously developed land.

NW2.1 Reclaim Brownfields

Locate projects on sites classified as brownfields.

- Solar site is there, but using the other brown field areas

NW2.2 Manage Stormwater

Minimize the impact of development on stormwater runoff quantity, rate, and quality.

- Bioswales, infiltration for stormwater, direct water to depressions

NW2.3 Reduce Pesticide & Fertilizer Impacts

Reduce non-point-source pollution by reducing the quantity, toxicity, bioavailability, and persistence of pesticides and fertilizers.

- Maintain existing landscaping

NW2.4 Protect Surface & Groundwater Quality

Preserve water resources by preventing pollutants from contaminating surface water and groundwater and monitoring impacts during construction and operations.

NW3.1 Enhance Functional Habitats

Preserve and improve the functionality of terrestrial (land) habitats.

- Designate parkland

NW3.2 Enhance Wetland & Surface Water Functions

Maintain and restore the ecosystem functions of streams, wetlands, waterbodies, and their riparian areas.

- Protect wetland

NW3.3 Maintain Floodplain Functions

Preserve floodplain functions by limiting development and impacts of development in the floodplain

NW3.4 Control Invasive Species

Use appropriate noninvasive species, and control or eliminate existing invasive species.

- Maintain existing landscaping

NW3.5 Protect Soil Health

Preserve the composition, structure and function of site soils.

- Minimize clearing

Envision Guidelines

8.6 Climate and Resilience

Reduce Net Embodied Carbon

Reduce the impacts of material extraction, refinement/manufacture, and transport over the project life.

Reduce Greenhouse Gas Emissions

Reduce greenhouse gas emissions during the operation of the project, reducing project contribution to climate change.

Reduce Air Pollutant Emissions

Reduce emissions of air pollutants: particulate matter (including dust), ground-level ozone, carbon monoxide, sulfur oxides, nitrogen oxides, lead, and volatile organic compounds.

Avoid Unsuitable Development

Minimize or avoid development on sites prone to hazards.

Assess Climate Change Vulnerability

Develop a comprehensive climate change vulnerability assessment.

Evaluate Risk and Resilience

Conduct a comprehensive, multi-hazard risk and resilience evaluation.

Establish Resilience Goals and Strategies

To support increased project and community resilience through the establishment of clear objectives and goals.

Maximize Resilience

Increase resilience, life-cycle system performance, and the ability to withstand hazards by maximizing durability.

Improve Infrastructure Integration

Enhance the operational relationships and strengthen the functional integration of the project into connected, efficient, and diverse infrastructure systems.

9 | Architectural Guidelines

9.1 Overview

The principles of the Eco-Village support a development model which preserves open space, creates mixed communities, and achieves carbon neutrality. To realize this vision, the buildings themselves must complement the planning. For site development, they should be grouped in clusters, to minimize the development footprint and maximize natural space. The clusters should be linked to the park and trail system through paths and trails. Roof forms should be oriented to the south to provide space for future building mounted solar panels, and to shade the buildings. Large roof overhangs will block high angle summer sun, while allowing winter sun to penetrate and warm the buildings. Large south facing windows will allow for cross ventilation and daylighting. Exterior materials should be durable and fire resistant. Buildings should be constructed to Step Code level 4 or 5, to render them net zero ready. This will mean high levels of insulation, and high-performing windows. Heating and cooling should all be provided with electricity, likely through air source heat pumps or geothermal. Hot water heat pumps and induction cooktops would round out the high comfort, zero carbon equipment list. A mix of unit sizes and layouts will allow for variation in unit costs, and the potential for a vibrant social mix of age groups and income levels.

9.2 Architectural Design Principles

Mobility

- Pedestrian Connection to east
- Car / Bike connection to west
- Access to Greenspace / trails
- Car Charging Clusters

Land

- Maintain Native Habitats
- Maintain Forest Canopy
- Low water use, perennial landscaping
- Cluster developments, minimal footprint
- Must meet district, provincial and federal requirements for wetlands and waterbody setbacks, buffers and protection.

Energy

- Zero Carbon (no natural gas)
- Renewable Energy
- Air Source Heat pumps
- Step Code 4 or 5
- Passive Solar Orientation
- Exterior Shading
- Natural Ventilation

Water

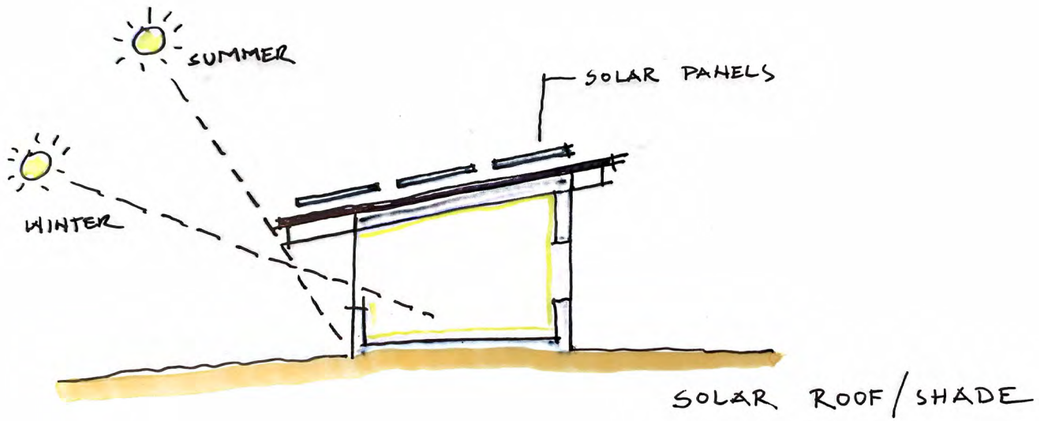
- Low water use
- Rainwater Collection
- Permeable Surfaces
- Stormwater Management

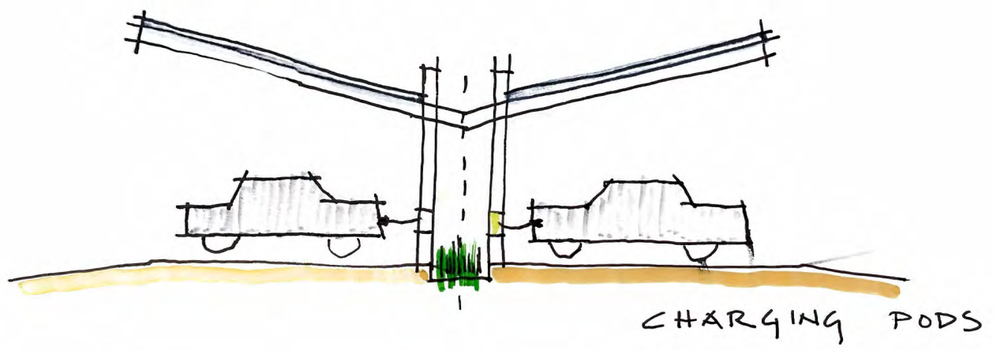
Materials + Waste

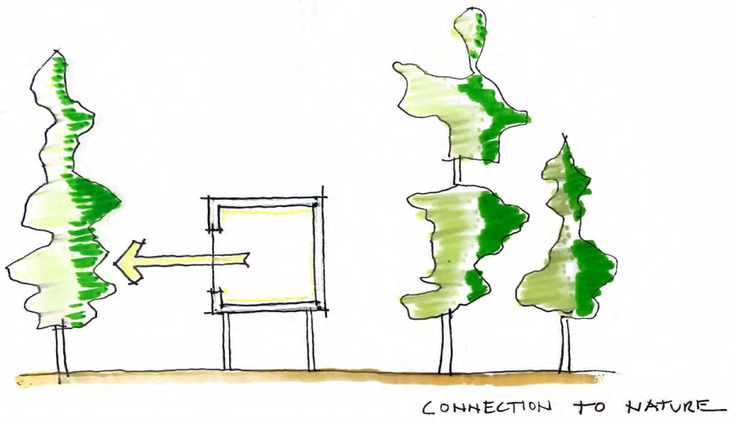
- FireSmart – non-combustible roofs, landscape buffer
- Local Materials – wood, metal
- Connected to Municipal Sewer
- Connected to Municipal Waste Management

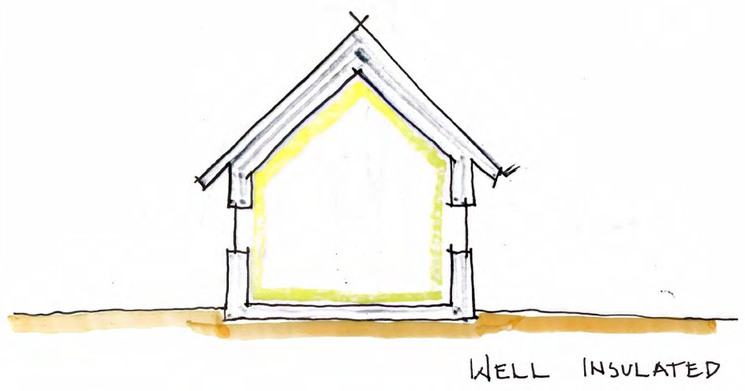
Community

- Social Mix – variety of unit type and size
- Cultural Expression – history of use, indigenous peoples, flume
- Community Garden
- Playground – pump track, children's play area
- Parkspace


SUMMER
WINTER
SOLAR PANELS
SOLAR ROOF / SHADE


CHARGING PODS


CONNECTION TO NATURE


WELL INSULATED

10| Landscape Architectural Guidelines

Landscape Design for the Eco-Village should follow the guidelines outlined below:

10.1 Overview

The Summerland Eco-Village is an opportunity for the community to explore and rethink how human activity changes the built environment, and how every built and designed asset embeds into and relates to the natural environment. In the time of anthropogenic climate change, the onus is on society to protect the Okanagan's magnificent diversity in physical landscape and rich natural environment for a great number of species, which in turn provides us with a wonderful setting in which to live and recreate.

One of the most visible ways to showcase sensitive integration of built environment and how it prioritizes nature conservation is through the landscape treatment. Further, using landscape to aid and embrace strategies that promote climate change adaptation serves community in two ways; a reduction in the 'eco-anxiety' experienced by society around the carbon footprint of how we currently live, and a relaxation of the oftentimes burdensome, maintenance obligations associated with the management of more traditional, ornamental landscape treatments commonly associated with suburban development.

The following guidelines are intended to guide how new development at the Summerland Eco-Village can integrate with the natural environment and the way in which landscape facilitates the built environment playing 'lightly on the land'.

10.2 Landscape Design Principles

Preservation of intact landscape

The site planning of the Eco-Village takes into consideration the preservation of stands of existing and native trees, the 'bending' of site infrastructure (such as roads) to avoid significant topography natural features and the placement of built forms which enhance and retain significant viewsheds. Through this approach, impacts to existing vegetation are minimized and swathes of natural environment preserved for contiguous wildlife corridors and ecosystem management.

As the built form is realized within the development parcels of the Eco-Village, care will be taken to preserve tracts of natural vegetation through sensitive grading and limiting construction disturbance to building footprints. Specific focus should be placed around the potential Culturally Modified Tree on site, as highlighted in the Cultural Heritage Assessment. A tree management plan is required for all development parcels and monitoring by a registered arborist during construction.

Shared open space

In comparison to traditional suburban developments, composed of separate, private yards, development parcels within the Eco-Village will consolidate open space opportunities (private yards) into one, common and shared amenity to encourage neighbours to gather and mingle. The immediate environs of private residences will focus on plantings which integrate with natural environment, pedestrian and (minimal) vehicular circulation and small areas for growing vegetables. Turfed front and back yards will be discouraged.

Reduction of ornamental groundcover

Open spaces intended for community gathering and to afford opportunities for children and their families to run around and play ball sports are critical to the success of the Eco-Village. The surfacing choices for these open spaces should be permeable, organic, durable and functional for this use and composed of alternate groundcovers such as decomposed granite or crusher fines. The use of a monoculture groundcovers such as turfgrass is to be minimized in the Eco-Village.

Utilization of native plant species

Landscape is an integral component of the built environment of the Eco-Village. In order for the outdoor spaces to feel part of the larger ecosystem, and for the buildings to appear as if they are 'emerging' from the land, there should be little, to no distinction between the intact landscape areas and intentionally established planting areas of the site.

This is achieved using indigenous and drought tolerant plantings acclimated to the hot, dry Okanagan climate. A suggested plant palette for the Eco-Village is attached in Figure x. Intentionally established planting areas will be composed of 100% native and drought tolerant plant material. Further, there is emphasis placed in the plant palette below on those trees and plants that are deemed to have cultural significance. The use of non-native species is to be discouraged.

Urban agriculture

The development areas of the Eco-Village will encourage the cultivation, processing and distribution of food within the community, reducing the reliance on outsourced food production. Space will be maintained adjacent to private residences for raised vegetable gardens and backyard chickens. A communal compost & yard waste facility will be provided in all residential clusters for the production of growing medium.

Landscape Architectural Guidelines

Indigenous fire management

The Okanagan is experiencing an increase in the severity and frequency of wildfires. Wildfires have devastated some communities, forcing evacuations, destroying vast tracts of forest, grasslands, fauna and disrupting livelihoods. Projected increases in spring and fall temperatures will have a strong influence on fire season start date, end date and length, particularly in areas subject to reductions in winter precipitation and earlier snowmelt. The length of the fire season is expected to increase in almost all areas, by 2100 becoming longer by more than a month in certain regions.

The Eco-Village is a wildland interface community that will be developed in a way that ecologically reduces the risk of wildfire while maintaining the natural values of the site. Prior to being removed from their traditional lands to reserves in the late 1800's Indigenous Peoples used controlled burns to manage the forests and rangeland. The timing and location of the fires were based on traditional knowledge about their territories accumulated over millennia. These managed fires were an important component of their stewardship of the land. Further, through the Cultural Heritage Assessment several culturally significant trees and plants were located on site, which presents an important opportunity to weave Syilx ecological understanding into the project. The Eco-Village will incorporate controlled burns in order to achieve some of the following objectives:

- Manage the buildup of combustible materials
- Manage regeneration
- Manage pests
- Open and maintain trails and paths
- Create grazing lands for prey species
- Rejuvenate quality and quantity of forage (new growth being higher in protein and minerals)
- Stimulate productivity of berry patches
- Stimulate growth of medicinal plants
- Produce materials for basketry (in partnership with Penticton Indian Band)
- Create fuel breaks around camps and villages

Exposure to natural environment

The Eco-Village will appeal to a wide demographic of families, seniors and young professionals who wish to have access to the natural environment. As opposed to traveling to a rustic resort or provincial park to have that nature experience, residents of the Eco-Village will be immersed in the natural environment on a daily basis, with access to nature trails 'at their back door'.

Irrigation systems

Irrigation systems will be via high-efficiency, automatic and timed underground system, utilizing reclaimed water. Drip irrigation will be used for intentionally established planting areas, with the ability to disconnect irrigation zones upon establishment of plant material. Many of the

Stormwater management

Intentionally established planting areas will be graded to receive seasonal stormwater in order to allow moisture to infiltrate into the site and to reduce run-off rates of return to Okanagan Lake. These low-lying areas will be created in conjunction with civil engineering of the site and to minimize the requirement for traditional storm sewer infrastructure.

Traditional landscapes with deciduous trees and turf groundcover can be labour intensive during the fall with leaf drop and the attendant clean-up. The intention behind the Eco-Village planting approach is to not obligate residents to clean-up leaf drop, rather to leave or mulch the leaves and allow natural decomposition in place and to return nutrients to the soil. By reducing the extent of turf groundcover in the development areas, decomposition and the recycling of nutrients can take place without the pressure to 'tidy-up' those natural processes.

Community Recycling Depot

The Eco-Village will incorporate a pilot, 'pop-up' recycling station in the community hub.

Landscape Architectural Guidelines

The following tree, shrub and ornamental grasses, and perennial plant palette is encouraged in the landscape designs for the Eco-Village:

10.3 Trees

* culturally significant trees outlined in the Cultural Heritage Assessment

Chickadee Birch

Sensation Box Elder

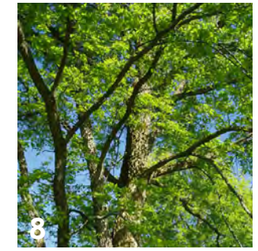
Autumn Blaze Maple

Autumn Purple Ash

Douglas Maple

Dakota Pinnacle Birch

Katsura Tree



Common Hackberry

✲ *Ponderosa Pine*

✲ *Douglas Fir*

Siberian Larch

Hick's Yew

Crimson Cloud Hawthorn

Snowbird Hawthorn

Paul's Scarlet Hawthorn

No.	Botanical Name	Common Name	Size	Character
1	Betula papyrifera 'Chickadee'	Chickadee Birch	12m tall x 6m wide	Narrow columnar tree with showy bark, yellow fall colour
2	Acer negundo 'Sensation'	Sensation Box Elder	9m tall x 7m wide	Broadly rounded form, variegated bronze fall colour
3	Acer x freemanii 'Jeffersred'	Autumn Blaze Maple	15m tall x 12m wide	Round, upright habit, fast growing, red-orange fall colour
4	Fraxinus americana 'Autumn Purple'	Autumn Purple Ash	15m tall x 15m wide	Upright form, dark green foliage, purple fall colour
5	Acer glabrum var. douglasii	Douglas Maple	2m tall x 1.5m wide	Upright, low branched, multi-stemmed, ornamental tree, fall colour
6	Betula platyphylla 'Fargo'	Dakota Pinnacle Birch	8m tall x 2m wide	Narrow columnar form, yellow in fall, white papery bark
7	Cercidiphyllum japonicum	Katsura Tree	13m tall x 6m wide	Pyramidal shape, bluish-green foliage, specimen tree, fall colour
8	Celtis occidentalis	Common Hackberry	15m tall x 10m wide	Round spreading form, shade tree, drought tolerant
9	Pinus ponderosa	Ponderosa Pine	15m tall x 6m wide	Fast growing pyramidal evergreen, long dark green needles
10	Pseudotsuga menziesii	Douglas Fir	20m tall x 10m wide	Fast growing, dense, pyramidal evergreen, dark green foliage
11	Larix sibirica	Siberian Larch	15m tall x 7m wide	Broad pyramidal shape, arching branches, soft green needles, yellow fall colour, conifer that loses its needles in winter
12	Taxus x media 'Hicksii'	Hick's Yew	3m tall x 1m wide	Slow growing, narrow upright evergreen, shear for compact form
13	Crataegus laevigata 'Superba'	Crimson Cloud Hawthorn	5m tall x 3m wide	Slightly weeping branch habit, dark green foliage, dark pink flowers
14	Crataegus mordonensis 'Snowbird'	Snowbird Hawthorn	5m tall x 5m wide	Upright rounded form, specimen/ accent tree, white flowers
15	Crataegus oxycantha 'Paul's Scarlet'	Paul's Scarlet Hawthorn	5m tall x 4m wide	Upright rounded form, specimen/ accent tree, pink flowers

Landscape Architectural Guidelines

10.4 Shrubs

* culturally significant trees outlined in the Cultural Heritage Assessment

Staghorn Sumac

Winged Burning Bush

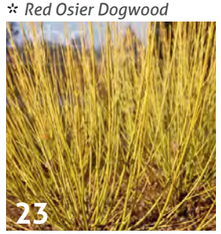
Arctic Fire Dogwood

✲ *Red Osier Dogwood*

✲ *Oregon Grape Holly*

Potentilla

Show Off Forsythia

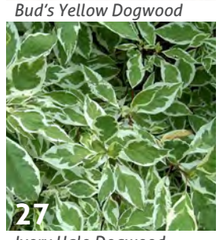


Bud's Yellow Dogwood

✲ *Saskatoon berry*

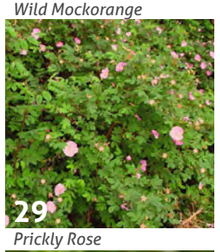
Wild Mockorange

Silver Variegated Dogwood



Ivory Halo Dogwood

Wood's Rose



Prickly Rose

Anthony Waterer Spirea

Goldflame Spirea

Hakura Nishiki Tricolour Willow

Common Boxwood

Green Gem Boxwood

Smooth Sumac

**Differing varieties of these plant species are acceptable.

No.	Botanical Name	Common Name	Size	Character
16	Rhus typhina	Staghorn Sumac	6m tall x 1.5m wide	Large open shrub, serrated leaves
17	Euonymus alatus	Winged Burning Bush	2.5m tall x 3m wide	Upright rounded form with winged leaves, brilliant red fall colour
18	Cornus stolonifera 'Farrow'	Arctic Fire Dogwood	1.25m tall x 1m wide	Compact shrub, winter interest from red stems, non-suckering habit
19	Cornus sericea	Red Osier Dogwood	3m tall x 3m wide	Large rounded native shrub, deep red winter bark
20	Mahonia aquifolium	Oregon Grape Holly	1.25m tall x 1.25m wide	Holly-like evergreen w/ red new growth, upright spreading stems
21	Potentilla sp.**	Potentilla**	1m tall x 1.25m wide	Mound shape, yellow, pink or orange flowers, good border plant
22	Forsythia x intermedia 'Mindor'	Show Off Forsythia	2m tall x 2m wide	Compact, upright form, early blooming bright yellow flowers
23	Cornus alba 'Bud's Yellow'	Bud's Yellow Dogwood	2m tall x 2m wide	Winter interest from yellow stems, berries attract birds in winter
24	Amelanchier alnifolia	Saskatoon berry	2.0m tall x 2.0m wide	Compact early flowering shrub, slightly fragrant, white flowers
25	Philadelphus lewisii	Wild Mockorange	2.4m tall x 2.4m wide	Woody ornamental shrub, scented, clusters of white flowers
26	Cornus alba 'Argenteo-Marginata'	Silver Variegated Dogwood	3m tall x 2.4m wide	Variegated white & green leaves, winter interest from red stems
27	Cornus alba 'Bailhalo	Ivory Halo Dogwood	1.5m tall x 1.5m wide	Compact mounding shrub with winter interest from red stems
28	Rosa woodsii	Woods Rose	1.5m x 1.5m	Hardy native shrub, forms deep spreading thickets in open areas
29	Rosa acicularis	Prickly Rose	1.5m x 1.5m	Spiky native shrub, pink flowers
30	Spiraea x bumalda 'Anthony Waterer'	Anthony Waterer Spirea	0.75m tall x 1m wide	Upright rounded shub, green foliage turns redish-purple in fall
31	Spiraea x bumalda 'Goldflame'	Goldflame Spirea	0.75m tall x 1m wide	Low compact shrub, golden purple tipped leaves, pink flowers
32	Salix integra 'Hakura Nishiki'	Hakura Nishiki Tricolor Willow	1.5m tall x 1.5m wide	Small round form, variegated foliage of green, pink, and white
33	Buxus sempervirens	Common Boxwood	1.0m tall x 1.0m wide	Upright rounded shrub, winter interest, cold hardy
34	Buxus 'Green Gem'	Green Gem Boxwood	0.6m tall x 0.6m wide	Ball shaped, dwarf shrub, maintenance free, winter interest
35	Rhus glabra	Smooth Sumac	1.5m tall x 1.75m wide	Loose, open-spreading shrub, red fall colour, flat crown

Landscape Architectural Guidelines

10.5 Ornamental Grasses

Karl Foerster Feather Reed Grass

Gold Dew Tufted Hair Grass

Tall Moor Grass

Tufted Hair Grass

Maiden Grass

Variegated Feather Reed Grass

Morning Light Maiden Grass

Blue Oat Grass

Red Switch Grass

Fountain Grass

Karley Rose Fountain Grass

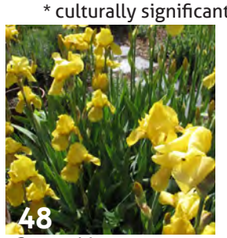
No.	Botanical Name	Common Name	Size	Character
36	Calamagrostis x acutiflora 'Karl Foerster'	Feather Reed Grass	1.5m tall x 0.75m wide	Golden yellow blooms, good for mass plantings
37	Deschampsia cespitosa 'Goldtau'	Gold Dew Tufted Hair Grass	0.6m tall x 0.6m wide	Small compact, ornamental grass, late blooming gold tufts
38	Molinia arundinacea	Tall Moor Grass	1.5m tall x 1.0m wide	Clump forming, narrow leaves, rich golden colour in fall
39	Deschampsia cespitosa	Tufted Hair Grass	1m tall x 0.6m wide	Clump forming grass, late blooming gold tufts
40	Miscanthus sinensis 'Gracillimus'	Maiden Grass	1.75m tall x 1m wide	Vase-like growth, tassel flowers, narrow green foliage
41	Calamagrostis x acutiflora 'Overdam'	Variegated Feather Reed Grass	1.25m tall x 0.6m wide	Golden yellow blooms, good for mass plantings
42	Miscanthus sinensis 'Morning Light'	Morning Light Maiden Grass	1.25m tall x 1m wide	Clump forming, late bloomer, green & white foliage, pink tufts
43	Helictotrichon sempervirens	Blue Oat Grass	1m tall x 0.75m wide	Tufted, dome shaped grass, blue foliage, drought tolerant
44	Panicum virgatum 'Rotstrahlbusch'	Red Switch Grass	1.2m tall x 0.9m spacing	Small, upright form, leaves tinged red all season, burgundy fall colour
45	Pennisetum alopecuroides	Fountain Grass	1.25m tall x 1m wide	Clump forming grass, drought tolerant, mauve flower spikes
46	Pennisetum orientale 'Karley Rose'	Karley Rose Oriental Fountain Grass	1.25m tall x 1m wide	Clump forming grass, rose-purple flower spikes

Landscape Architectural Guidelines

10.6 Perennials

* culturally significant trees outlined in the Cultural Heritage Assessment

✲ *Cloth of Gold Yarrow*



German Iris

Goldsturm Coneflower

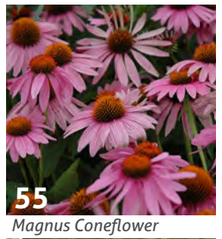
Black Eyed Susan

Big Sky Harvest Moon Coneflower

Daylily

✲ *Summer Pastels Yarrow*

Japanese Astilbe

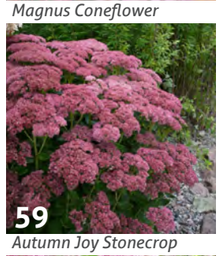


Magnus Coneflower

Prairie Splendor Coneflower

Matrona Autumn Stonecrop

Brilliant Stonecrop



Autumn Joy Stonecrop

✲ *Paprika Yarrow*

Kobold Blazing Star

Rose Queen Salvia

Little Joe Dwarf Joe Pye

Blazing Star

Caradonna Salvia

Frikart's Aster

***Differing varieties of these plant species are acceptable.*

No.	Botanical Name	Common Name	Size	Character
47	Achillea filipendulina 'Cloth of Gold'	Cloth of Gold Yarrow	1m tall x 0.6m wide	Vigorous clump forming perennial, ferny foliage, attracts butterflies
48	Iris germanica**	German Iris**	1.0m tall x 0.6m wide	Clumping form, variety of colours available, good cut flower
49	Rudbeckia fulgida 'Goldsturm'	Goldsturm Coneflower	0.75m tall x 0.6m wide	Clumping perennial with long- lasting yellow flowers, drought tolerant
50	Rudbeckia triloba	Black Eyed Susan	0.75m tall x 0.75m wide	Vigorous growth, small daisy-like flowers, attracts butterflies
51	Echinacea 'Big Sky' Harvest Moon	Big Sky Harvest Moon Coneflower	0.75m tall x 0.5m wide	Upright form, drought tolerant, attracts butterflies, yellow flowers
52	Hemerocallis sp.**	Day Lily**	Varies by species	Clump forming perennial, variety of colours
53	Achillea millefolium 'Summer Pastels'	Summer Pastels Yarrow	0.6m tall x 0.6m wide	Vigorous clump forming perennial, ferny foliage, attracts butterflies
54	Astilbe japonica 'Peach Blossom'	Japanese Astilbe	0.6m tall x 0.75m wide	Feathery leaves, pyramidal flowers, shade tolerant
55	Echinacea purpurea 'Magnus'	Magnus Coneflower	0.75m tall x 0.6m wide	Upright bushy growth habit, drought tolerant attracts butterflies
56	Echinacea purpurea 'Prairie Splendor'	Prairie Splendor Coneflower	0.9m tall x 0.6m wide	Large purple variety of coneflower, blooms all season
57	Sedum telephium 'Matrona'	Matrona Autumn Stonecrop	0.5m tall x 0.6m wide	Compact clump form, purple foliage, hardy & drought tolerant
58	Sedum spectabile 'Brilliant'	Brilliant Stonecrop	0.6m tall x 0.6m wide	Clump forming, mauve-pink flowers, attracts butterflies
59	Sedum spectabile 'Autumn Joy'	Autumn Joy Stonecrop	0.6m tall x 0.6m wide	Clump forming perennial, succulent leaves, attracts butterflies
60	Achillea filipendulina 'Paprika'	Paprika Yarrow	0.6m tall x 0.6m wide	Vigorous clump forming perennial, ferny foliage, attracts butterflies
61	Liatris spicata 'Kobold'	Kobold Blazing Star	0.6m tall x 0.3m wide	Mauve blossoms, compact & low growing, attracts butterflies
62	Salvia nemerosa 'Rose Queen'	Rose Queen Salvia	0.5m tall x 0.6m wide	Upright growth, rosy-pink flowers, attracts butterflies & hummingbirds
63	Eupatorium dubium 'Little Joe'	Little Joe Dwarf Joe Pye	1.5m tall x 1.0m wide	Upright form, green foliage, pink flowers, attracts butterflies
64	Liatris spicata	Pink Blazing Star	0.75m tall x 0.5m wide	Pink blossoms, compact & low growing, attracts butterflies
65	Salvia nemerosa 'Caradonna'	Caradonna Salvia	0.6m tall x 0.6m wide	Upright growth, tall spiky deep purple flowers, attract butterflies
66	Aster x frikartii 'Monch'	Frikart's Aster	0.75m tall x 0.75m	Upright form, attracts butterflies, blue flowers

Landscape Architectural Guidelines

10.7 Pernnials

May Night Salvia

Hidcote English Lavender

Siberian Iris

Speedwell

Russian Sage

Six Hills Giant Catmint

Walker's Low Catmint

Dropmore Blue Catmint

Blue Hobbit Sea Holly

Hosta

Snow Hill Salvia

False Spirea/Astilbe

***Differing varieties of these plant species are acceptable.*

No.	Botanical Name	Common Name	Size	Character
67	Salvia nemerosa 'May Night'	May Night Salvia	0.5m tall x 0.6m wide	Upright growth, purple flowers, attracts butterflies & hummingbirds
68	Lavendula angustifolia 'Hidcote'	Hidcote Lavender	0.6m tall x 0.6m wide	Compact perennial, scented, attracts butterflies, drought tolerant
69	Iris sibirica**	Siberian Iris**	0.75m tall x 0.6m wide	Clumping form, good cut flower, variety of colours available
70	Veronica spicata**	Speedwell**	0.45m tall x 0.4m wide	Upright arching flower spikes, blooms all season long
71	Perovskia atriplicifolia	Russian Sage	1.25m tall x 1m wide	Upright woody shrub, misty-blue flowers, attracts butterflies
72	Nepeta mussinii 'Six Hills Giant'	Giant Blue Catmint	0.9m tall x 0.75m wide	Hardy, tolerant of damp conditions, free flowering, deep violet blue flowers
73	Nepeta x fassennii 'Walkers Low'	Walkers Low Catmint	0.6m tall x 0.6m wide	Grey-green fragrant leaves, soft lavender-blue flowers
74	Nepeta x faassenii 'Dropmore Blue'	Dropmore Blue Catmint	0.3m tall x 0.5m wide	Spreading habit, fragrant leaves, lavender-blue flowers
75	Eryngium planum 'Blue Hobbit'	Blue Hobbit Sea Holly		Round mounding form, purplish-blue flowers, dwarf variety
76	Hosta sp.*	Hosta*	Varies by species	Shade tolerant, mounding habit, variety of different species
77	Salvia nemerosa 'Snow Hill'	Snow Hill Salvia	0.5m tall x 0.6m wide	Upright growth, white flowers, heat & drought tolerant
78	Astilbe x arendsii	False Spirea	0.6m tall x 0.6m wide	Feathery leaves, pyramidal flowers variety of colours available, shade tolerant

SUMMERLAND ECO-VILLAGE concept